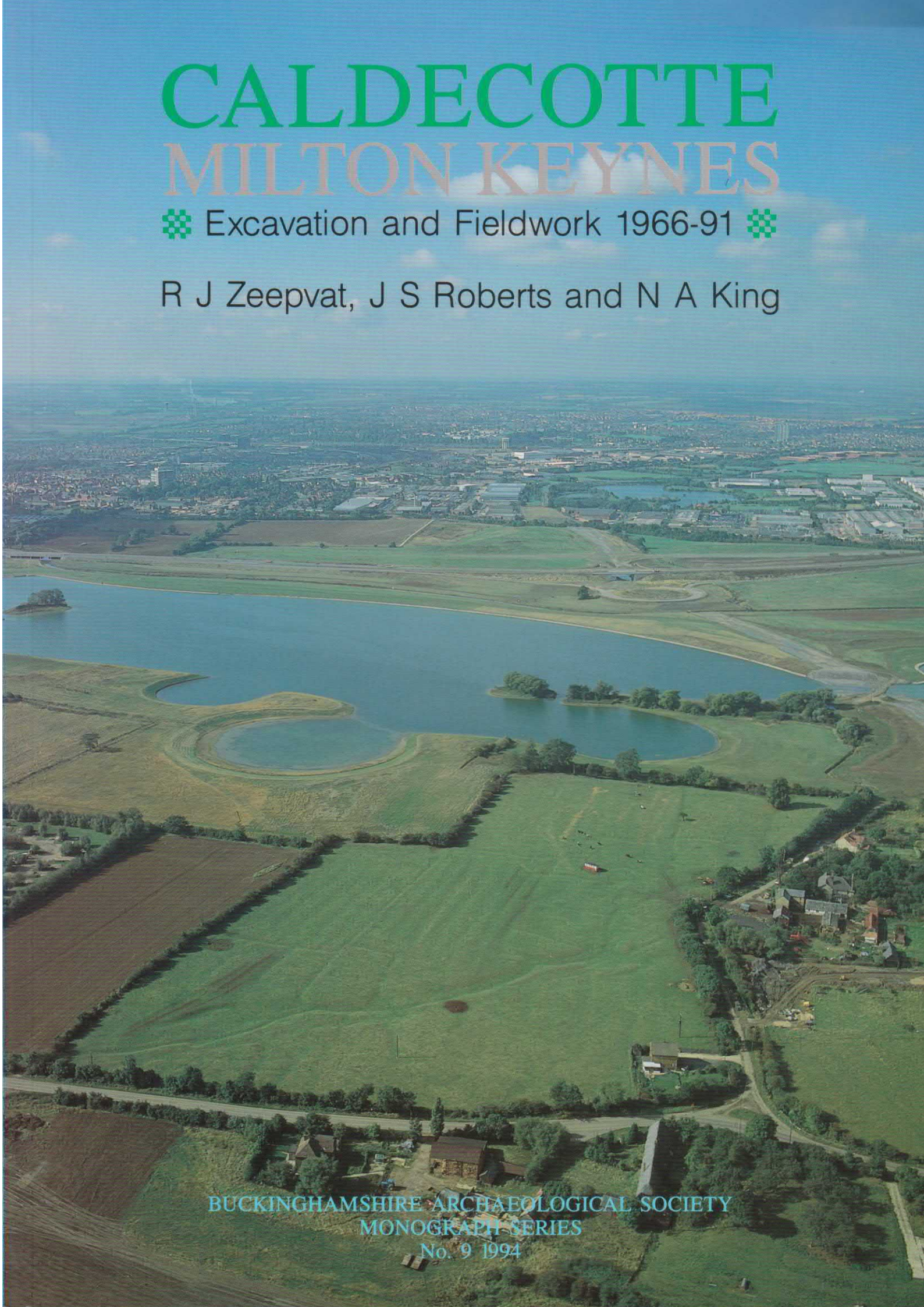
CALDECOTTE
MILTON KEYNES

Excavation and Fieldwork 1966-91

R J Zeepvat, J S Roberts and N A King



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CALDECOTTE

EXCAVATION AND FIELDWORK, 1966–91

by

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with reports on watching briefs by

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FOREWORD AND ACKNOWLEDGEMENTS

R.J. Zeepvat

In an area of large-scale planned development such as Milton Keynes, it is invariably the location and pace of development that dictate the scale and direction of archaeological fieldwork, rather than the archaeologist's desire to undertake orderly programmed excavations of particular areas of archaeological interest. A particularly good example of this is the work detailed in this volume, consisting of excavations and fieldwork carried out in a variety of circumstances over some twenty years in the Caldecotte area of Milton Keynes.

Conceived in the early 1970s as a multi-period excavation project taking in the medieval village and moated site, as well as adjacent areas of known Roman and Saxon activity, work finally began in 1978 on the Roman, Saxon and moated sites, prior to the start of the construction of Caldecotte balancing lake. A watching brief was also maintained on adjacent areas threatened by the lake. With the completion of the lake archaeological work ceased, and it was not until 1990 that the threat of housing development made possible partial excavation of the medieval village.

Despite the diverse nature of the Caldecotte 'project', its results have not been disappointing. Caldecotte has provided the only opportunity for examining on a large scale the historic landscape of the Ouzel valley, thus complementing the Unit's work at Great Linford, in the Ouse valley (Mynard and Zeepvat 1992) and in the Shenley and Tattenhoe area, on the Boulder clay uplands (Ivens *et al*, forthcoming). It has also revealed an interesting variety of sites and features, from Roman pottery kilns to a post-medieval water mill.

Most of the work at Caldecotte was funded by Milton Keynes Development Corporation, without whose continued support the project could not have taken place. Grants were also received from English Heritage and its predecessors towards both excavation and post-excavation work. Thanks are due to Paul Gosling and Anthony Fleming of the Inspectorate of Ancient Monuments (latterly English Heritage) for their advice and interest in the excavations.

As has often been the case on excavations in Milton Keynes, access to excavation sites still under cultivation has had to be negotiated with both landowners (normally the Development Corporation) and tenant farmers. In this respect we are grateful to the MKDC Estates and Commerce Departments, and latterly to Andrew Barr of Kirkby Diamond, the Corporation's land agents, for their assistance. We would also like to thank the various landowners and tenants involved, particularly the Dickens brothers of Caldecotte Farm. The 1990–91 excavation staff were particularly grateful for the assistance given by the occupant of Honeybun Cottage, Mr R. Bassant, in providing refreshments and other home comforts during the excavation!

Excavating machinery for the various sites at Caldecotte has come from several sources over the years, but we would particularly like to acknowledge F.J. Morris (Contracting), SRBE Ltd and Wysehire for their assistance. During the construction of the lake, access and assistance was provided by the principal contractors, French Kier, and by the resident engineering staff of Anglian Water.

As might be expected, the labour force for the various excavations at Caldecotte consisted of several hundred people over the twenty years of the project, which without their help would not have been as successful. The earliest exploratory excavations at Caldecotte, carried out by Bletchley Archaeological Society, were supervised by Hedley Pengelly, while the Unit's first evaluation of the area north of the moat was supervised by Don Stewart. The 1978–81 excavations were directed by Martin Petchey, assisted for the first season by the writer. During that period the Finds Supervisors were Pauline Marney and Karen Larsen, and the Assistant Supervisors Deborah Ford, Peter Gilbert, Lawrence Manley and Paul Stamper. The 1990–91 excavation was directed by the writer, and supervised by John Roberts. The Finds Supervisor was Nicola King, and the Assistant Supervisor was Iain Charles. During the construction of the lake, all watching briefs were carried out by Bob Williams, who was also responsible for much of the other fieldwork in the area.

Post-excavation work on Caldecotte has been carried out by various Unit staff members and external specialists, who are acknowledged in the introduction to the finds report. Conservation of the finds from the various excavations and watching briefs was undertaken by Susan Marshall and Victor Osborne. Finds and pottery illustrations are the work of Alexandra Thorne and June Burbidge, while the site drawings were prepared by Bob Zeepvat, with the exception of those for the MK618 excavation, which are the work of Iain Charles and John Roberts.

The cover was designed by David Williams.

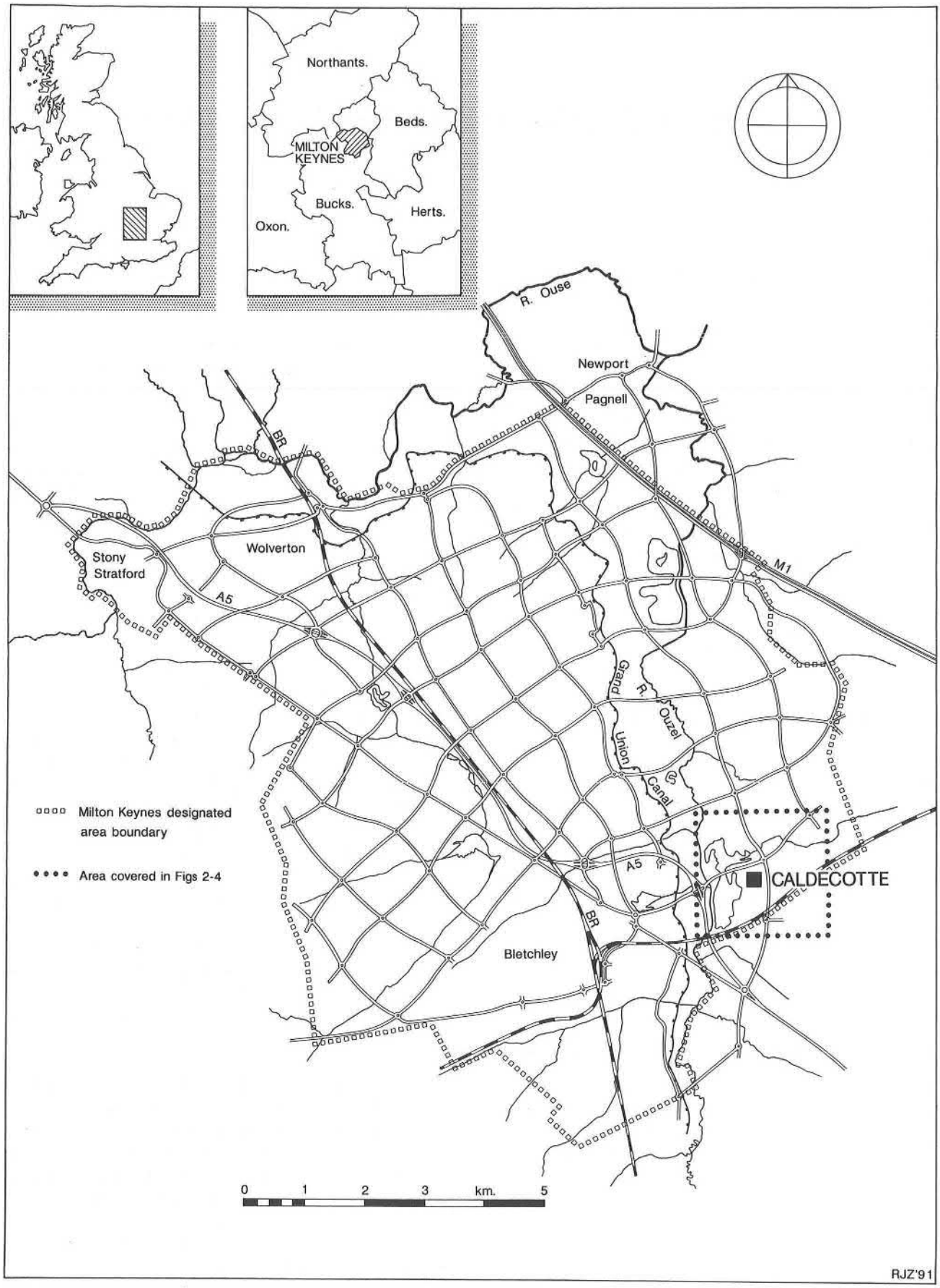


Figure 1: Site location plan.

INTRODUCTION

R.J. Zeepvat

This volume details the results of the archaeological examination over some twenty-four years of a number of sites, of different periods, in the Caldecotte area in south-east Milton Keynes. This area (Fig. 1), covering nearly two square kilometres, includes the Caldecotte balancing lake, the construction of which occasioned many of the archaeological discoveries detailed below, and the north-west corner of the parish of Bow Brickhill, now forming the Caldecotte and Tilbrook areas of Milton Keynes.

The Caldecotte area or 'grid square' of Milton Keynes preserves on its north side at NGR SP 894 355 the hamlet of Caldecotte, the smaller of the two population centres in the parish of Bow Brickhill. Prior to modern development, the settlement consisted of two farms and some farmworkers' houses, on the north side of Caldecotte Lane. This runs westward from the Walton to Bow Brickhill road, part of the main north-south route following the east side of the valley of the River Ouzel. The river itself followed a meandering course some 500 m west of the settlement. To the south of the hamlet was an area of earthworks marking the site of a medieval settlement (MK618), while a medieval moated site (MK619) survived to the west, with further enclosures (MK685) and areas of ridge-and-furrow to the north. These are described in detail elsewhere (p. 13; Fig. 5).

It was the earthworks that first attracted archaeological attention to Caldecotte. The Royal Commission on Historical Monuments noted the moat in 1914 (RCHM(E) 1914, 67), but it was not until the nineteen-fifties that the village earthworks were recorded, initially from the air by Aerofilms Ltd and by Dr St Joseph from Cambridge University. Partly as a result of these aerial photographs, the site was identified with some conviction by local amateur archaeologist Victor Ashby as the site of the Roman 'station' of '*Magiovinto*'. *Magiovinium* is in fact two kilometres to the south, at Dropshort Farm on Watling Street, the modern A5 (Fig. 26).

Despite their scale and state of preservation, it was not until 1969 that the Caldecotte earthworks were scheduled (as Bucks. No.100). However, this protection came too late for the moat, for in 1962 the farmer who then owned it filled in the southern and eastern arms with material from the development of the Denbigh Industrial Estate in Fenny Stratford, barely two kilometres away; the whole of the field containing the moat (*Berrystead Close*), including the now accessible moat interior, was put under the plough. This process in turn opened up a new source of information about the site, as for the next few years each successive ploughing brought to the surface Belgic, Roman and medieval sherds from areas to the north and east of the moat (Anon. 1963, 203; Anon. 1964, 302; Anon. 1965, 410).

The culmination of this phase was a small trial excavation by the Bletchley Archaeological Society in 1967 in the north-west corner of Berrystead Close (MK504), directed by Hedley Pengelly. By 1970, the new city of Milton Keynes had been designated, and it was clear from early plans that the construction of a lake at Caldecotte posed a major threat to the site. The Milton Keynes Research Committee organised further trial excavation in Berrystead Close, under the direction of Hedley Pengelly and Richard Griffiths, aimed at establishing the limits of the site. Long trial-trenches were dug by machine across the field, and pits and ditches containing Belgic, Roman, Saxon and medieval pottery were observed and sampled.

The Saxon evidence was of particular importance, so in 1972 the recently formed Milton Keynes Archaeology Unit opened three trial trenches under the direction of Dennis Mynard, in an attempt to elucidate this phase of the site's history, in preparation for a full-scale excavation in the following year. In the event this excavation did not take place, as attention was directed to more immediately threatened sites elsewhere in the city.

The first major development threat to the Caldecotte area came with the construction of the Caldecotte balancing lake, part of the city's drainage system, which was planned to occupy large parts of the Caldecotte and Walton grid squares. Although originally planned for the early 1970s, it was not until 1980 that construction began (Plate 1). This enabled further field work to be carried out, providing more information about the distribution of sites in that part of the Ouzel valley, particularly the area to the north of the moat, where surface finds were most numerous. However, a flight over Caldecotte in 1976 by Dennis Mynard located the cropmark of an oblong ditch (MK117) in *Mill Close*, the field to the south of Berrystead Close (Plate 5). This feature was interpreted initially as a barrow (Loveday and Petchey 1982, 20).

Since there were no surface indications of this feature despite regular field walking after the plough, a geophysical survey of the south end of Berrystead Close and of Mill

Plate 1: Construction of Caldecotte Lake, 1981 (*MKAU*).

Close was commissioned to ensure no other occupation was lurking undetected. This was carried out by Alistair Bartlett of the Ancient Monuments Laboratory, using a fluxgate magnetometer (Bartlett 1977). The oblong ditch showed strongly, and another area of anomalies was located straddling the boundary of the two fields.

It was also about this time that the surviving earthworks of the medieval village and moat at Caldecotte were surveyed for the Unit by Robbie Browse and Ros Tyrrell, and a survey of the ridge-and-furrow in the parish was carried out by Chris Hooper, using evidence from fieldwalking and aerial photographs. The picture of the medieval parish thus obtained can be seen in Fig. 7.

As a result of the discoveries detailed above, and in view of the imminent start of work on Caldecotte Lake, a programme of excavation by the Unit was begun in April 1978. The object of this work, directed by Martin Petchey, was to examine the moated site and adjacent areas of Berrystead Close. It was envisaged at the time that the excavation team would then move on to the village earthworks, which were earmarked for housing development.

In the event, excavation continued on Berrystead Close and the north end of Mill Close until 1980, revealing evidence of Roman occupation and field boundaries (MK44), as well as industry in the form of pottery kilns and bronze working. During this period excavations were also carried out on the site of a post-medieval water mill (MK961), identified by Bob Croft as an earthwork in Mill Close on the secondary channel of the Ouzel that also served the moat. This excavation has already been published (Petchey and Giggins 1983). Evaluation by machine trial trenching was undertaken on MK117, and the site was excavated in 1981 under the direction of Martin Petchey. The principal excavated areas are shown in Fig. 2.

Construction of the lake, which began in 1981, led to further discoveries in the Caldecotte area. A watching brief was maintained on the lake area by Bob Williams, who was responsible for the discovery of a number of new Roman sites (MK351, MK353, MK354) as well as a second Roman pottery kiln (MK357), a post-medieval brick clamp (MK 1008), and the remains of a post-medieval wharf (MK1011) on the Ouzel near Simpson. Part of a seventeenth-century boat (MK1016) located by the lake contractors in a silted side-channel of the river close to the mill was excavated by a team from the National Maritime Museum. A number of individual finds were also made by metal detectorists and reported to the Unit; these are detailed below in the relevant sections of the finds reports.

After yet another hiatus, punctuated only by chance finds from fieldwork and metal detecting, the final phase of archaeological work at Caldecotte begun in 1988, following proposals from the Development Corporation for housing development on the scheduled area containing the medieval village earthworks. Objections were raised to these proposals by English Heritage, despite the fact that two assessments

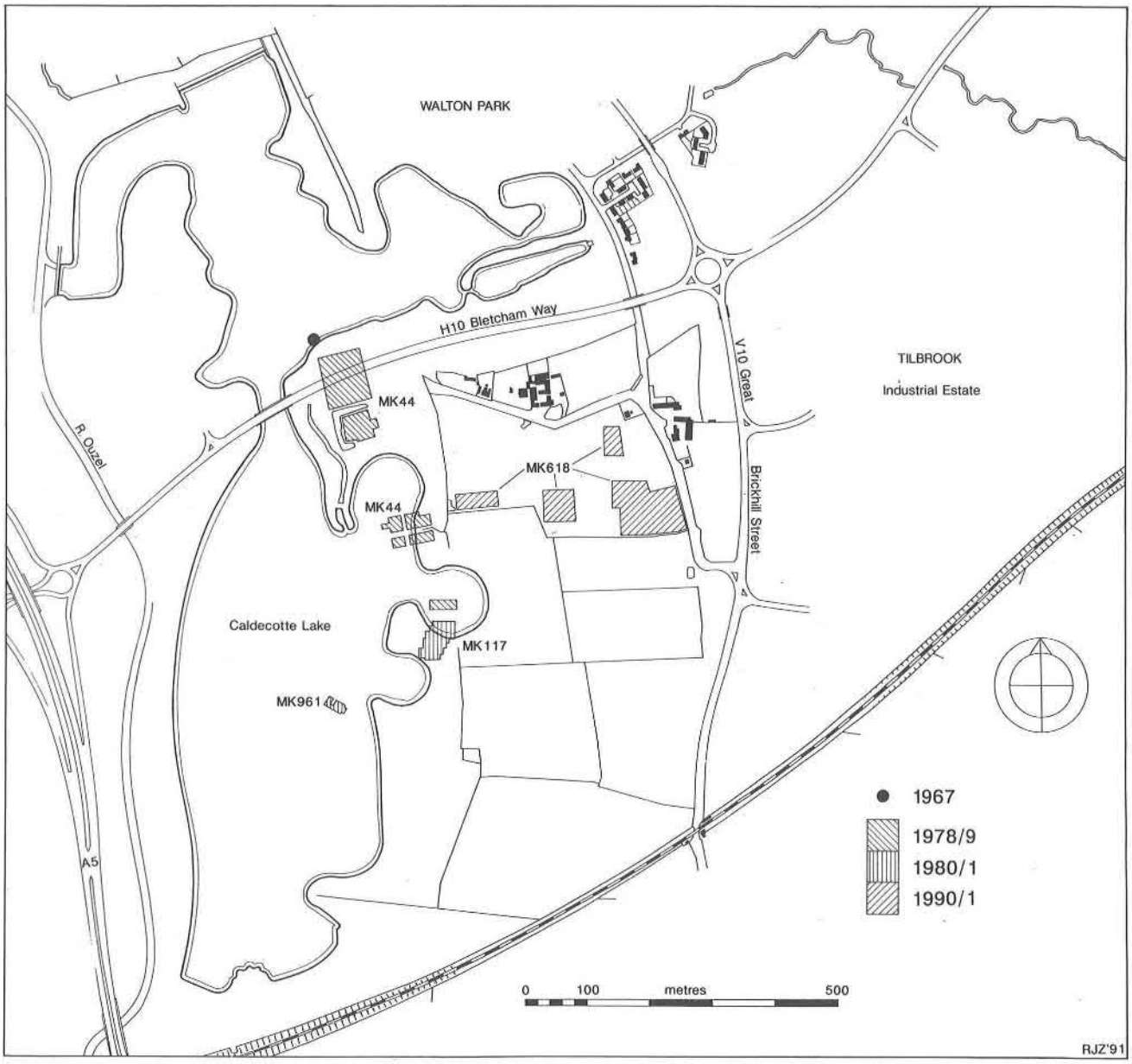


Figure 2: Excavated areas and major development threats.

of the site prepared by the Unit (MKAU 1982: Zeepvat 1989), identified the monument as being incomplete and of low archaeological importance when compared with other sites within the new city, and proposed its release for development, subject to excavation. In the event, a compromise was reached whereby the north-west quarter of the field was retained as open space, the rest of the scheduled site being released for development, subject to excavation. This work was carried out between August 1990 and April 1991, directed by the writer and supervised by John Roberts, and was the final excavation carried out by the Unit.

GEOLOGY AND TOPOGRAPHY

R.J. Zeepvat

The construction of Caldecotte Lake has considerably altered the topography of the Ouzel valley in the Caldecotte area. It is described as it was before the lake, the destructive impact of which on the landscape can be seen in Fig. 2. The geological information is derived from Horton *et al.* (1974), and illustrated in Fig. 3.

Caldecotte lay on the eastern side of the River Ouzel, on the river's second terrace, here composed of a shallow deposit of low-grade sand and gravel overlying Oxford clay, which was exposed on the edge of the terrace toward the river, and also to the east of the second terrace gravels. It is interesting to note that the area of the medieval village excavated in 1990/91 was the only part located on the clay subsoil, the rest being on second terrace gravels. The first terrace was only briefly present, and the junction of the terrace gravels with the alluvium of the flood-plain was marked most distinctly by the mill-stream, which left the river some 500 m south of the village, passed the site of the mill 150 m further north, continued northwards for 450 m to the moat and finally rejoined the river, which meanwhile had meandered over to the other side of the flood-plain, almost 300 m wide at this

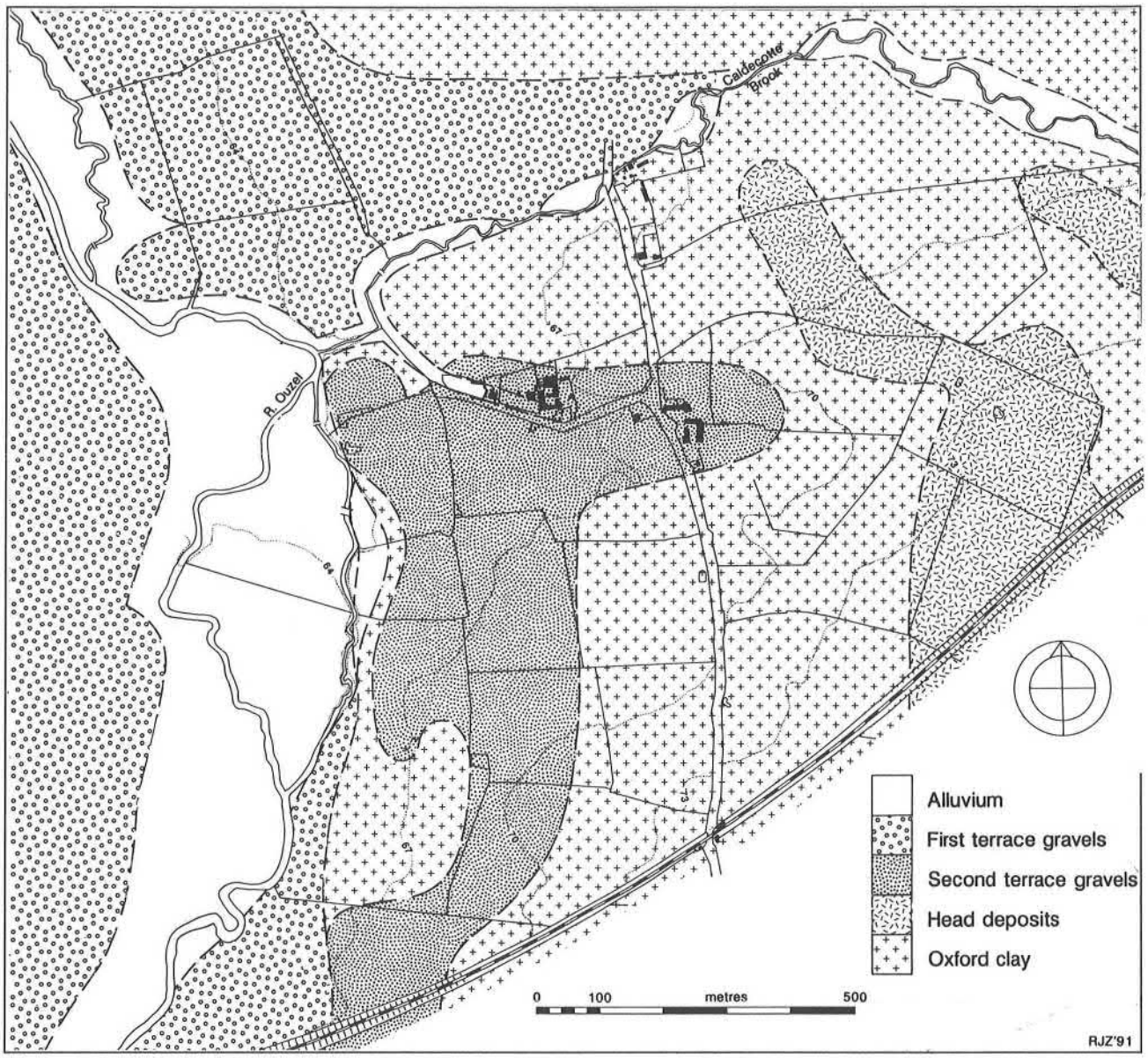


Figure 3: The geology of the Caldecotte area.

point, and then back again. At this point the river was also joined by a small tributary stream from the east. This stream, Caldecotte Brook, had no major effect on the topography.

The edge of the flood-plain was about 65 m OD (Newlyn datum) and the land rose gradually away from the river, the east side of the medieval village being about 67 m OD. The soils produced by the terrace gravels are loamy and well-drained, and were considered useful for both arable and pastoral agriculture.

Beyond the immediate environs of the hamlet of Caldecotte, the land continues a gradual rise south and east from the river to the foot of the escarpment of the Woburn Sands Heights, about 1.7 km from the river. A steep slope then rises to the highest area of ground for some miles around, especially high spots being the site of Bow Brickhill parish church and the hill fort of Danesborough, both at about 170 m OD. The Woburn Sands Heights are, as their name suggests, formed by sands of the Lower Greensand, and produce a hungry podzolic soil which supported a dry-heath vegetation until the late eighteenth century, when extensive conifer plantations were established which survive to the present day. There are deposits of fuller's earth which have been exploited since the Middle Ages, and some of the sand is cemented by iron oxides to form rusty-brown-coloured ironstone, the only locally available building stone. There are former quarries near Bow Brickhill Church.

Between the Woburn Sands Heights and the river the land is underlain by Oxford clay, which produces a tenacious and heavy soil, often difficult to plough in wet winters. However, across about half the area the clay is masked by head deposits which are often sandy, as they are derived from the Woburn Sands, and these lighten the soil considerably.

The Greensand escarpment is a slight natural barrier to north-south movement, though not as severe as the Chilterns, further to the south, and the Ouzel valley forms an easy route through it, followed by the Grand Junction Canal of 1800 and the London and Birmingham Railway of 1838. It is reasonable to suppose that this is a long-standing natural

route, especially as it leads to the Tring Gap in the Chilterns. By analogy with the Icknield Way on the scarp of the latter ridge, Simco (1984, 67) postulates an east-west route along the Greensand ridge, but this is very speculative.

In 1968, Caldecotte was included in the designated area of the New City of Milton Keynes, from which point redevelopment became inevitable. When it came, the threat was from the construction of a lake, the function of which is to prevent flooding, associated lake-side development, and a major road. Construction of the lake started in 1981 and was finished two years later, but lake-side development is only now (1993) taking shape. To the east of the lake, much of the northern part of the parish has been covered by the Tilbrook industrial development, and the Brownswood and Old Farm Park housing areas.

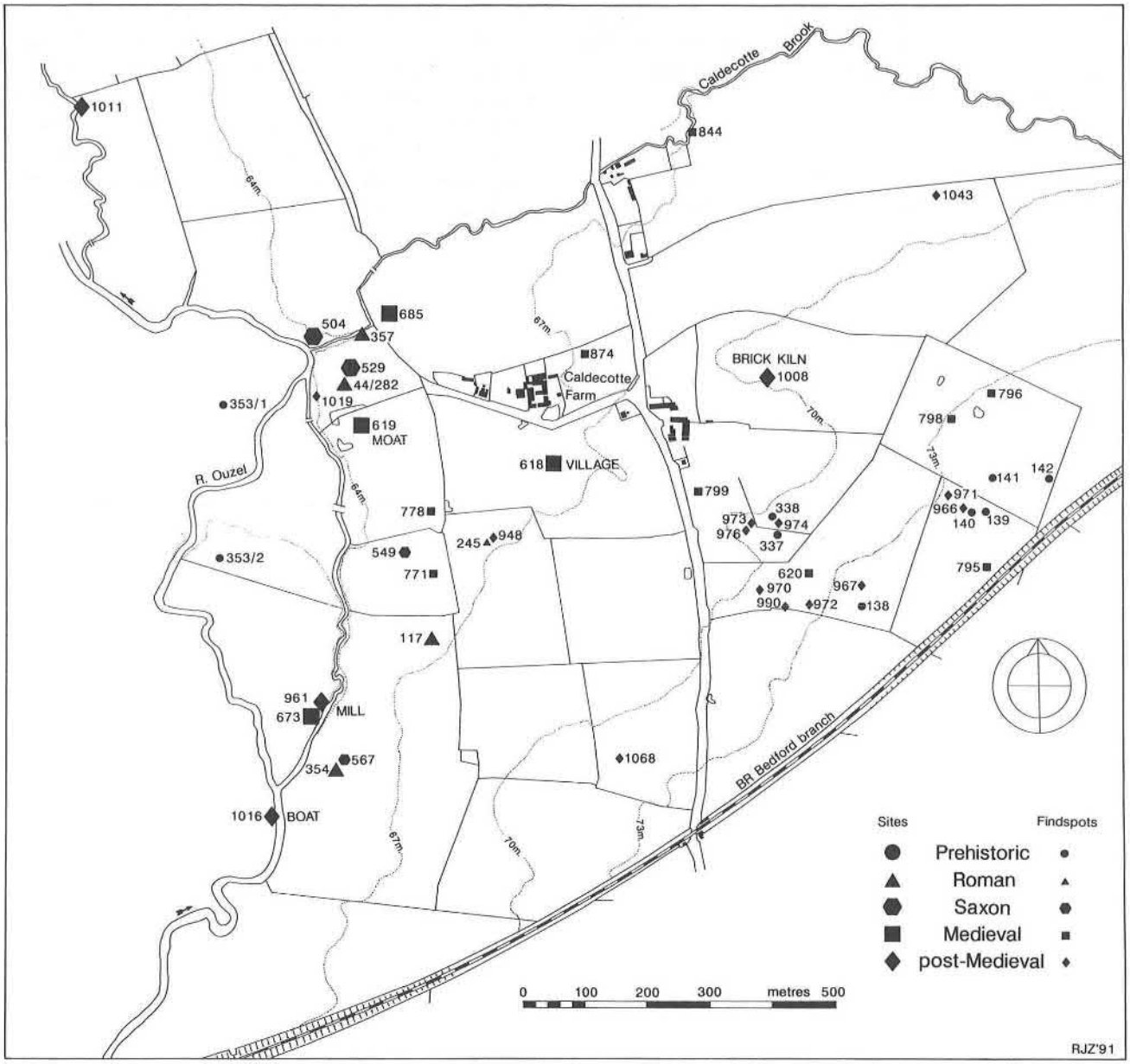


Figure 4: Caldecotte; sites and findspots.

GAZETTEER

R.J. Zeepvat

The information presented in this gazetteer has been compiled from the Milton Keynes Archaeology Unit Sites and Monuments Record. This was begun in 1974, at which time earlier discoveries in the area were renumbered and integrated into the new system. The numbering is compatible with the Buckinghamshire SMR system, by adding 3000 for MK sites 1–999 (eg. MK618 becomes Bucks. 3618) and 6000 for those over 1000.

Where possible, site locations have been plotted to the nearest ten metres, using an eight-figure National Grid reference. Where only a six-figure reference is given, this either indicates an extensive site, or that insufficient data was available for accurate plotting. All grid references are prefixed by the letters SP. Site locations are shown in Fig. 4.

The site and find descriptions have been checked against published sources, and in the case of unpublished sites either against the MKAU Level III archive, or the Sites and Monuments record cards. The descriptions are brief summaries of the known evidence, and have where necessary been expanded in the body of this report (see *published sources* column for page numbers).

The circumstances and date of discovery are given as succinctly as possible, and are in most cases self-explanatory. For the major entries, more detailed information may be found in the text of the expanded report. As a matter of Unit policy, the names of individual finders of sites and objects are not included, although they are of course recorded in the SMR.

All major published sources have been checked, although reference has not been made to every minor mention, particularly in the annual notes of *Records of Buckinghamshire* and *South Midlands Archaeology* (formerly *CBA Group 9 Newsletter*), which add little more information than will be found in the descriptive column of this gazetteer.

Finds are stored either at Buckinghamshire County Museum (BCM), with Milton Keynes Archaeology Unit (MKAU), or have been retained by the original finders.

Other abbreviations used:

MKJ *Milton Keynes Journal of Archaeology and History.*

NMM National Maritime Museum.

RBP Marney 1989.

RMK Mynard (ed.) 1987.

RoB *Records of Buckinghamshire.*

WDASJ *Wolverton and District Archaeological Society Journal.*

Site no.	*NGR*	*Description*	*Date*	*Circumstances and date of discovery*	*Published Sources*	*Location of finds*
44	891 355	Extensive area of settlement including circular and rectangular post-built structures, yard surfaces, industrial activity, field system and droveway. See also MK282 and MK357 (below).	1st-2nd cent. AD	Fieldwalking 1960s Excavated 1978–80.	This volume, p. 36ff.	MKAU
117	892 351	Extensive cropmarks visible on aerial photographs, including long rectangular enclosure *c.*50 × 10 m.	1st cent. AD	1976 aerial photographs. Excavated 1982	This volume, p. 30ff.	MKAU
138	8989 3515	End scraper on flint blade	Neolithic/ Bronze Age	Fieldwalking 1979	–	MKAU
139	9008 3530	Flint blade	Meso/Neo.	Fieldwalking, 1979	–	MKAU
140	9006 3530	Microlith	Meso.	Fieldwalking, 1979	–	MKAU

Site no.	*NGR*	*Description*	*Date*	*Circumstances and date of discovery*	*Published Sources*	*Location of finds*
141	9009 3536	Flint flake and re-touched microlith on backed blade	Meso.	Fieldwalking, 1979	–	MKAU
142	9018 3535	Flint flake	Meso/Neo.	Fieldwalking, 1979	–	MKAU
166	–	Ae quarter stater of Cunobelin, Mack 249	Late Iron Age	Metal detecting, 1982	–	with finder
245	8928 3525	Eight sherds	late 2nd–4th cent.	Fieldwalking 1977	–	MKAU
282	891 355	Various sherds from Berrystead Close (=MK44)	Iron Age and Roman	Fieldwalking 1963–5 and 1977	*RoB* 17.3, 203 (1963) *RoB* 17.4, 302 (1964) *RoB* 17.5, 410	BCM (63–65) MKAU (77)
337	8975 3527	Small struck flint flake	Meso/Neo/ Bronze Age	Fieldwalking 1979	–	MKAU
338	8974 3529	Small flint chopper	Meso/Neo/ Bronze Age	Fieldwalking 1979	–	MKAU
353/2	8886 3523	Layer of flint waste found *c.*1.5 m beneath topsoil and brown river alluvium east of R. Ouzel. Assoc. with band of red-brown alluvial clay, and several fragments of partly fossilised bone. A similar scatter was recorded west of the river (MK353/1)	Meso.	Lake construction 1982	This volume, p. 29	MKAU
354	8905 3489	Features concentrated in an area 30 m across. Some stone present, exact nature unknown. Site destroyed without excavation.	3rd-4th cent.	Lake construction 1982	This volume, p. 56	MKAU
357	8909 3558	Pottery kiln and associated ditches containing kiln waste, north of 1978–80 excavation. (Part of MK44)	late 1st–early 2nd cent.	Lake construction 1982	*RBP*, 100 (pot) This volume, p. 54	MKAU
504	8900 3557	St Neots ware associated with floor, beneath which was Middle Saxon pottery.	9th-12th cent.	Excavation by Bletchley Arch. Soc., 1968	*WDASJ* 1, 9	MKAU
529	8910 3553	Scatter of Saxon sherds over field north and north-east of moat.	Saxon	Fieldwalking, 1966–77	*WDASJ* 1, 9 *MKJ* 2, 7	MKAU
549	8915 3523	Saxon sherd.	Saxon	Fieldwalking, 1977	–	MKAU
567	8905 3489	Three hand-made quartz-gritted sherds found on MK354	Saxon	Lake construction, 1982	–	MKAU
618	8940 3535 (centre)	Village earthworks south of Caldecotte Lane, consisting of hollow way, ponds, and several crofts and other enclosures. Scheduled Ancient Monument (Bucks. 100).	Med.–post-med.	Aerial photographs, RCHM/Cambridge, *c.*1954 Excavated 1990–91	This volume, p. 59ff	MKAU
619	8908 3543	Moated site west of MK618, partly filled in 1963 and subsequently ploughed.	Med.	Field survey, 1914 Excavated 1978.	RCHM(E) 1914, 67. This volume, p. 97ff	MKAU

Site no.	*NGR*	*Description*	*Date*	*Circumstances and date of discovery*	*Published Sources*	*Location of finds*
620	898 352	Pot sherds and iron barrel padlock	Med.	Gas pipe trench, 1967	–	BCM
673	8902 3498	Site of possible mill-pond and water-mill	Med.	Lake construction, 1982	–	MKAU
685	8913 3562	Earthworks in field north-east of the moat.	Med.	Field survey and aerial photographs.	This volume, p. 16	MKAU
771	892 352	Medieval sherds from south end of Berrystead Close.	Med.	Fieldwalking, 1976/7	–	MKAU
778	893 352	2 sherds Bronze fitting	Med.	Fieldwalking, 1977 Metal detecting, 1990	–	MKAU
795	9008 3521	Fragment of limestone mortar	Med.	Fieldwalking, 1979	This volume, p. 133, obj. 148	MKAU
796	9009 3549	Two sandy sherds	Med.	Fieldwalking, 1979	–	MKAU
798	9020 3545	One sandy sherd	Med.	Fieldwalking, 1979	–	MKAU
799	8962 3533	Sand tempered sherds and sherd of glazed Brill	Med.	Fieldwalking, 1979	–	MKAU
844	896 359	Various pottery sherds, fragments of lead and copper alloy, inc. seal matrix	Med.	Metal detecting, 1988	This volume, p. 145 obj.226 (matrix)	MKAU
874	8945 3555	Quarter cut silver penny	Med.	Watching brief, 1991	–	MKAU
948	8928 3525	Two sherds pottery, assorted copper alloy and lead objects	post-med.	Fieldwalking, 1977 Metal detecting, 1989/90	–	MKAU
961	8902 3498	Water mill	post-med.	Field survey, 1979 Excavated 1980/81	Petchey and Giggins 1983	MKAU
966	9006 3530	Fragment of jug handle	post-med.	Fieldwalking, 1979	–	MKAU
967	8988 3518	Six pottery sherds	post-med.	Fieldwalking, 1979	–	MKAU
970	8971 3517	Potterspury sherd	post-med.	Fieldwalking, 1979	–	MKAU
971	9002 3532	Stoneware sherd	post-med.	Fieldwalking, 1979	–	MKAU
972	8980 3515	Three assorted sherds	post-med.	Fieldwalking, 1979	–	MKAU
973	8971 3528	Horseshoe	post-med.	Fieldwalking, 1979	–	MKAU
974	8975 3528	Three stoneware sherds	post-med.	Fieldwalking, 1979	–	MKAU
976	8970 3528	Scatter of building debris, clay pipes, pottery and iron nails. Possible house site?	post-med.	Fieldwalking, 1979	–	MKAU
990	8976 3516	Sherds	post-med.	Fieldwalking, 1976	–	MKAU
1008	8973 3552	Brick kiln	post-med.	Pipeline construction, 1980	This volume, p. 102ff	MKAU
1011	8860 3596	Brick and timber wharf on east bank of R. Ouzel, opposite Simpson moat and fishponds.	18th cent?	Lake construction, 1981	This volume, p. 103f	MKAU

Site no.	*NGR*	*Description*	*Date*	*Circumstances and date of discovery*	*Published Sources*	*Location of finds*
1016	8895 3482	Remains of boat in silted side-channel on west side of R.Ouzel	17th cent.	Lake construction, 1982	This volume, p. 108ff	MKAU/NMM
1019	8901 3549	Silver sixpence of Elizabeth I Small bronze buckle	1592	Metal detecting, date uncertain	–	MKAU
1043	900 358	Various non-ferrous metal finds	post-med.	Metal detecting, 1988/89	This volume, p. 121, 35, 61, 66	MKAU
1068	895 349	Iron object	post-med.	Metal detecting, 1989	–	MKAU

THE EARTHWORKS

R.J. Zeepvat

INTRODUCTION

Surveys of the standing earthworks and ridge-and-furrow in the Caldecotte area were carried out in 1976/77 as part of a survey programme covering all such sites in Milton Keynes. The survey method used on the earthworks at Caldecotte was plane-tabling, employing a microptic alidade and staff, the results being plotted at a scale of 1:500. The published plan (Fig. 5) is an abridged version of the original, taking into account information from aerial photographs and a contour survey of Well Close (Fig. 6), carried out in 1990/91 prior to excavation.

DESCRIPTION

Ridge and furrow

A survey of the evidence for ridge-and-furrow in Bow Brickhill parish was undertaken as part of a survey of all eighteen parishes in the designated area of Milton Keynes, taking into account evidence from fieldwalking and examination of any available historical maps and aerial photographs. Of the latter, the most informative were a set produced for the Air Ministry in 1946/47, now held by the County Museum. The picture thus obtained is shown in Fig. 7. In the interests of clarity, only alternate furrows are shown.

Although the evidence for large areas in the south and east of the parish had been obliterated by intensive ploughing, the ridge-and-furrow in the Caldecotte area largely survived. As might be expected from the topography, most of the ploughing followed the valley slope, *ie.* west-east, although two small areas to the north and north-west of the village were ploughed in a north-south direction, suggesting they may have been later infilling of the pattern.

Of particular note on the survey are the areas that appear to have been devoid of ridge-and-furrow, close to the village and moat. The former was probably the village green, while the latter could have been pasture associated with the moat.

Also of interest is the pattern of roads and trackways shown by the survey. The present Walton Road is shown passing to the east of the village to its junction with the road from Bow Brickhill, south of the modern railway level crossing, but it appears formerly to have turned westwards, joining a lane leading southwards from the west end of the village to Watling Street. Part of this lane survives as a pronounced hollow-way on the west side of Well Close. This north-south route continued to the north of the village, following the northern boundary of the parish towards Simpson, and is shown as 'Simpson Road' on the 1791 map of the parish (Fig. 9).

The Village (MK618)

The field containing the village earthworks (*Well Close*) covered some 6.25 hectares (Plate 2). It was bounded to the east by the minor road from Walton to Bow Brickhill (*Walton Road*), and to the north by Caldecotte Lane. To the west was *Berrystead Close*, containing the moated site, and to the south two fields, *Broad Gate Piece* and *Ditch Furlong Ground*. All three have been extensively ploughed in recent times.

Cutting across Well Close from its south-east corner to the middle of its north side, opposite Caldecotte Farm, was a sinuous feature, having the appearance of a lane or 'hollow-way'. This branched towards its southern end into a series of roughly parallel, meandering ditches. To the west of this hollow-way, close to its southern end, were three rectangular enclosures on a north-south axis, increasing in size towards the southern one, which measured 50 × 34 m internally. To the west of this group was a much larger enclosure, measuring 55 × 100 m.

A second, larger group of enclosures occupied much of the north side of the field. Going from east to west, there were first of all two enclosures, each measuring 50 × 20 m, on a north-south axis. These were followed by a larger enclosure which measured 30 × 60 m. To the west of this was a large square enclosure 50 m across, bisected by a sinuous ditch which appeared from its alignment to post-date the enclosure. The rest of the north-west corner of the field was occupied by four large enclosures.

Whilst some traces of ridge-and-furrow on an east-west axis in the south-west corner of the field was visible on the 1976 survey, examination of aerial photographs of the site (Cambridge Univ. Coll. nos. AEF36, BEM49) confirmed the presence of east-west ridge-and-furrow to the west and south of the two groups of enclosures described above. In contrast, the north-east corner of the field, east of the hollow-way, appeared free of earthworks except for some minor disturbance beside Walton Road, possibly resulting from gravel digging for road repairs.

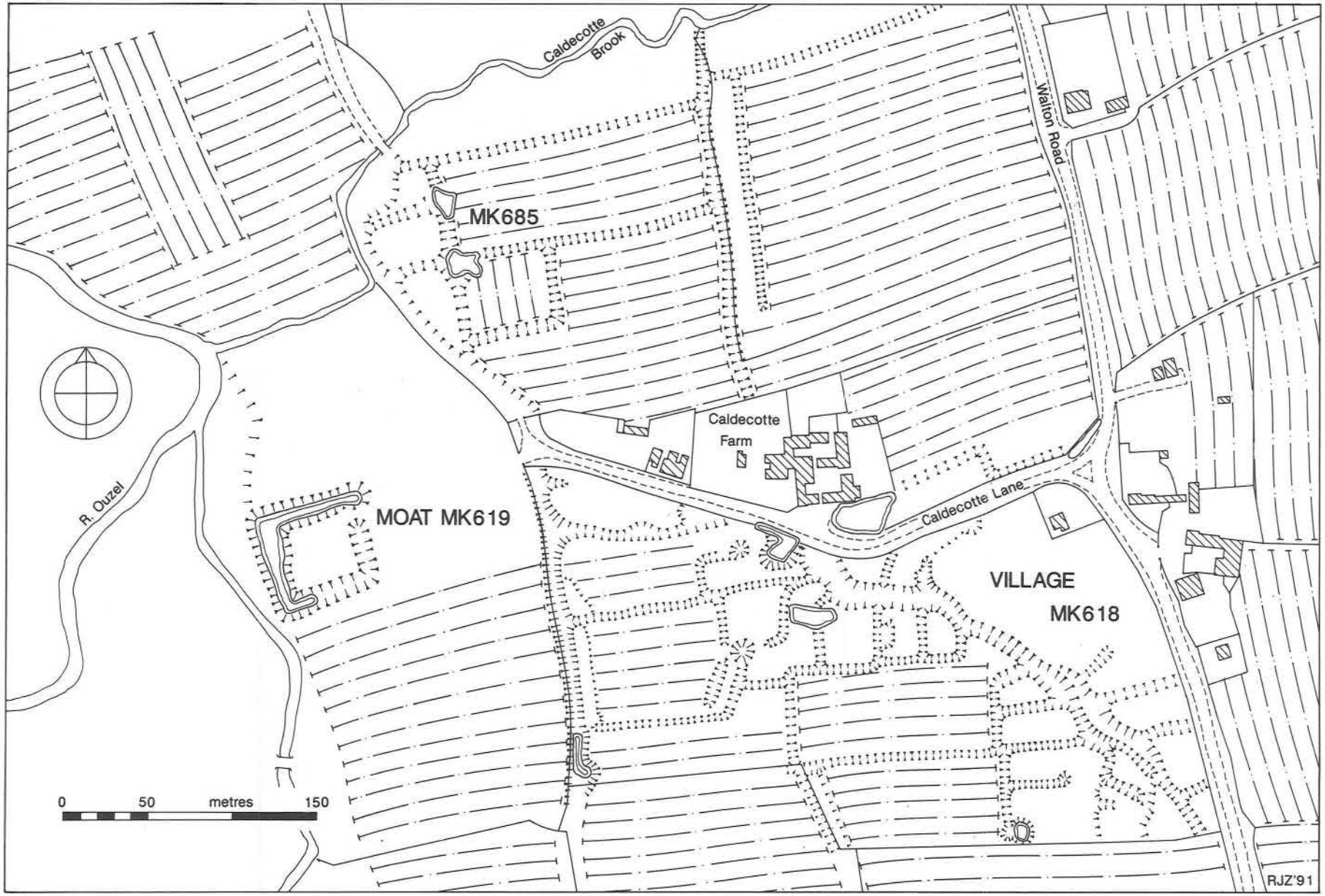


Figure 5: Caldecotte; earthworks survey.

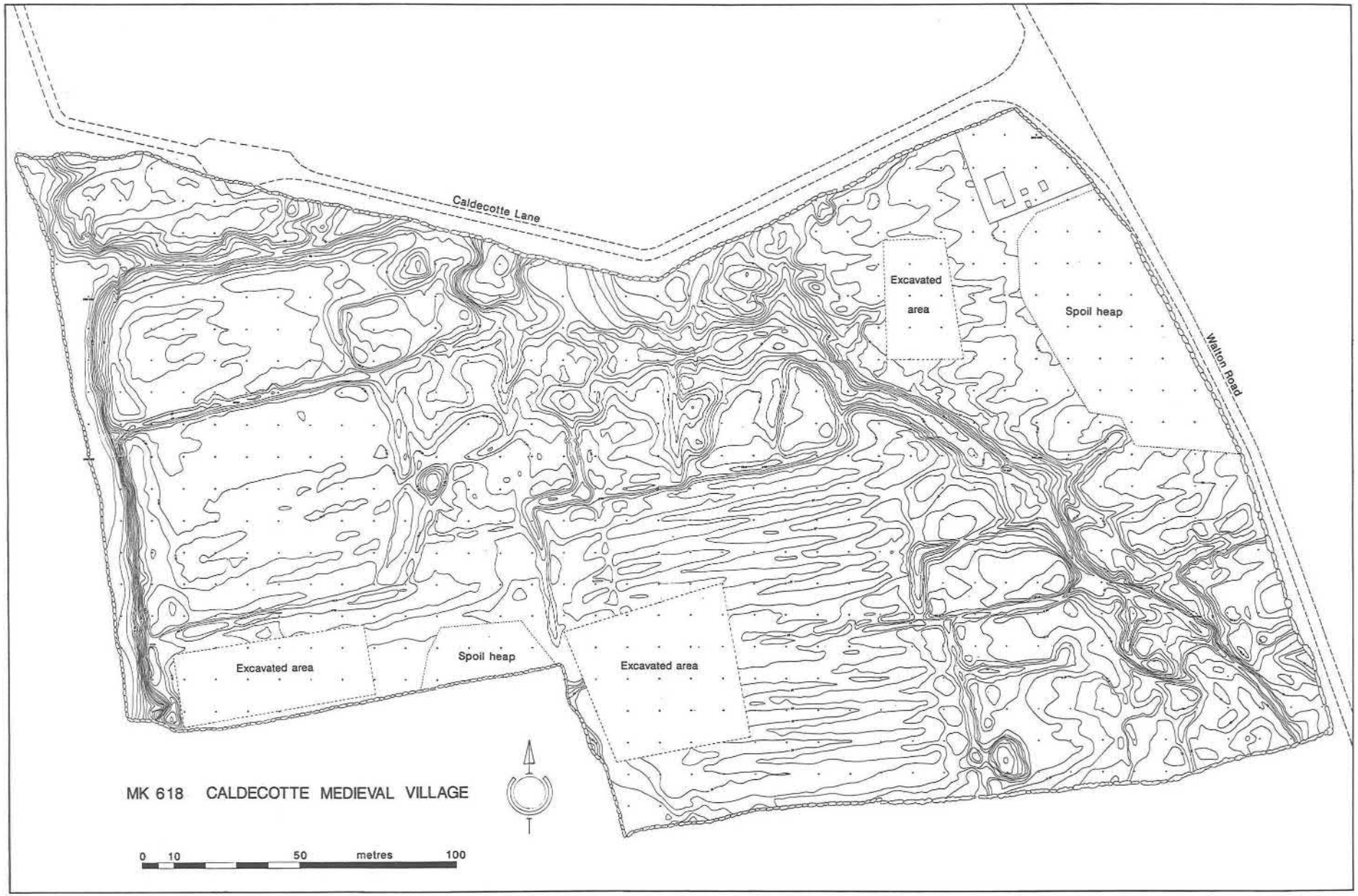


Figure 6: Caldecotte; contour survey of village earthworks

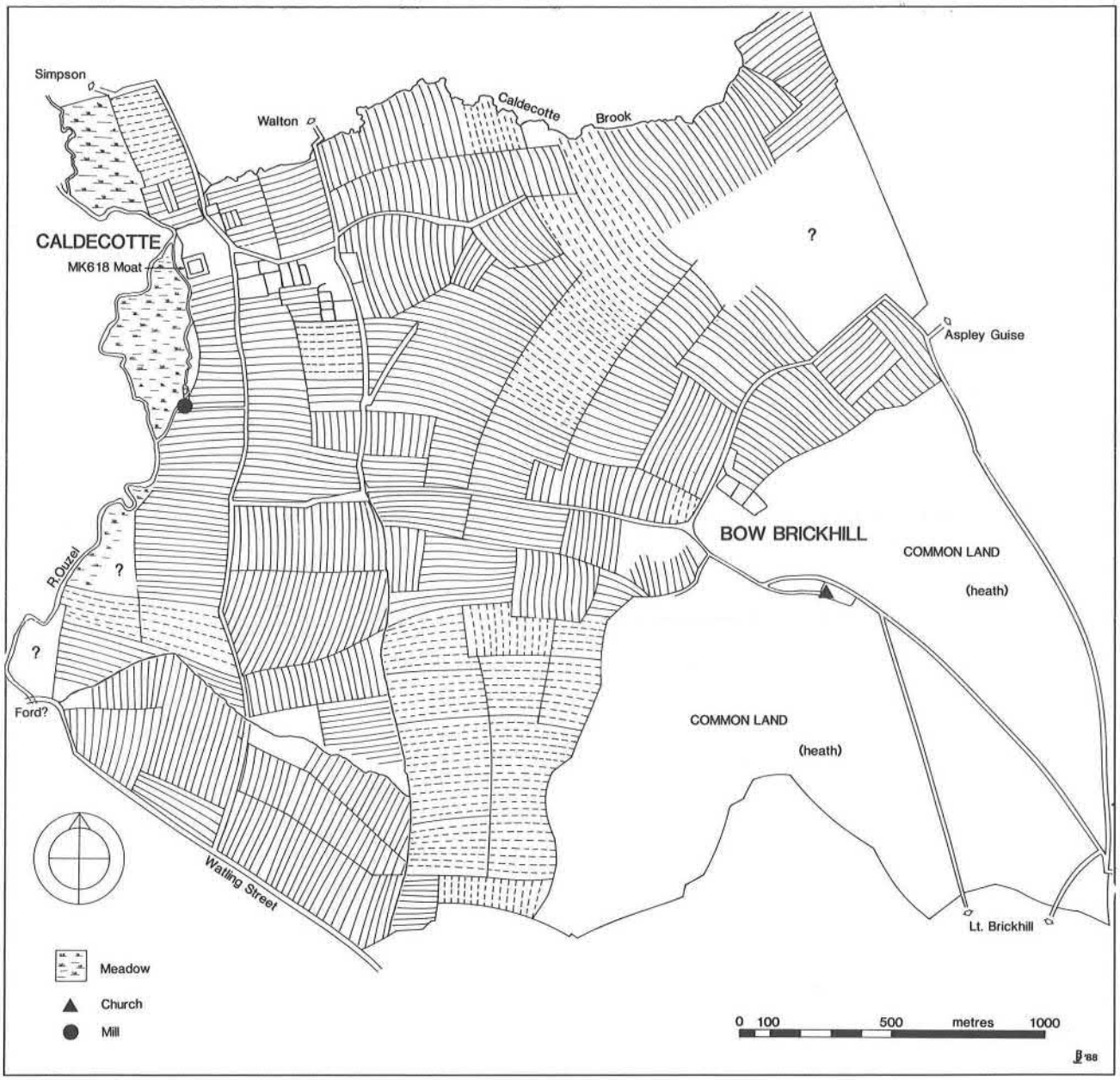


Figure 7: Bow Brickhill parish; medieval field system.

The Moat (MK619)

The moat (Plate 3) lies one hundred metres east of MK618 in Berrystead Close, beside the leat or side channel of the Ouzel which supplied Caldecotte Mill. Only the west and north sides of the moat are now open, the other two sides having been filled in the 1960s. The moat is about 12.0 m wide. The enclosed area measures 37 × 40 m, and there appears on aerial photographs to have been an entrance near the north-east corner (Cambridge Univ. Coll. no. AEF36; Aerofilms A/54099/54), consisting of a narrow causeway. The only internal features were a series of pits in the north-west corner, associated with gravel extraction.

The Northern Earthworks (MK685)

The field to the north of Caldecotte Farm Cottages (Plate 4) was subdivided by ditches into three enclosures, two large and one small, the latter measuring 43 × 50 m internally. Much of the field was covered by ridge-and-furrow, but at the time of the survey the small enclosure was judged to be free of it. However, recent studies of aerial photographs have shown that ridge-and-furrow did exist in this enclosure, running at right-angles to that in the surrounding area.

INTERPRETATION

As far as the MK618 earthworks are concerned, available evidence suggests that the hollow-way was the latest feature, probably post-medieval in date, as it cut across the northern group of enclosures. The enclosures themselves appeared to fall into two groups depending on size, suggesting differences in function, if not in date. The smaller enclosures, measuring 20–35 × 50–60 m, all appeared to predate the hollow-way, and fell within a size range similar to medieval crofts in other villages in the area, particularly Westbury and Great Linford. Of the larger enclosures, three are shown in

Plate 2: Caldecotte village earthworks, from the east (*Cambridge University Collection of Air Photographs: copyright reserved*).

existence on the 1791 enclosure maps. Therefore it is likely that the medieval village of Caldecotte consisted of a range of crofts along the south side of Caldecotte Lane, with an outlying group of crofts west of Walton Road. It is also probable that other crofts were destroyed in the construction of Caldecotte Farm and its associated buildings, to the north of Caldecotte Lane.

Plate 3: Caldecotte moat before backfilling, from the south (*Aerofilms*).

Plate 4: Earthworks to the north of Caldecotte village, from the south (*Aerofilms*).

HISTORICAL EVIDENCE

R.J. Zeepvat

INTRODUCTION

The hamlet of Caldecotte was the smaller of two population centres in the parish of Bow Brickhill, the northernmost of the three Brickhills. The parish, which covers 748 hectares (1848 acres), extends south-eastward from the River Ouzel and Caldecotte Brook up onto the Woburn Sands Heights. To the south, the parish is bordered in part by Watling Street, the modern A5 (Fig. 7). Between Caldecotte and Bow Brickhill, the parish is bisected by the Bletchley-Bedford railway line, which now forms part of the southern boundary of Milton Keynes. Despite this modern division, it is necessary to consider the historical evidence for Caldecotte in relation to the parish of Bow Brickhill as a whole.

'Caldecotte' is a recurrent name which has alternative modern forms such as 'Caldicote', 'Calcutt' and 'Caucot', of which over twenty examples are known in England. Two of them are in Milton Keynes, as settlements in the modern parishes of Bow Brickhill and Newport Pagnell. To avoid confusion, the former is referred to in this volume as *Caldecotte*, the latter as *Caldecote*, versions of the name also adopted by the Ordnance Survey. The literal meaning of the name is 'cold cottages', which has been considered (Ekwall 1960, 82) to refer to a shelter for travellers, with the topographical implication that sites with this name tend to be separate from major village centres, often in a fairly exposed position. As the name was applied to both settlements when they were occupied, it is unlikely that the 'cold' element means 'deserted'. There is reason to think that *-cot* is predominantly a middle- rather than late-Saxon place-name element.

EARLY OCCUPATION

The earliest traces of human activity in the Caldecotte area are represented by three areas of flint scatter; two in the Ouzel valley (MK353/1 and 2; p.29) and one, rather more dispersed, to the east of the medieval village (MK337/338; Fig. 4). Material recovered from MK353/2 suggested the presence of Mesolithic flint working at that location, while flints from other sites in the area ranged from Mesolithic to early Bronze Age in date.

The first major phase of activity in the area begins in the early first century AD, continuing into the second century and diminishing through the remainder of the Roman period. Settlement was predominantly agricultural, though traces of industrial activities such as potting and bronze working were found. This was doubtless encouraged by the presence of the town of *Magiovinium*, two kilometres to the south.

Traces of Saxon occupation in the area, though slight, suggest continuity of occupation of some of the Roman sites in the river valley. The Saxon precursor of Caldecotte village (MK504) appears to have been located on the junction of the Ouzel and Caldecotte Brook, in the north-west corner of Berrystead Close (Fig. 4).

DOCUMENTARY EVIDENCE

Although Caldecotte does not appear in Domesday as a manor in its own right, there are three entries relating to holdings in 'Caldecot' in the Secklow Hundred. The first is of four hides and one virgate, held as one manor by Alfred from the Count of Mortain. The second is of three hides and one virgate belonging to William son of Ansculf, and the third of two and a half hides, held by Swarting from William. It is possible that the first of these could relate to Caldecotte in Bow Brickhill, the others to Caldecote near Newport Pagnell. It has been suggested (VCH 1927, 291) that the manor of Caldecotte was probably included in Bow Brickhill Manor, as the first mention of the overlordship in 1261 assigns Caldecotte to the honour of Gloucester (*ibid.*, 289).

Colour is lent to this supposition by the fact that the Chauncey family, lords of Bow Brickhill, were also lords of the manor of Caldecotte. The earliest reference that can be definitely assigned to Caldecotte Manor dates from 1208, when Geoffrey Chauncey granted Caldecotte Mill along with some land to Robert de Braybrook (VCH 1927, 290–291). Nearly fifty years later, Geoffrey's daughter Margaret surrendered lands in both Caldecotte and Bow Brickhill to Robert Chauncey (*ibid.*, 291).

In 1261, Robert's knight's fee in the parish is described as being in Caldecotte (*ibid.*). In 1276 it is described as being in Caldecotte and Bow Brickhill (*ibid.*), and from that time until the seventeenth century Bow Brickhill and Caldecotte were in the same hands, being reckoned as one knight's fee, but two manors (*ibid.*, 289).

In 1628, Francis Watson and his wife Mary sold the manor of Caldecotte to Sir Francis Staunton (VCH 1927, 291), who four years later settled it on his second son Francis (*ibid.*). On his death in 1639 Sir Francis Staunton was seised only of three messuages and one hundred acres of land in Caldecotte

and Bow Brickhill. From that time until 1798 no reference to the manor of Caldecotte has been found in public records. In that year Joseph Ager and his wife Mary sold the manor to Elizabeth Hillier, spinster (*ibid.*). Joseph Ager appears as a landowner in Caldecotte in 1793, associated with a Miss Ann Parker of Caldecotte Green (*ibid.*), and was probably related to Thomas Ager, one of the principal landowners in Bow Brickhill parish in 1791, when the parish was enclosed (BuCRO IR/27). Elizabeth Hillier was a relative of Nathaniel Hillier of Stoke Park, who also owned land in the parish in 1791, and whose daughters Harriet and Susan Eliza, with their respective husbands James Bogle Delap and the Hon. Thomas Cranley Onslow, and Susan Hillier, made a settlement of the manor of Caldecotte some twenty years later (VCH 1927, 291). From that time the manors of Caldecotte and Bow Brickhill have descended together, held by the Delap family between 1847 and 1892, when they were purchased by the Duke of Bedford.

If few references survive relating to the manor of Caldecotte, even less have been found relating to the settlement and its occupants. One of the earliest surviving references is a charter of *c.*1200, in which William, son of William Peverel of Bow Brickhill, grants to William, son of Hugh cum Barba of Middleton (Milton Keynes) in return for his service and a bushel of corn, half an acre of meadow in 'le holm' of Caldecotte, which he had as a gift of Hugh. As part of the agreement, William cum Barba was to pay annually at Michaelmas one apple to William Peverel or his heirs, if they chose to go to Middleton to fetch it (BAS Mss. 106/36). 'Holm' here probably means 'island', in the sense of 'land almost surrounded by a loop in a river' (pers. comm. J. Chenevix Trench). This description fits the field later called *The Great Holmes*, shown on the 1791 estate map (Fig. 9)

Aside from a few such references to individuals living in Caldecotte, there is little evidence upon which to base estimates of the size of the hamlet's population, or the period of its desertion. A survey of the diocese of Lincoln carried out in 1563 (Cornwall 1959, 268) records the population of Caldecotte, wrongly identified as a hamlet in Bletchley parish, as three families. Taking Cornwall's figure (*ibid.*, 262) of 4.75 persons per family as a basis for calculation, this gives a population of about fourteen people in Caldecotte, suggesting that the hamlet was largely deserted by the mid to late sixteenth century.

One property in Caldecotte which is well-documented (VCH 1927, 291) is the mill. As has been mentioned above, the mill was granted with some land in 1208 by Geoffrey Chauncey to Robert de Braybrook, from whom this estate descended to Gerard de Braybrook, probably his grandson. He alienated it before 1293 to John Grey, who in 1307 settled lands, a mill and rent in Bow Brickhill and Caldecotte on himself and his sons. The rent attached to this property appears to have been claimed by the Greys of Wilton, descendants of the eldest son, who held Water Eaton, Bletchley. The more important part, however, passed to the younger son and his descendants, the Greys of Ruthyn, who had Bletchley Manor and the manor of Brogborough in Ridgmont (Beds.), to which Caldecotte Mill was deemed appurtenant in the reign of Elizabeth. The miller, Humphrey Blackshaw, paid a rent of £4. 13s. 4d, which was granted to Edward Ferrers and Francis Philips in 1610, and sold to Andrew Rowley of Birchmore, Woburn (Beds.) in 1650. In 1653 the water-mill, together with a windmill and messuage in Bow Brickhill and Caldecotte were in the possession of Robert Morgan. The mill is known to have remained in existence until 1766, but had evidently been demolished by 1791, as only the mill-pond appears on the enclosure map (Petchey and Giggins 1983, 67–68).

Unfortunately, the documentary evidence for Caldecotte sheds far less light on the manor house. Only one reference to it is known, dating from 1641, which is worth quoting in full;

". . . The demesne lands of Bow Brickhill is now waste ground and hath been for time out of mind: the scite of ye Mannore House is still known by the name of *Burie Steed*, compassed with an ancient ditch but lieth continually common. . ." (New College Ms. 1450).

CARTOGRAPHIC EVIDENCE

As with documentary material, early cartographic evidence for the parish of Bow Brickhill is sparse. The earliest extant maps, copies of which are held by the Buckinghamshire (BuCRO IR/27) and Bedfordshire (BedsCRO R 1/290) Record Offices, relate to the enclosure of the parish. The Bedfordshire map is shown in full in Fig. 8, while a detail of the Buckinghamshire version is illustrated in Fig. 9. Although these maps are of the same date, the former shows pre- and post-enclosure boundaries, and indicates both field names and landowners, while the latter concentrates on the blocks of land held by particular people, and is less detailed.

Although many of the field names on the maps refer to post-enclosure fields, it is quite possible that some may have derived from earlier field names in the same area. This is particularly true of the area around Caldecotte, where field boundaries were not significantly altered. The name of *Berrystead Close*, the field containing the moat, has already been noted above on a document of 1641. Other names of archaeological significance are *Mill Close* and *Mill Corner North (South) Ground*, close to the watermill, and to the east of the village *Kiln Furlong Ground* and *Kiln Pits Ground*, where a brick clamp kiln (MK1008) was discovered. Much of the field containing the village earthworks was known as *Well Close*, though no evidence of a well was found in the 1990/91 excavations, and no record of a well elsewhere in the field survives.

Several topographical details shown on the two enclosure maps are also worth noting. Perhaps the most surprising is the absence of the moated site from both maps, considering its size and state of preservation, and the fact that its interior was not readily accessible for farming until the 1960s.

A second point, mentioned above, is the absence of the mill, although the mill-pond and the plot of land upon which it

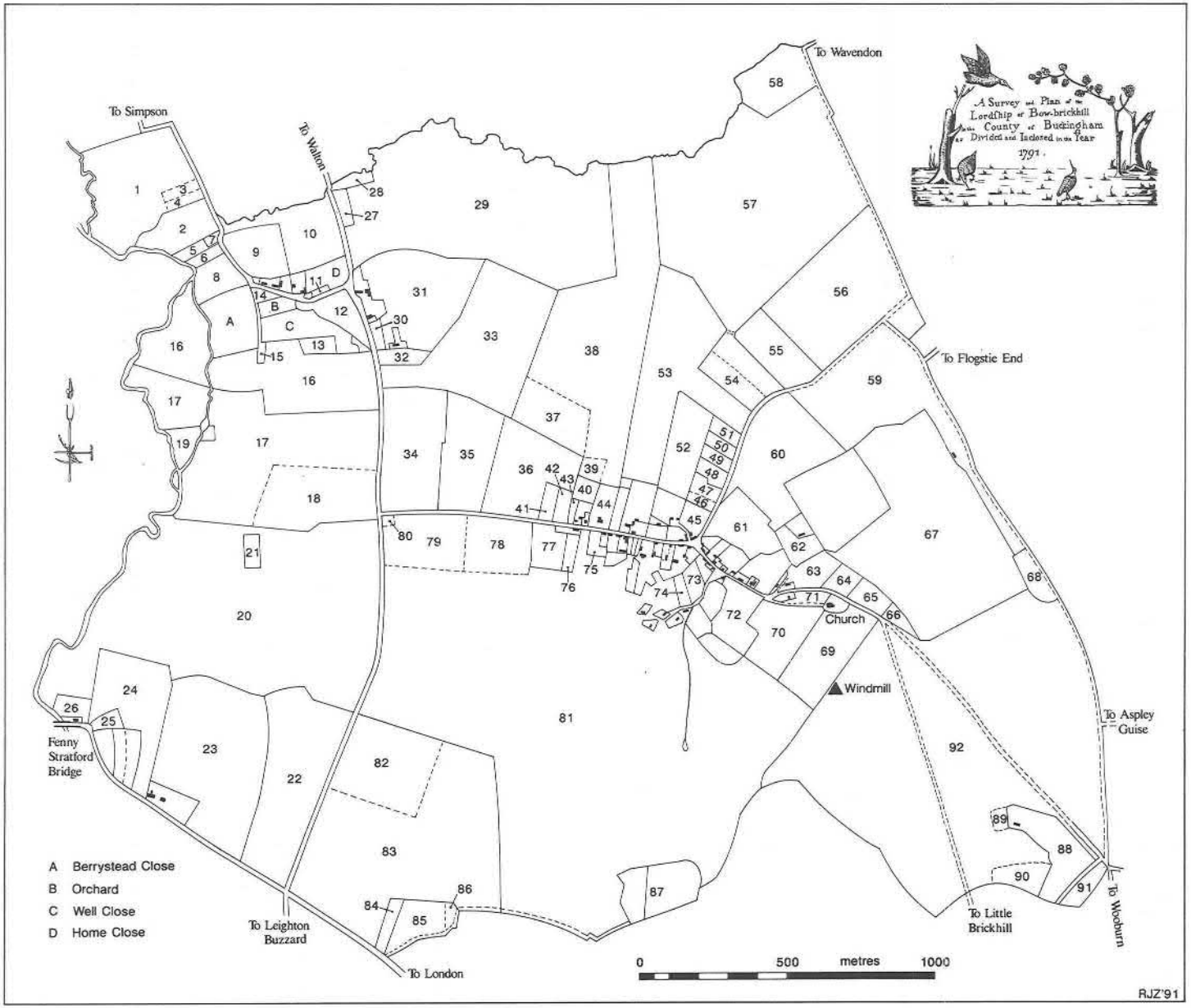


Figure 8: Bow Brickhill parish; 1791 enclosure map (BedsCRO R1/290).

Landowners	Field no.	Allotment	Description/comments	Acres	Roods	Poles
Major landowners (in order of size of holding):						
Joseph Ager	8	–	'Berrystead Close'	4	1	24
	20	2nd	–	122	1	38
	30	–	'Caldecot Close'	not shown		
	61	–	'Sheveralls Closes'	9	2	18
	81	1st	–	279	0	35
The Rector	17	–	'for tithes of the fields'	44	3	22
	18	–	'for tithes of old enclosures'	24	0	0
	33	3rd	'for tithes of the fields'	35	3	25
	57	2nd	'for tithes of the fields'	90	3	28
	60	2nd	'for glebe'	22	2	30
	70	1st	'for tithes of the fields'	9	1	4
	79	5th	–	11	0	36
	82	4th	'for glebe'	19	2	12
Anne Parker	1, 10	1st	–	38	2	1
	2, 11, 37	2nd	–	18	0	3
	12	3rd	–	4	1	36
	14	5th	–	0	3	0
	29	4th	–	85	2	6
	46	7th	–	0	1	32
	73	–	'Chapel Close'	1	2	30
Thomas Ager	22	2nd	–	31	3	34
	45	–	'Farmhouse'	1	3	16
	72	–	'The Wicks'	7	0	32
	83	1st	–	69	1	37
Francis Moore	3	6th	–	0	3	17
	39, 53	1st	–	37	1	16
	55	2nd	–	9	0	1
	56	3rd	–	35	0	23
	59	4th	–	35	2	17
	65	5th	–	2	2	2
	67	–	'The Parks'	not shown		
	69	–	'Allotment for Manor'	10	3	25
	88—90	–	'Kiln Ground'	not shown		
	91	–	'Bell Coppice'	7	2	37
Charlotte Primatt	16	2nd	–	37	0	23
	31	1st	–	23	0	35
	78	3rd	–	9	1	21
John Chapman	4	2nd	–	1	0	28
	9	–	'Caldecot Close'	7	1	11
	38	1st	–	56	3	1
	44	–	'farm and homestead'	2	2	25
Thomas Cook	23	–	–	39	2	13
Minor landowners (in alphabetical order):						
Gregory Austin	58	–	–	10	0	35
Thomas Bennett	63	–	–	2	1	21
Thomas Carpenter	25	–	–	1	0	24
Rev'd D. Chelsum	52	–	–	9	2	2
Joseph Clark	48	–	–	1	2	10
Thomas Clark	41	–	–	1	0	37
William Clark	40	–	–	1	2	10
H.W. Cowley	75	–	–	0	3	13
Mrs Duncombe	87	–	'Cut Mill Close'	not shown		
Thomas Edwin	76	–	–	1	0	13
William Elkin	35	–	–	18	0	12
Rev'd William Ellis	28	–	–	1	0	36
Rev'd Charles Este	19	2nd	–	3	1	32
Ann Hack	5	–	–	0	3	17

Landowners *Continued*	Field no.	Allotment	Description/comments	Acres	Roods	Poles
John Hammond	74	–	–	0	3	4
John Hart	42	–	–	0	3	39
William Henman	77	1st	–	3	0	35
Francis Hobbs	47	–	–	2	0	25
E. Masters	26	–	–	1	3	3
W. Merryman	7	2nd	–	0	0	21
Walter Mills	84	–	–	1	3	26
George Norris	36	–	–	16	3	17
Samuel Odell	27	–	'Orchard'		not shown	
	32	–	–	2	0	1
William Page	34	–	–	18	1	3
Page, (?) & Norris	13	–	'Caldecot Close'	1	2	8
Richard Parrott	50	–	–	1	0	31
Thomas Parrott	6	–	–	0	3	14
Joseph Pettit	49	–	–	1	0	30
Edward Shouller	62	–	–	2	0	36
S. Smith	80	1st	–	0	0	21
	86	2nd	–	0	1	9
John Stevens	24	–	–	16	2	10
Thomas Wootten	51	–	–	1	1	11
Others	15	4th	'for gravel'	0	2	0
	21	–	'for gravel'	1	2	0
	64	2nd	'stone pit'	1	3	8
	66, 68	–	'part of the Poor's allotment'	4	3	4
	71	3rd	'stone pit'	0	3	33
	85	–	'Town land'	6	0	19
	92	–	'The Poor's allotment'	198	0	5
Unknown	43	–	–	0	2	38

KEY TO FIG. 8: Landowners and acreages allotted in the 1791 enclosure of Bow Brickhill parish.

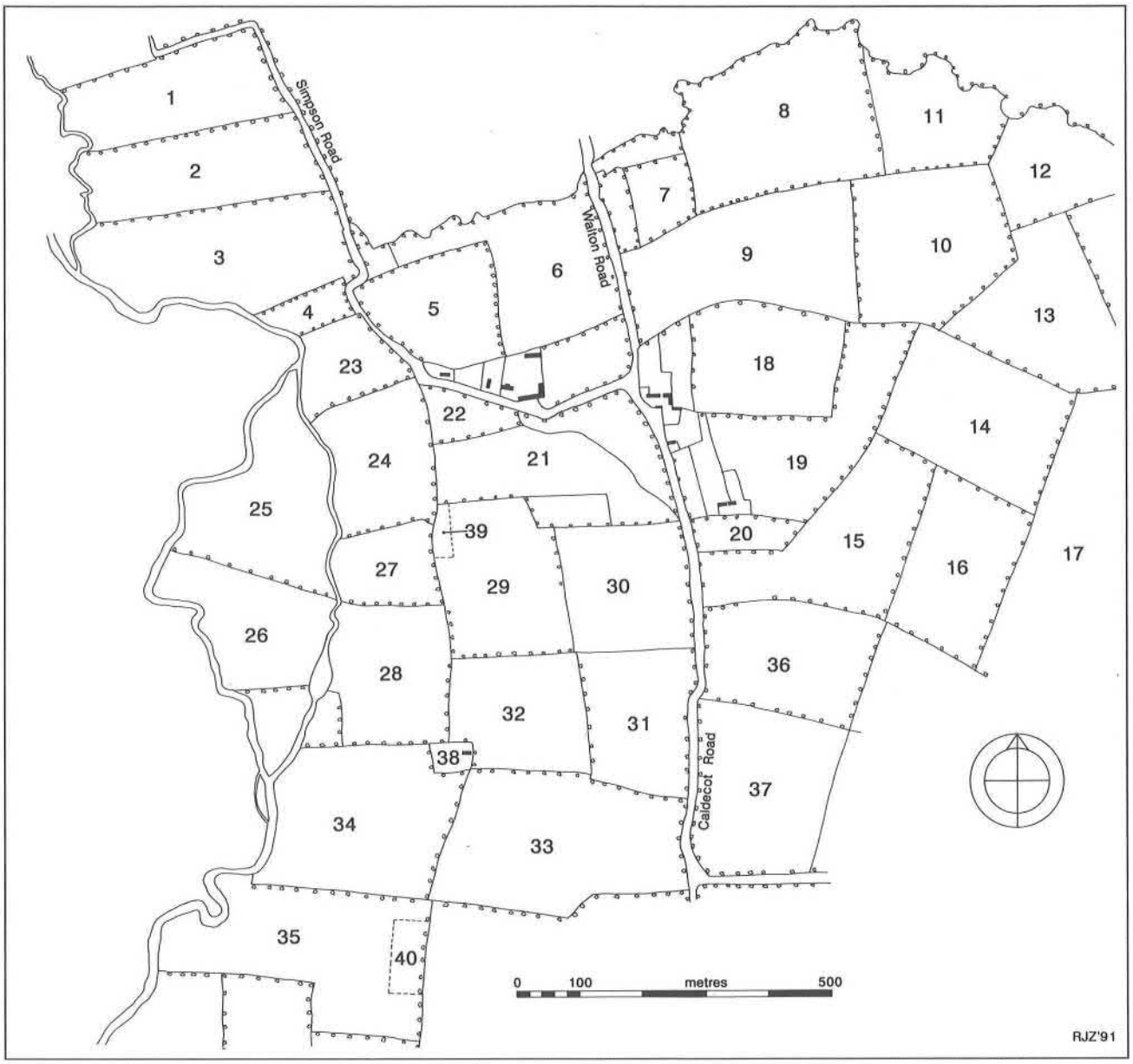


Figure 9: 1791 enclosure map; detail of Caldecotte area, drawn on modern base.

stood are shown, the latter as 3 acres, 2 roods, 20 poles in size, belonging to the Rev. Charles Este. On the Bucks. map the line of the trackway leading to the mill from the Bow Brickhill to Caldecotte road can also be discerned.

In the area of the village earthworks, the line of the excavated hollow-way is shown as a field boundary cutting across Well Close, with an irregular, narrow plot of 1 rood, 18 poles at its south-east end, on which a group of post-medieval buildings were excavated in 1990/91 (MK618; p.91).

The enclosure maps also show some evidence of changes in communication routes in the Caldecotte area. Caldecotte Lane, now a cul-de-sac, is shown on both maps as continuing northwards to wards Simpson, and is named 'Simpson Road' on the Bucks. map. On both maps, the hollow way between Berrystead Close and Well Close is shown, leading to a gravel pit by the south-east corner of the former. On the Bucks. map, the route is shown as continuing southwards, eventually splitting to join Watling Street close to the original bridge over the Ouzel (north of the present crossing) and just west of its junction with Gallery Lane.

No.	*Name*	*Owner*	*Acres*	*Roods*	*Poles*
1	Nortons north meadow	APr	10	0	22
2	Nortons middle meadow	APr	11	1	17
3	Nortons south meadow	APr	15	2	28
4	Nortons close	APt	1	3	7
5	Caldecot close	APr	7	1	11
6	Back leys	APr	11	3	9
7	Outfield	APr	2	2	22
8	Long hades ground	APr	16	1	35
9	Crab-tree west ground	APr	13	3	49
10	Crab-tree east ground	APr	13	1	27
11	Garden bridge ground	APr	7	2	19
12	Far meadow	APr	9	1	37
13	Long hedge ground	APr	10	3	2
14	Mougher north field	Rec	11	3	15
15	Mougher west field	Rec	15	0	35
16	Mougher east field	Rec	10	3	15
17	Home ground	NH	44	2	39
18	Kiln furlong ground	CP	9	0	21
19	Kiln pits ground	CP	13	2	31
20	Home close	SO	2	0	1
21	Well close	APr	13	3	28
22	An orchard	APr	2	0	34
23	Little Berrystead close	CP	4	1	24
24	Great Berrystead close	CP	8	1	31
25	The great holmes	Rec	12	0	6
26	The great holmes	Rec	9	0	30
27	Mill close	CP	4	2	22
28	Mill close	Rec	9	0	3
29	Broad gate piece	CP	10	1	4
30	Ditch furlong ground	CP	9	2	31
31	Ditch furlong ground	CP	8	3	38
32	Mill corner north ground	Rec	8	2	27
33	Mill corner south ground	Rec	17	1	14
34	Meadow ground	Rec	15	0	23
35	Fullbuddy meadow	NH	15	0	16
36	Rowland north field	WP	10	1	39
37	Rowland south field	WP	12	3	3
38	Milking yard	Rec	0	2	1
39	Gravel pit	CP	0	2	0
40	Gravel pit	NH	1	2	0

Key to landowners:

APr	Anne Parker
APt	Anne Parrott
CP	Charlotte Primatt
NH	Nathaniel Hilliard
Rec	the Rector
SO	Samuel Odell
WP	William Page

KEY TO FIG. 9: Field names, acreages and landowners in the Caldecotte area in 1791.

THE EXCAVATIONS

INTRODUCTION

R.J. Zeepvat

The major problem encountered in preparing this volume has been to find an acceptable and uncomplicated way of presenting the archaeological information from the sites included in the study area, considering their variety and the fact that twenty-three years separate the first and last excavations undertaken in that area. Accordingly, sites requiring description beyond that given in the gazetteer (p.8) are described and discussed individually in approximate chronological order, with detailed discussions for the Roman and post-Roman periods included in the MK44 and MK618 reports respectively. The sites dealt with in detail are:

Site no.	*Name/Location*	*Period*
MK44	Berrystead Close	Roman
MK117	Mill Close Enclosure	Belgic/Roman
MK351	Simpson	Roman
MK353	River Ouzel flint scatters	Mesolithic
MK354	Mill Close South	Roman
MK357	Caldecotte Pottery Kiln II	Roman
MK504	Berrystead Close	Saxon
MK618	Caldecotte Village	Medieval & post-medieval
MK619	Caldecotte Moat	Medieval
MK1008	Caldecotte Brick Kiln	Post-medieval
MK1011	Simpson Sluice	Post-medieval
MK1016	Caldecotte Boat	Post-medieval

Several entries in the above list deserve further comment. Abridged unillustrated reports on MK351 and MK354 have already appeared in print (RMK, 49–50); this volume contains R. J. Williams' original detailed reports and site plans. MK357 is in effect a part of MK44, although listed and described separately because of the circumstances of its discovery. One major omission from the list of sites excavated at Caldecotte is MK961, the watermill, which has already been reported on in some detail (Petchey and Giggins 1983).

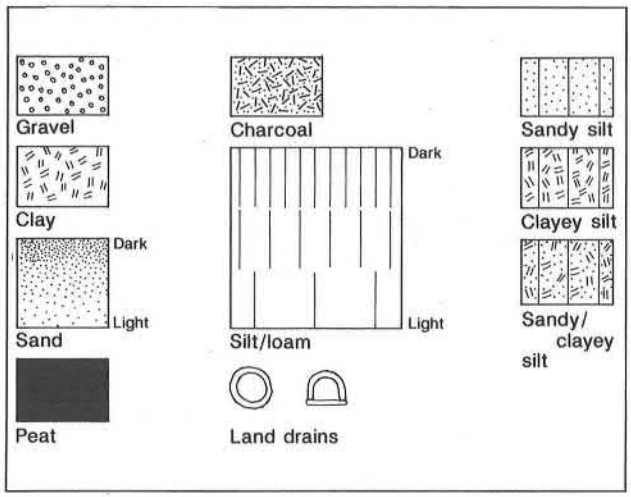
Recording Systems

As excavations at Caldecotte have taken place over a long period in a variety of circumstances, under different supervisory staff, several different recording systems have been used. To avoid any confusion, particularly for the reader intending to consult the site archive, these are described below.

In 1978 on MK44 and MK619, major contexts were recorded as 'features' and given a feature number in a continuous sequence from '1' preceded by the letter 'F'. For features with a single fill, this is the only distinguishing number. For features with more than one fill, each successive fill was given a number in a new sequence for each feature. For example, F101/1 is the first fill of Ditch 101, F135/4 is the fourth fill of Pit 135, and so on. Layers such as soil spreads or metalled surfaces were numbered in the same sequence, prefixed 'L'. In 1979 and subsequent seasons a number in a single numerical sequence was given to each separate context, so that a feature would be given one context number, and each fill of it a different context number in the same sequence. One such sequence was used for 1979 (MK44), another for 1980 and 1981 (MK44), and a third for 1982 (MK117). This system, which was that generally adopted on sites in Milton Keynes from 1979, was also used in 1990/91 on the village excavations (MK618) in conjunction with the Central Excavation Unit's 'Delilah' software to create an integrated database of site and finds records. Unfortunately, circumstances did not permit the incorporation of earlier excavation records into this system.

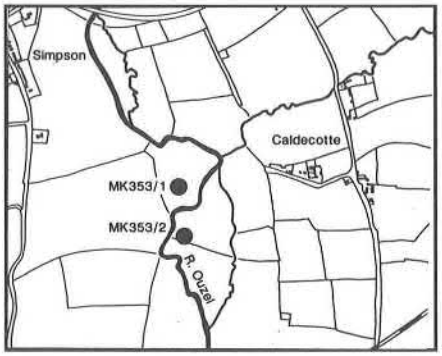
It should also be noted at this point that the site numbers given above for some of the major Caldecotte excavations, although correct as far as the Unit's SMR is concerned, differ from those allocated by Martin Petchey from 1978 to 82, and therefore from those in the excavation archive and on material in the Unit's collection. The reason for his decision is not known; perhaps, considering the number chosen, it was in anticipation of excavating the village earthworks, and of producing a single integrated site archive for all the Caldecotte excavations. The numbers used were as follows:

Year	*SMR site no.*	*Archive site no.*
1978	MK44, MK619	MI8A
1979	MK44	79MI8
1980	MK44, MK961	MI8C
1981	MK961, MK117	MI8D
1982	MK357	MI8E



MK117 and MK1016 were excavated and recorded under their correct SMR numbers. Since 'M18' is an obsolete version of 'MK618', the village earthworks, it will be seen that the use of the correct SMR number for all sites in this volume was necessary to avoid confusion.

Figure 10: Conventions used in section drawings.



Ouzel Valley Flint Scatters (MK353)

R.J. Williams

In order to prevent flooding of the workings during the construction of Caldecotte Lake, several large drainage trenches were dug by the contractors at right angles to and on both sides of the original course of the river. In two locations, SP 8888 3547 (MK353/1) and SP 8886 3523 (MK353/2), scatters of worked flint were observed in section, buried beneath the alluvium which covered the gravel subsoil over much of the floodplain (Fig. 4).

MK353/1

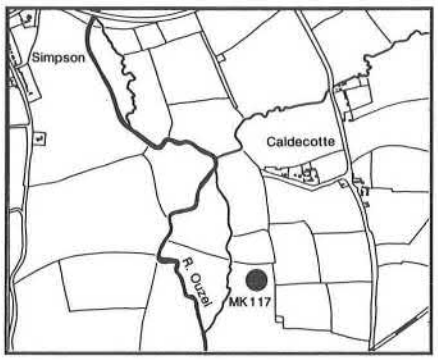
The first flint scatter was found some 60 m west of the former river channel. The visible section showed the alluvium to be over 2.0 m deep at the river's edge, reducing evenly to a thin spread some 110 m west of it. The flint scatter was found at a depth of 1.3 m, just above the junction of the gravel subsoil and the earliest alluvial layers, in a band approximately 25–30 m wide. No features related to the scatter were noted.

Forty-five flints were collected, including thirteen complete or broken cores. Most were irregular with large areas of cortex remaining, having derived from small poor-quality nodules. Several cores retained single platforms, from which short punch-struck blades hade been removed. Perhaps surprisingly, only seven blades were collected; the remainder of the assemblage consisted of twenty-five waste pieces, including several core rejuvenation flakes. Three fragments had been burnt.

MK353/2

The second scatter was situated 60 m east of the river channel, about 200 m south of the first deposit. Here much of the alluvium had been removed, so an assessment of its depth was not possible. The flint scatter was in the lowest alluvial layers, some 200 mm above the gravel subsoil. However, unlike MK353/1 this scatter appeared to be concentrated in small pockets, above a discrete band of reddish-brown clay separating the alluvium and gravel. Several fragments of partially fossilised bone and a number of burnt stones were found in association with the scatter.

Forty-four flints were collected from this deposit, including two complete and two broken cores, of similar type to those from MK353/1. Ten punch-struck blades, longer than thoses from MK353/1, were recovered, as well as a single scalene triangle microlith, which is a useful indicator of the probable late mesolithic date of both assemblages. The remainder of the group consists of thirty-one waste fragments, of which eleven were heavily fire-crazed.



Mill Close Enclosure (MK117)

R.J. Zeepvat

Introduction

This site (Fig. 4) was located as a cropmark in 1976, during a flight over Caldecotte by D.C. Mynard (Plate 5). It was initially interpreted as a Neolithic mortuary enclosure because of its oblong shape. The size and location of the cropmark were confirmed the following year during a geophysical survey of Berrystead Close and Mill Close, carried out by the DOE Ancient Monuments Laboratory. The site was trial-trenched in 1980, and excavated in the spring of 1982 in advance of the construction of Caldecotte Lake. Both operations were directed by M.R. Petchey, who subsequently identified the site as a late Iron Age ritual enclosure (Loveday and Petchey 1982).

Trial trenching was undertaken with the aid of a Massey-Ferguson MF50B excavator fitted with a toothless ditching bucket, the trenches being targeted on the enclosure and other possible archaeological features revealed by the geophysical survey. For the 1982 excavation a similar machine was used to strip topsoil from an irregular area centred on the enclosure (Fig. 11: Plate 6).

Phasing

Three phases were suggested by the excavator, based on the stratigraphic evidence. These were as follows:

Phase 1: An oblong enclosure defined by a broad deep ditch, with a possible external bank. Also belonging to this phase was the curving gully (13/56) in the north end of the enclosed area.

Phase 2: The north, west and south sides of the Phase 1 enclosure were recut, forming part of a larger rectangular or square enclosure. Within the enclosed area was the flexed inhumation burial of a child (11).

Phase 3: This was represented by a number of shallow field boundary ditches (43W, 46, 63, 66, 105) forming part of the Roman field system examined in detail to the north (MK44).

Unfortunately, there are a number of problems with this interpretation. Firstly, apart from a few later Roman sherds in the upper fill of Ditch 4, all the pottery from the excavation is of Belgic date, showing no distinction between the suggested phases. Secondly, the excavation record shows no conclusive proof for the existence of these phases. On the strength of the available section drawings, re-cuts can only be seen clearly in the northern and southern parts of the enclosure ditch (Fig. 12). On plan, some of the Phase 3 ditches appear to be cut by the enclosure ditch, rather than to cut it. Furthermore, at many of the ditch junctions encountered on the site sections were not dug, so the stratigraphic evidence for dating the ditches meeting at those points is absent. Finally, although the eastern side of the proposed Phase 2 enclosure is described as having been located in a drainage ditch dug as part of the lake construction works, no record was made of its exact location or its physical appearance. Because of this lack of stratigraphic evidence, the excavated features are described below without any attempt to suggest phasing.

The Enclosure

This consisted of two elements, which are referred to below as the *narrow enclosure* and the *greater enclosure*. The former, the major excavated feature, was aligned NNW-SSE, and measured 48 × 9 m internally. It was bounded by a ditch (4) varying from 0.9–1.3 m in depth, and 2.0–4.0 m in width. The ends of the enclosure were rounded, particularly on the north-west and south-west corners. The ditch profile varied from a 'V' section (eg. Cuts A, H) to a more rounded, flat-bottomed shape (eg. Cuts B, C). It should be noted at this point that all the sections of Ditch 4 were dug in 0.3 m 'spits', so that the layers recorded on the sections in Fig. 12 cannot, for the most part, be related to particular context numbers. The primary fill was a black or blue/grey clay, which had obviously been deposited while the ditch contained water, and had preserved environmental material (p.224). The grey colour and clayey texture typical of water-deposited layers gradually died out toward the top of the ditch, and were replaced by yellow/brown silty brick earths derived from the natural gravels and sands.

It was evident that for some time the narrow enclosure must have formed part of or been associated with a larger ditched feature on its east side. Projecting eastward from the north-east and south-east corners of the narrow enclosure were two ditches. The former (43) measured 3.0 m in width and 0.8 m deep, with rounded sloping sides and a flat bottom. Its fill was similar to that of Ditch 4, and showed no evidence of re-cuts. The southern ditch, which was not given a separate context number, was apparently of similar dimensions to Ditch 43.

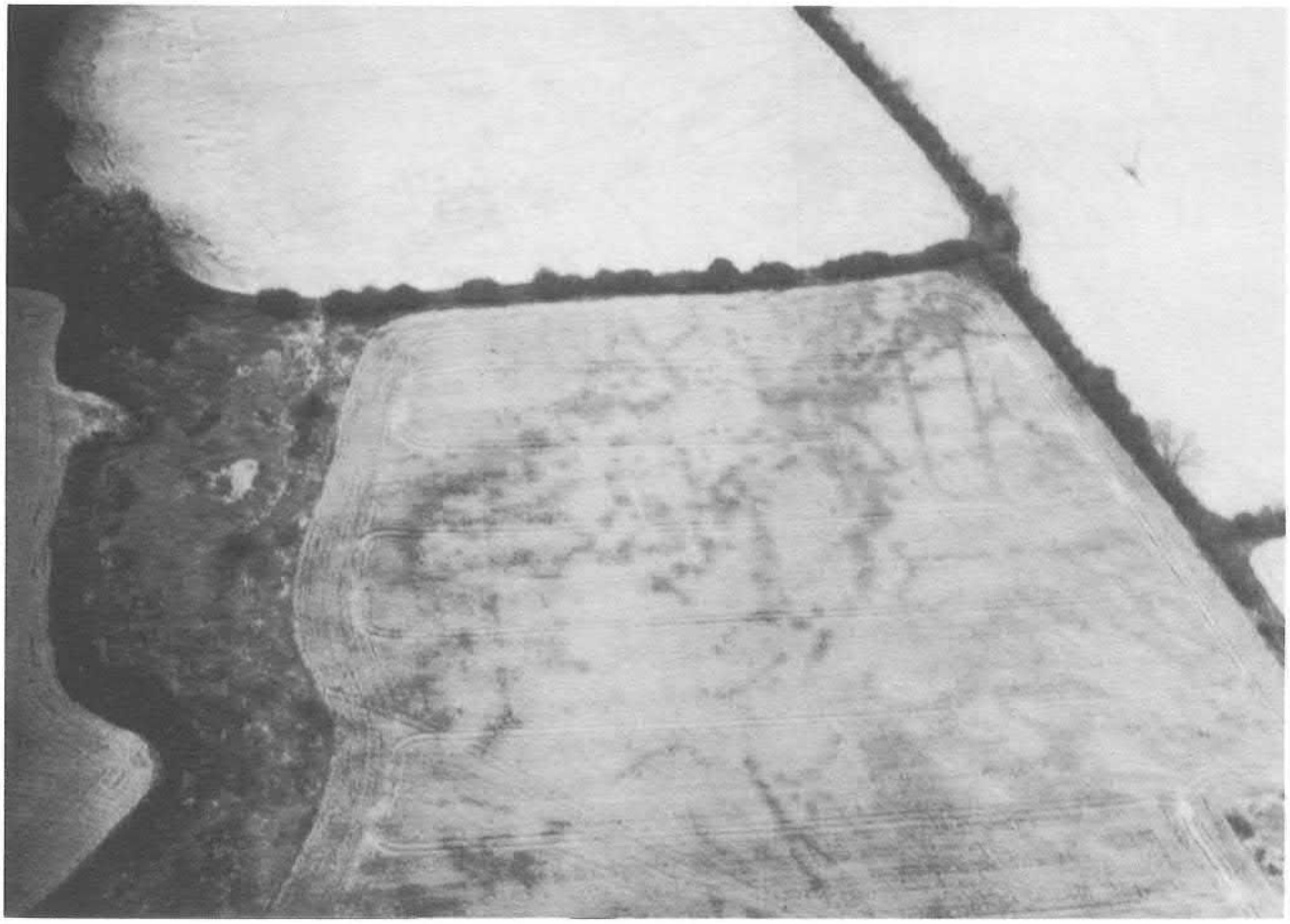


Plate 5: Cropmarks in Mill Close, 1976. The long rectangular cropmark right of centre is the MK117 enclosure (*MKAU*).

Plate 6: MK117; the excavated area, from the south (*MKAU*).

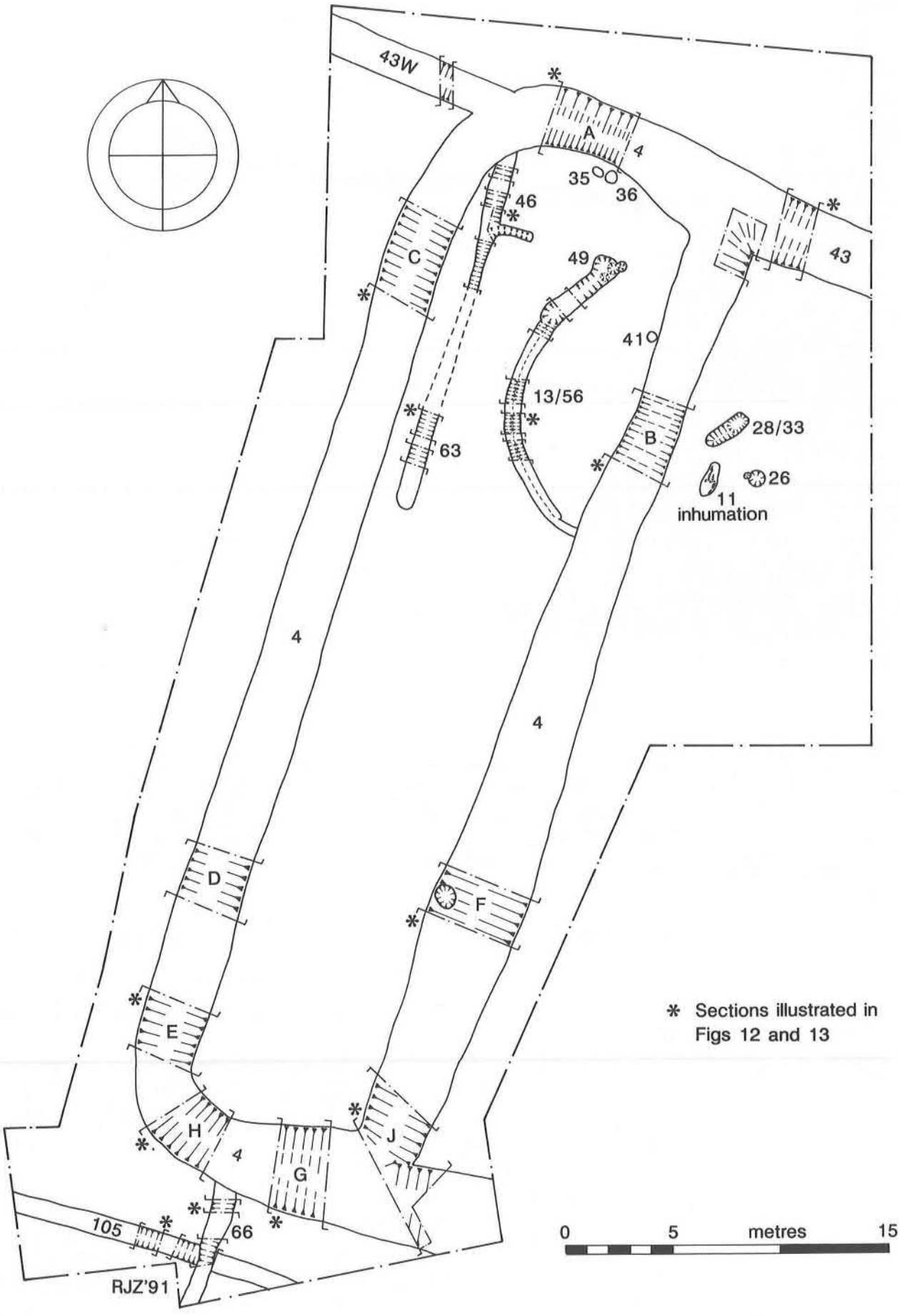


Figure 11: MK117; overall site plan.

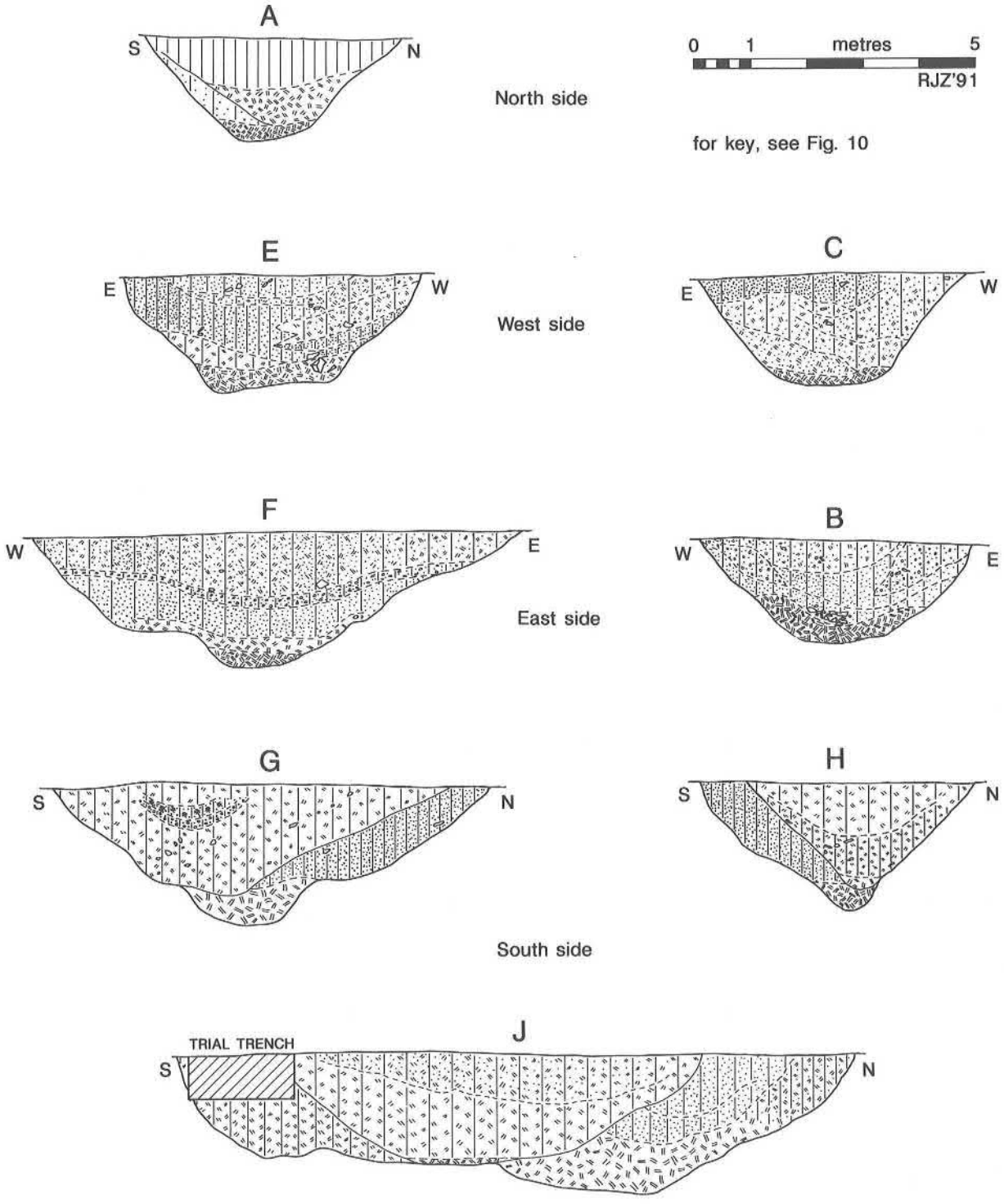


Figure 12: MK117; enclosure ditch sections.

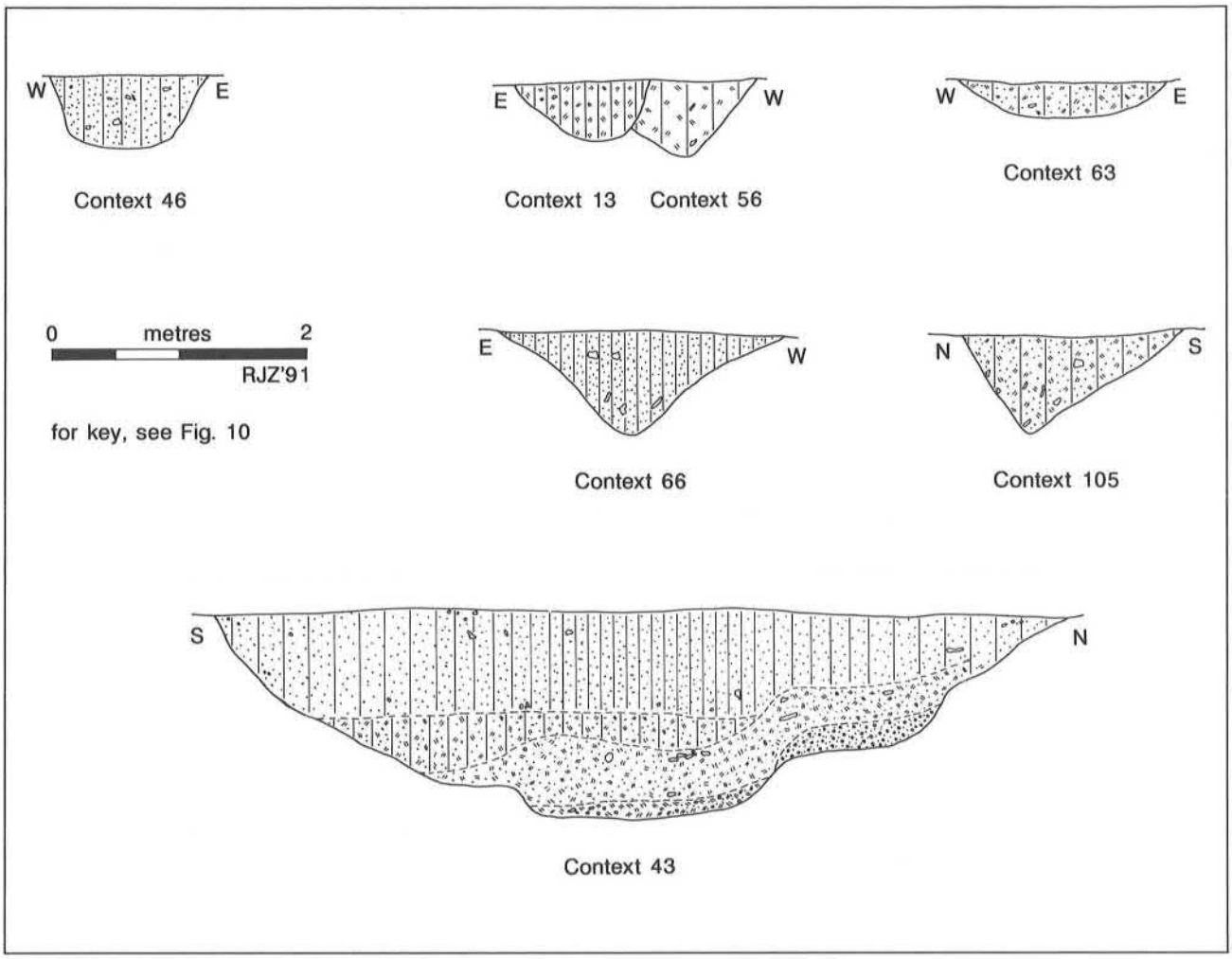


Figure 13: MK117; sections of other features.

The relationship of these ditches to the narrow enclosure cannot be determined, as the ditch junctions were not sectioned in such a way as to determine stratigraphic relationships. The appearance of the junctions on plan suggests that both ditches were added to the narrow enclosure, and this supposition is further reinforced by the evidence of re-cuts to the north and south sides of the narrow enclosure, and in the oblique section cut across its south-east corner.

Taken with all or part of Ditch 4, these ditches form the north and south sides of the greater enclosure. As has been mentioned above, the site notes record that the east side of this enclosure was seen in a contractor's trench during lake construction. However, the site archive contains no record of its location.

Other Features (Fig. 13)

The majority of the other excavated features were located within the narrow enclosure. At the north end of the enclosure were three post-holes (35, 36, 41) situated immediately on the inside of the ditch, suggesting an internal fence.

The other principal internal feature appeared as a curving soil mark (13/56), culminating in a large post-hole (49). At first it seemed as if the enclosure ditch cut this feature, but it did not reappear on the far side of the ditch. The loss of an eastern terminal was ascribed by the excavator to erosion of the edge of the ditch after the abandonment of the enclosure, although it should be noted that no excavation was undertaken to check this supposition.

This curving feature had two elements; a gully filled with dark brown humic soil (13) and a second gulley (56) running concentrically outside it. This was more difficult to see as it was filled with dirty humic material derived from the natural gravel subsoil. About one metre from the northern terminal the gully was re-cut as a wider feature, removing all trace of its earlier form. Finally, the terminal itself was a confusing combination of re-cut post-holes. The feature is clearly difficult to interpret, but possible explanations are that the curving gulley represents either a post trench, with 56 as the original trench and 13 the trench left after the removal of the posts, or the remains of a penannular hut gully.

Three features were located within the greater enclosure. Of these, a stone-packed post-hole (26) and a sausage-shaped pit (28) contained Belgic grogged sherds. The third, which produced no dateable finds, was a shallow grave (Plate 7) containing the incomplete skeleton of a child (11). The grave cut was barely large enough to have contained even the small body in it, which had been buried in a posture with the head upright. This and the extreme shallowness of the

Plate 7: MK117; Grave containing the incomplete burial of a child, from the north (*MKAU*).

grave may explain the absence of a skull, while acid soil conditions may account for many of the other missing or damaged bones.

A cremation, noticed during stripping of the topsoil during lake construction to the east of the square enclosure, may also be associated with this phase. Unfortunately, as with the possible east side of the greater enclosure, the location of this feature was not plotted, although pottery from it is described elsewhere in this volume (p.190).

The features identified by the excavator as representing field boundary ditches post-dating the enclosure(s) were 1.0 m wide and 0.5 m deep, significantly smaller in section than the enclosure ditches, but followed a similar alignment. To the south of the narrow enclosure were two 'V'- section ditches (105 and 66), the former running parallel to the south side of the enclosure, the latter cutting it at right angles. Ditch 66 also extended northwards to meet enclosure Ditch 4, but their relationship is given as 'uncertain', although on plan it appears as if Ditch 66 is cut by or runs into the enclosure ditch.

Within the narrow enclosure, two features (46 and 63) were identified as field boundary ditches. These ditches, about 0.7 m wide and 0.25–0.3 m deep, aligned north-south, possibly represented a northward continuation of Ditch 66. The absence of this feature in the southern part of the enclosure may be accounted for by modern plough-damage, or perhaps over-machining during topsoil stripping. As with Ditch 66, the relationship of Ditch 46 to the enclosure ditch is uncertain.

To the north-west of the enclosure was a somewhat broader ditch, aligned west-east, which was numbered as a continuation of Ditch 43, and is therefore referred to in this report as Ditch 43W. Though excavated, the section of this ditch, 1.5 m wide and 0.8 m in depth, was not recorded. Again, there are problems with the relationship between this and Ditch 4. On plan the two are shown as contemporary, but there is a suggestion in the records that the re-cut shown in Ditch 4 (Cut A) represents Ditch 43W, although it was been interpreted by the excavator as showing the incorporation of his Phase 1 enclosure into the larger Phase 2 version!

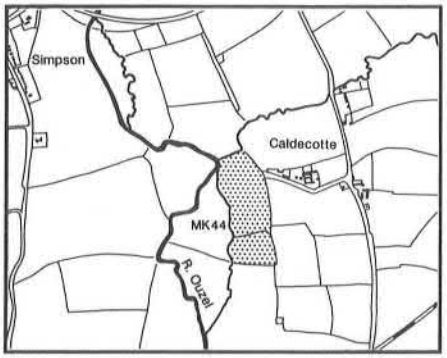
Conclusion

On the available stratigraphic and ceramic evidence from the site, it is quite clear that the phases proposed by the excavator cannot be substantiated. What is certain is that during the late Iron Age there was a ditched enclosure or succession of enclosures, around which some human activity was taking place. In the absence of much more archaeological evidence, which cannot now be obtained, the function of these enclosures must remain uncertain. What is also certain is that Martin Petchey's assertions (Loveday and Petchey 1982) that the narrow enclosure had a religious or ritual function, and was the sole Iron Age example of a category of monuments identified in that publication as Neolithic mortuary enclosures, are no longer credible.

Object type	*Pub. No.*	*Context*
Brooch	3	+
Buckle/brooch pin	37	+
Quern	123	104
Fishing weight	344	+

All unstratified except 123, which is late Iron Age.

TABLE 1: Mill Close enclosure (MK117); concordance table of illustrated objects/contexts.



Berrystead Close (MK44/504)

R.J. Zeepvat

Introduction

Following the infilling of Caldecotte Moat in the 1960s, and the change of use of Berrystead Close from pasture to cultivation, increasing amounts of Roman and Saxon pottery were recovered from the site during fieldwalking undertaken by the Bletchley Archaeological Society. The presence of Roman features in the areas around the moat was confirmed by small-scale excavation and trial trenching, carried out in 1967 and 1971 respectively. The extent of probable Roman features across much of this field and the north end of Mill Close, to the south, was further demonstrated by a geophysical survey carried out in 1977. Major excavations were undertaken by the Unit in these areas between 1978 and 1980 (Fig. 2).

As a result of the trial-trenching and geophysical survey, four areas covering a total of 7380 sq. m were selected for excavation (Fig. 14). These were:

Area 1: Some 45 m sq., this area encompassed the interior of the medieval moat. Post-Roman evidence from this area is described under MK619 (p.97).

Area 2: To the north of the moat, this area measured about 50 × 70 m. At its north end was found evidence of Saxon occupation (MK504), described below (p.48).

Areas 3 and 4: Area 3, consisting of two trenches covering some 1300 sq. m, was at the south end of Berrystead Close in an area which produced several pronounced anomalies on the geophysical survey. Area 4, two trenches covering about 600 sq. m, lay to the south, in the north end of the north part of Mill Close.

A fifth area (Fig. 2) was also opened up to the south of Area 4, midway between it and MK117, but this proved devoid of features of any date.

From the more recent excavations on the village earthworks, further evidence was obtained of the extent of Roman agricultural activity east of Berrystead Close. This is described under MK618 (p.59).

Dating

From the ceramic evidence, it is clear that occupation and activity at Caldecotte in the Roman period dated mainly from the mid first to the late second or early third century. Pottery of the later third and fourth centuries was present in much smaller quantities, generally in the upper fills of the larger ditches, suggesting much lower levels of activity. Sherds of the late Iron Age were also found as residual deposits in all the areas excavated, but only Areas 3 and 4 produced features of that date. Provisional dating of the site by the excavator (apparently based on spot-dating of the samian assemblage) suggested three phases, one Iron Age and two Roman, the latter being 43–160 and 160/175–210. However, detailed examination of all the dating evidence in conjunction with the few clearly visible stratigraphic relationships on the site has shown that the suggested Roman phases do not relate to any distinct change in the character and development of the site, which appears to have developed gradually between the mid first and late second/early third centuries.

Because of this lack of evidence for distinct periods of change on the site during the Roman period, and because many excavated features could not be dated artefactually or stratigraphically, only the major feature groups are described below.

Early Saxon pottery was found in the upper fills of many of the later Roman ditches in Areas 1 and 2, indicating that they remained as landscape features beyond the Roman period. Apart from this, the principal evidence of occupation during the Saxon period was a post-built structure, described below.

Iron Age Features

Although residual Iron Age sherds were found in all the excavated areas in later contexts, only one feature could be dated with any certainty to that period. This was F115, a ditch in Area 4 (Fig. 15). It measured 3.0 m wide and 1.0 m deep, with a 'V' section, and was traced for some 20.0 m running northward across the excavated area, but curving to the west. From the site plans its westward continuation appears to have been located in an extension of the south-east corner of Area 3. The size and cross-section of this feature were similar to the late Iron Age enclosure (MK117) in Mill Close, some 300 m to the south (p.30), suggesting that F115 was part of a similar enclosure ditch system.

In the southern part of Area 2 (Fig. 21) was found a group of marks from an ard plough (Plate 8; Fig. 16). These were preserved in a patch of clay brought to the surface of the

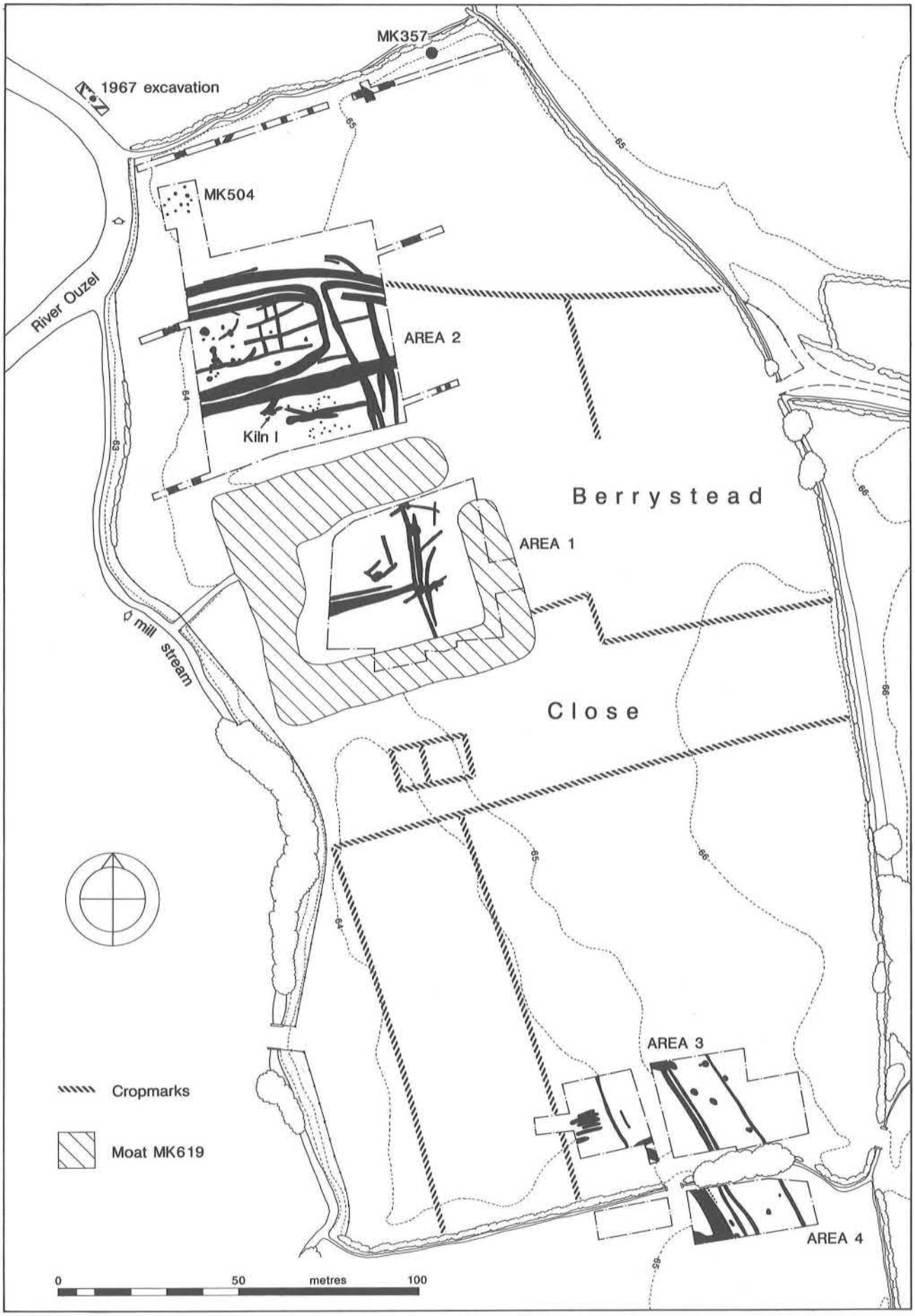


Figure 14: MK44/504 overall site plan.

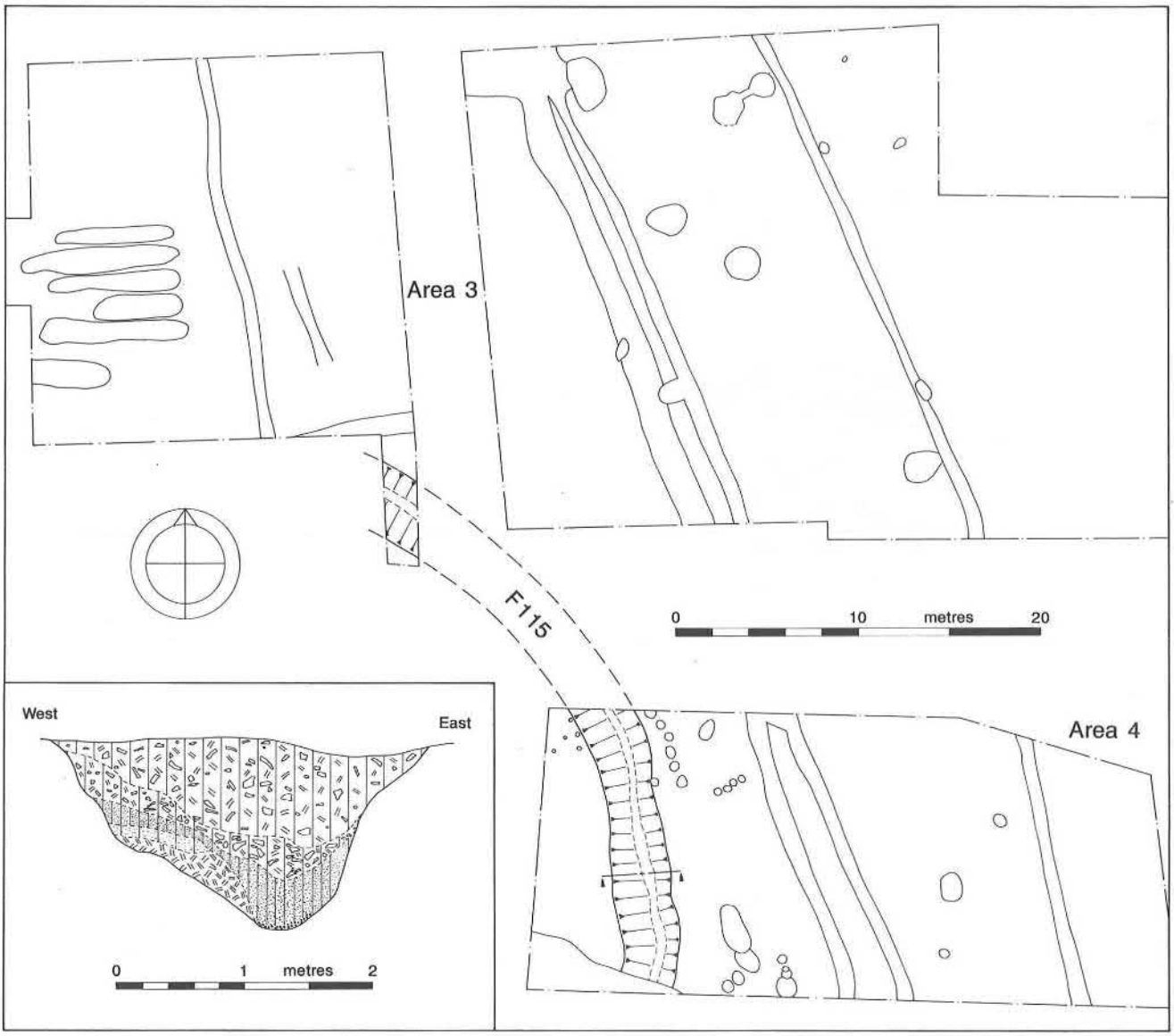


Figure 15: MK44; Ditch F115, plan and section (Areas 3 and 4).

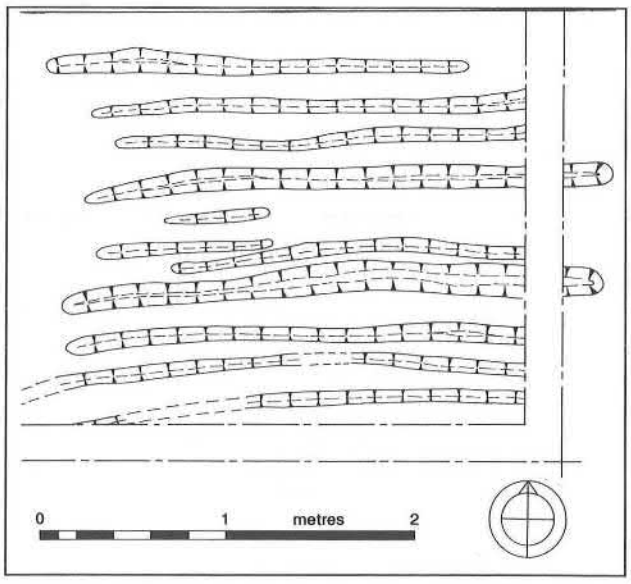


Figure 16: MK44; plan of ard marks (Area 2). For location, see Fig. 21.

gravel by solifluction, and then protected from later ploughing by a first to second-century Roman yard surface (L163), which was in turn buried beneath upcast from the medieval moat. The marks themselves were made by an implement about 100 mm in dia. and were 120–150 mm apart, surviving for some 2.0 m in a north-south direction, and 3.0 m east-west.

As might be expected, no finds were recovered from this feature, so the dating of the ard marks as Iron Age is by no means certain, although it seems the most likely explanation.

Roman Features

Enclosure (Fig. 17)

Occupying the central part of Area 2 was a roughly rectangular enclosure, 20.0 m wide and at least 35.0 m long, aligned east-west. Its south side was formed by Ditch 442 (2.8 m wide) and its east end by Ditch 39 (2.0 m wide). Its north side was formed by two closely-spaced parallel ditches (151 and 218), the innermost being the larger in section.

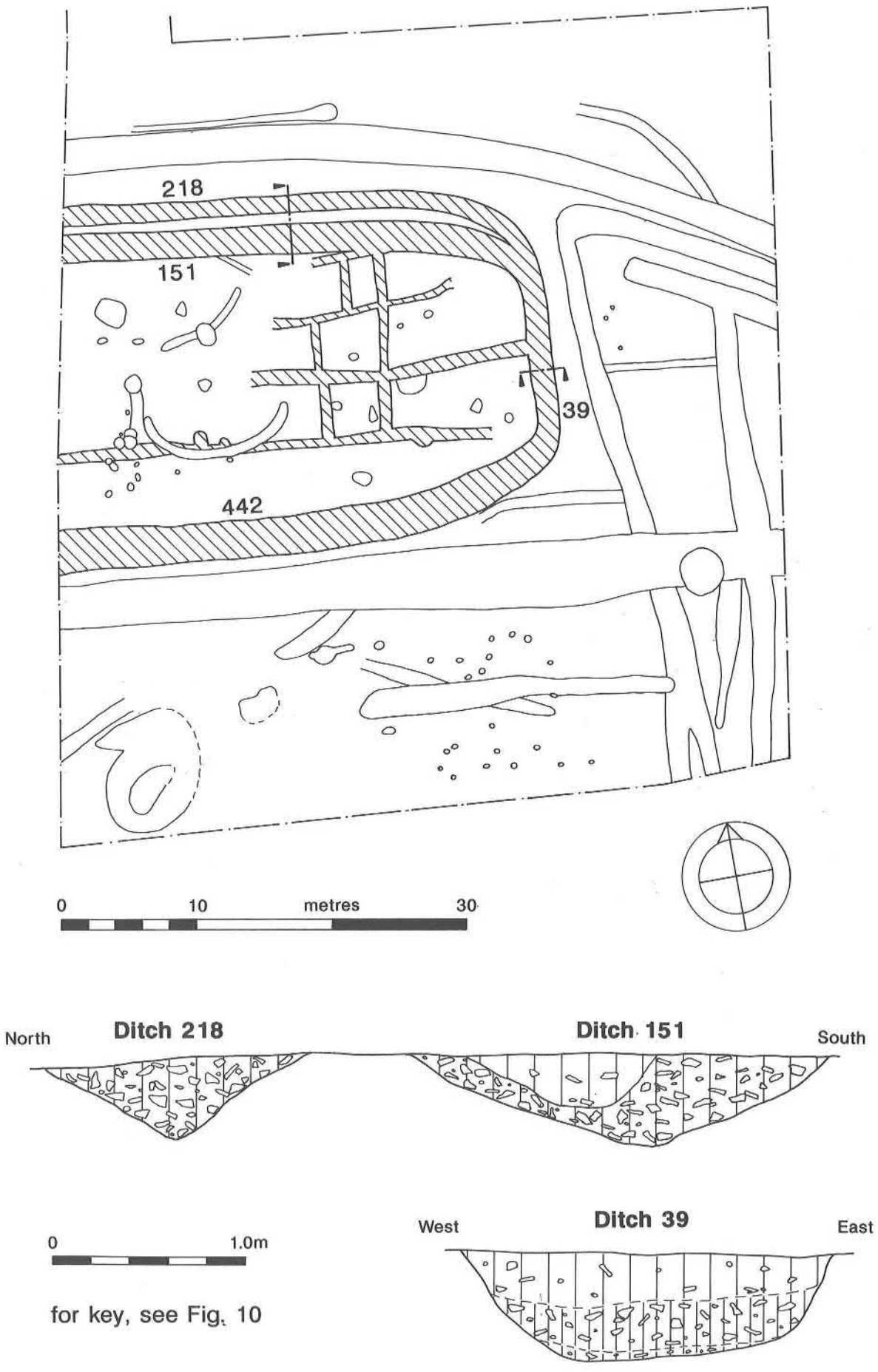


Figure 17: MK44; enclosure and associated features, plan and sections (Area 2).

Plate 8: MK44; ard marks, probably Iron Age, in Area 2 (*MKAU*).

Although the presence of these two ditches suggests that the north side of the enclosure was recut, the pottery from all the above features dates from the mid first century, and no stratigraphic evidence for the sequence of these ditches was recorded, nor were any sections drawn of them.

Within the enclosure were a series of shallow gullies about 4.0 m apart, aligned either east-west or north-south to form a rudimentary chequerboard pattern. Although the excavator suggested that these were the remains of successive patterns of Iron Age field boundaries, the ceramic evidence points to a mid first-century date for most, if not all of the gullies, and the stratigraphic relationships of these features with the surrounding enclosure ditch were not clear. Presumably they relate to some form of agricultural activity taking place in the enclosure.

Boundary Ditches (Figs 18, 19: Plate 9)

Much of Areas 1 and 2 was covered by a system of boundary ditches, aligned either north-south or west-east. These fell into two distinct phases, mid first to mid second century, and late second to third century. In addition, there appeared to have been much recutting of the ditches of the earlier phase, though the evidence for this was stratigraphic rather than ceramic.

In the earlier phase, the main north-south boundary was marked by Ditch F186/40 in Area 2, which continued into Area 1 as F10/F72. This feature was 1.0–1.5 m wide, 0.3–1.0 m deep, with a rounded section. The shallowest part was F72, in the south part of Area 1. The ditch was traced for some 90.0 m from the south side of Area 1 to its junction with the east-west Ditch 58 in Area 2. Ditch 40 ran roughly

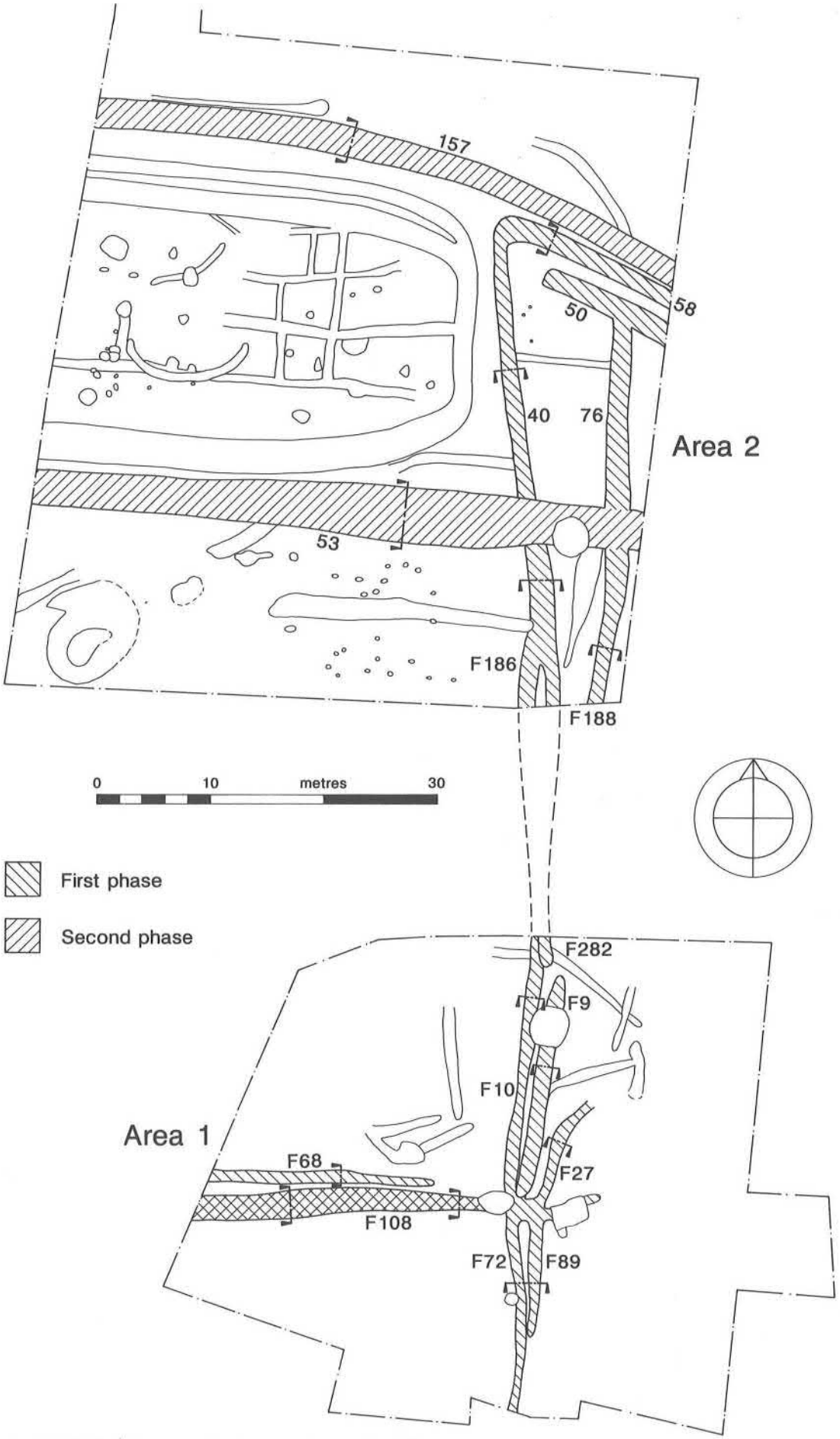


Figure 18: MK44; field boundary ditches, plan (Areas 1 and 2).

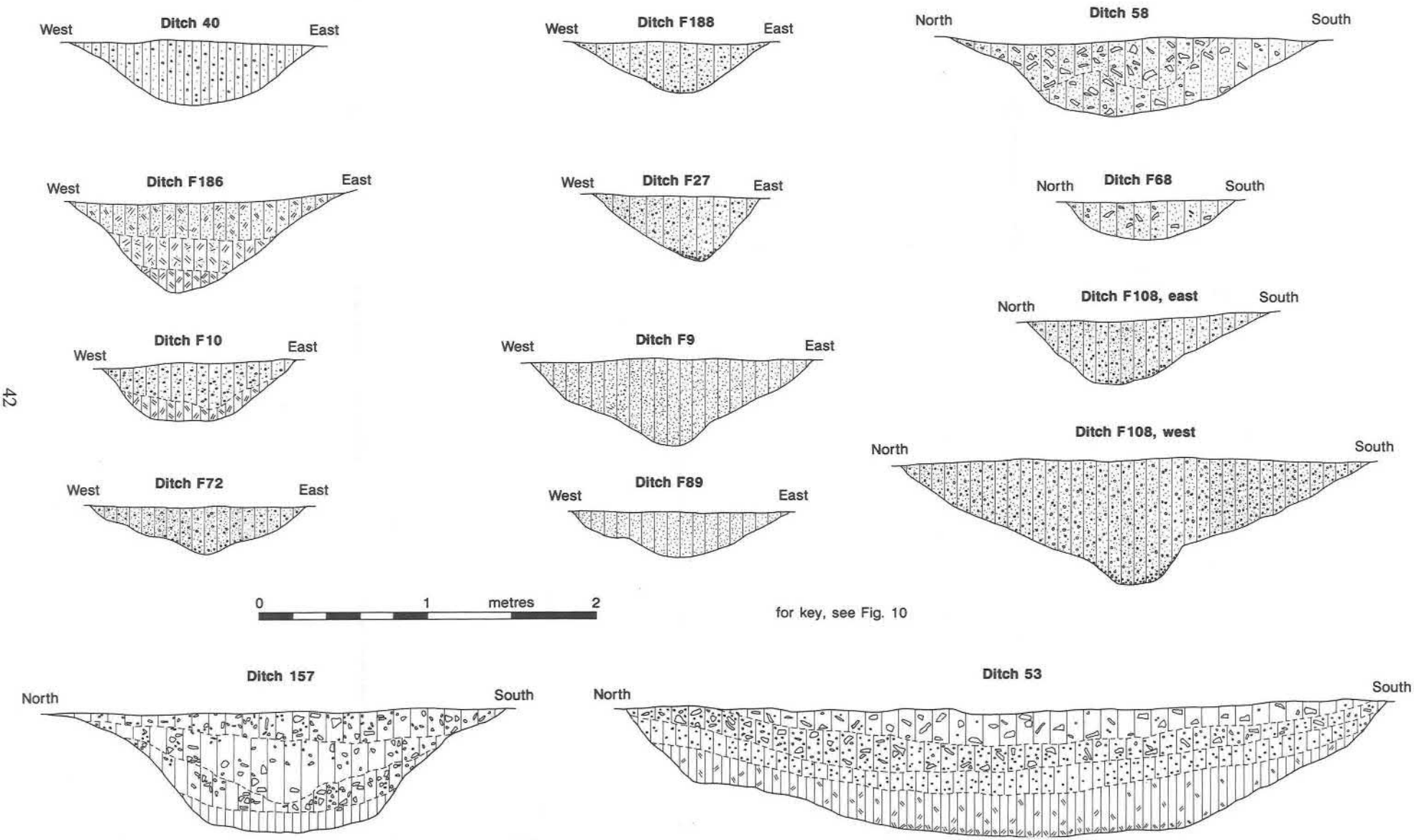


Figure 19: MK44; field boundary ditches, sections (Areas 1 and 2).

Plate 9: MK44; field boundary ditches F9 and F10, seen from the north crossing Area 1. The pit in the foreground is F11 (*MKAU*).

parallel to Ditch 39, the east boundary of the contemporary enclosure described above.

Evidence of recutting or reinforcement of this feature in Area 1 was provided by three unconnected lengths of ditch (F9,F27/F89,F282), of slightly larger dimensions than their predecessor and running parallel to it, close to its east side. In Area 2, evidence of recutting was provided by a bifurcation of F186 close to the south boundary of the excavated area, while Ditch F188/76, to the east of F186/40, may also be a recut of this boundary. F188/76 terminated at its north end at a 'T' junction with Ditch 50, which ran parallel to Ditch 58, and may have been a recut of it.

Running west and east from the north-south boundary were several other ditches. In Area 1, forming a 'T' junction with Ditches F10/F72 and F27/F89, was Ditch F108, which ran west towards the river. F108 varied in section, 1.5 m wide and 0.3 m deep at its east end, increasing to 3.0 m wide and 1.0 m deep to the west. Unlike the north-south ditches, its fill contained pottery of both phases. Closely paralleling its north side was Ditch F68, with gently sloping sides and a rounded bottom, 0.8 m wide and 0.2 m deep, terminating some 13.0 m west of F10/F72, the gap presumably being to allow access between fields. This ditch only contained first and second-century pottery, suggesting that F108 was a recut of this boundary line.

In Area 2, Ditches 58 and 50, mentioned above, appear to have formed a field boundary line running east from the main north-south boundary, continuing eastward the line formed by the north side of the enclosure (Ditches 151 and 218). Once again, these ditches were closely-spaced, running parallel, though here there was no evidence for their actual chronological relationship.

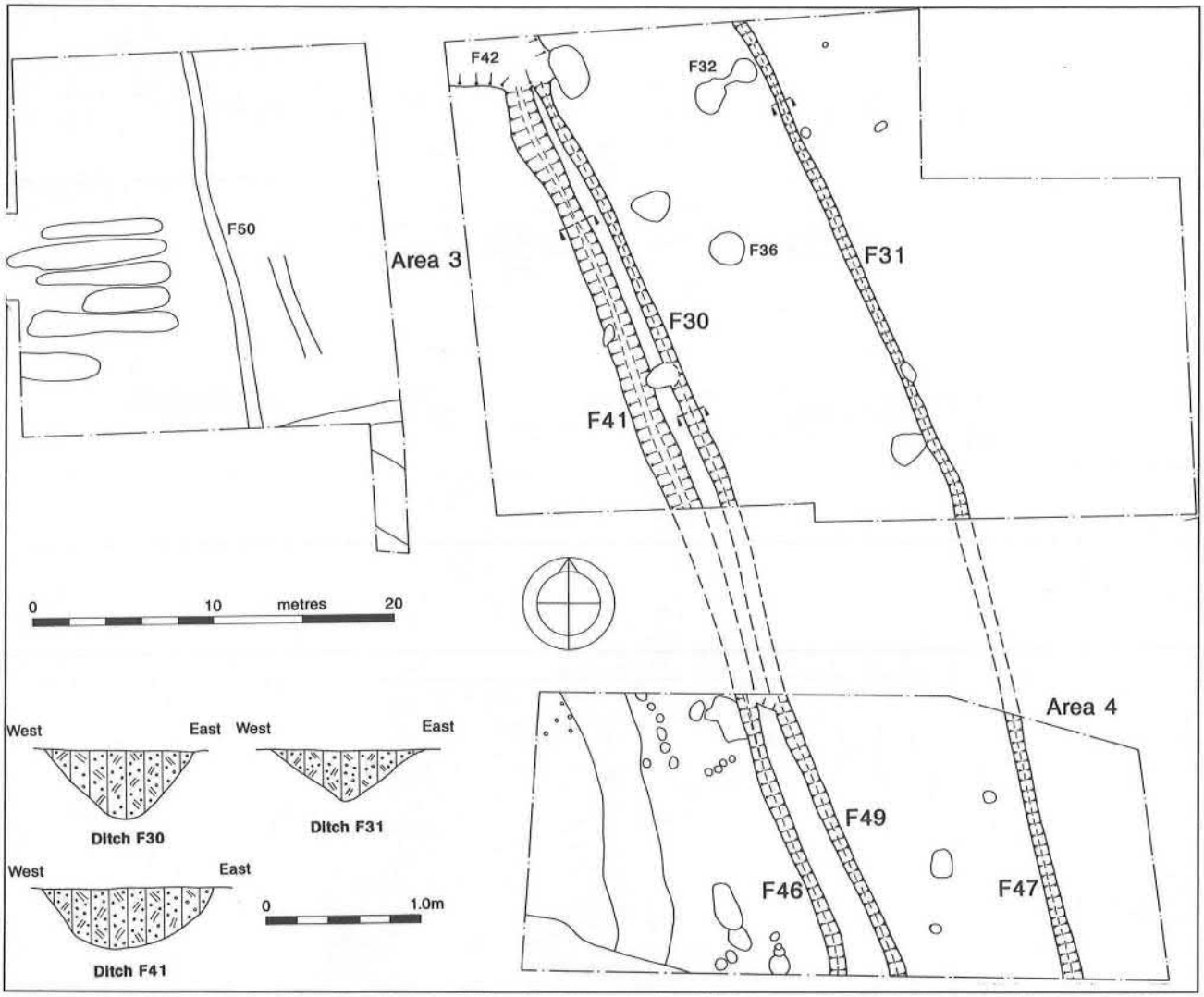


Figure 20: MK44; Droveway, plan and sections (Areas 3 and 4).

The late second to third-century phase of field boundaries was represented only by ditches running east-west. In Area 1, F108 appears to have remained in use during this period. In Area 2, Ditch 157 was dug parallel with and to the north of the line previously marked by Ditches 58 and 218, while the south side of the enclosure, Ditch 442, was paralleled to the south by Ditch 53. These two later ditches were much larger in section than their predecessors, Ditch 157 being 2.5 m wide and 0.74 m deep, and Ditch 53 5.0 m wide and 0.77 m deep. Both ditches crossed the excavated area with total disregard for all earlier features, suggesting that they marked a complete change in land allotment. On aerial photographs, Ditch 157 appears to continue across the field to the east (Fig. 14; Plate 3) on a slightly curving alignment.

Droveway (Fig. 20)

The field boundary ditch systems described above did not appear to extend to Areas 3 and 4. In contrast, these areas were crossed by a series of smaller-section ditches marking a droveway 11.0 m wide, running roughly north-south. The sides of this feature were delineated by two shallow gullies, F30/F49 on the west side, and F31/F47 on the east. Both were about 500 mm wide and 250 mm deep with rounded profiles, and contained late second to early third-century sherds. In the area bounded by these gullies were a number of features, mainly pits. Among these were Pit F36 and Hearth F32. Both of these features were dated to the late second century, suggesting that droveway had only a short period of use.

About one metre west of F30/F49 and running parallel to it was F41/F46. This ditch measured 1.5 m wide and 0.25 m deep, with a rounded profile, and was dated to the late first to mid second century. As the droveway was evidently constructed in relation to this ditch, it could have marked a field boundary, a continuation of the system located in Areas 1 and 2, albeit on a different alignment. The contemporary Gully F50, 9.0 m to the west, may also have been related to the boundary system.

Occupation Evidence (Fig. 21; Plate 10)

Despite the presence of quantities of Roman pottery in many of the features excavated in Areas 1 and 2, there was surprisingly little evidence of occupation in the form of structures, yards, etc. In the south part of Area 2, west of F74, a yard surface (F163) made up of large water-washed

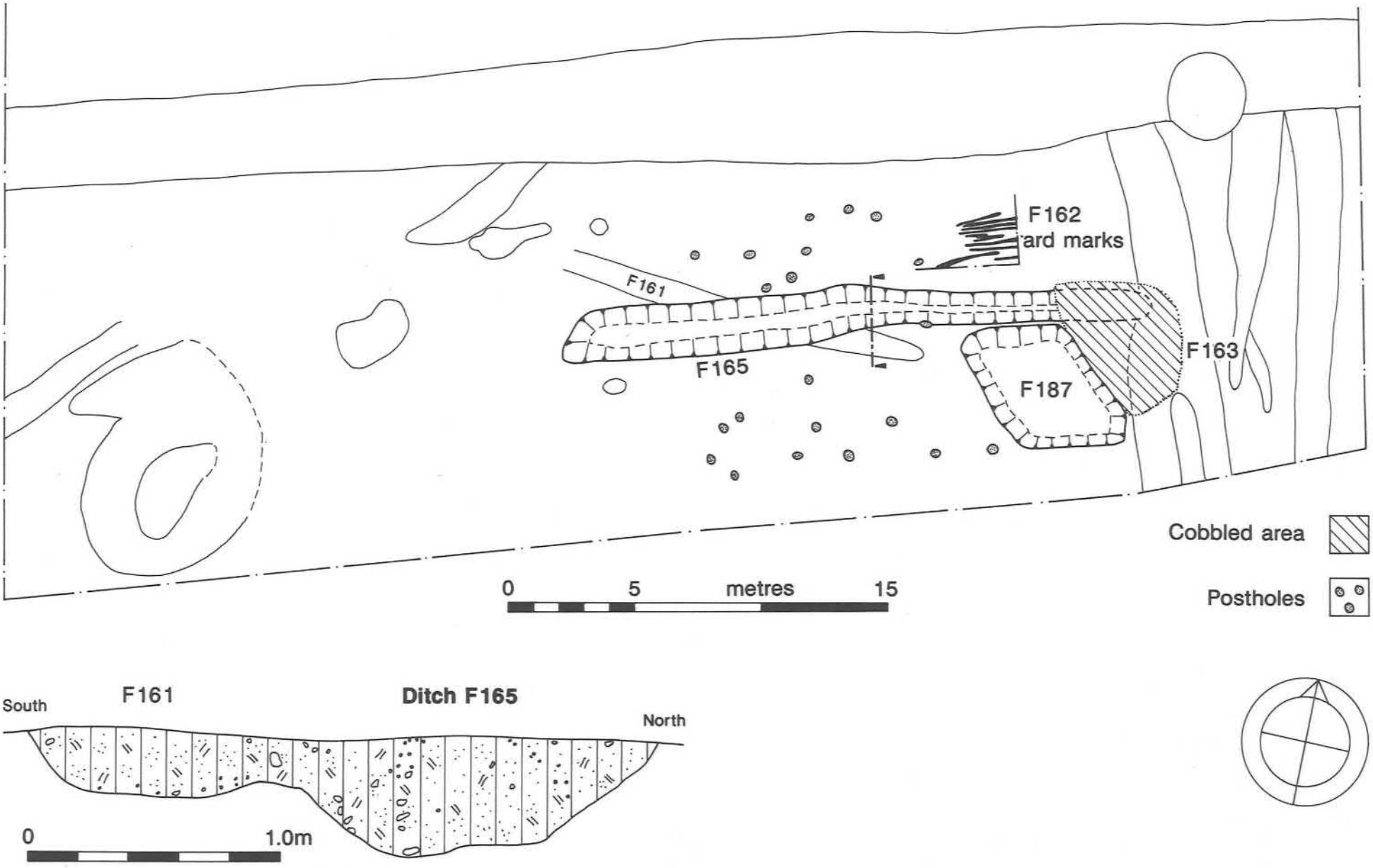


Figure 21: MK44; Occupation evidence (Area 2, south part).

Plate 10: MK44; the south part of Area 2, showing yard surface L136 and the ard marks (*MKAU*).

pebbles with the occasional discarded quernstone covered the field boundary F186, extending over an area of 12.5 × 10.0 m (Plate 10). To the west of the yard was an irregular sub-rectangular depression (F127), probably the remains of a building. Further west still were a whole series of post holes, some of which bore traces of stone packing. These post holes did not form a recognisable pattern, and may have represented either some farmyard equipment, such as corn-drying racks, or the remains of a series of casual, flimsy buildings. None could be accurately dated, but appeared to be associated in some way with the yard surface, which was of second-century date.

Some 27 m north-west of this cobbled area, in the centre of the first-century ditched enclosure, was what appeared to be part of a penannular hut gully (113). This was 1.0 m wide, 0.45 m deep, and formed an arc of a 9.6 m dia. circle. As with the other occupation evidence from this area, this feature was also of second-century date.

Industrial Activity (Figs 22, 23)

Traces of two industrial activities were noted at Caldecotte, pottery manufacture and metalworking, both of iron and bronze. Evidence of pottery production came from two kilns, F74 in Area 2 (Kiln I) and MK357 (Kiln II), 80.0 m north of F74 (Fig. 14). Both kilns, and their products, are described in detail elsewhere in this volume (p.179), while the features related to Kiln II are dealt with in the MK357 report (p.54). The plan and longitudinal section through Kiln I is shown in Fig. 22. Pottery from Kiln I was dated to the mid first century, while Kiln II was in production in the early to mid second century. The wares produced in both kilns were made from locally-obtained clay, and production

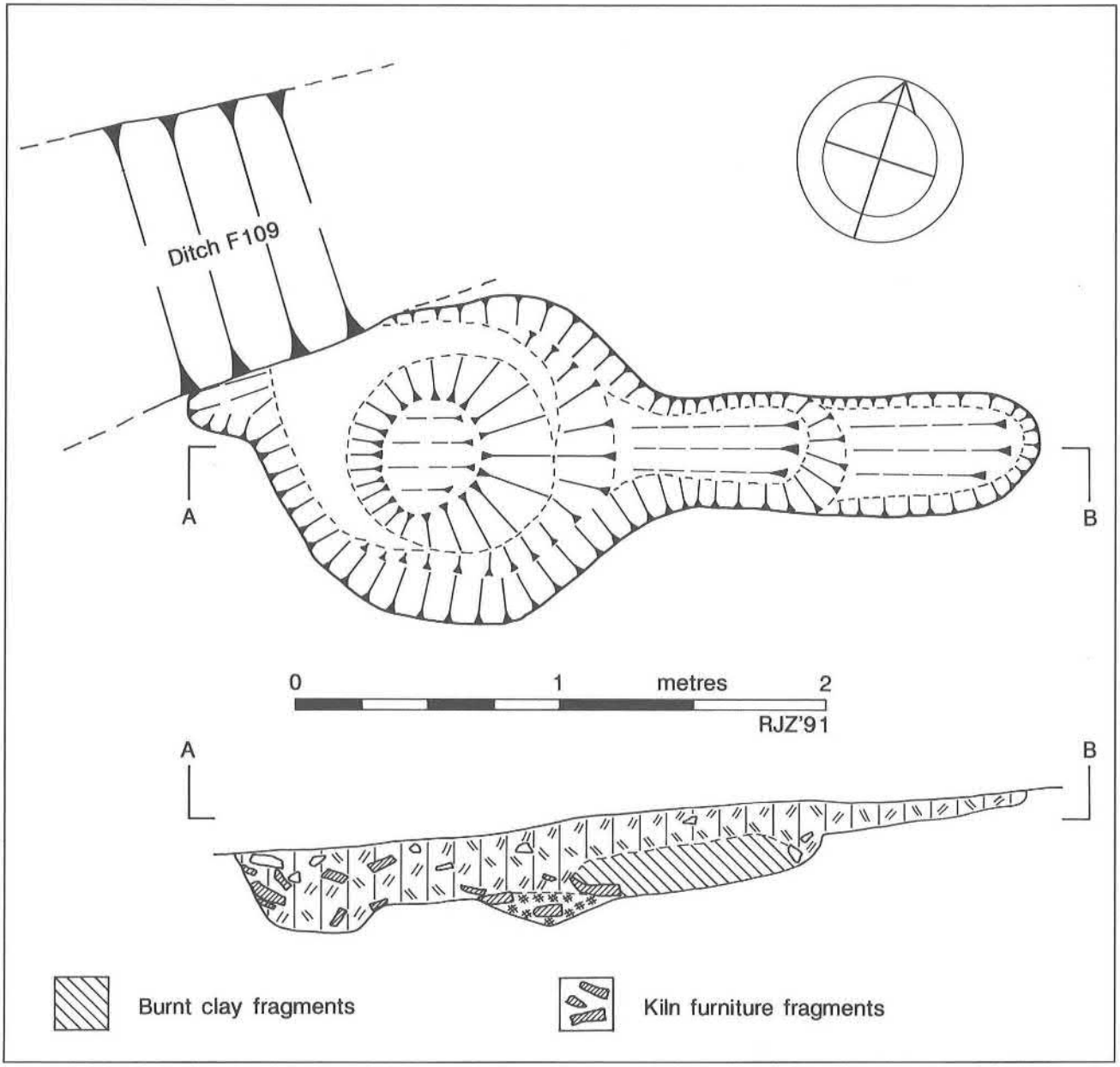


Figure 22: MK44; Pottery kiln I (Area 2).

was evidently on a small scale, as no other kilns or features related to pottery manufacture were found.

Evidence for metalworking mainly came from Area 3 (Fig. 23). In the droveway, close to Gully F31 in the northern part of the excavated area, was a circular hearth (F32), 1.3 m in dia. and 0.1 m deep, with a narrow flue projecting to the south-west. It was filled with charcoal and burnt clay, and contained late second-century pottery. Though it contained no artefacts or other materials directly connected with metalworking, it could have been related to that activity, as fragments of crucibles and slag were recovered from neighbouring features.

In the west part of Area 3 were six short closely-spaced parallel ditches (F62, F90, F91, F111, F119, F131), varying in length between 5.0 m (F131) and 9.0 m (F111). Widths varied between 0.9 and 1.3 m, depths between 0.3 and 0.5 m, while all had 'U'-shaped profiles. All were dated to the late second century, and were filled with a black charcoally loam containing slag, fragments of furnace lining and crucibles. These features are identical to examples found in Northamptonshire, where they have been described as 'channel hearths' (Jackson and Ambrose 1978, 154). Their function, though clearly associated with industrial processes, is not known. The slag and metallic traces in the crucibles indicate that both bronze- and iron-working was being carried out (p.166).

In addition to the above, fragments of crucible and slag from both iron- and bronze-working were found across much of the site. A number of partly-finished bronze toilet spoons also recovered from the site may indicate the type of objects being manufactured (p.125).

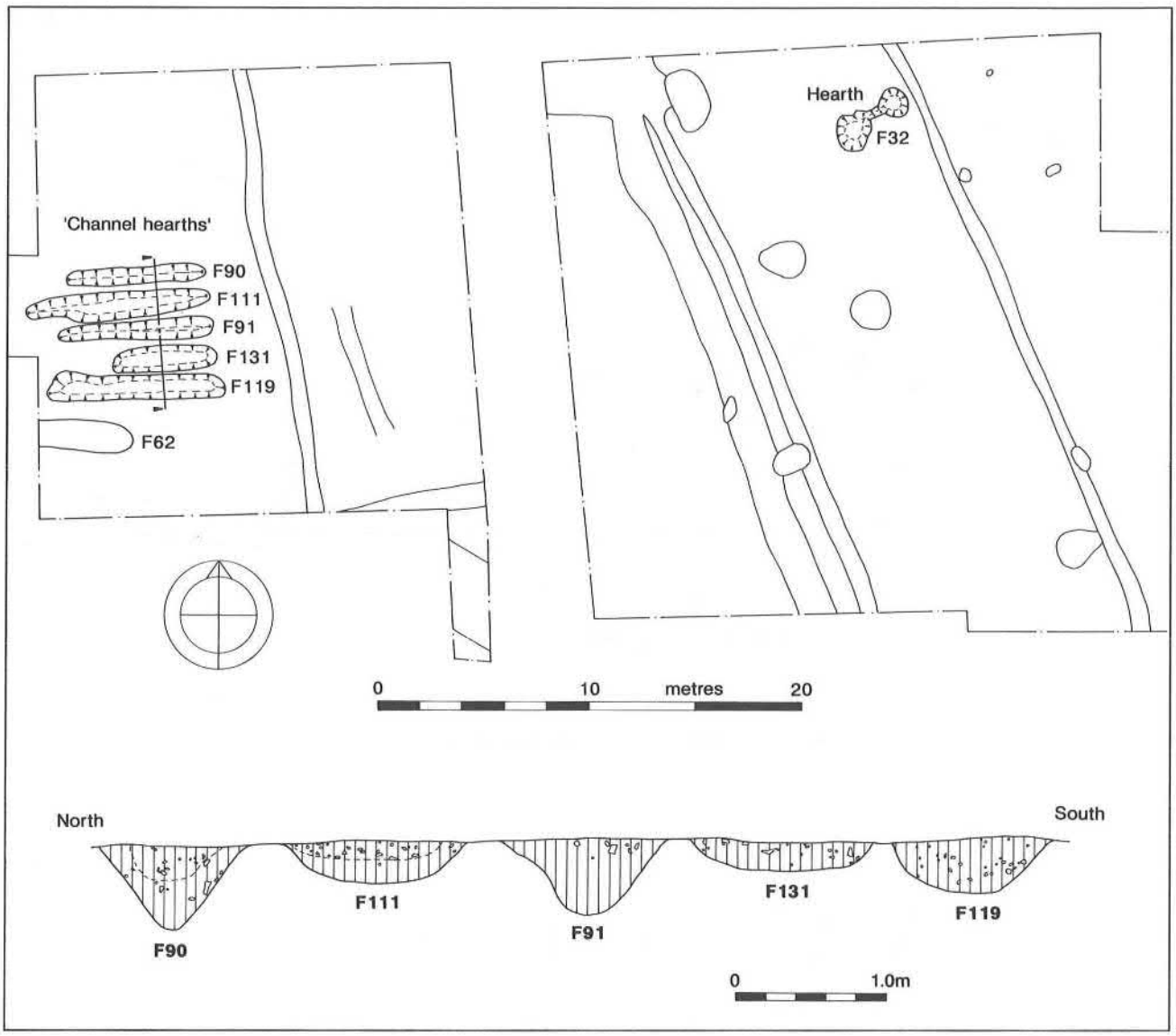


Figure 23: MK44; Evidence of metalworking, plan and sections (Area 3).

Other Features

As with most other archaeological sites, excavations at MK44 revealed many features which could not be either readily dated or comfortably fitted in to the interpretation of the site. While many of these were small pits or possibly postholes containing no ceramic evidence and stratigraphically isolated from the main dated features, some are worthy of comment.

Pit F11: a large circular feature 3.0 m in dia. and 1.2 m deep, cut into north-south field boundary ditches F9 and F10, close to the north side of Area 1 (Fig. 24). It contained a large assemblage of late second to third-century sherds, and may have been associated with the adjacent area of occupation in Area 2, 20 m to the north.

Ditch F165: a broad shallow feature 1.3 m wide and 0.35 m deep, running west for a distance of 23.5 m from F186, in the south part of Area 2 (Fig. 21). It contained mid first to late second-century pottery, and was sealed by cobbled yard L163. Its function is uncertain; from its profile and abrupt ending, it does not appear to have been part of the field boundary ditch system.

Saxon Features, MK504 (Fig. 25)

Aside from the presence of Saxon pottery in the upper fills of many of the later Roman features, the only feature which appeared to date from this period was a rectangular post-built structure (300) in the extreme north-west of Area 2 (Fig. 14; Plate 11). No direct dating material was recovered the structure, but early Saxon pottery was found in the vicinity. The building measured 5.0 × 3.5 m, defined by six large post holes about 450 mm dia × 600 mm deep. No floor levels or other features were found associated with this structure.

In Area 1, a depression at the junction of Ditches F10/F72 and F108 was found to contain Saxon pottery and a possible Saxon spindle whorl (p.127, no. 106). This feature was

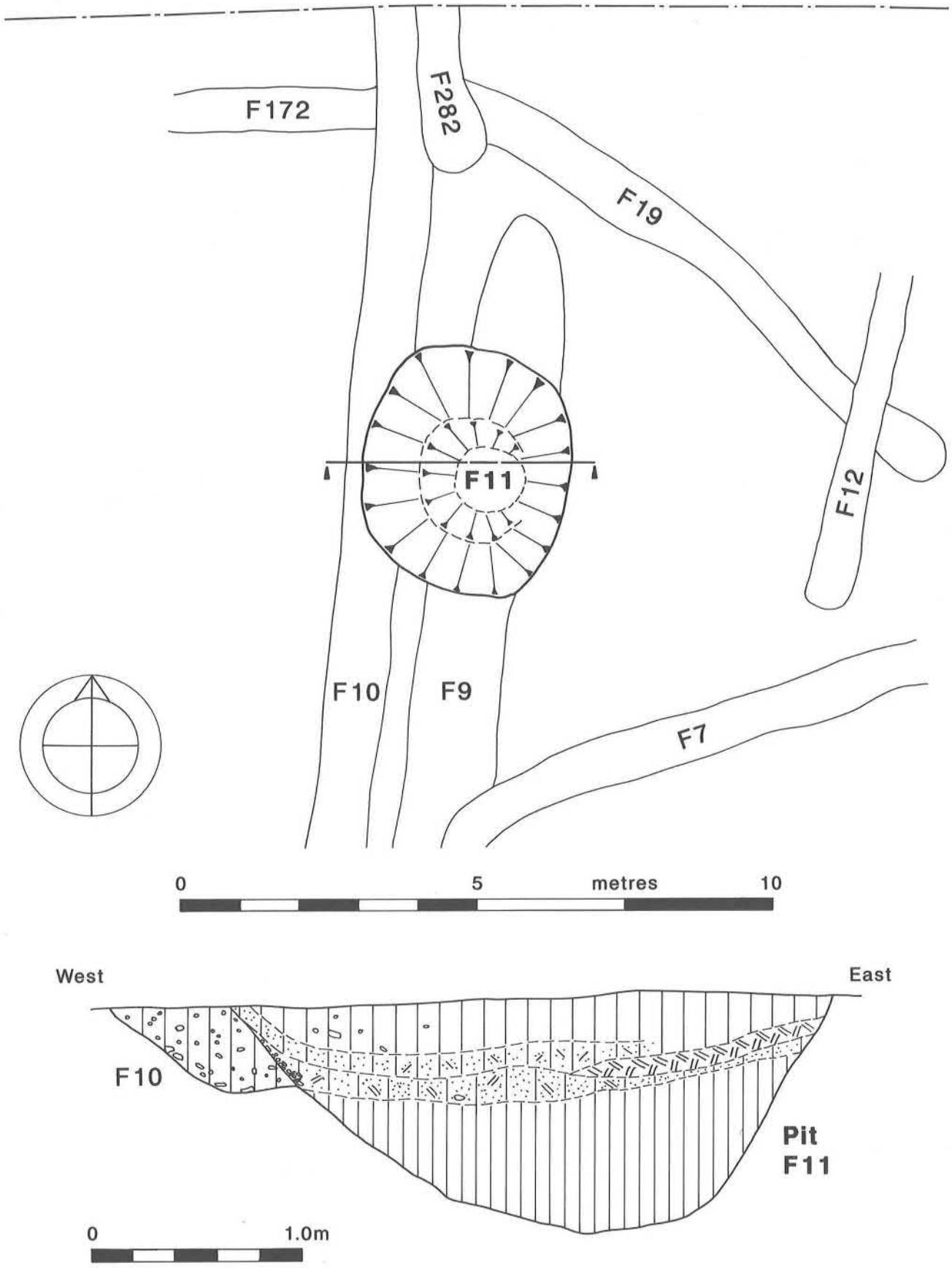


Figure 24: MK44; Location plan and section of Pit F11 (Area 1).

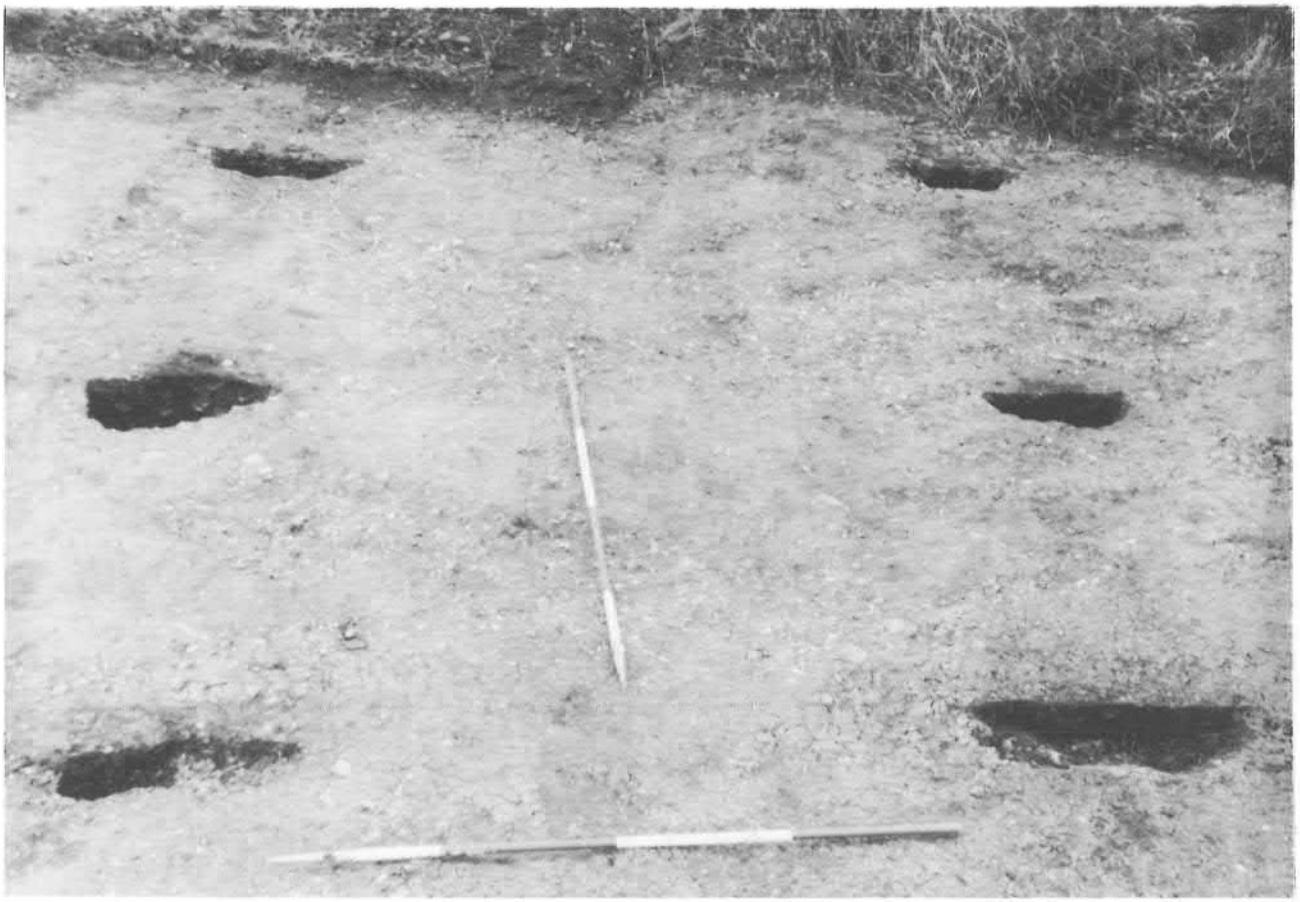


Plate 11: MK44; Saxon Building 300, from the north-east (*MKAU*).

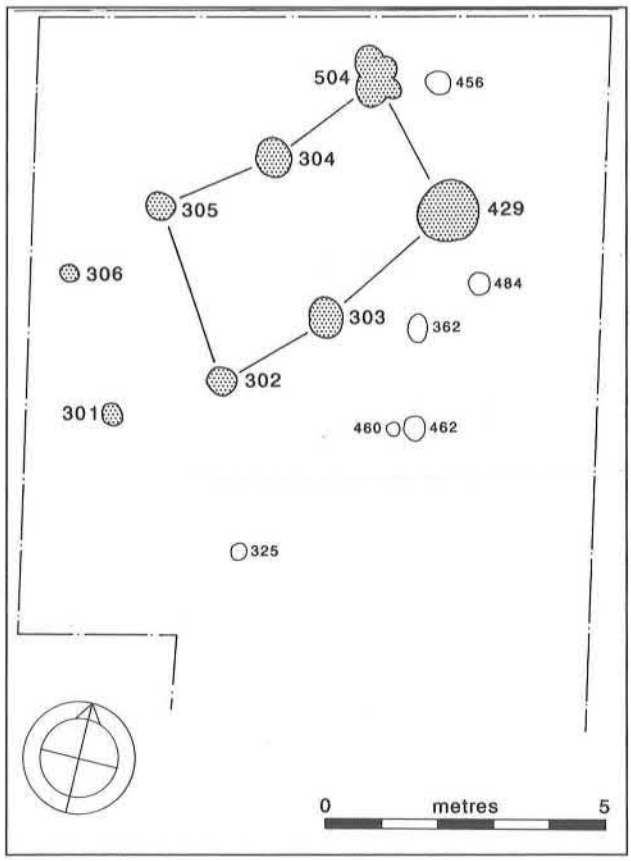


Figure 25: MK44/504; Saxon post-built Structure 300 (Area 2).

initially interpreted as a sunken featured building, but seems more likely to have been created by the slow rate of silting at the junction of the ditches.

Discussion

Unfortunately, as the pace and scope of archaeological work at Caldecotte was dictated totally by development, the information presented above is by no means comprehensive enough to permit a detailed study of the Upper Ouzel valley landscape during the Roman period. However, from the available evidence some conclusions can be drawn regarding the topography, settlement and economy of the area and its setting in the Roman landscape (Fig. 26).

Topography

The environmental evidence recovered from the first-century enclosure in Mill Close (MK117) suggests that by that time the gravel terrace areas to the east of the river were largely open grassland. Areas of mixed oak woodland also existed, perhaps on the Oxford clay soils around the 70 m contour, six or seven metres above the floodplain of the river. As the settlements on the east bank of the Ouzel are all on low-lying ground no more than 300 m from the river, it must be assumed that in the early Roman period the river was not as prone to flooding as it became in medieval times. Only one settlement on the west bank, Simpson (MK351), is situated like to the east bank sites.

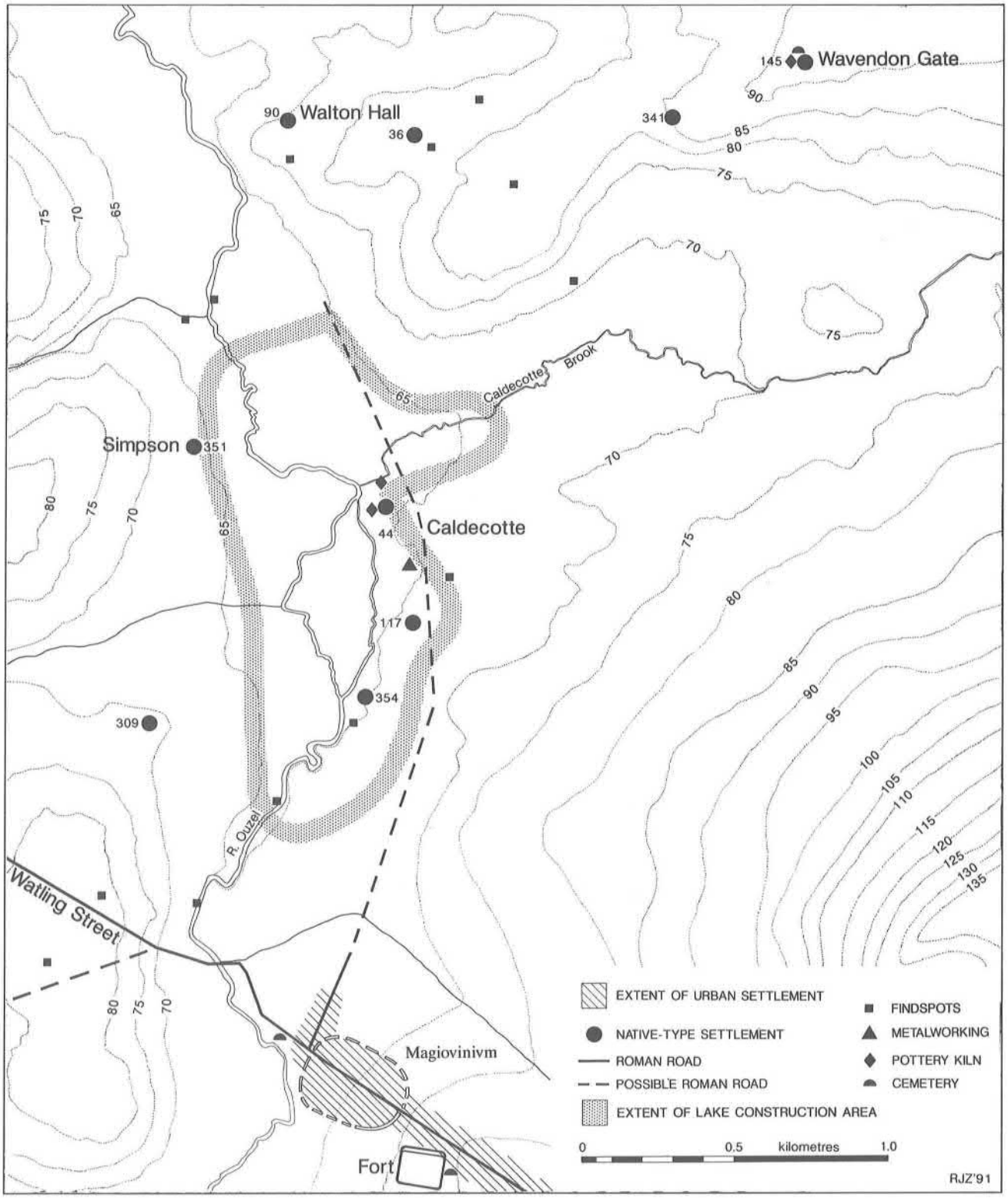


Figure 26: MK44; Major Roman sites in the Caldecotte area.

Settlement

Though sparse, the evidence for settlement in the Caldecotte area suggests the existence of a number of primarily agricultural native settlements, scattered at more-or-less regular intervals along the river valley, with associated field boundary ditch systems. This picture is similar to that obtained for other river valleys in the south-east Midlands, notably the rivers Nene and Welland (Hall 1982), the Ouse (Simco 1984), and the upper Thames (Lambrick and Robinson 1979).

Two details in the Caldecotte settlement scenario are worthy of note. The first, already remarked upon, is the apparently greater density of settlement on the east bank of the river. There seems to be no topographical reason for this, and fieldwork in the area affected by construction of the

lake is considered to have been sufficiently thorough not to have missed any sites (pers. comm. R.J. Williams). One possible explanation may be found in the proximity of the *Magiovinium*-Irchester road, which ran to the east of the Ouzel. This suggestion is reinforced by the continuing preference for settlement on the east bank to the north of Caldecotte: occupation sites have been examined at Walton Hall (MK90), 1.4 km north of MK44 (Zeepvat 1991), and also Oakgrove (Zeepvat 1993) and Cotton Valley (RMK, 35), 3.6 and 5.3 km to the north respectively.

The second notable point in the Caldecotte settlement pattern is the evidence (p.56) from Mill Close South (MK354) of a substantial stone wall, suggesting the presence of a stone building, perhaps a small Romanised farmstead or villa, similar to that at Wymbush (RMK, 82–89: Zeepvat 1990). This is the nearest occupation site to the town of *Magiovinium*, and may have been analogous to the probable villa sites at Holne Chase and Sherwood Drive, to the west of the town (RMK, 30, 39 respectively).

Dating

Compared with many other Milton Keynes sites, occupation of most of the Caldecotte sites appears short-lived. The *floruit* of activity in Berrystead Close (MK44) extends from the mid first to the late second century, while the Mill Close Enclosure (MK117) has an even briefer period of use, in the early to mid first century AD. In contrast, the site in Mill Close South was not occupied until the fourth century, while evidence from Simpson (MK351 and MK309) suggests two periods of occupation, one similar to that at Berrystead Close, the second contemporary with Mill Close South. Clearly there are problems with the variable quality of the evidence from these sites, although the picture presented is consistent. The early period of occupation at all these sites can be related with some certainty to the establishment and growth of *Magiovinium*, 2 km to the south, which would have provided a market for produce from the surrounding area.

The end of occupation at Berrystead Close and the apparent abandonment of the Simpson sites in the late second or early third century is paralleled by the near-abandonment of the villa at Bancroft (Williams and Zeepvat 1993) in the late second century, following a fire. At *Magiovinium* at this time much of the extra-mural settlement was deliberately levelled, a move possibly associated with the construction of defensive earthworks (Neal 1987). Unfortunately, evidence from the interior of the town is lacking, so one can only speculate whether the fortunes of the settlement waned during the third century, as did those of other small towns in Catuvellaunian and Trinovantian territory, a phenomenon often associated with 'Antonine fires' (Rodwell 1975).

The resurgence of activity in the late third to early fourth century at the Simpson sites was probably related to the general resurgence in the fortunes of the province at this time. The most dramatic example of this in the Milton Keynes area was the construction of a new house at Bancroft, and there appears to have been some extra-mural expansion at this time at *Magiovinium*. This period of prosperity continued at least to the mid fourth century, and it is possible that the stone building at Mill Close South (MK354) was built at this time. Much of the former occupation area in Berrystead Close remained in agricultural use at this time.

Despite the large quantities of Saxon pottery recovered from fieldwalking in Berrystead Close in the 1970s, evidence for occupation of that date was slight, though it appears that settlement was centred on the area around the confluence of Caldecotte Brook and the Ouzel. What is of particular interest is the suggested fifth-century date for the settlement, the earliest recorded Saxon site in the Milton Keynes area. The relationship of this short-lived settlement to other Milton Keynes sites is dealt with in the pottery report (p.194), and little can be added here.

Agriculture

From the available faunal evidence, animal husbandry in the Caldecotte area appears to fit into the general pattern for the area (RMK, 12–13; Zeepvat 1991, 20–21), with cattle predominating, and much lower numbers of sheep/goats, horses and pigs. The higher ratio of cattle to sheep/goats can be accounted for by the low-lying riverside location of the sites, which is less suitable for pasturing sheep (p.215), and the small numbers of pigs can be explained by the lack of woodland. The inhabitants of the Berrystead Close site appear to have supplemented their diet with small amounts of game. They and the occupants of Simpson (MK351) also engaged in fishing, as demonstrated by the presence of various items of fishing equipment (p.158, 343–349).

Unfortunately, lack of a coherent policy for environmental sampling has meant that evidence for arable farming in the Caldecotte area is minimal. The presence in waterlogged deposits from the Mill Close enclosure of seeds from plant species which normally occur as weeds among arable crops suggests that some of the area was given over to cereal growing, though only a single wheat grain was found in the same deposit (p.227). The insect evidence indicates a largely pastoral landscape.

Industry

It is now widely recognised (Cleere 1982) that the occupants of rural settlements in the Roman period were often engaged in a variety of small-scale industrial practices as well as agriculture. Two such activities have been recognised at Caldecotte: metal-working and pottery production. Both were carried out on a very small scale, by Cleere's definition as 'handicrafts' rather than 'industries', and presumably supplemented farming rather than providing a major source of income.

Metal-working evidence suggests two unrelated activities, iron- and bronze-working. The former was represented by bloomery slag and fragments of furnace lining, found in

Object type	*Pub. No.*	*Context*
ROMAN:		
Tweezers	76	L60C.1
Tweezers	77	F122A.1
Toilet spoon	78	F92B.2
Toilet spoon	79	F114A.1
Toilet spoon	82	F119C.1
Spindle whorl	105	F111B.1
Loomweight	107	F10E.1
Rotary quern	128	L163
Glass bowl	153	F108A/
B.1		
Glass bowl	154	F92B.3
Glass bowl	155	F89C.1
Glass ?jar	157	F90A.1
Square glass bottle	159	F10G.1
Square glass bottle	161	F108A.1
Knob	197	L124
Bone counter	209	F27.1
Stylus	224	F122B
Stylus	225	F119C.1
Cleaver	293	L180
Cleaver	294	F220
Barrel padlock key	313	F171
Lift key	316	F11.2
Spearhead	350	F108K.1
Spearhead	351	L180
Copper-alloy strip	399	F92B.2
Unidentified object	401	F165G.1
?Link	402	L60
SAXON:		
Spindle whorl	106	F148.1
MEDIEVAL:		
Hairpin	13	L141
Mortar	146	F5.1
?Fishing weight	219	F173C.1
Iron buckle	229	F229B.1
Spur	268	L141
Chisel/wedge	274	F78.3
Knife	278	L141
Barrel padlock bolt	308	L141
Barrel padlock bolt	309	L141
?Hinge strap	326	F78.2
Strip fitting	356	L196
Spiked ferrule	358	L100
POST-MEDIEVAL:		
Copper-alloy buckle	21	F81A.1
Button	52	L120
Glass flask/jug	156	F101.1
Glass 'dolphin' bottle	158	F1
Sickle blade	340	126
UNSTRATIFIED:		
Fibula	1	+
Fibula	4	+
Hairpin	10	+
Hairpin	11	+
Bracelet	14	+
Copper-alloy buckle	22	+
Button	47	+
Button	56	+
Button	57	+
Nail cleaner	74	+
Tweezers	75	3
Needle	110	+
Bird's head fitting	198	+
Handle fitting	201	3
Fleur-de-lys escutcheon	202	+
Seal-box lid	228	+
Axe	272	+
Chisel/wedge	273	+
Knife	279	+
Lever lock key	315	+

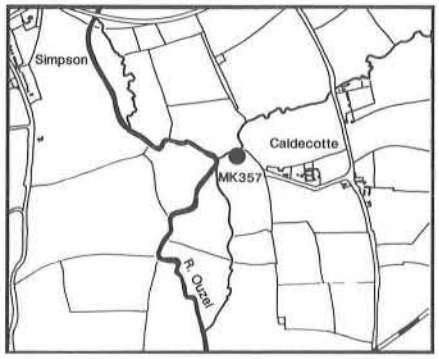
TABLE 2: Berrystead Close (MK44); concordance table of illustrated objects/contexts/periods.

association with a group of six 'channel hearths'. Evidence for the latter came from a large number of crucible fragments, encrusted with bronze droplets, a large number of bronze toilet spoons, some of which were unfinished, and a small bowl-shaped hearth. The impression gained from this is of small-scale metalworking, supplying a variety of objects for sale in *Magiovinium*. The success of such a cottage industry would be closely linked to the development of the town, being at its most successful while the settlement was still in its early stages of growth.

Pottery production from the two kilns in the north part of Berrystead Close appeared to be on a similar footing to the metalworking being carried out 250 m to the south. Both kilns were small, and evidently not intended for long-term production. The source of raw materials, clay bands and lenses occurring in the gravel subsoil, could not in any case have supplied a permanent pottery industry. The range of forms being produced, particularly by Kiln I, has been described as 'transitional' (Marney 1989, 96), Romanised forms made with Belgic fabrics, further suggesting that the kilns were operated for a brief period to supply a short-term local demand. A similar phenomenon has been noted at Wavendon Gate, 2 km to the north-east, where two contemporary small kilns were discovered (Williams *et al.* forthcoming), producing similar vessels to the Caldecotte kilns. All four kilns are compared in detail elsewhere in this volume (p.182).

Traces of possible pottery production have also been noted at Walton (MK36), 1.3 km to the north (RMK, 30) and Simpson (MK351), while the latter site also produced possible evidence of lead-working (p.169). In all these cases the evidence for these activities is slight because of the circumstances under which the sites were located and examined.

With hindsight, it is apparent that excavations at Berrystead Close present more questions about Roman activity in the area than they have solved, and that, with the exception of the area within the medieval moat, our understanding of the site would have been better served by a comprehensive programme of geophysical survey and/or machine trial trenching, allied to selective area excavation over the whole of Berrystead Close and Mill Close, and a comprehensive environmental sampling policy.



Caldecotte Pottery Kiln II (MK357)

R.J. Williams

Introduction

During topsoil stripping for the construction of Caldecotte Lake, the remains of a Roman pottery kiln were uncovered in Berrystead Close at SP 8909 3558, 80 m north-east of Kiln I (Fig. 14). A Massey-Ferguson excavator was used to clear an area of approximately 16 × 8 m around the kiln, revealing three lengths of ditch and a possible stoke hole for the kiln. These were then cleaned, planned and excavated.

Description

The following section deals only with the features found in association with the kiln. The structural details of the two kilns are described in detail elsewhere in this volume (p.179).

The remains of a small pottery kiln (5) were noted in a large block of clay approximately 1.0 m across. This block had been completely torn out of the ground, and its original location could not be plotted with any certainty. In the upper part of the block were several complete kiln bars (Fig. 109.5.6) and part of a semi-circular clay ring (Fig. 109.7.8). Associated with these were a few pottery sherds. The possible structure of the kiln is discussed elsewhere (p.179).

In the centre of the areas clearcd by the machine was a short length of ditch 4.8 m long, on a north-west to south-east alignment (4/14). The ditch was wider at its north-west end with a rounded butt end 0.8 m wide, tapering almost to a point to the south-east. It had been cut into the gravelly clay subsoil, and was filled with a silty clay containing charcoal.

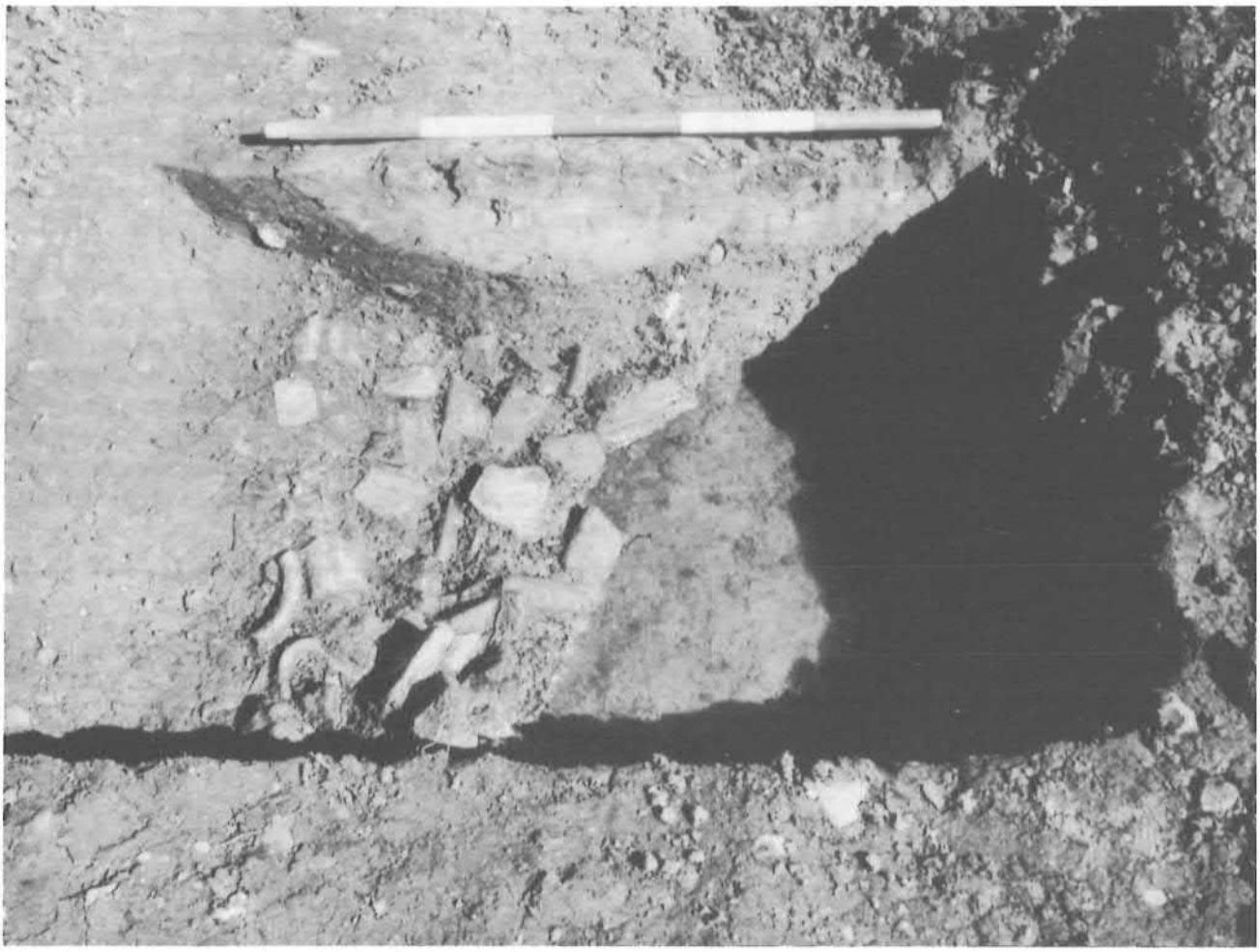


Plate 12: MK357; section through Ditch 6, showing deposit of broken kiln bars and pottery (*MKAU*).

A longitudinal section was excavated on the north-east side, showing the ditch to be only 0.25 m deep at the centre, with a shallow 'V'-shaped profile.

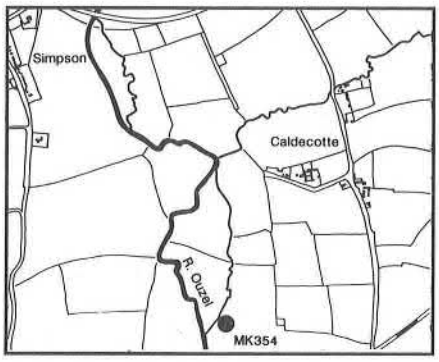
Seven metres to the east of the kiln, a 4.0 m length of ditch (6) with two rounded butt ends was excavated. It was aligned north-south, and measured 1.3 m in width. Towards its centre the ditch had a shallow 'V' shaped profile 0.6 m deep, reducing to 0.3 m at the southern butt end. For much of its length, its lower fill consisted of a 100-mm-thick layer of dark grey/black charcoally silty clay, containing a high proportion of pottery sherds and broken kiln bars, as well as small fragments of burnt clay (Plate 12). This deposit (10) was much thicker on the western side of the ditch, petering out to a thin lens on the eastern side, suggesting it had been tipped into the ditch from the western side, presumably as waste from the kiln. Above 10 was a layer of medium to dark grey silty clay (8), containing a much smaller percentage of fired clay fragments. Above this was a large deposit of redeposited yellowish-blue natural clay (12). Layers 8 and 12 may have resulted from a later recut of the ditch, which would account for the truncated appearance of the upper part of Layer 10. Layer 12 may represent levelling of the site after Ditch 6 had become disused.

Running in an approximately east-west direction, 2 m to the south of the kiln was a ditch (16) 1.4 m wide, which was traced for a length of 10 m, terminating at its eastern end in a rounded butt end adjacent to the southern end of Ditch 6. This feature was not excavated.

Conclusion

It was evident that MK357 was the site of a kiln, producing pottery in a grey sandy fabric, of early to mid second-century date (Marney 1989, 100). Its proximity to and later date than Kiln I suggests that the small-scale production of pottery was carried on at Caldecotte from the mid first to the mid second century. Evidence for similar small-scale pottery production, also in the form of two kilns, has since been located at Wavendon Gate, 2 km to the north-east (Williams *et al.*, forthcoming). Although little evidence remained *in situ* of the kiln structure, the kiln furniture recovered from Ditch 6 allows identification and discussion of the kiln type to be attempted (p.180).

In view of the limited nature of the excavation, little can be said of the functions and relationships of the other features located adjacent to the kiln.



Mill Close South (MK354)

R.J. Williams

Introduction

In June 1982, topsoil stripping for Caldecotte Lake uncovered a Roman site in Bow Brickhill parish, at SP 8905 3489. The site was 110 m east of the River Ouzel, at the junction of the first gravel terrace and Oxford clay, on level ground at 66 m OD (Fig. 4).

Topsoil stripping in this area was immediately followed by excavation of the subsoil to a depth of several metres below the existing ground level to form the lake bed. Because of the speed of these operations, the writer was able only to record the presence of Roman soil features and a possible stone wall before the site was destroyed.

As in the case of MK351, a supervised metal detector survey of the site was carried out.

Description

The visible soil features were concentrated in an area approximately 30 m across. No features were excavated, and planning of the site was impossible because of deep ruts caused by the contractor's earthmoving machinery.

On the north side of the area, a patch of large quartzite pebbles and ironstone blocks was noted. The pebbles were derived from local riverine deposits, while the ironstone originated from deposits in the Greensand forming the Woburn Sands Heights, 2 km to the east. Although badly disturbed, evidence of a possible wall one course high could be seen at one point.

Finds

A few finds were recovered from the surface of the site, including a fragment of rotary quern and several fragments of clay tiles, including a piece of *tegula*. The metal detector survey recovered a number of objects, including three copper alloy coins, two of which were identified as of mid fourth-century date. A very badly preserved small disc brooch (Fig. 58.6) was dated to the third century, and one lead steelyard weight (RMK, no.208) and three disc-like weights or counters made of lead were also found (p.143, objects 216–218), along with several fragments of waste lead and unidentifiable bronze.

The pottery assemblage consisted of almost seventy sherds of unstratified material picked up from the rutted surface. Apart from a number of hand-made Saxon sherds, the assemblage has been dated to the mid to late fourth century, the more diagnostic forms suggesting a post-350 date.

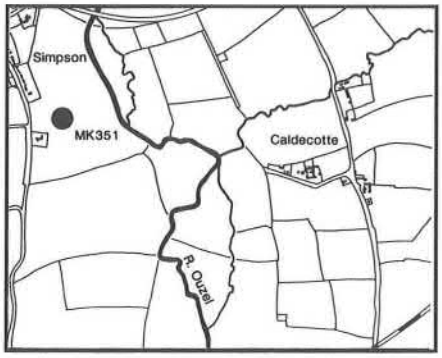
Discussion

In the light of the limited evidence available, detailed discussion of the site is not possible. In a local context, the site's importance lies in its period of occupation. With the exception of one sherd, there is nothing to suggest occupation at MK354 before the middle of the fourth century.

Object type	*Pub. No.*
Brooch	6
Brooch	7
Stud	18
Buckle	27
Buckle	33
Buckle	34
Knob	199
Knob	200
Steelyard weight	216
Weight/gaming piece	217
Weight/gaming piece	218
Decorative strip	357
Lead sheet	411

All above objects are unstratified.

TABLE 3: Mill Close South (MK354); concordance table of illustrated objects/contexts.



Simpson (MK351)

R.J. Williams

Introduction

Observations during topsoil stripping for Caldecotte Lake in September 1981 revealed a number of late Iron Age and early Roman soil features at the north-west end of the lake basin at SP 8843 3569, adjacent to Simpson village (Fig. 27a). The site was 200 m west of the River Ouzel on flat glacial gravel, at 67 m OD (Fig. 4).

The site was first noted as a number of soil features cut into the gravel subsoil. An area to the east of these features had been badly disturbed, but to the west other features extended beneath an unstripped area.

A small mechanical excavator was used to clean the stripped area, which measured approximately 30 × 60 m. Four trenches, 2 m wide and 10 m apart, were excavated westwards for a distance of 36 m (Fig. 27b) in an attempt to define the limits of the site. In the time available, it was possible only to clean and plan the features, and to collect any finds visible in their upper layers.

In addition, a gridded metal detector survey of the site and surrounding area was carried out by the Newport Pagnell Metal Detector Club. All the finds were three-dimensionally plotted, and the highest concentration was found to correspond to the area of densest features, suggesting that little peripheral domestic settlement had been missed.

A much abridged report on MK351 was included in RMK (p.49). The following version, which is more complete and includes a plan, has been included in this volume because of the site's relationship to the other Ouzel Valley Roman sites examined at Caldecotte.

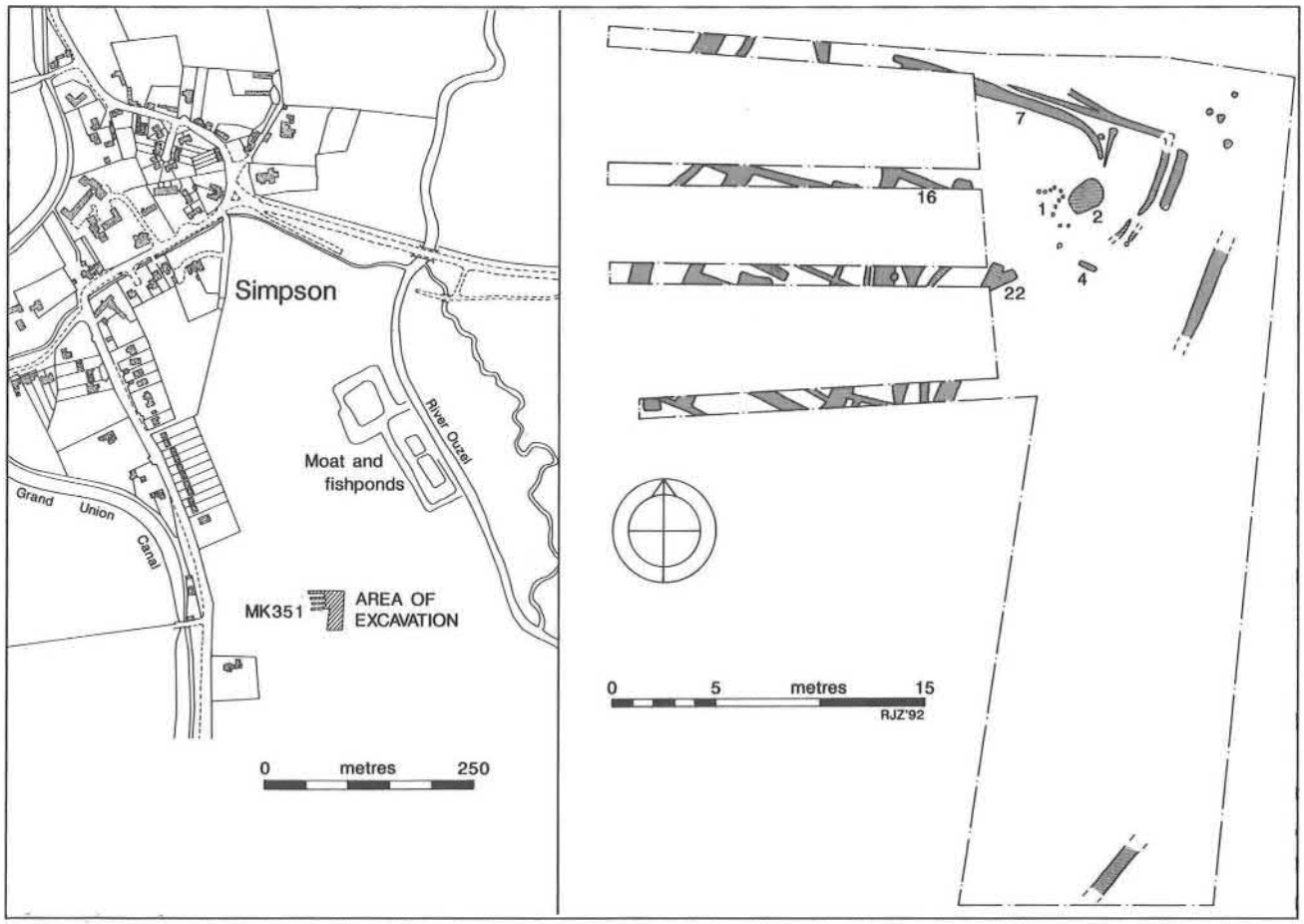


Figure 27: MK351; overall plan.

Description

Most of the features noted were confined to the northern part of the stripped area. Some were traced westwards in the trial trenches, which revealed additional features. It was evident that the site extended further in all directions, but circumstances did not permit a more comprehensive examination. However, a number of general observations can be made. Most of the recorded features formed part of a series of ditches and gullies between 0.5 m and 2.0 m wide, aligned north-south or east-west in a rectilinear pattern, apparently representing several phases of field systems or enclosures. Most were very straight, with the exception of Ditch 7, which curved towards the south at its east end.

Feature 4 was excavated, and found to be a shallow rectangular flat-bottomed slot 1.75 × 0.50 m and 100 mm deep, containing a heavy concentration of charcoal, although no fire-reddening of the subsoil or in-situ burning was noted.

The north-eastern terminal of Ditch 22 was also excavated and was found to have been cut by a later circular pit (47), which measured 1.30 m across and 0.75 m deep. This feature contained late first and early second-century pottery.

A group of twelve post holes averaging 250 mm dia. were located between the north-eastern terminal of Ditch 22 and Ditch 7. Several of these were excavated, and found to contain quartzite-gritted body sherds of early Saxon date. Part of a pottery spindle whorl of similar fabric (Fig. 68.104) was found lying on the subsoil, and the metal detecting survey located the head of a small early Saxon bronze longbrooch (Fig. 58.8).

Nearby was a sub-rectangular feature (2) 3.5 m in length. Although of similar shape and proportions to Saxon sunken-featured buildings, this only contained finds of a late first to early second-century date.

Finds

Pottery was recovered from sixteen of the recorded features. This ranged from Late Iron Age hand-made pottery in Ditch 16 to the early Saxon sherds from the small post holes. Most of the pottery was dated to the early or middle first century AD, with smaller quantities of later first and early second-century material. Much of this later pottery, including most of that from the pit, was identical to that produced in Kiln 2 (Marney 1989, 100).

Ditch 16 was found to contain several fragments of circular fired clay plates 180 mm across and 30 mm thick, which had been pierced with a sharp circular tool. These are almost certainly fragments of kiln furniture (Angus *et al.* 1962, 956), although no other evidence for a kiln was found. Most of the associated pottery was a local Belgic grogged ware, dated to the early to mid first century AD.

The unstratified and topsoil sherds differed in date to that from the excavated features, ranging from the third to late fourth century, and including a small proportion of Oxford wares. This apparent gap in occupation is also reflected in the coin assemblage (p.177).

Apart from two post-medieval bronze crotals and several buckles, a number of copper alloy, iron and lead objects of Roman date were found. These are listed in Table 4.

Of particular interest was the large number of lead objects, forty-six in all, found on the site. Over half of these were either waste sheet lead trimmings or droplets from casting, suggesting that lead working was taking place on site. Among the other objects found were thirteen hollow lead tubes, probably used as sinkers for fishing lines or nets. These are described elsewhere (p.158; Fig. 98.348).

Discussion

From the limited evidence available, it is difficult to make any detailed observations concerning the character of the site. Apart from the post holes which probably represented an early Saxon timber post-built structure, no evidence of earlier buildings was found. Most of the Roman features were drainage or boundary ditches, laid out in rectilinear patterns.

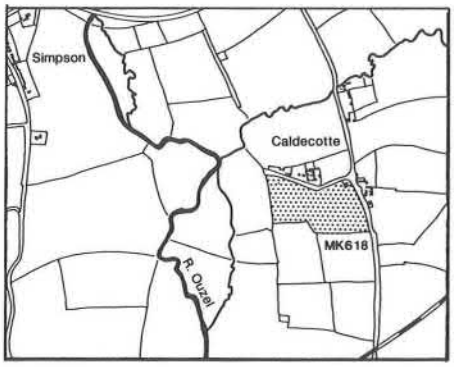
The quantity and types of finds present accord well with the interpretation of the site as domestic. On ceramic evidence alone, the recorded features date from the late Iron Age to late first or early second century, although the date ranges of the unstratified pottery and the coin assemblage suggest a continuation of activity in the area into the fourth century.

In conclusion, MK351 appears to have been a small native settlement of the Roman period, lying just above the river flood levels on a well-drained site. Its inhabitants were probably engaged in the small-scale manufacture of pottery and lead objects. The relationship of this site to others in the vicinity is discussed elsewhere in this volume (p.50ff).

Object type	*Pub. No.*
Brooch	5
Brooch	8
Hairpin	12
?Strap end	20
Copper alloy buckle	23
Copper alloy buckle	25
Spindle whorl	103
Spindle whorl	104
Steelyard weight	215
Iron buckle	230
Iron buckle	231
Crotal	236
Fishing weights	348
Spearhead	352

All above objects are unstratified.

TABLE 4: Simpson (MK351); concordance table of illustrated objects/contexts.



Caldecotte Village (MK618)

J.S. Roberts

Introduction

This project, the final excavation undertaken by the Milton Keynes Archaeology Unit, began in September 1990 on the earthworks of the medieval village at Caldecotte in *Well Close* (SP 894353). The background to this excavation, and the constraints placed upon it by English Heritage, are detailed elsewhere (p.4), and shown in Fig. 28.

Prior to excavation a detailed contour survey of the area available for archaeological investigation was begun, and extended during the excavation to cover all of Well Close (Fig. 6). This was used in conjunction with a study of the available documentary and aerial photographic evidence for the site in order to decide which parts of the area earmarked for development, some 35,000 sq. m, should be investigated. Also taken into account in this study were the results of earlier excavations in Berrystead Close, the field to the west of the village earthworks (MK44, MK619).

As a result of this preliminary investigation four areas were targeted for topsoil stripping. *Area 1*, covering approximately 14000 sq. m in the south-east corner of the field, included much of the hollow-way, as well as several ditched enclosures. *Area 2*, covering 1200 sq. m, was opened to the north to examine a part of the site devoid of any visible earthworks. *Area 3*, measuring 3600 sq. m, was excavated to test an area of ridge-and-furrow to the west of Area 1 for traces of earlier occupation. *Area 4*, covering 2700 sq. m in the south-west corner of the site, was opened to ascertain the eastward extent of the Roman features noted in MK44, and to examine the hollow-way which formed the western boundary of the site.

Dating Summary

The stratigraphic evidence from Area 1 indicated three periods of activity:

Period 1: Roman.

This was represented by a number of ditches which probably formed part of a field system dating from the first and second centuries AD. These ditches were probably related to the more extensive system (MK44) excavated in Berrystead Close, immediately west of Well Close.

Period 2: medieval.

Phase I: mid twelfth to late thirteenth century.

This phase consisted of plough furrows running east to west across Area 1. The hollow-way was also present in this phase and marked the east limit of the ridge-and-furrow.

Phase II: late thirteenth to mid fourteenth century.

In this phase Area 1 was taken out of the field system. Four crofts, each of which contained at least one building, were laid out to the west of the hollow-way, which apparently continued in use during this phase.

Phase III: late fourteenth to early fifteenth century.

By this time the crofts in Area 1 had been abandoned and their ditches allowed to silt up. An effort was made to return the area of Crofts A and B to the plough. The evidence for this was a series of furrows running north-west to south-east, which seemed to respect the hollow-way. A dovecote, animal pen and pond occupied the south-west corner of Croft C.

Period 3: post-medieval.

During the mid seventeenth to mid eighteenth centuries an enclosure bounded by two ditches was laid out, one of the ditches cutting into the silted-up hollow-way. Four buildings were erected within this enclosure.

***Period 1** (Fig. 29).*

Three ditches (931, 1156, 1345) represented the earliest period of activity in Area 1. Ditch 931 was traced for some 64 m , running across the west half of the area on a north-south alignment. At its north end it was cut by Ditch 1019, to the north of which it could not be traced, although later widening of the medieval hollow-way at this point might have destroyed any evidence of its continuation. At its north end 931 was between 500–800 mm wide and 300–350 mm deep, widening to about 1.0 m as it progressed southward. It had a 'V'-shaped profile and a single fill, which contained second-century pottery (Fig. 31, S1). As a result of disturbance related to the Period 2/III pond, its southward extent could not be ascertained.

Running west from Ditch 931, close to the south edge of the later Croft A, was Ditch 1345. It was traced for some 31 m to the edge of the excavated area. Its 'U'-shaped profile varied between 620 mm and 1.0 m in width and 350–400 mm in depth (Fig. 31, S2). Its fill contained second-century pottery.

Ditch 1156 ran parallel to and 26 m to the south of 1345, also starting from a right-angled junction with Ditch 931. It was traced westward for 19 m, to the edge of the excavated

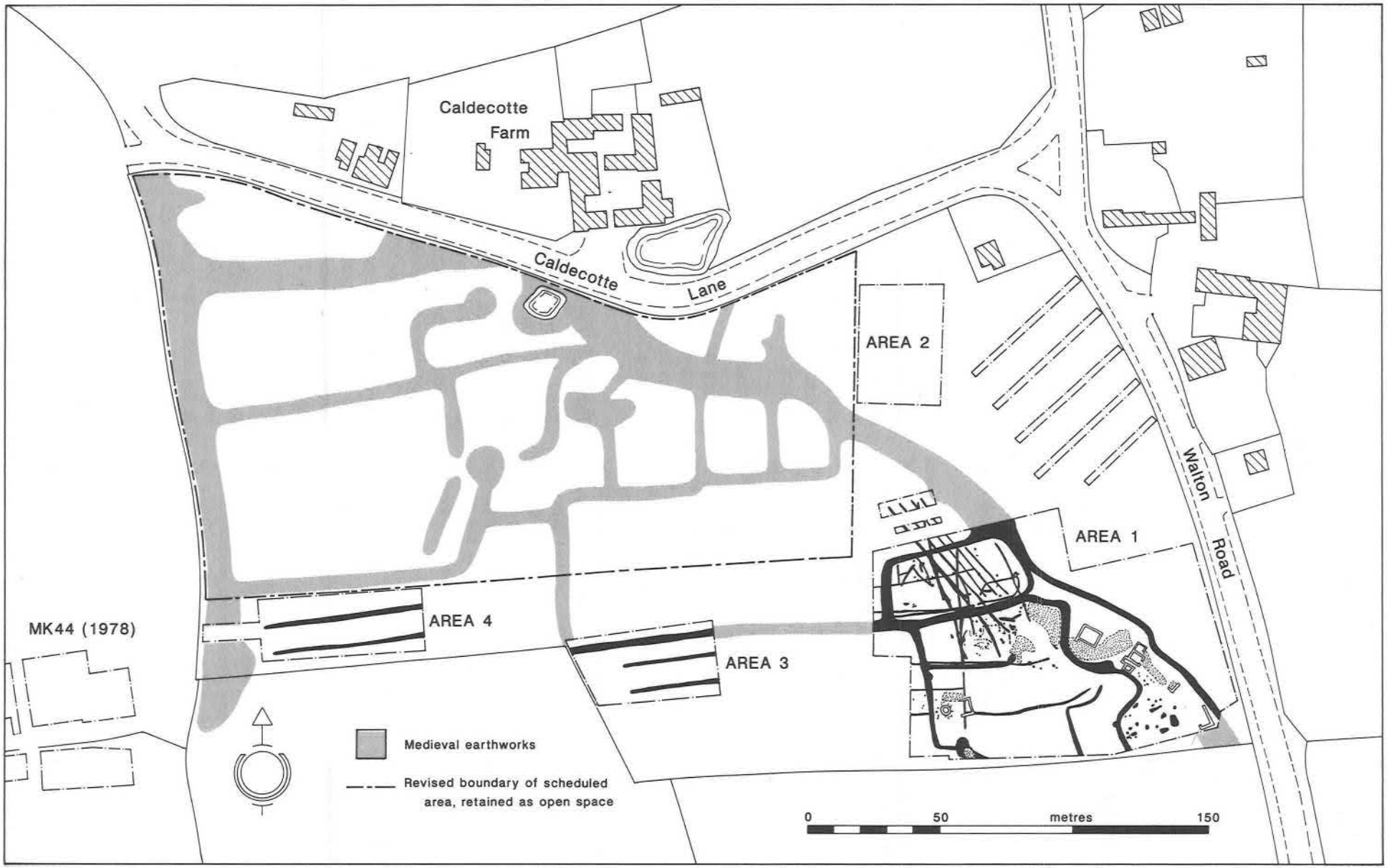


Figure 28: MK618; overall site plan.

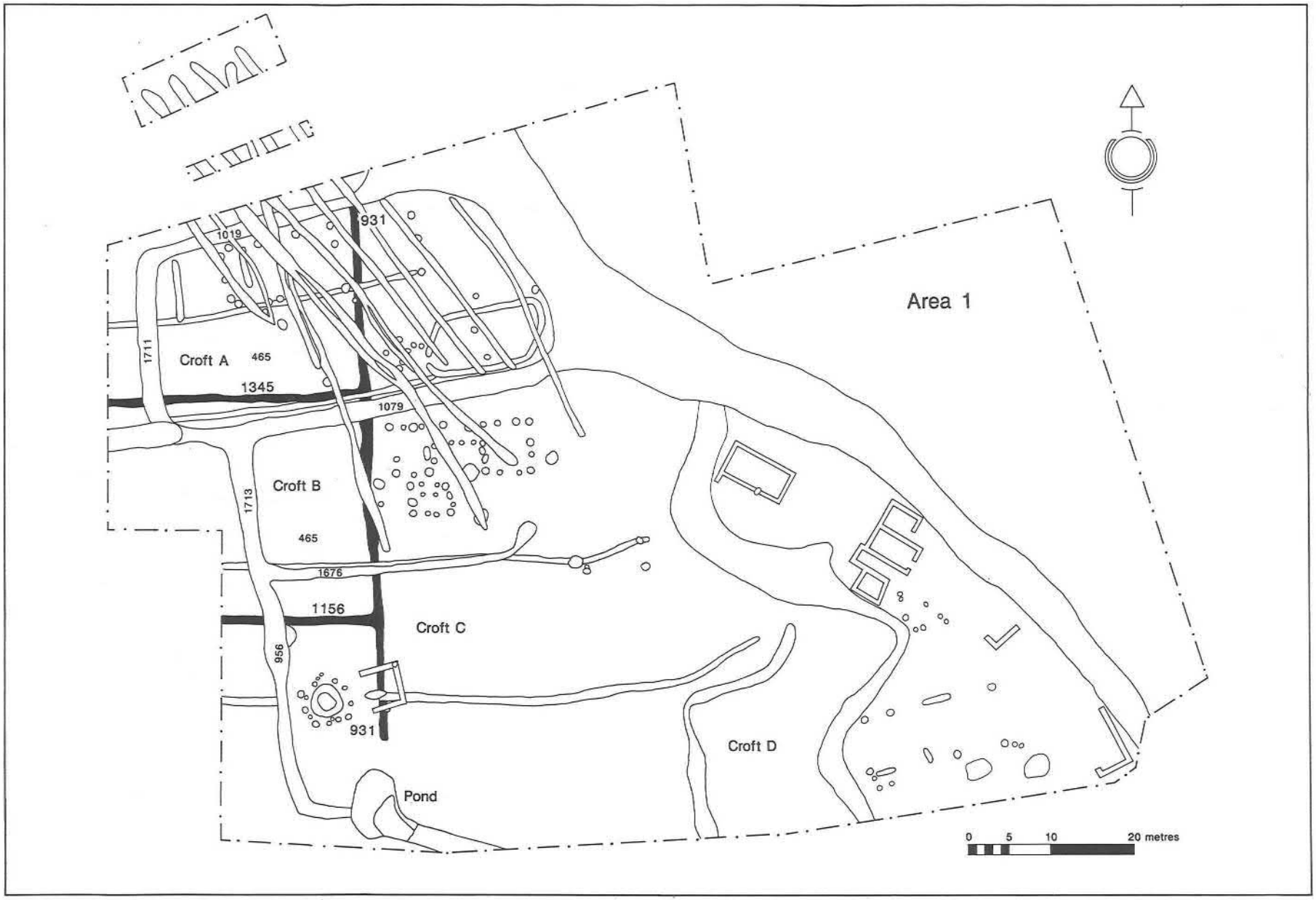


Figure 29: MK618; Area 1, Period 1.

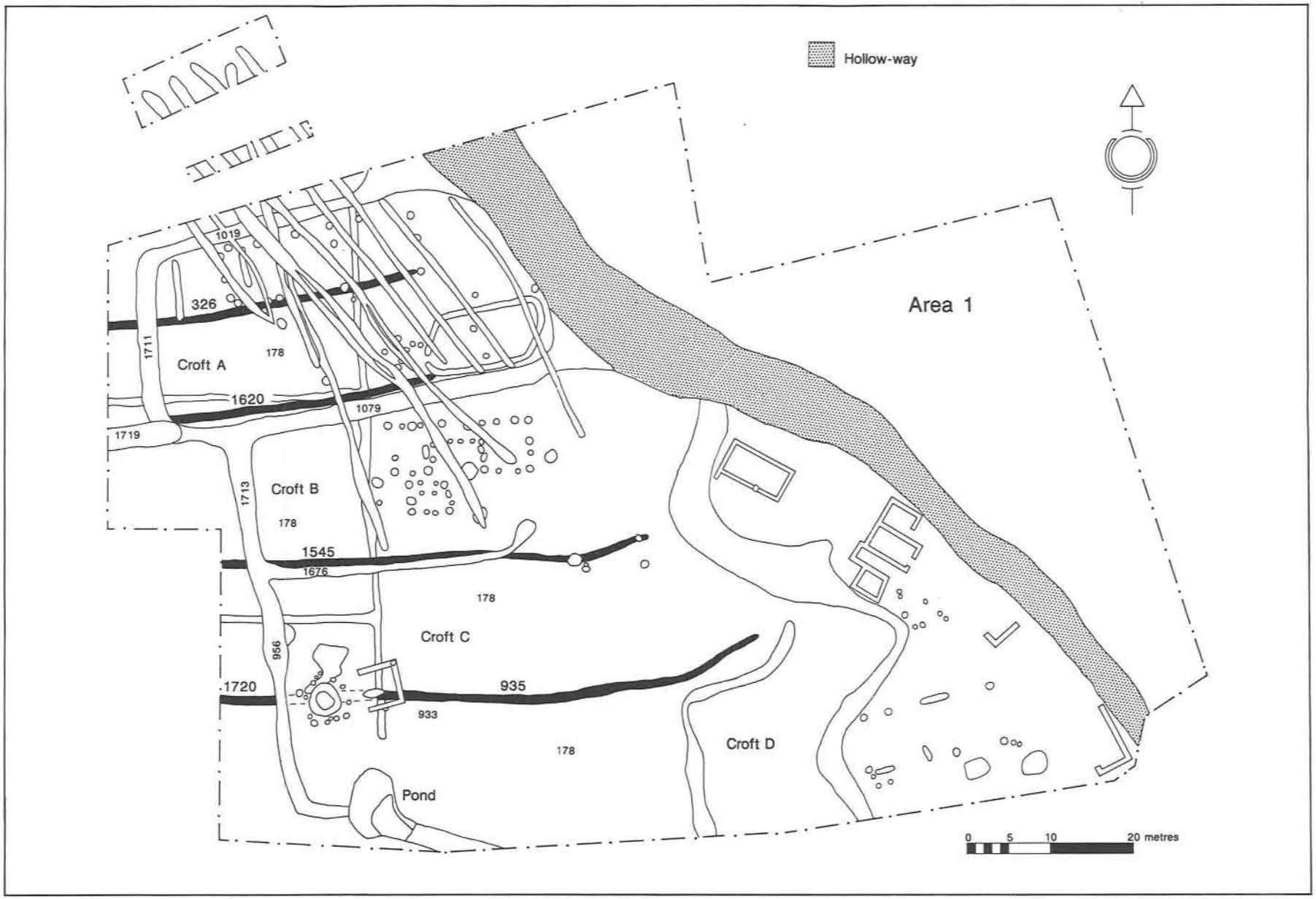


Figure 30: MK618; Area 1, Period 2.

area. Its dimensions and profile were very similar to 1345 (Fig. 31, S3).

These features were cut into the Oxford clay subsoil or, in the case of the extreme west of Ditches 1156 and 1345, into the river terrace gravel. To the west of Ditch 931, in those places where the later periods of ploughing and building were less intensive, an intermediate layer (465) was observed between the subsoil and the later occupation and ploughsoil layers. It was a mixture of this layer and the clay and gravel subsoils which formed the fills of these three features. Context 465 produced the largest amount of first and second-century pottery found in Well Close.

Discussion

The rectilinear pattern formed by Ditches 931, 1156 and 1345, and the presence of Roman sherds both in their fills and in the associated Layer 465, suggests that they formed part of a field boundary system dating from the first or second century AD, contemporary with the activity noted to the west on MK44. What is surprising was that nothing of a definitely Roman date was found in Areas 3 or 4, which lay between Area 1 and MK44. It is possible that evidence of Roman activity was found only in Area 1 because it was covered by later crofts, rather than remaining in continuous cultivation during the medieval period like Areas 3 and 4. The west ends of 1345 and 1156 which were outside the croft ditches were probably preserved by the new plough headland that built up as a result of the creation of the crofts.

Period 2

Phase I (Fig. 30)

This was represented by four more or less parallel gullies extending east across Area 1 from its west edge. The most northerly of these, Gully 326, was traced for about 39 m beneath the later Croft A. On average it was 450 mm wide and 250 mm deep, with gently sloping sides and a curved base (Fig. 31, S4). A single fill (452) produced pottery of early to mid thirteenth-century date.

Gully 1620 was 11 m to the south of 326, and terminated directly to the south of the east terminal of 326. Close to the west edge of the excavated area its course had been obliterated by the later ditches 1711 and 1719. Excavation of 1620 showed it to be 600–800 mm wide and 200–300 mm deep, with steep sides and a flat base (Fig. 31, S5).

Twenty metres to the south of 1620 was Gully 1545, which was traced for some 52 m. Several sections through 1545 showed it to be 500–800 mm in width and 170–280 mm deep (Fig. 31, S6), with gently sloping sides and a curved base. Pottery recovered from its fill was dated to the mid to late thirteenth century.

The southernmost of these features was Gully 935 which lay 12 m to the south of 1545 and ran east to west for 48 m. At its west end some 10 m of this feature had been destroyed by the construction of the Period 2/III dovecote, and it is probable that Gully 1720 was a continuation of 935. Sections through 935 showed that on average it was 700 mm wide and 250 mm deep, with steep sides and a flat base (Fig. 31, S7). A single fill (934), contained thirteenth-century pottery.

The layer of ploughsoil associated with this phase (178) covered most of Area 1 to an average depth of 200 mm and sealed the Period 1 features (Fig. 31, S1). Elements of 178 also formed a large part of the fills of 326, 935, 1545, and 1620, making it difficult to distinguish ploughsoil from fill

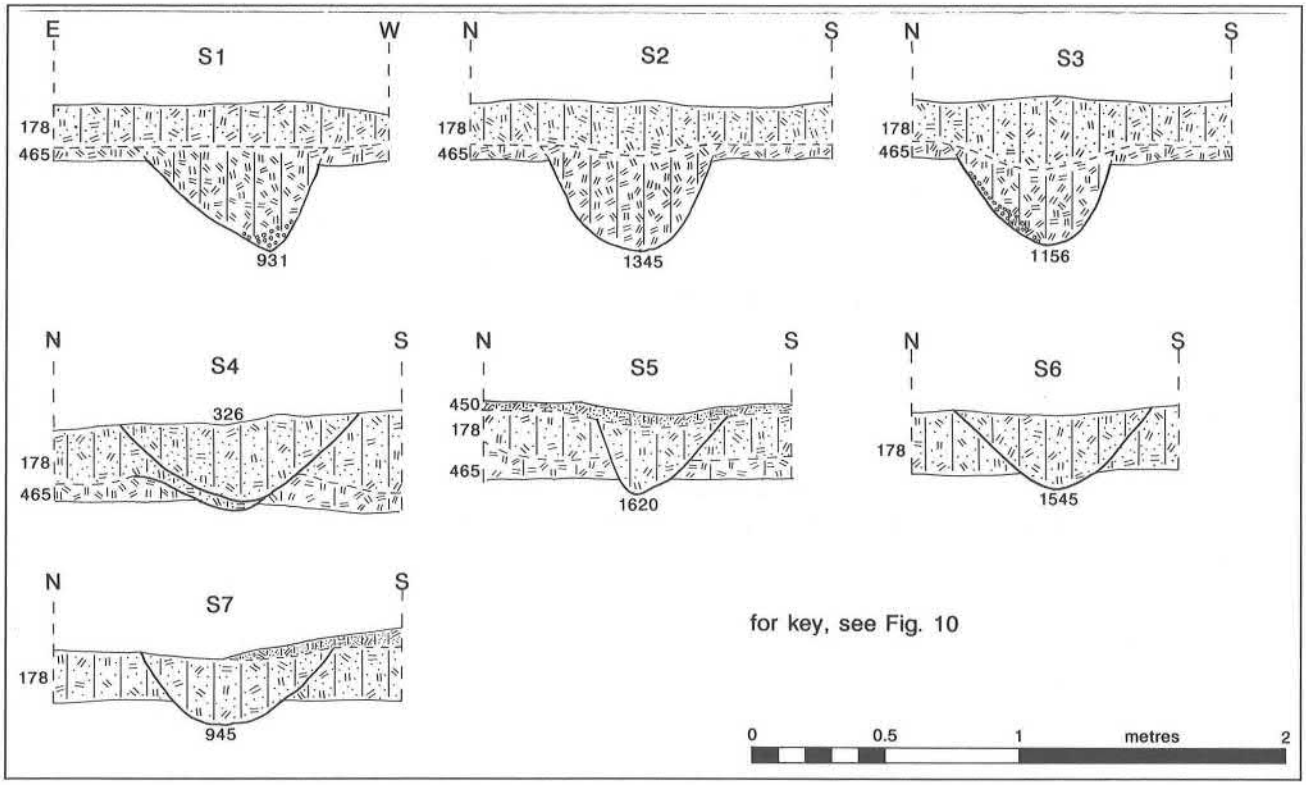


Figure 31: MK618; Periods 1 and 2/I, sections.

in these features. This task was simpler where these gullies cut into Period 1 features (Fig. 31, S4).

Discussion

These gullies appear to be the remains of medieval ploughing on the same alignment as the extant ridge-and-furrow to the west of Area 1. The impression given is that the field system once extended eastward as far as the hollow-way, beneath the Period 2/II crofts.

Two points raised by the existence of this phase of ploughing are important when considering the development of the medieval village of Caldecotte. First, it seems reasonable to assume that this area was being ploughed in medieval times by people living at Caldecotte. This means that the crofts which were later established west of the hollow-way represent a period of expansion of the village. Second, excavation of Areas 1 and 2 produced no evidence of either occupation or cultivation to the east of the hollow-way. This suggests that the hollow-way was in use at the time of this phase of ploughing, and acted as an eastern limit for it.

Phase II (Fig. 32)

This phase represents an expansion of the settlement at Caldecotte. Four crofts, bounded by ditches, were laid out to the west of the hollow-way. Each of these contained a long-house, while there were also ancillary buildings on Crofts A and B. There were no direct stratigraphic links between any of the buildings or between the buildings and the ditches. This means that their grouping together within the same phase is based upon their stratigraphic relationships with features of other periods and phases, particularly the fact that they all cut Layer 178 (Period 2/I), and upon their alignment and positioning with regard to each other.

Croft A

All the features associated with this phase in Croft A were cut directly into the Phase I ploughsoil.

Building 1: (Fig. 33) was rectangular in shape, measuring 23 m east to west and 7.0 m north to south. Its outline was marked by fifteen postholes. The north wall of the building consisted of six postholes. The spacing between the central four was about 4.0 m, with a gap of 3.0 m at the west end and 6.0 m at the east end. For the most part all were of similar dimensions, wider than they were deep and 'U' shaped in profile. Their diameters ranged from 180–300 mm and their depths between 120–200 mm. Although some were cut by later gullies, it seems that all these postholes survived more or less to their full depth, and were in some cases sealed by the plough-soil (450) associated with Phase III (Fig. 31, S5).

The east wall consisted of three postholes. 1760, which marked the north-east corner of the building, was 260 mm in diameter and 200 mm deep. The central posthole measured 200 mm in diameter and was 140 mm deep. The posthole (1768) which marked the south-east corner of the building was 200 mm in diameter and 120 mm deep. All three postholes were 'U'-shaped in profile.

The south wall consisted of five unevenly spaced postholes. Between 1768 and the posthole to the west of it (958) there was a gap of 8.0 m. 958 was considerably larger than the other postholes, measuring 480 mm across and 300 mm deep, with steep sides and a flat base. It is likely that an intermediate posthole between 958 and 1768 had been destroyed by later ploughing, especially as a posthole existed in the corresponding position in the north wall. Moving west there was a gap of 7.0 m followed by three postholes in the space of 2.0 m. The dimensions of these three were much closer to the average for the postholes associated with Building 1. The largest and most westerly (1547) was 200 mm in diameter and 150 mm deep, with a 'U'-shaped profile.

There was no single posthole to mark either the south-west or the north-west corners of the building. The west wall was 500 mm to the west of 1547 and was only 5.0 m long, 2.0 m shorter than the distance between the north and south walls. It consisted of three postholes, all with 'U'-shaped profiles. The smallest (864) had a diameter of 180 mm and was 150 mm deep.

Only two features possibly associated with the interior of the building were discovered. A single posthole 7.0 m to the west of the east wall may mark the location of an internal division, though no other evidence for one was found. Gully 1477, 2.5 m to the east of the west wall, ran downhill on a north-south alignment. It was 4.5 m long, began 200 mm from the north wall and ended 1.8 m short of the south wall. It was 160 mm wide and 200 mm deep, with near-vertical sides and a curved base.

Five metres to the west of this building was Gully 1192 which ran north-south for 7.0 m. This feature was 400 mm wide and 120 mm deep, with steep sides and a flat base. Although not linked to Building 1, it is worth noting that this feature was as long as Building 1 was wide, and that its north and south ends aligned with the north and south walls of the building, suggesting that Building 1 may have extended 6.0 m further west than its apparent west end. This would have made it 30.0 m long, so if 1192 is a structural feature it is probably more likely that it represents the remains of another building constructed on the same alignment as Building 1.

To the south of Building 1 was a large, roughly circular pit (1558) measuring 1.1 m × 900 mm across and 200 mm deep, with gently sloping sides and a flat base. A similar pit (1595) was situated 18 m to the south. The apparent randomness of their positioning and their shallow depth make it unlikely that their purpose was structural, but what function they did serve was unclear.

Building 2: (Fig. 33) was located in the south-east corner of Croft A. Its outline was formed by 1124, a continuous gully which described a roughly trapezoidal shape measuring 10 × 6 m, with rounded corners. A 600 mm gap in its west side probably marked the entrance. The gully was 440–750 mm wide and 230–300 mm deep, with near-vertical sides and a

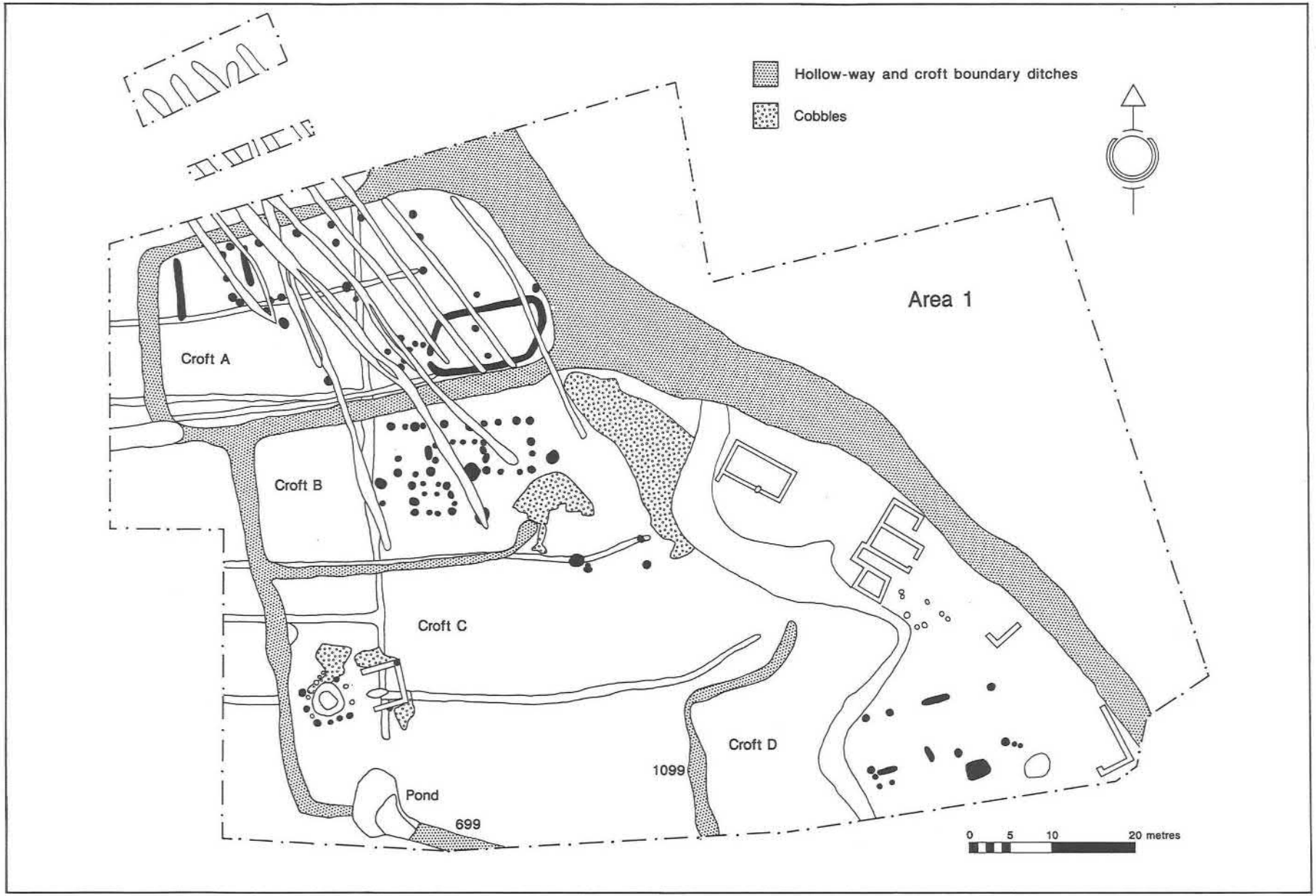


Figure 32: MK618; Area 1, Period 2/II.

flat base (Fig. 36, S160/6). There were two postholes within the area enclosed by this trench. One was 1.0 m south of the north side of the of 1124, and the second almost 1.0 m north of the south side.

Outside the area defined by 1124 was a row, 3.5 m long, of four postholes running parallel to the west side of the gully at a distance of 2.0 m. Midway between the northern posthole and 1124 was a fifth posthole. To the west and north-east of 1124 were two pits (1049 and 1552), each about 1.0 m in dia. and 200 mm deep, the purpose of which was unclear.

Boundary ditches: Croft A was bordered on three sides by ditches (Fig. 33), and on its east side by the hollow-way. The north ditch was 36 m long, running into the hollow-way at its east end, and had been recut twice, the second time on a more northerly alignment (Fig. 36, S11/8). Its earliest cut (871) was 600 mm deep and probably 1.0 m wide, with steep sides and a flattish, uneven bottom. The first recut (1019) had a 'V' profile, with a depth of 400 mm and a probable width of 800 mm. The final recut (1009) had a similar profile, 750 mm wide and 300 mm deep, and contained a land-drain.

The west ditch of Croft A was 22 m long, and showed a similar series of recuts (Fig. 36, S181/3). The earliest cut (1151) was 560 mm deep with a steep east side and a flat base. The first recut (1711) was on a slightly more westerly alignment, and had a similar but slightly larger profile, 650 mm deep. The west side of 1171 had in turn been removed by 1141; it was 500 mm wide and 400 mm deep, and contained a land-drain.

The ditch forming the south side of Croft A was 50 m long, and contained a single recut (Fig. 36, S160/6). Very little of the earliest cut (1068) remained, as the recut (1079) seems to have closely followed its line. This recut, unlike those in the north and west ditches, was not truncated by a later field drain and was 1.3 m wide and 660 mm deep, with steep sides and a flat base.

It was apparent from excavation of the north-west corner of Croft A that the north and west boundary ditches (and their recuts) were one continuous feature. It is probable that the same relationship existed between the west and south boundary ditches, but all trace of it had been destroyed by the later Ditch 1719.

Croft B (Fig. 34)

Within this croft two buildings were identified, their outlines marked by rows of post and stake-holes.

Building 3: this structure (Fig. 35) measured 17 × 6 m, and was situated close to the north boundary of the croft, but on a slightly different alignment. Its north wall was marked by a line of eleven postholes. Posthole 1724 formed the north-west corner of the building and was 360 mm dia. and 230 mm deep, with steep sides and a flat base (Fig. 41, S1). The north-east corner was marked by Posthole 1581, 290 mm dia. and 180 mm deep. Of the remaining nine postholes, eight had the same profile as 1724, but measured 200–270 mm dia. and 150–200 mm deep. Almost midway along the north side, Posthole 1419 measured 600 mm wide and only 80 mm deep, with shallow sloping sides, suggesting that it did not serve a structural purpose.

The west wall of the building was 6.0 m long, formed by four postholes. The south-east corner was marked by Posthole 1276, which was 600 mm wide and 280 mm deep, with a 'U'-shaped profile (Fig. 41, S2). Between it and Posthole 1581 were two postholes, slightly smaller in size than those in the north wall but with the same profile. Between them were two stakeholes, each 80 mm in dia. and 100 mm deep.

The line of the south wall was marked by six postholes and a larger feature (1168). Between the latter and Posthole 1276 were three postholes, similar in size and profile to those in the north wall. A fourth similar posthole was located 4.0 m east of Posthole 1223, which formed the south-west corner. A group of four stakeholes midway between this posthole and 1223 probably marked the location of an internal feature close to the south wall.

The west wall of Building 3, 5.5 m long, was marked by a row of four closely-spaced stakeholes which ran north for 2.0 m from Posthole 1223. These measured 80–130 mm dia. and 100–140 mm deep.

Inside the building were several alignments of post- and stakeholes, probably representing partitions. About 5.5 m from the east wall was a row of three closely spaced, shallow oblong postholes. The smallest measured 800 × 500 mm and 110 mm deep, and the largest 1.0 × 0.6 m and 200 mm deep. All had steep sides and a flat base.

From the northernmost of these features a row of four postholes ran west for 5.5 m parallel to the north wall, at a distance of 2.0 m. These postholes were smaller in size than those that formed the outline of the building. The largest was 150 mm in dia. and depth, and all four were 'U'-shaped in profile.

From the western end of this row a line of six stakeholes ran south to rejoin the south wall line. These stakeholes were of similar dimensions to those in the west wall, with near-vertical sides and pointed bases.

These internal partitions formed three rooms within Building 3 (Fig. 35). The west room (*Room A*) measured 3.5 × 6.0 m. It contained a single internal feature (1670), cut directly into the Phase I ploughsoil (178). This feature ran parallel to the east wall of the room and was oblong, with rounded corners. It measured 1.5 × 0.75 m and 100 mm deep, with steep sides and a curved base. The four stakeholes which made up the west wall of Room A, which was also the west wall of the building, only ran for 2.5 m of the distance between the north and south walls, leaving a gap of 3.5 m

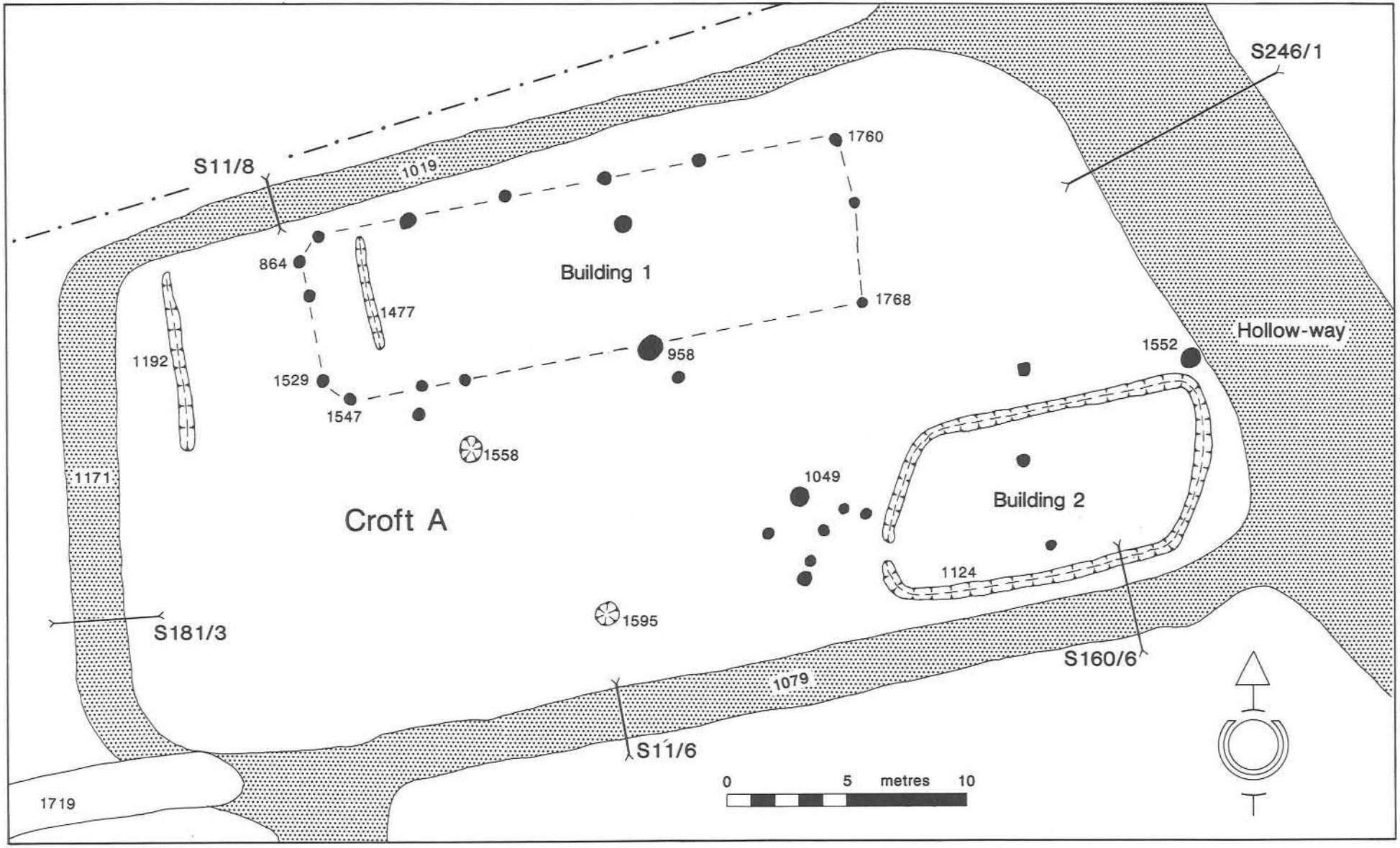


Figure 33: MK618; Croft A, Period 2/II.

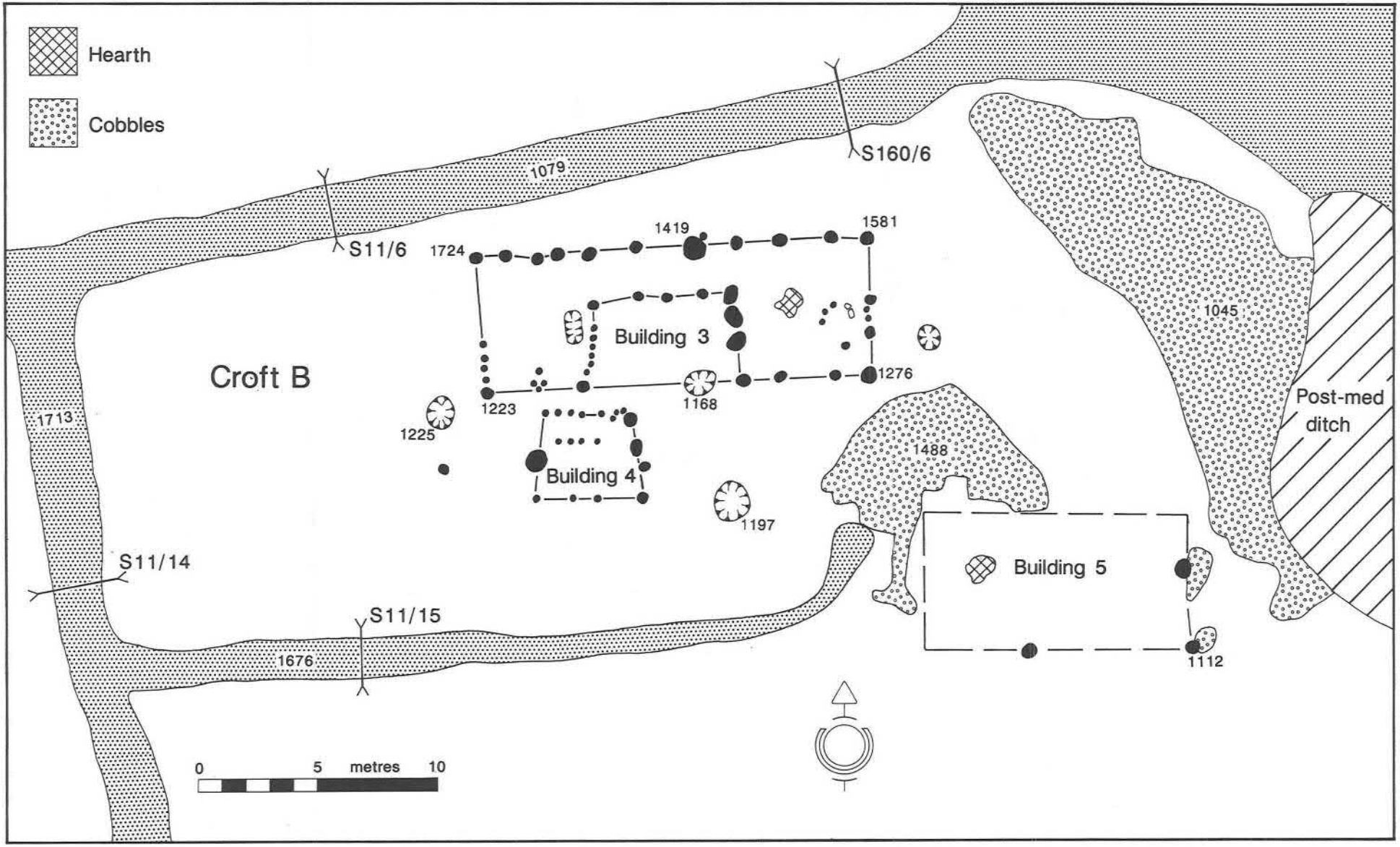


Figure 34: MK618; Croft B, Period 2/II.

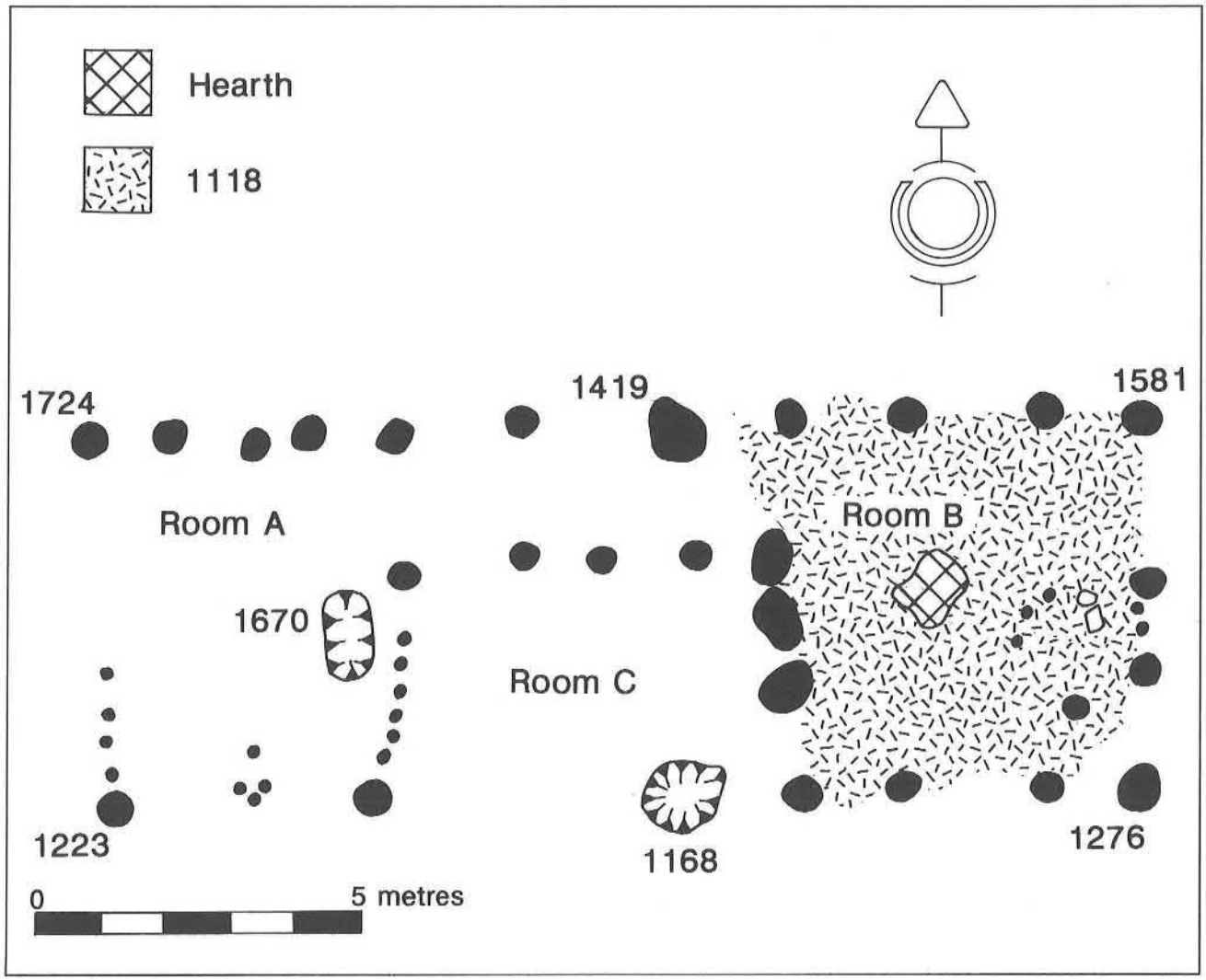


Figure 35: MK618; Croft B, Building 3.

that might indicate the position of an entrance or gateway. This interpretation is reinforced by the nature of the other walls of Room A. The north wall was constructed from closely spaced postholes, and the east wall was an internal division. The south wall might have contained an entrance. However, the proximity of Building 4 would surely have presented problems of access.

The outline of the east room (*Room B*) was further marked by a distinct occupation layer (1118). This was a dark brown silty clay containing charcoal, small fragments of ironstone, and pottery dating from the fourteenth century. This layer covered an area 6.0 m sq., and survived to a maximum depth of 40 mm. Room A also contained one of only two hearths found in association with the medieval buildings at Caldecotte. It was situated near the centre of the room and consisted of a shallow pit, 1.0 × 0.6 m across and 70 mm deep. Its fill was principally charcoal, and its flat clay base was reddened through burning. Several other features were present in this room. Three stakeholes and two fragments of ironstone were grouped together to form a semi-circle, and there was a single small posthole in the south-east corner of the room. The purpose, if any, of these features was unclear.

Separating these two rooms was *Room C*. It measured 6.0 × 3.5 m and differed from the other two in that it that it did not span the complete width of Building 3. This was because a passage 2.0 m wide and 6.0 m long ran behind Room C, linking Rooms A and B. No internal features were discovered in this room, and as with Room A there was no occupation layer present. Although this area has been interpreted as a room it is possible that its south side was open and that it served as a three-sided covered 'bay' rather than a conventional room. Although a row of postholes clearly defines the north wall none were found which would represent the south wall of the room. The only feature present in a position where an element of this south wall might have been expected was 1168, and its dimensions make it unlikely that it served a structural purpose.

Even if Room C lacked a south wall, it is possible that the three distinct areas within the building each served a particular purpose. The presence of a hearth suggests that Room B was a living room. Room A was probably used as a byre, with a wide entrance in the west wall. The use of stakes rather than posts in its construction suggests that it had low hurdle walls on two sides. There is no indication of the

function of Room C. However, an open-ended room would have provided a useful temporary shelter for animals and a well-lit but sheltered work area for the occupants of the building.

Midway along the south wall, opposite 1419, was a large oval feature (1168). It measured 1.4 × 1.0 m and was 770 mm deep, with steep sides and a flat base (Fig. 41, S3). It seems too large to have been a posthole, and although its fill contained some pottery and a noticeable amount of charcoal, these were not present in sufficient quantities to conclude that it functioned as a rubbish pit. Another possibility is that it acted as a sump, a function to which it was eminently suited as it was never dry during the six months of the excavation. Alternatively, it could have been a small clay pit, dug to provide materials for the buildings in Croft B. This explanation could also apply to a number of other features within Croft B (eg. 1197 and 1225) and also perhaps to those circular features outside the buildings in Croft A (1558, 1595, 1049 and 1552) which were similar in size and shape to 1168 and did not seem to have any structural purpose.

Building 4: situated 1.0 m to the south of Building 3 and trapezoidal in shape. Its south wall was 4.5 m long and its north wall 3.5 m, while the west and east walls measured 3.5 m. The east wall consisted of a line of four postholes which decreased in size from north to south. The north-east corner posthole was 350 × 200 mm and 130 mm deep, while the posthole at the south-east corner measured 130 mm dia. and 70 mm deep. Although of different sizes all four postholes had the same profile, with steep sides and a flat base.

At right angles to this line of postholes ran three rows of stakeholes. The northernmost row, forming the north wall of Building 4, was 3.8 m long and consisted of eight stakeholes. Three were closely grouped near the north-east corner of the building, and from this group a line of five ran westward. All eight had very similar dimensions to those associated with Building 3, 80–100 mm in dia. and depth.

The central row of four stakeholes did not divide the building equally, being positioned 1.1 m from the north row and 2.3 m from the south one. Both the central row and the three stakeholes which made up the south wall had dimensions closely corresponding to those of the north row. The west wall was marked by a gully 360 × 300 mm and 90 mm deep, with steep sides and a flat base. From these dimensions it seems unlikely that this feature was structural, but as with 1419 and 1168 there was no clear indication as to its function.

There were no features such as hearths or floor layers to indicate that this structure served as a dwelling. The use of stakeholes for external walls could suggest that it was not roofed, or if it was then a lightweight arrangement was probably all that could have been supported. This, along with its size and shape, suggests that the structure served as an animal pen or small stable, perhaps with the central row of postholes dividing it into separate stalls. If this interpretation is correct then the entrance to the structure would have been through a door in its west wall or, probably more likely, the west side of the structure was open.

Building 5: 10 m to the south-east of Building 1, and flanked by two cobble spreads, 1488 and 1045 (Fig. 34). Its outline was not as clearly defined as Building 3, the main indicator of its possible size and shape being provided by the edges of 1488. The south edge of these cobbles formed a right angle which marked the north-west corner of the building, with the cobbles extending along what would have been its north and west walls. It is possible that a widening of the west line of cobbles marked an entrance into the building, though there could equally have been one in the north wall.

Three postholes indicated the possible line of an east and south wall. These formed a right angle, with Posthole 1112 marking the south-east corner of the building. It was 250 mm in dia. and 170 mm deep, with a U-shaped profile. A small patch of cobbles lay alongside the northernmost of these postholes, and the straightness of its west edge suggested that it marked the line of the east wall.

From this evidence the building was rectangular, measuring 11 × 5.5 m. Within the building a shallow feature filled with a large amount of charcoal and burnt at its base probably served as a hearth. This was the only internal feature discovered in association with Building 5.

Authors's note: Since this report was prepared, it has been pointed out (pers. comm. J. Chenevix Trench) that Building 5, from its location, could belong with either Croft B or Croft C, and that no arguments are offered for its inclusion in the Croft B. From the alignment of the southern boundary of the latter (see below), it appears likely that Building 5 actually belongs in Croft C.

Boundary ditches: The north boundary ditch of Croft B has been dealt with under Croft A (p.66).

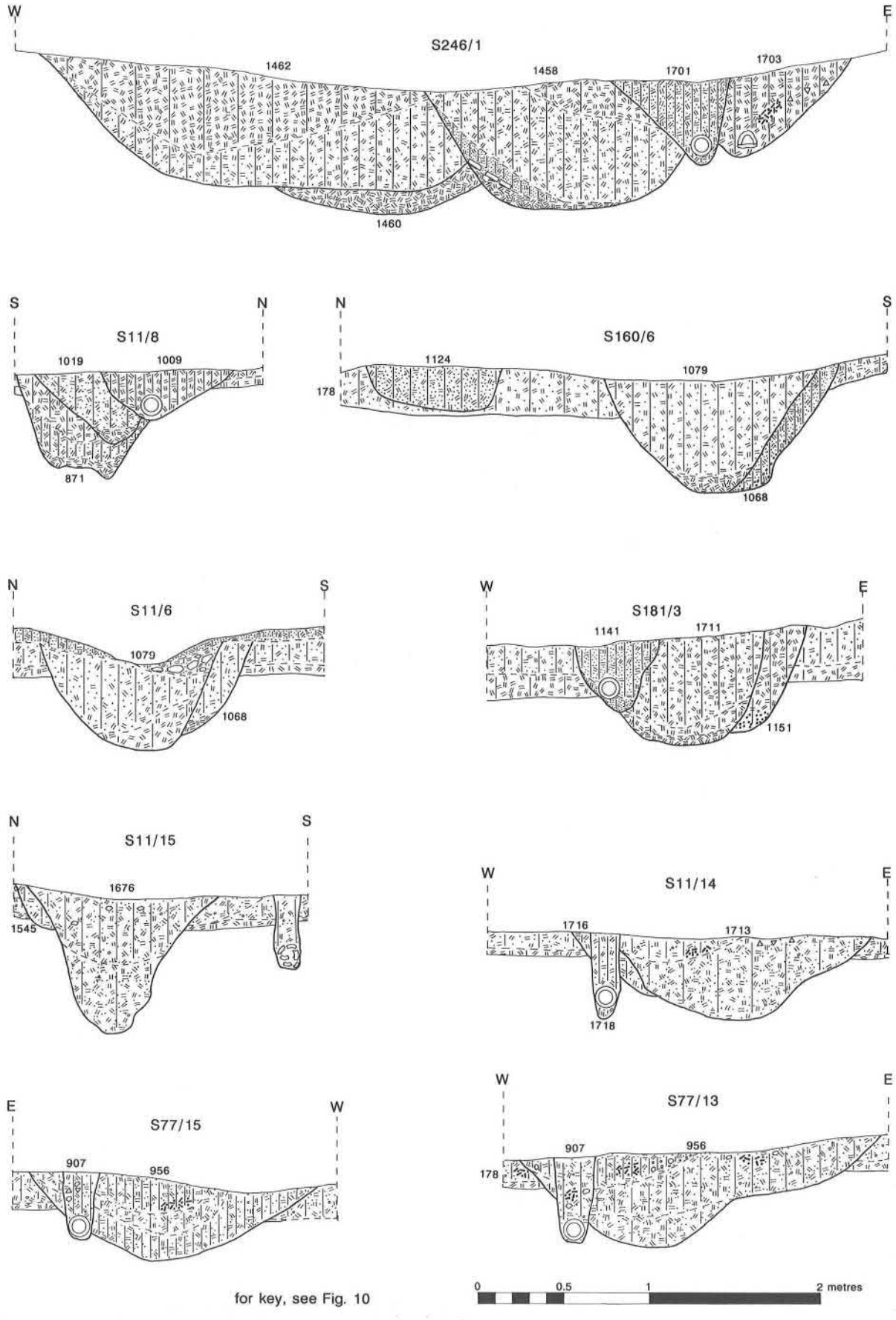
The west ditch of Croft B ran south for about 30 m from a 'T'-junction with the north boundary ditch. It had been recut once (Fig. 36, S11/14). Only the west edge of the earlier cut (1716) survived, the rest having been removed by the recut (1713) and a field drain (1718). The latter had also slightly truncated the west edge of the recut. What survived of 1713 was 1.4 m wide and 500 mm deep, with gently sloping sides and a curved base.

The south ditch was about 34 m long, running from a 'T'-junction with the west ditch as far as cobbled area 1488, at which point it turned northward before terminating. It consisted of a single cut (1676), 1.1 m wide and 800 mm deep, with steep sides and a curved base (Fig. 34, S11/15).

Croft C (Fig. 37)

Croft C, to the south of Croft B, measured 27 m north-south and about 50 m west-east. It contained a single rectangular post-built structure (Building 6).

Building 6: this was 11 m long, 5.0 m wide at its east end and 4.5 m wide at its west end. The shape and size of the



for key, see Fig. 10

Figure 36: MK618; Area 1, Period 2/II, sections.

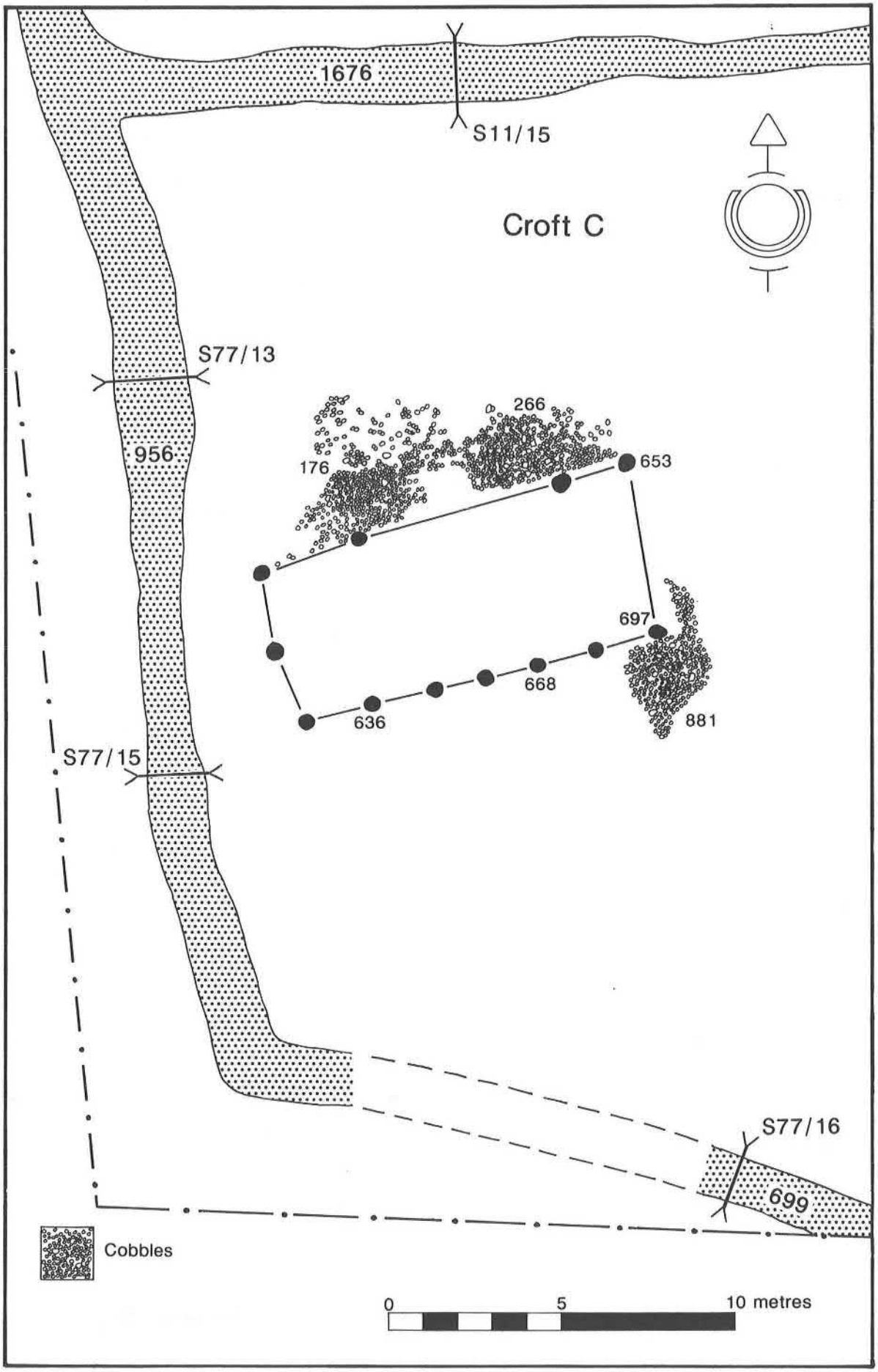


Figure 37: MK618; Croft C, Period 2/II.

building was defined by rows of postholes and several areas of cobbling.

The south wall consisted of seven postholes ranging in size from 636, which was 400 mm in dia. and 330 mm deep, to 668, which was 320 mm across and 200 mm deep (Fig. 41, S15). This row of postholes was very evenly spaced, the gaps varying between 1.75 and 2.0 m. The south-east corner of the building, marked by Posthole 697, was emphasised by the edge of cobble spread 881.

Five metres north of 697 was Posthole 653 which marked the north-east corner of the building. The north wall contained only four postholes, spaced in such a way that there was a gap of 6.0 m in the middle of the wall. The line of this wall was indicated by the straight edges of cobble spreads 266 and 176. Given the similarity in size and concentration of the cobbles in these two spreads it seems likely that they formed a continuous layer running almost the entire length of the north wall.

Boundary ditches: The northern boundary ditch of Croft C (1676) has been dealt with under Croft B (p.70).

The west boundary ditch was 28 m long, essentially a continuation of the western boundary of Croft B. For the northern 11 m of its length it varied in width between 2.0 and 2.5 m, while its southern part was only 1.0 to 1.5 m wide (Fig. 36, S77/15). The difference in width was due to a shallow extension of the east side of the ditch (Fig. 36, S77/13). At first this extension was thought to be a recut, but after excavation it was seen to be part of the main ditch (956). In common with all the other north-south croft ditches 956 was cut by a post-medieval field drain.

Ditch 956 turned east to form the south ditch of Croft C, but after only 2.0 m it was lost, owing to erosion caused by the digging of a post-medieval pond (15). However it did emerge to the east of the pond, continuing for a further 2.0 m before reaching the edge of the excavation. A section through the ditch at this point showed a single cut (699) which was 1.4 m wide and 450 mm deep, with gently sloping sides and a curved base (Fig. 41, S4).

The field drain located in the west ditch also turned to run east and was present in the short length of ditch to the west of 15, into which it emptied. The slight south-easterly direction of 699 meant that, apart from the two short lengths either side of 15, most of it ran beyond the south edge of Area 1. Efforts to follow the line of 699 in the field to the south were thwarted by modern ploughing and the presence of a post-medieval field boundary ditch which may well have been cut along the same line as 699.

Fifty metres east of Ditch 956 was another north-south ditch (1099). This turned to the north-east at a point 18 m north of the excavation edge, and was traced for a further 17 m, curving northward and ending 20 m west of the hollow-way (Fig. 32). 1099, which had not been recut, was 1.05 m wide and 420 mm deep, with steep sides and a flat base. Its topmost fill consisted of the Phase III ploughsoil (450) through which a post-medieval field-drain had been cut (Fig. 41, S5). It is likely that 1099 marked the eastern boundary of Croft C, separating it from Croft D.

Croft D (Fig. 38)

Croft D was bounded by Ditch 1099 to the west and north, and the hollow-way to the west. It measured about 48 m west-east, and at least 20 m north-south, and contained a single rectangular structure (Building 7).

Building 7: this structure was 17 m long, 7.0 m wide at its west end and 5.5 m wide at its east end. Its construction seems to have combined postholes and trenches. The north wall consisted of three postholes and one trench. The largest of the postholes (106) marked the north-east corner of the building, and was 510 mm in dia. and 300 mm deep, with a 'U'-shaped profile. At its base were three large flat fragments of ironstone which probably served as a post-pad. The trench associated with the north wall (1726) measured 3.5 × 0.8 m, and had steep sides and a flat base. The other two trenches belonging to the building (1029 and 1636) were shorter than 1726, but in width, depth and profile were virtually the same.

There was no evidence of postholes in the bases of these trenches and although a few fragments of ironstone were present in the fill none could be described as post-pads. If the trenches did contain posts then they were probably propped upright and the trench backfilled around them.

The south wall consisted of Trench 1636 and three postholes. The largest of the postholes (1550) marked the south-west corner of the building. It was 550 mm in dia. and 280 mm deep, with a 'U'-shaped profile.

Within the building, Trench 1029 ran north at a right angle to this wall suggesting the position of an internal partition. In the west half of the building was Feature 1677. It was 'pear' shaped, with maximum dimensions of 1.4 × 1.1 m, and a depth of 250 mm, with gently sloping sides and a narrow curved base. There was no indication as to the purpose of this feature.

Outside the building were two pairs of postholes. One was close to the south-west corner, the other near the south-east corner. All were smaller in profile than those marking the walls, the largest (1638) being 300 mm wide and 200 mm deep, with steep sides and a flat base.

The largest feature in Croft D was a rectangular pit (231) measuring 2.0 × 1.6 m. It was 350 mm deep, with steep sloping sides and a curved base. This pit contained large amounts of charcoal, burnt stone and burnt pot.

The Hollow-Way

The west sides of Crofts A, B and D were bounded by the hollow-way, which ran on a south-east to north-west alignment for 107 m across Area 1. Sections through the south-

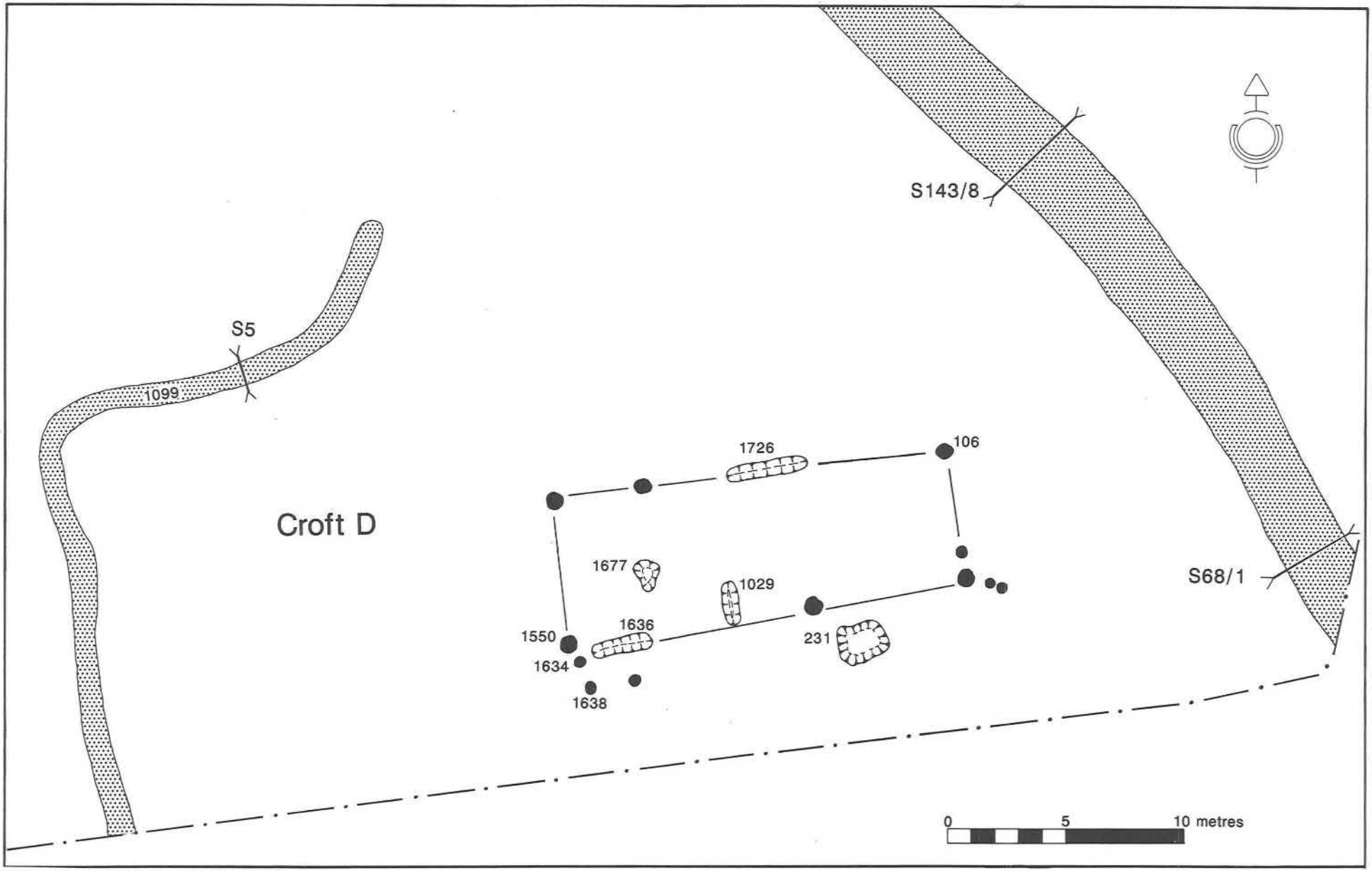


Figure 38: MK618; Croft D, Period 2/II.

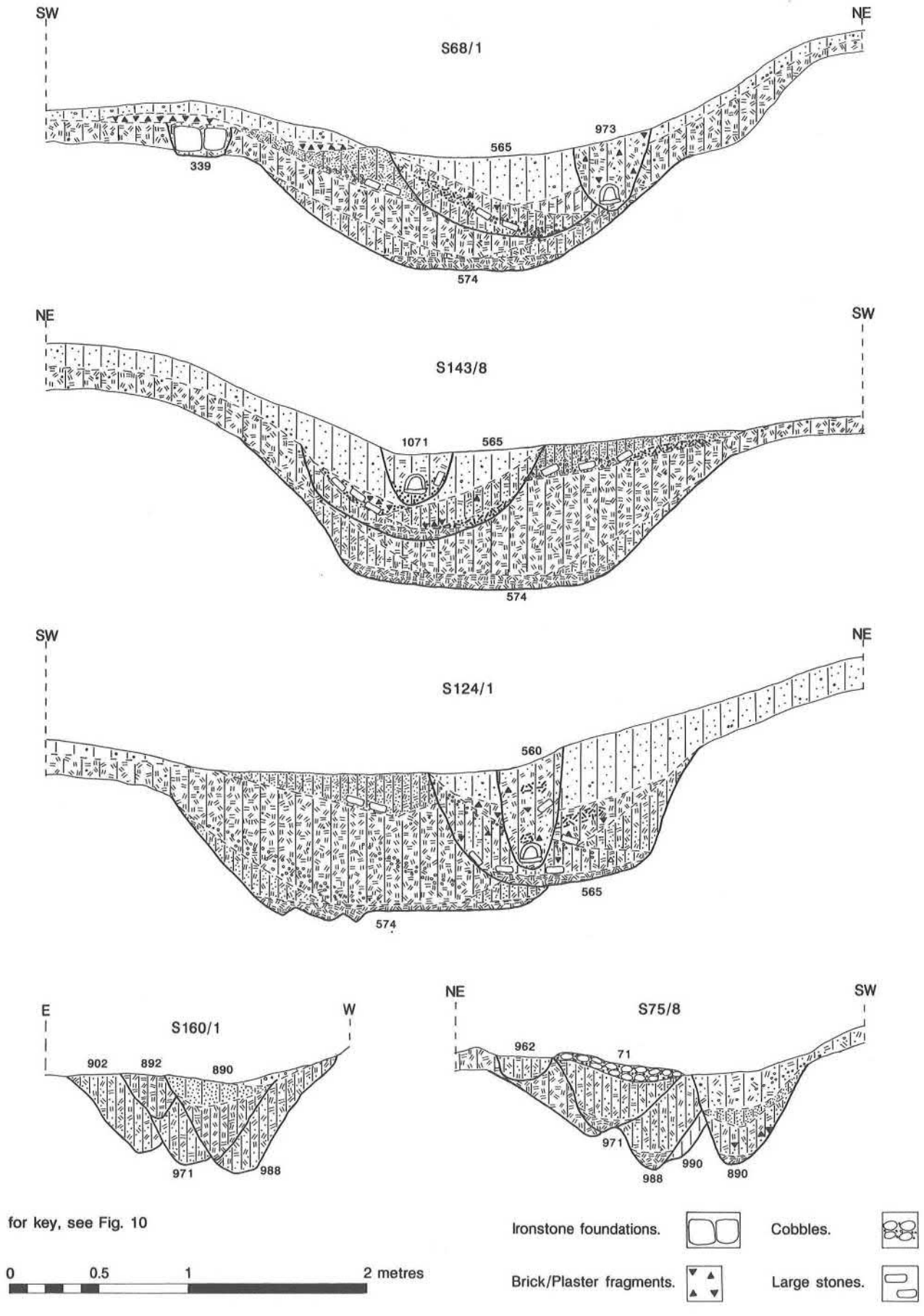


Figure 39: MK618; Hollow-way sections.

east half showed that the earliest phase of the feature (574) had measured 2.7–3.0 m wide and 600–800 mm deep, with steep sides and a flat base (Fig. 39, S68/1, S143/8 and S124/1). It had been cut into the Oxford clay sub-soil, which was 450–700 mm higher on the east side of the hollow-way. This difference in height suggests that the hollow-way followed a natural slope in the sub-soil. All sections showed the same series of recuts within the hollow-way. The medieval hollow-way itself was cut by Ditch 565, which was associated with seventeenth-century buildings (p.91) found immediately to the west of the hollow-way.

The north-west part of the hollow-way served as the eastern boundary of Croft A, and the north and south ditches of that croft ran into it. The recuts revealed in section through this part of the hollow-way (Fig. 36, S246/1) were similar to those to the south-west, although two more recuts were present. The medieval hollow-way appeared to have been recut. What survived of the original cut (1460) was 200 mm deep and 1.0 m wide, with a gently curving base. The recut (1462) had a flat base, and seems to have been considerably wider than its predecessor. It survived to a width of 2.0 m and a depth of 700 mm, with a steep west edge.

The apparent difference in width between the two ends of the hollow-way (Fig. 32) was caused by the alignment of later recuts. At the south-east end these all followed the original alignment. At the north-west end the recuts were side by side, with only a small overlap, giving the impression that the hollow-way was wider at its north-west end. In fact, the size and shape of the medieval recuts (574 and 1462) were very similar. There was also a similarity between the ditch that cut the western edge of the hollow-way (1458) and the seventeenth-century ditch (565) found at its south-west end. Almost the only difference between the two was that 1458 had an extra field drain dug into it.

There was no evidence of the hollow-way in the fields to the south of Area 1, so it seems probable that it joined the line of the modern Walton Road (Fig. 28). Beyond Area 1 to the north, the hollow-way continued north-west until it reached Caldecotte Lane. From this point a broad ditch or sunken way led west to the hollow-way forming the western boundary of Well Close, and it is possible that either this feature or Caldecotte Lane may have continued the route of the hollow-way during the medieval period. Unfortunately, a modern pond at the junction of these features has obliterated any evidence of a junction that may have existed.

Possible Extent of Settlement

In that part of Well Close retained as open space, a number of ditched enclosures lined the western edge of the hollow-way, and there were indications of similar features alongside Caldecotte Lane and Walton Road. Immediately to the east of Walton Road were a number of buildings constructed on plots of land that were devoid of ridge-and-furrow. Most of the buildings are modern, and so care must be taken in supposing that their siting has any relevance to the medieval landscape. However, one of these structures, Old Caldecotte Farmhouse, was a ten-bay building dating to at least the seventeenth century. It stood at the south end of a plot of land near the junction of Walton Road and Caldecotte Lane. The east and north sides of this plot were clearly marked by ditches separating it from the surrounding ridge-and-furrow. A similar situation seems to have existed to the north of Caldecotte Lane, where the absence of ridge-and-furrow and the presence of a number of ditches suggested that crofts may once have lined the north side of the lane.

The hollow-way, Caldecotte Lane and Walton Road enclosed a large triangle of land that revealed no evidence of either occupation or cultivation when it was trial-trenched. Considering the activity that surrounded this area, it is possible that it served as a village green.

Phase III (Fig. 40)

Evidence of Cultivation

This phase was represented by a series of gullies which ran north-west to south-east across that part of Area 1 previously occupied by Crofts A and B. These gullies seem to represent an attempt to return the now abandoned crofts to cultivation. The length of these gullies varied, though most appear to have been about 45–50 m long, and to have begun about 20 m north of Croft A. With the exception of 1113, (the easternmost gully), 1492 and 1496 (the longest), all ran parallel, at about 3.0 to 4.0 m centres.

Stratigraphically, the earliest gullies were 1492 and 1496 which ran parallel to and for the most part touching each other, on a more northerly alignment than the rest for some 31 m (1496) and 61 m (1492). A section halfway along its length where it cut Ditch 931 showed that 1492 was 1.0 m wide and 220 mm deep, with shallow sloping sides and a flattened 'V'-shaped profile which was characteristic of all the gullies of this phase (Fig. 41, S6). A single fill (1491) produced pottery dating from the fourteenth century, typical of much of the pottery recovered from the fills of these gullies. A section through the north end of 1492 where it ran side by side with 1496 showed that they were both filled by 1491. The relationship between the two gullies could only be detected where they cut into the subsoil and it was seen that 1492 cut 1496. In this section 1492 was 900 mm wide and 250 mm deep.

The two most westerly gullies (1527 and 1515) converged at their south ends. Excavation at this point suggested one continuous gully turning, rather than two separate ones merging. Gully 1515 was 350 mm wide and 150 mm deep, while 1527 was larger, around 550 mm wide and 250 mm deep, and only narrowed right at its south end.

To the east of and parallel to 1515 were gullies 1107 and 1035, which ran side by side for 67 m. From a section dug at the junction of these ditches with 1492/1494 it was clear that 1107/1035 were the later features. At its south end 1035 was 800 mm wide and 200 mm deep (Fig. 41, S7). The fills of 1107 and 1035 were practically identical, so that it was

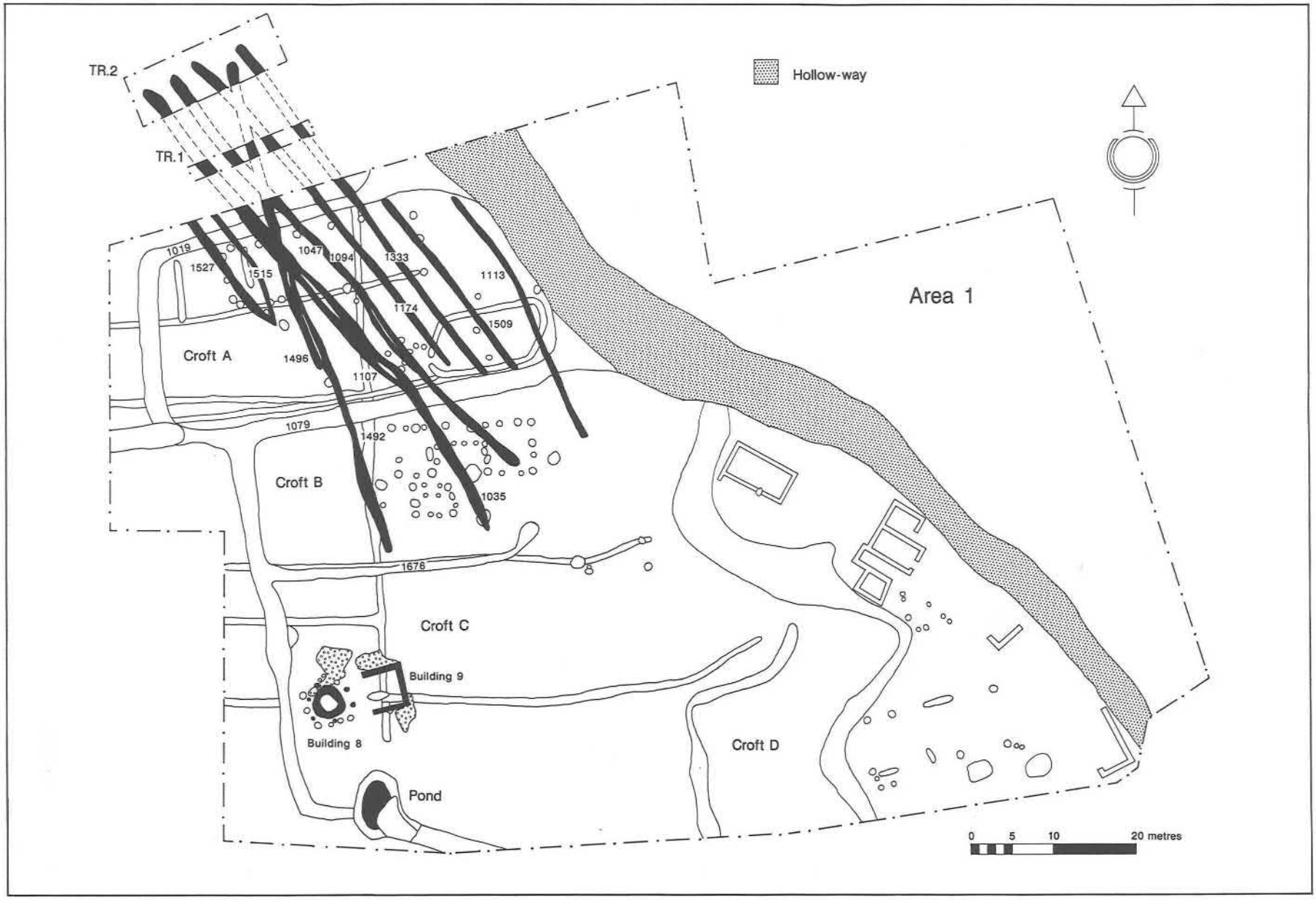


Figure 40: MK618; Area 1, Period 2/III.

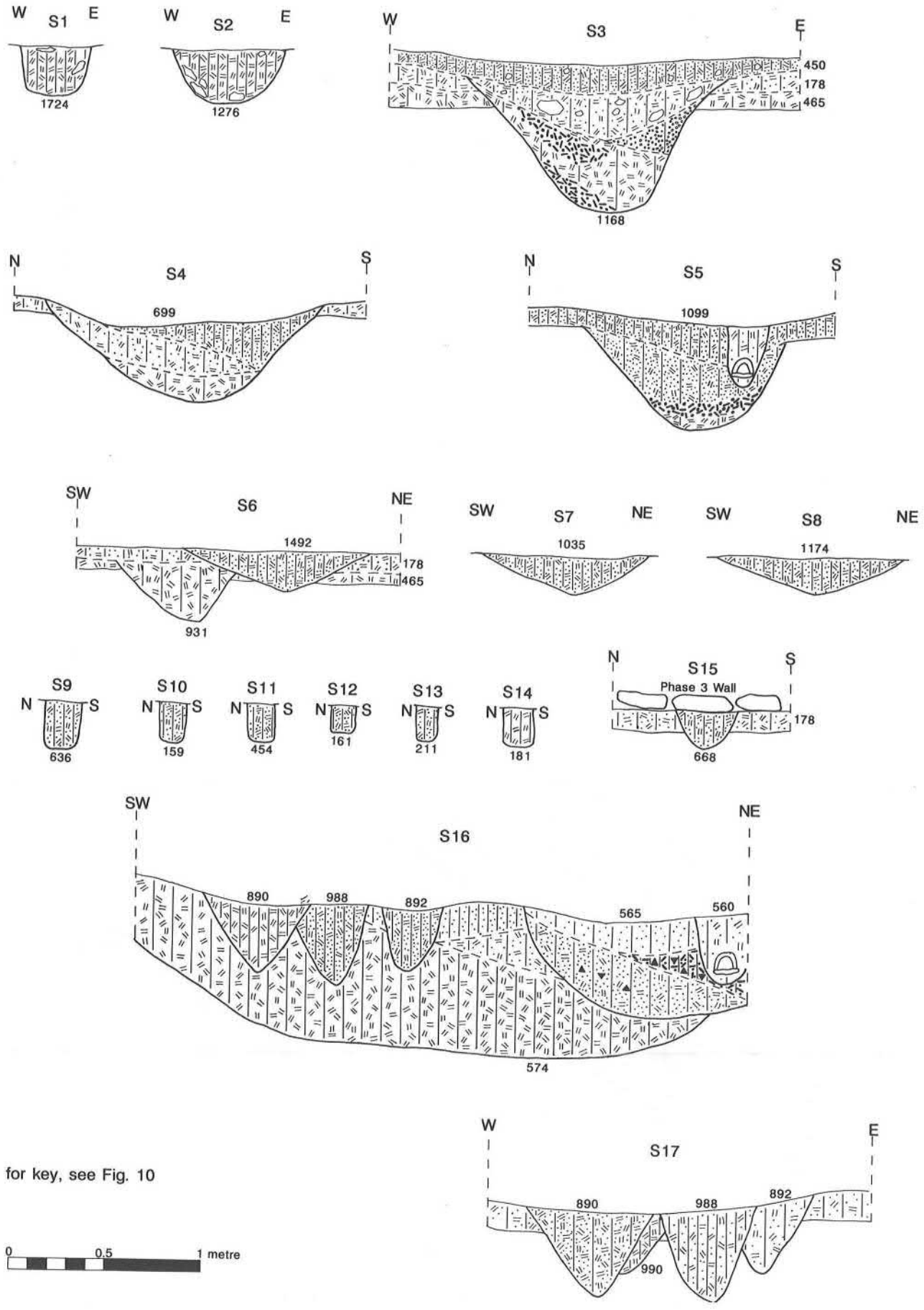


Figure 41: MK618; Sections S1-S17.

only when the two parted for a short while that it was apparent they were separate features.

The next pair of gullies belonging to this phase were 1047 and 1094, which were traced for some 62 m. Sections showed that 1047 cut 1094. The latter gully was 400 mm wide and 200 mm deep, while 1047 was 900 mm wide and 300 mm deep. A section immediately to the north of Ditch 1079 showed only Gully 1047, but to the south of the ditch 1094 reappeared and they ran together across Croft B.

The next gully to the east was 1174 which was 47 m long, 1.0 m wide and 320 mm deep with the same profile as the other gullies of this phase (Fig. 41, S8). Gully 1333, the next in the sequence, was similar in most respects to 1174, as was probably 1509, the easternmost of the parallel gullies, though its course was only followed southward across Croft A, and northward no further than Ditch 1019. Sections through 1333 showed an average width of 500 mm and depth of 150 mm. It had a single fill (1332), which contained pottery of thirteenth to fifteenth-century date. 1509 was 400–600 mm wide and 200–250 mm deep.

The most easterly gully belonging to this phase was 1113. This ran for 35 m, from where Ditch 1019 joined the hollow-way in the north, to a point almost midway across Croft B. Its southern half followed a more northerly alignment than most of this group of ditches. It was 600 mm wide and 200 mm deep.

Pottery recovered from the gullies in Trenches 1 and 2, to the north of Area 1, included only the later types and fabrics of the Phase III assemblage (p.202), probably because this area was not previously occupied, and the gullies were therefore not contaminated by earlier material at this point. Accordingly, a late fourteenth-century date is suggested for Phase III.

From the excavation it appears that these gullies were confined to this particular part of the field. They were contained within a triangle of land formed by the hollow-way to the north-east, ridge-and-furrow to the west and Phase II Ditch 1676 to the south. One explanation for this is that the hollow-way, village green, ridge-and-furrow and Croft C were still functioning during this phase, but that Crofts A and B had fallen into disuse. A small piece of land existed between Croft A and the southernmost of the Caldecotte Lane (scheduled) group of crofts, that does not seem to have contained either a croft or ridge-and-furrow. Perhaps this piece of land was considered too small to be useful on its own, but when added to the former Crofts A and B became a viable proposition for cultivation. The gullies in Area 1 and the trenches to the north of it may represent an attempt to bring this land under the plough. If this was the case then it must have been a short-lived attempt, as it was not detected in either the earthwork or contour surveys carried out prior to excavation.

Croft C (Fig. 42)

It is probable that the Phase III ploughing did not extend further south than Ditch 1676 because there was a second phase of building within Croft C. Two structures (Buildings 8 and 9) were erected almost exactly on top of Building 6. Both these structures made extensive use of the locally available ironstone in their construction.

Building 8: a circular structure 3.7 m in diameter, this was the most substantial structure discovered during the excavation (Fig. 43: Plate 13). A trench (223), measuring 750 mm wide and 250 mm deep with steep sides and a flat base, bounded a rough circle some 2.5 m in diameter. Against the outer and inner edges of this trench the stones forming the wall of the building had been laid with some care so as to give a reasonable finish to the exposed surfaces. The local clay had been used liberally as a bonding agent between these large stones. The core of the wall was made up of smaller stones packed together. Although not as regular, it did seem as if some effort had been made to position these stones rather than just dumping them between the larger outer and inner stones. Any gaps seem to have been filled using the surrounding ploughsoil. At its most extensive the wall survived to a width of 750 mm and a maximum height of 500 mm, represented by five courses of stones (Fig. 44, S77/10). The curve of the north-east segment of the trench (223) was flatter than elsewhere which meant the building was not a true circle. This part of 223 was also different in that it was considerably smaller than the rest of the trench measuring 550 × 100 mm, and contained only a few randomly scattered stones.

Within the building it appeared as if ploughsoil had been brought in to build up the floor level. No direct link could be made between this material and Ploughsoil 178 outside the building, so it was numbered separately (220). In a few places the remnants of a clay layer (682) survived on top of 220, probably representing the floor surface of Building 8.

Outside the building was a great deal of rubble (488). Most of it was probably stone from the core of the wall, but there was also a considerable amount of tile (Fig. 44, S77/10). This debris covered some of a group of ten postholes which seemed to form a circle around the building. They were positioned between 1.0 m and 0.5 m away from the wall, and the spacing between them varied from 1.5 to 2.0 m. The largest measured 200 × 250 mm, and the smallest 120 × 150 mm (Fig. 41, S9–14), all having vertical sides and flat bases. These postholes may mark the line of a fence that surrounded Building 8, but their depth and the use of posts rather than stakes suggests that they supported something more substantial than a fence. It is possible that the building had a tiled roof, and the posts may have acted as eaves supports. Stratigraphically they could not be differentiated from the Phase II postholes, as both sets were dug into the Phase I ploughsoil (178). Therefore, the phasing of these postholes was based on a comparison of size, shape and alignment.

Building 9: the relationship between this structure and Building 6 was clear, as the stones which marked the wall lines of Building 9 directly overlay the postholes of the earlier structure (Fig. 41, S15). Along three sides these

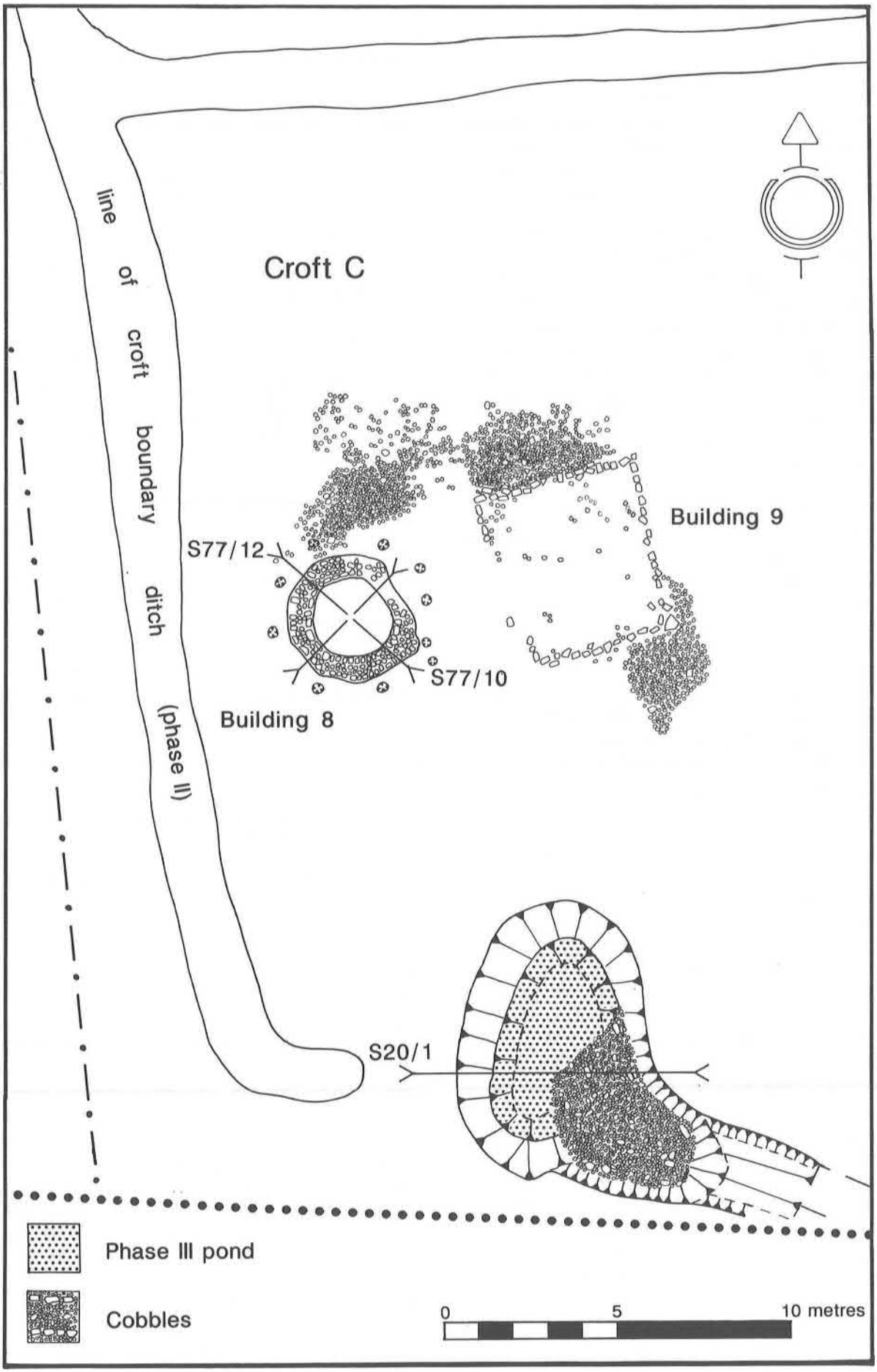


Figure 42: MK618; Croft C, Period 2/III.

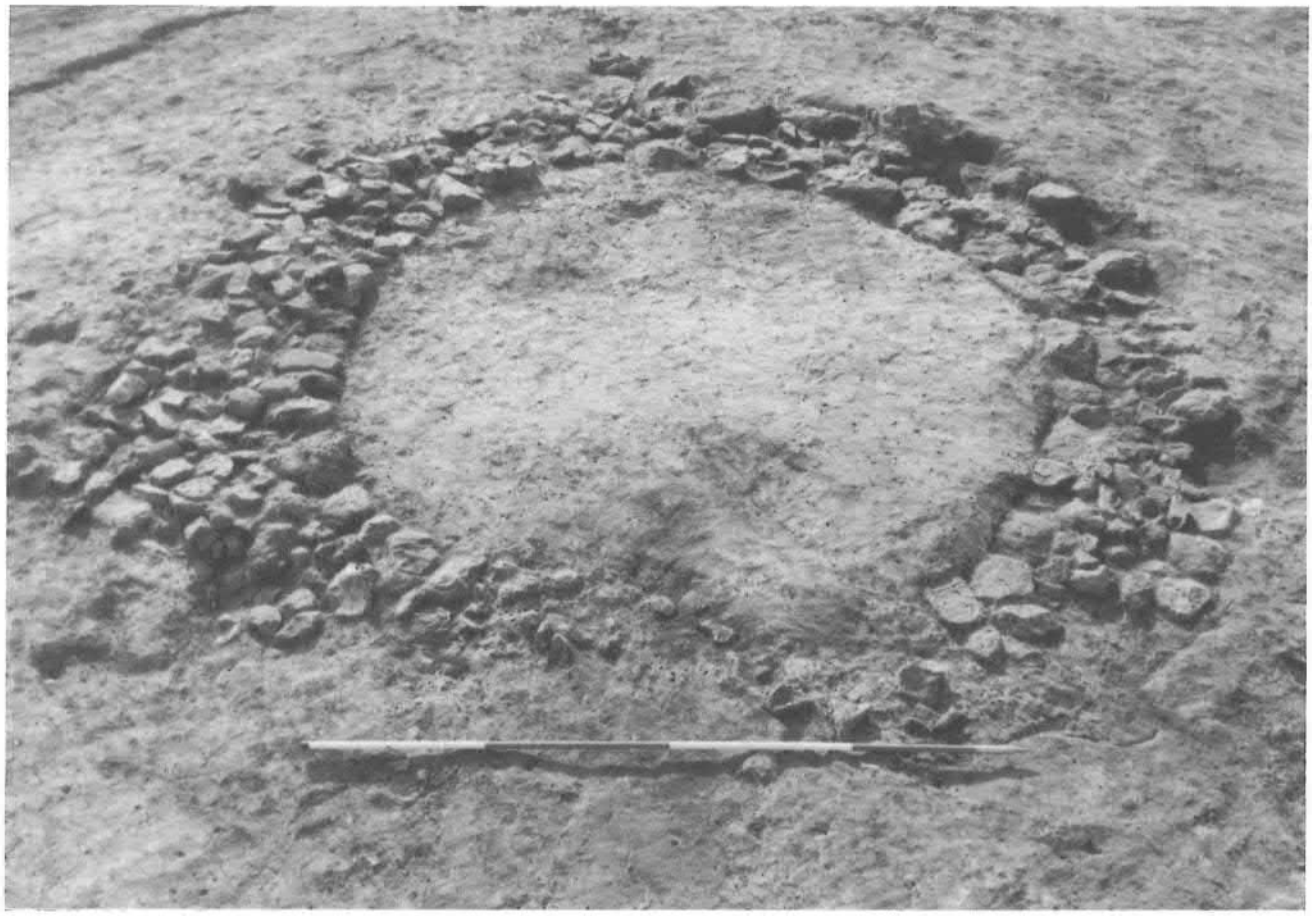


Plate 13: MK618; Building 8 (*MKAU*).

Plate 14: MK618; the pond, from the east, showing cobbling and primary deposits of waterlogged wood (*MKAU*).

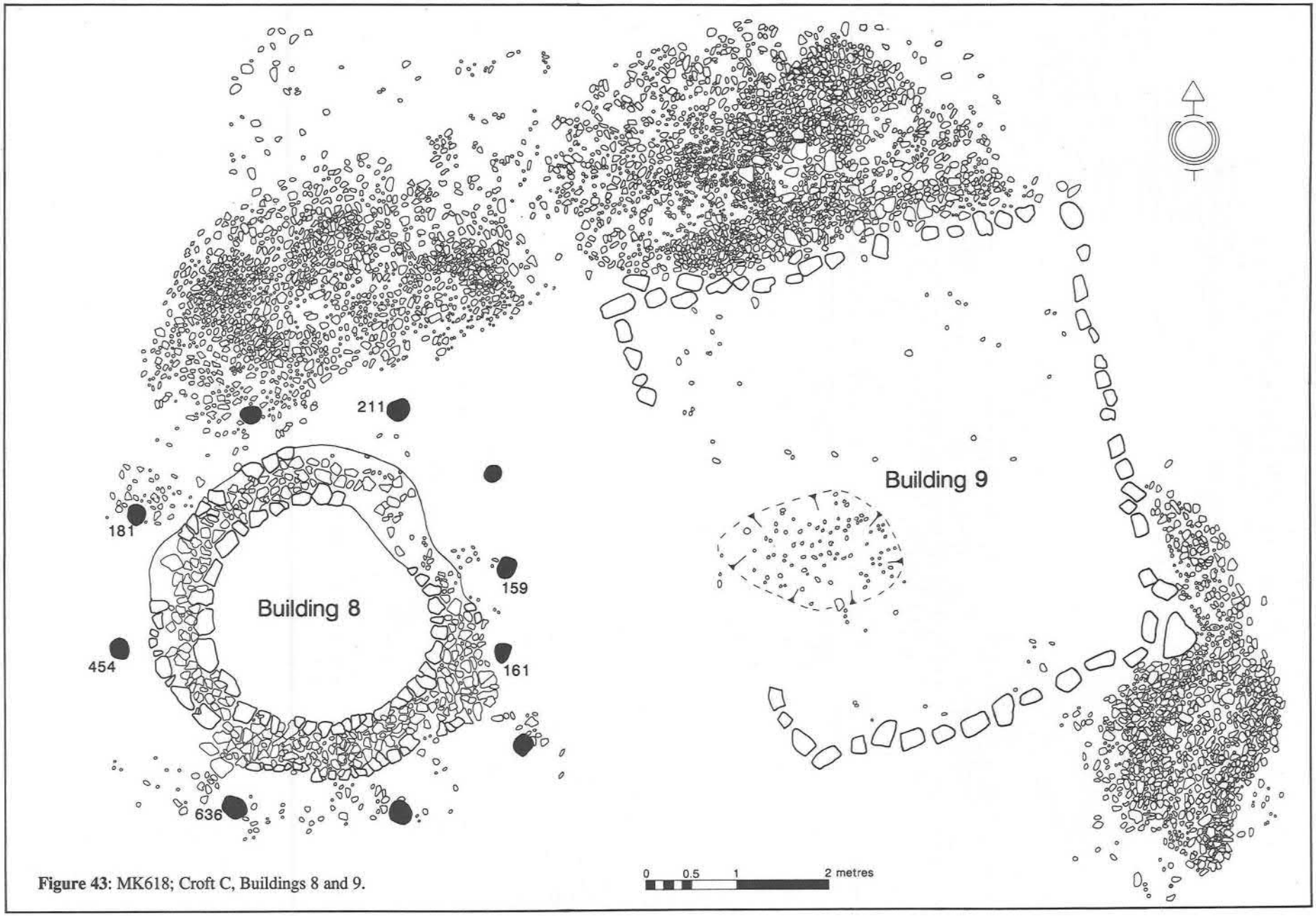


Figure 43: MK618; Croft C, Buildings 8 and 9.

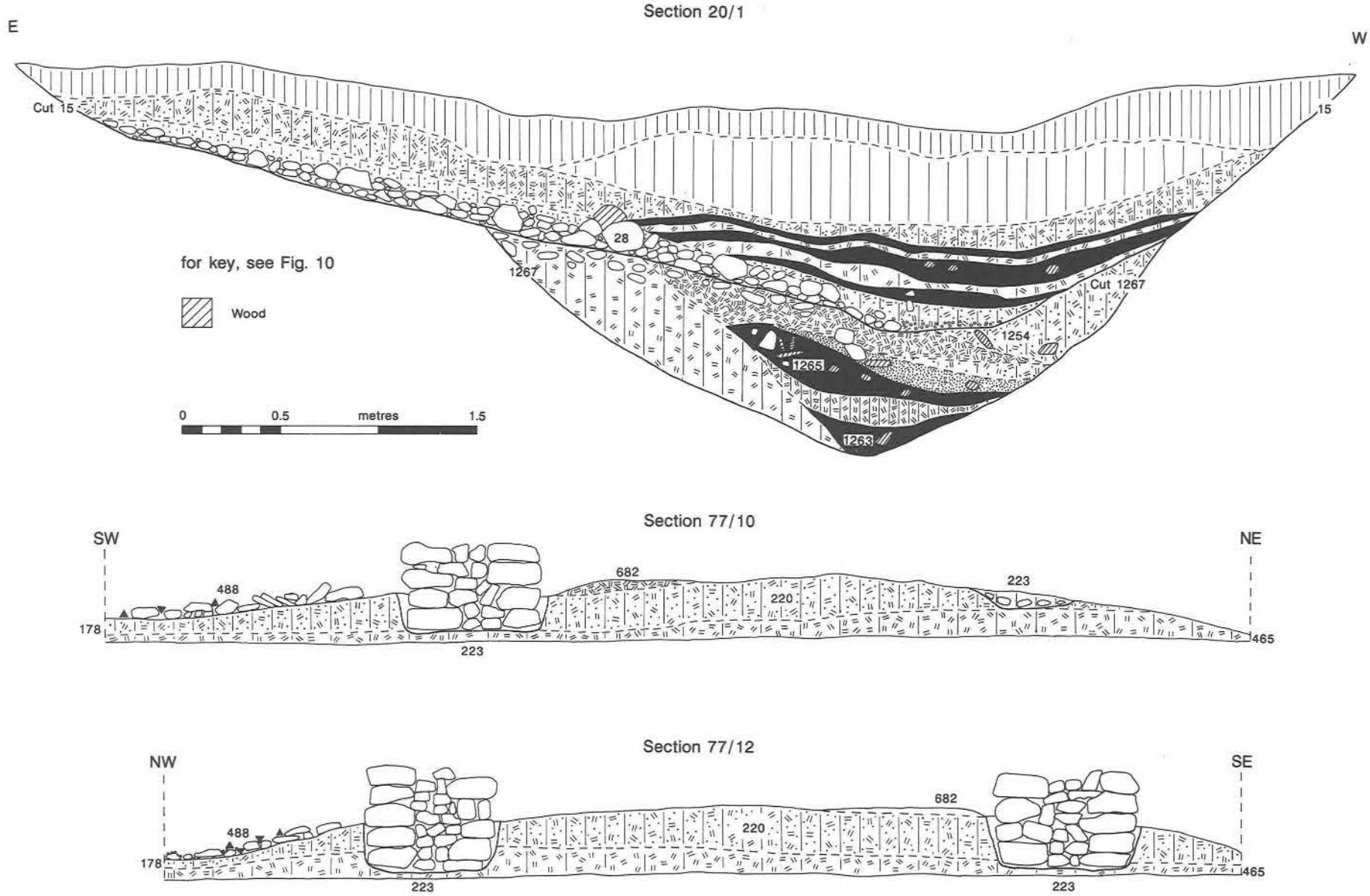


Figure 44: MK618; Croft C, Period 2/III, sections.

stones were laid almost end to end straight onto the ground surface. They probably acted as post-pads, but the large number present makes it unlikely that each supported a post. If enough stone was available it was probably easier to lay continuous lines rather than using fewer and having to space them accurately for each post.

The three lines of stones were similar in length. The north one consisted of eighteen stones and ran for 5.0 m, while the south line contained thirteen and was 4.25 m long. The line of the west wall was marked by two short rows of stones. A 1.0-m-long line of four ran south from the west end of the north wall, while from the west end of the south wall three stones ran north in a line for 750 mm. Immediately north of these stones was a shallow depression were the ploughsoil had been eroded. This and the absence of stones may indicate the position of an entrance or gateway.

The Pond: in the south-west corner of Croft C, which was the lowest point in Area 1, was a circular depression or pond (Fig. 42: Plate 14). Excavation revealed two distinct periods of use (Fig. 44, S20/1). In the first period, dated to the late fourteenth to early fifteenth century, the pond (1267) was at least 3.0 m in dia. and 1.85 m deep. This meant that, in addition to being filled by drainage water, much of it was below the water table (certainly at the time of excavation!). The combination of steep clay sides and water was unstable, such that the east side of 1267 seems to have collapsed before any sediment had collected on the base of the feature. It was against this collapsed edge that the contrasting clay, sand and leaf-peat fills of 1267 had accumulated. All the fills were waterlogged; even the topmost (1254) was frequently under 1.0 m of water, providing excellent conditions for the preservation of organic material, especially within the two layers of compressed leaf-peat (1263 and 1265) contained within 1267.

Several bulk and core samples were taken for environmental analysis. The results (p.232) suggest that the medieval pond was not more than 1.5 m deep, the preferred depth for sedge, pondweed and starwort, all of which were present within the samples. Duckweed seeds were common, and as this plant only seeds when exposed to direct sunlight, it is probable that the bramble and willow which grew in the vicinity did not shade the surface of the pond. Grass and shrubs dominated the surrounding area, while the presence of members of the soft rush group suggests that there was trampled or puddled ground nearby. A small amount of cereal pollen was present, as well as larger amounts from plants that thrive in open disturbed ground, such as buttercups and thistle. In addition to pollen and seeds, the conditions within 1267 had preserved a number of pieces of wood. These included several fragments of stakes and planks, and parts of domestic implements, in particular the lid of a bucket (p.164, obj. 415).

1267 had been truncated by a post-medieval recut (15), 14 m in dia. and only 1.1 m deep, and was sealed by an extensive layer of stones (28) associated with 15 (Fig. 44 S20/1). Although construction and recut were separated by some three hundred years the function of the feature seems to have remained the same, as a pond or watering hole for animals. Both phases cut through Phase II Ditch 922/699, which marked the south boundary of Croft C. This ditch must have drained into the pond. Whether or not this was intended by the pond's excavators, its merits were certainly recognised in modern times, as at least two field drains emptied into the pond.

Discussion: The size and shape of Buildings 8 and 9 make it unlikely that they were domestic. The wall of Building 8 did not survive to a sufficient height to indicate whether or not it contained any nesting boxes, but its size and shape strongly suggest that it was a dovecote. The remains of the walls were substantial enough for it to fulfil this role, although it would have been a small example of this type of building. The keeping of doves for meat, eggs and manure was a guarded right of the lord of the manor, and when compared with earlier structures in this area, the standard and scale of the work involved in Building 8 and its setting with Building 9 and the pond certainly suggest the involvement of someone influential in this part of Well Close.

Another possibility is that it was some form of covered shelter for animals such as a 'Welsh pigsty' (Harvey 1970, 33, plate 1). In this role it could have been associated with Building 9, which may have acted as an animal pen. A gap in the layer of cobbles immediately to the west of the north wall of Building 9 might have been caused by grazing animals being brought in to enter Building 9 through a gate in its west side. Although cobbled areas are often reinforced at entrance points, as these cobbles were laid in association with Building 6, the necessity for reinforcement at this point could not have been foreseen.

The contemporary existence of the gullies, two buildings and the pond can only be inferred from their stratigraphic relationship with features of other phases and from their spatial relationship. The gullies cut Phase II postholes, trenches and ditches in Crofts A and B, but seemed to respect the boundaries of Croft C. The early pond (1276) cut Phase II Ditch 922, and the stones of Building 9 overlay the postholes of Phase II Building 6.

The hypothesis that the area occupied by Crofts A, B, and C was put to two different uses during Phase III was supported by the environmental evidence. Cereal pollen was present, as well as pollen from plants that grow well on broken ground. This indicated the presence of arable land, but grasses dominated the samples, supporting the idea that the immediate vicinity was used as pasture. The use of the pond as a watering hole for grazing animals would have created ideal conditions for the plants represented in the samples that enjoyed trampled or puddled ground.

It is probable therefore that at some time the cultivation within Crofts A and B went on side by side with grazing and animal husbandry on Croft C. However, the different types of agriculture may not have begun at the same time. The re-use of Phase II cobbles by the Phase III buildings and the

fact that three of the walls of Building 9 directly overlay the walls of Building 6 suggests that any period of abandonment in Croft C was very brief. However, the time required for the croft ditches to silt up to the point at which they did not present an obstacle to ploughing may indicate a longer period of abandonment in Crofts A and B.

If the crofts were abandoned at different times the interval was not great, and is not reflected in the ceramic assemblage. An analysis of the Phase III pottery shows no clear break with Phase II; all that can be said is that it is generally of a later date. The ceramic evidence is clearer in providing a date for the end of Phase III and of medieval activity in Area 1. The increased percentage of fabric MS9 compared with Phase II suggests a late fourteenth-century date for the end of Phase III. A few sherds of TLMS3 produced in the fifteenth to sixteenth century and found in one of the gullies in Trench 1 represent the final silting up of these features, probably early in the fifteenth century. More importantly, these few sherds are the only ones found at Caldecotte that are truly representative of these two centuries. If the pottery showed no clear break between Phases 2 and 3 it does show quite clearly that after the end of Phase III this part of the village was abandoned for about two hundred and fifty years.

Area 3 (Fig. 45)

Area 3 lay 60 m to the east of Area 1. Only five features were identified within it; a bank (5009), running south-east to north-west along the southern boundary of Well Close, a small bank (5007) and ditch (5006) running east to west along the north side of the excavated area, and two plough furrows (5002 and 5005) running west-east across the area.

Bank 5009 was 3.3 m wide and 0.6 m high, and was composed entirely of ploughsoil, built up directly on top of the undisturbed sub-soil. This bank ran the width of Area 3, but the earthwork and contour surveys showed that it continued to the south beyond Area 3 as far as the south edge of the field, and north beyond Ditch 5006 to the south edge of the central group of crofts (Figs 5 and 6). The presence of the two plough furrows (5002 and 5005) immediately to the east of it probably indicates that 5009 was a headland marking the eastern turning point of the ridge-and-furrow which ran between it and another headland immediately to the west of Area 1.

Ditch 5006 was 1.5 m wide and 0.3 m deep, with gently sloping sides and a curved base. It was cut through Ploughsoil 5008 and the sub-soil, and the material removed to create it seems to have been piled along its north side on top of 5008 in order to create a bank (5007). Erosion of this bank had caused the silting up of the ditch. This meant that it was filled with the material that had been dug out to create it, which made it difficult to discern its edges. Excavation at the junction of these features and Bank 5009, in the north-west corner of Area 3, showed that 5006 cut 5009.

The two plough furrows (502 and 5005) ran east to west for 34 and 32 m respectively. they had been clearly identified before excavation as earthworks which ran continuously between the two headlands. They varied in width from 1.0 to 1.3 m and in depth from 300 to 350 mm, and both had 'V' shaped profiles.

A few fourteenth-century sherds recovered from the ploughsoil (5010) were the only stratified pottery from Area 3, so the dating of the features is problematic. There was no evidence of any Period 1 activity within Area 3, or of it ever having been anything other than part of the field system during the medieval period.

From their alignment the two furrows probably represent the continuation of the Phase II ridge-and-furrow found in Area 1. The existence of the headland to the west of the Phase II crofts, and the fact that the Phase III ploughing in Area 1 was restricted to a small area, suggests that to the west of Area 1 the Phase I ploughing continued throughout Phases II and III. Because 5009 and the ridge-and-furrow continued to the north of Ditch 5006 it is likely that this ditch divided what had originally been a single area of ploughing (Fig. 5).

From the 1792 estate maps it is quite clear that Ditch 5006, along with the west boundary of Croft C (956) delineated *Caldecotte Close*, a rectangular area 60 × 120 m midway along the south side of the field. This ties in with its stratigraphic relationship to Headland 5009, and also suggests that the line of Ditch 5006 must have remained in use as a boundary long after Croft C was abandoned.

The available evidence gives a relative dating for the ditch and the ridge-and-furrow but does not suggest an absolute date for its creation. The pre-excavation surveys suggest that Ditch 5006 is the same as Ditch 1719 (Area 1), which cut a Phase I croft ditch and the Phase III ploughsoil (450). This would date 5006 to some time after 1400.

Area 4 (Fig. 46)

Area 4 lay in the south-west corner of Well Close. It measured 53 × 23 m and was excavated in order to examine the ridge-and-furrow and the hollow-way forming the boundary between Well Close and Berrystead Close. It was also hoped that Area 4 might produce further evidence of Roman activity to complement the information from MK44, but this did not prove to be the case.

As in Area 3, two plough furrows (7061 and 7063) were found in Area 4. The north furrow (7061) ran east-west across Area 3 and ended 4.0 m to the west of a large bank (7037) on the east side of the hollow-way. It was between 0.9 and 1.2 m wide, 250 mm deep and had a 'V'-shaped profile. The length, size and shape of the south furrow (7063) were almost exactly the same, except that its maximum width was 1.4 m. It too ended 4.0 m to the east of 7037.

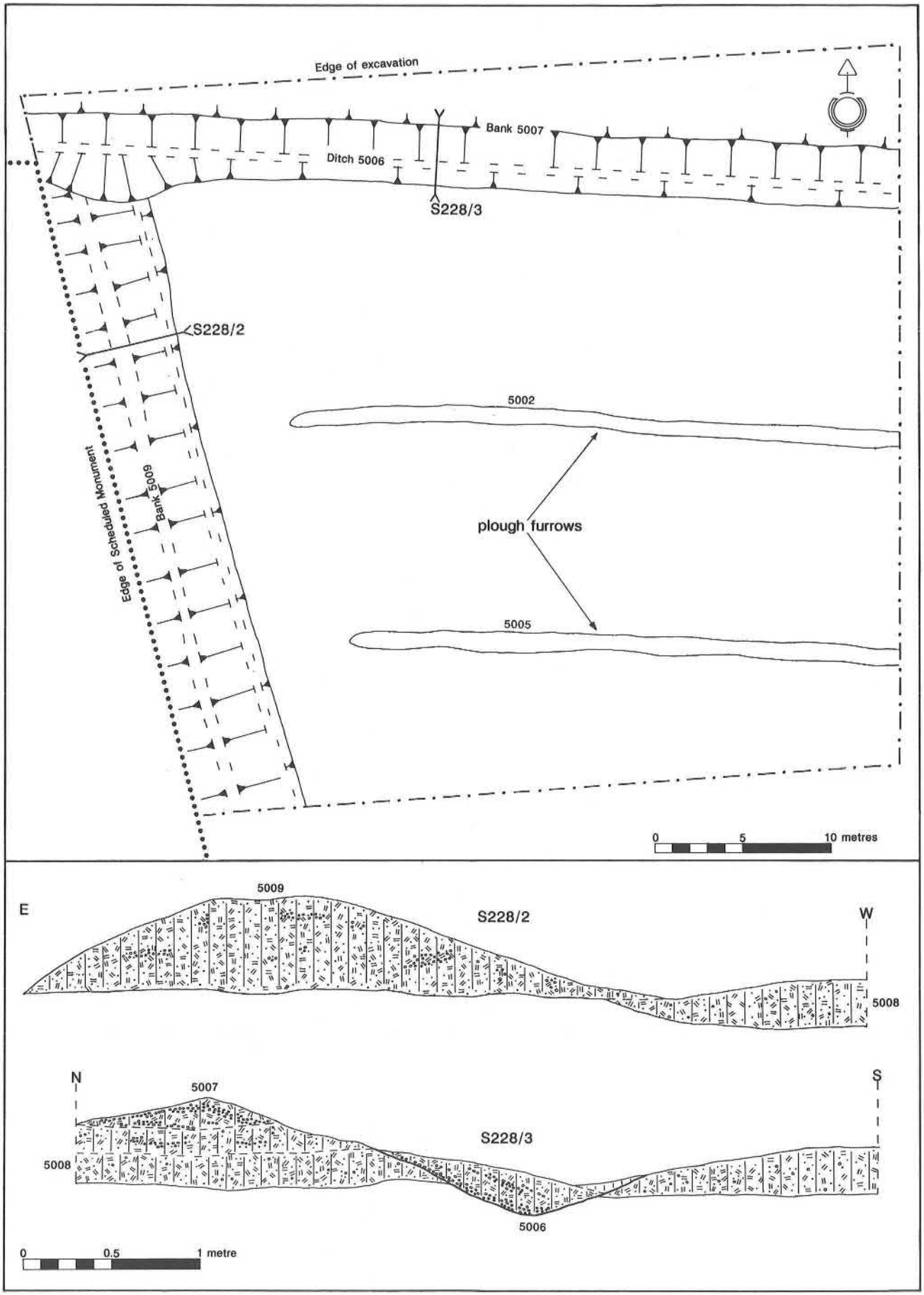


Figure 45: MK618; Area 3.

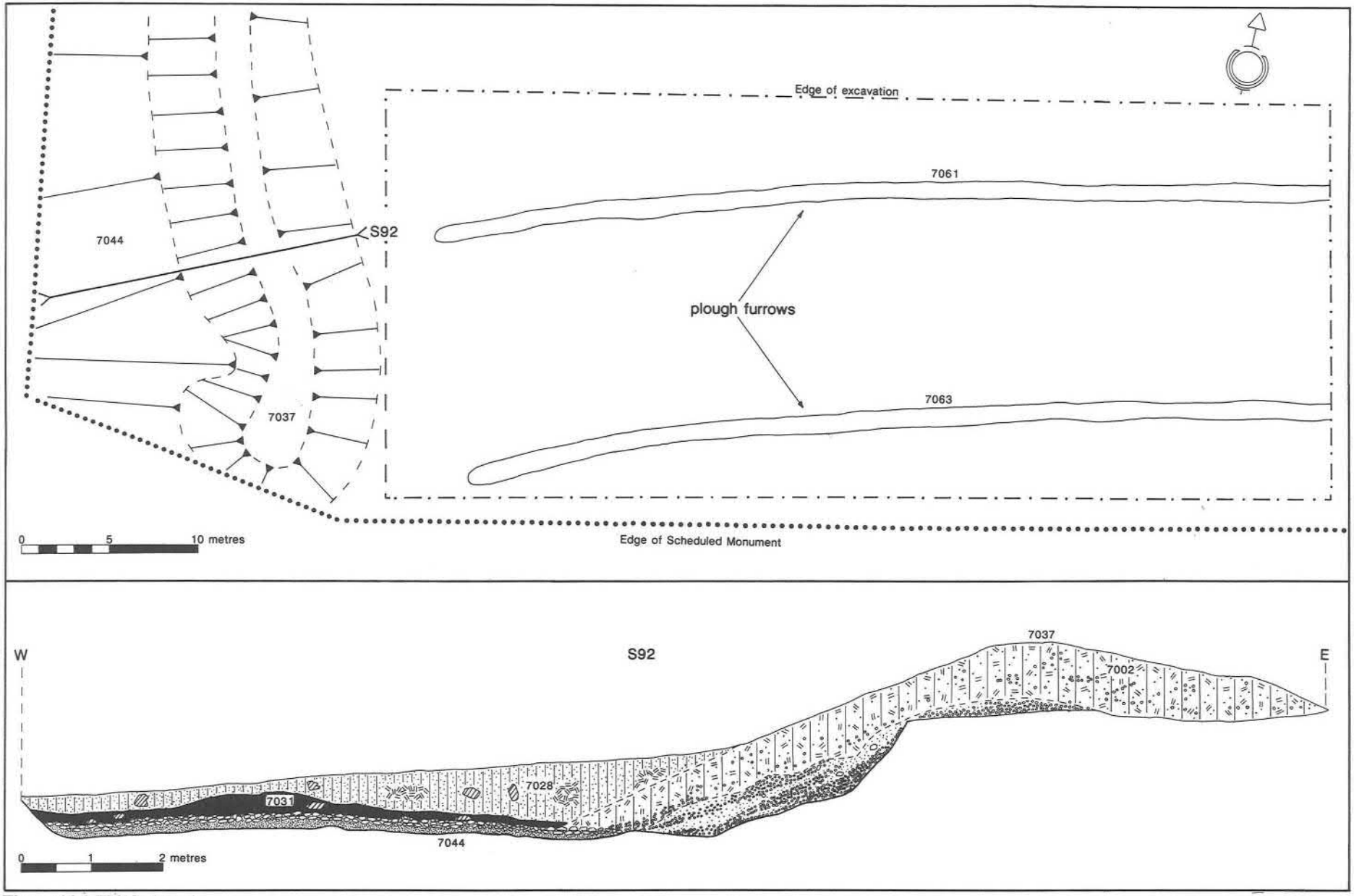


Figure 46: MK618; Area 4.

Only a 27 m length of bank and hollow-way was available for excavation, and this was heavily overgrown with bushes and trees. Consequently there was only one point where it was possible to examine these features, by putting a 5.0 m wide trench through them. Bank 7037 was 1.0 m high and 7.5 m wide, although some of this width was due to the fact that it had slumped into the hollow-way, which ran parallel and to the west of it (Fig. 46, S92). Like Bank 5009 (Area 3), 7037 was a plough headland, composed entirely of the surrounding ploughsoil (7002), and had been built up at the west end of the ridge-and-furrow represented by 7061 and 7063.

The hollow-way was 8.5 m wide and 1.5 m deep (max). Its eastern edge sloped gently down to a flat base. Along the slope of the west edge of the ditch ran a hedge marking the boundary of the field. The part of this slope that lay beyond the hedge had been levelled for a modern road which runs next to Caldecotte Lake.

Across the base of the hollow-way was a layer of sand (7004) above which was a dense, level layer of stones (7034), consisting of rounded pebbles and fragments of flint, no larger than 100 mm across. These stones were tightly packed together and had been pressed down into the upper level of 7004. Along the east edge the soil of Bank 7037 had silted into the ditch and covered some of the stones, but for the most part they were overlain by a layer of 'leaf-peat' (7031) very similar to that found in the pond in Area 1. This contained several fragments of unworked wood, an animal trap and fragments of modern glass and metalwork. On top of 7031 was a thick sandy loam (7028) which contained a large amount of semi-decomposed vegetation.

The evidence gained from Area 4 was virtually the same as that from Area 3. There was no indication of any Roman activity, and during the medieval period the area seems to have been devoted solely to arable farming. The ridge-and-furrow represented by 7061 and 7063 ran from the Area 3 headland in the east to headland 7037 in the west. This headland and the associated ridge-and-furrow extended north for 80 m beyond Area 4. As with the ridge-and-furrow to the east, around Area 3, this large area of ploughing seems to have had a series of ditches imposed upon it which created three smaller enclosures.

The hollow-way has long been a well-defined earthwork, and that and the presence of a metalled surface in it demonstrates its former importance. From the ridge-and-furrow survey of the parish (Fig. 7) the hollow-way appears to have formed part of a route leading south from the village to Watling Street, parallel to the present Walton Road, continuing north towards Simpson.

Period 2: Conclusion

Any interpretation of the medieval period at Caldecotte must take into account the fact that Area 1 lay on the periphery of the village. This probably meant that the crofts established within it were more vulnerable to social and economic change than longer established crofts near the centre of the village. The rapid expansion and contraction of settlement seen in Area 1 probably reflects trends that affected the rest of the village but over a longer period.

Another factor which may have made the whole village vulnerable to change is the fact that it lay on marginal arable land. This in itself was not a problem but if the village suffered some depopulation as a result of the plague, as seems to have been the case, what survived of the village would have been an ideal candidate for enclosure, further depopulation and perhaps desertion.

Caldecotte lay close to the junction of two medieval roads. The one which ran along the west edge of the site may have been part of a major route running north from Watling Street along the east bank of the River Ouzel to a fording point of the river at Simpson. The hollow-way excavated in Area 1 formed the south-east side of the village green and the eastern limit of the Phase I ploughing found in Area 1. It may also have been part of a route that linked Caldecotte and Bow Brickhill. All these elements appear to have been part of the original village. The inhabitants probably lived in the group of crofts at the north-west end of the eastern hollow-way.

In Area 1 the ridge-and-furrow was replaced by four crofts, but to the west in Areas 3 and 4 ploughing seems to have continued uninterrupted throughout Period 2. The longhouses found on the crofts presumably reflect an increase in the population of the village, and the presence of ancillary buildings on some of the crofts indicates the presence of livestock. The relatively small amount of pottery recovered at Caldecotte only provides rather general dating for the length of each phase, but what information there is indicates that the longhouses were abandoned during the second half of the fourteenth century. It is therefore possible that their abandonment was due to the effects of the plague of 1349, either as a result of mortalities amongst the occupants themselves or because deaths elsewhere had made more desirable plots of land available.

It is impossible to say how widespread this abandonment was, but it did not result in the complete desertion of the village, as efforts were made to return Crofts A and B to the plough, and Croft C was given over to grazing. A few sherds of pottery from this phase suggest that it may have extended into the very early part of the fifteenth century. The fills of Ditch 1719/5006 failed to produce any pottery, but stratigraphically it was later than the Phase III ploughing and the headland in Area 3 and was in existence when the 1791 enclosure map was drawn. It is possible that this ditch, along with others to the north which appear to post-date the ridge-and-furrow, represent continuing small-scale enclosure of land which began with Croft C in Phase III.

The depopulation caused by the process of enclosure was almost complete by 1563 when a survey of the diocese of Lincoln recorded the population of Caldecotte as three

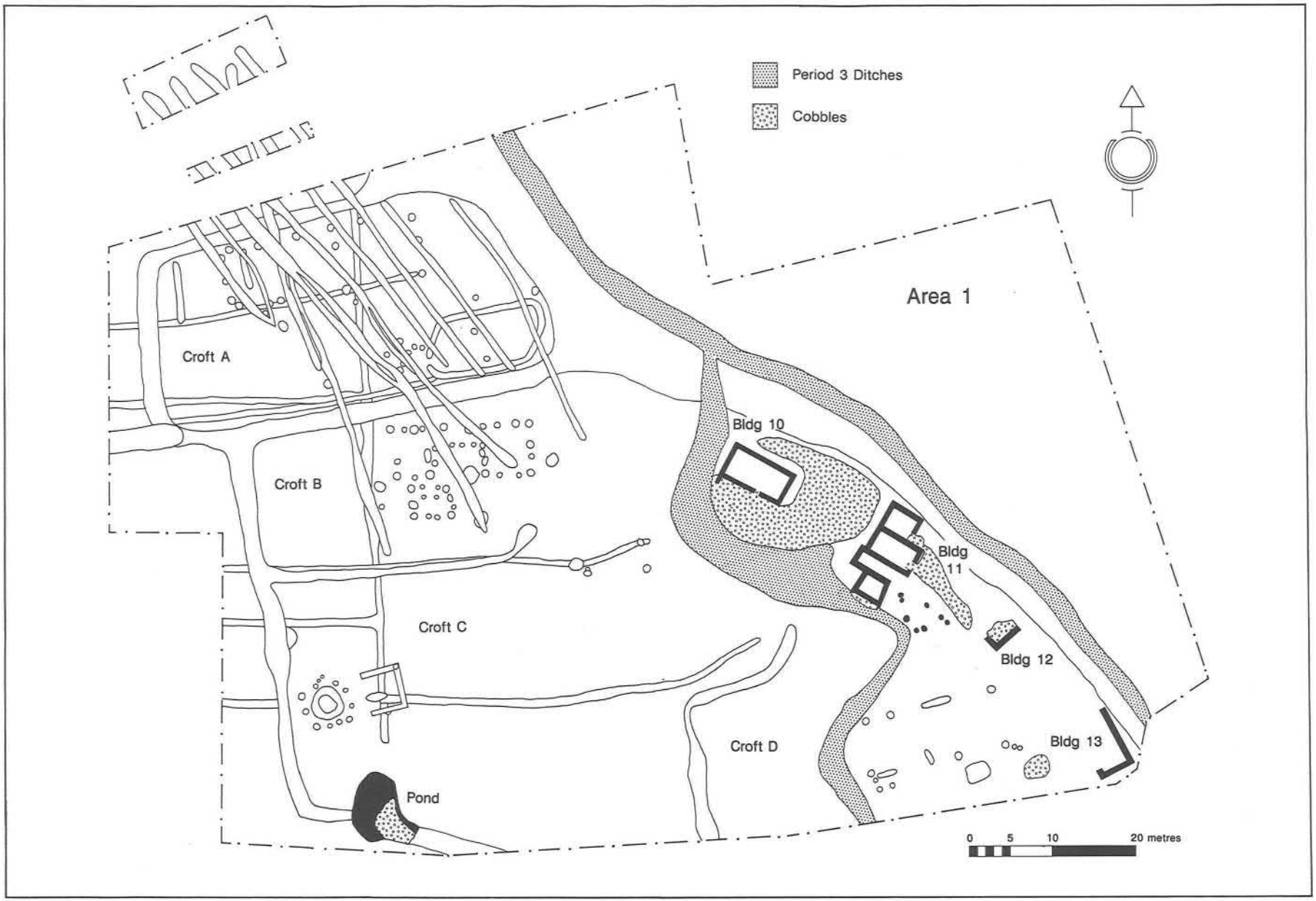


Figure 47: MK618; Area 1, Period 3/I.

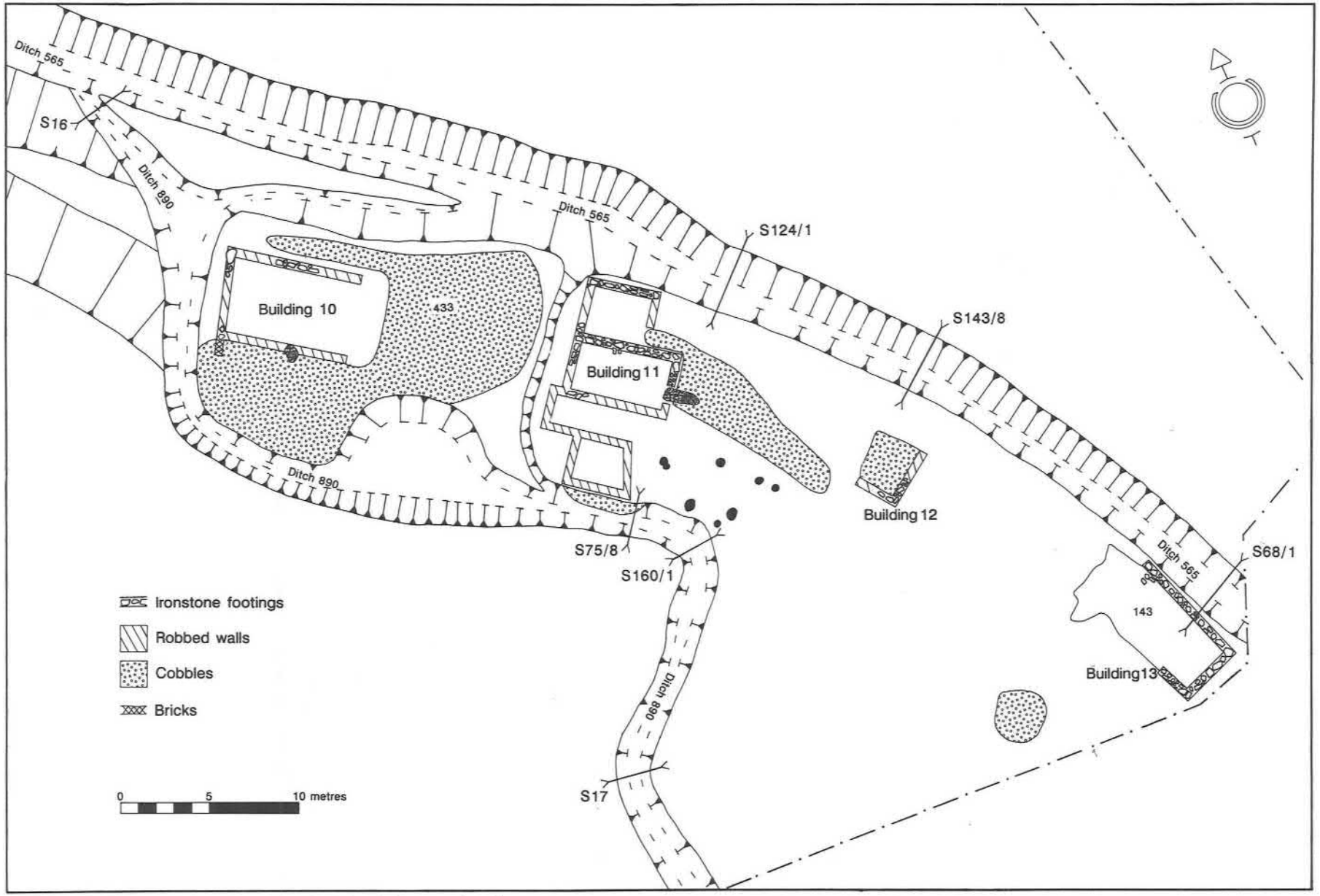


Figure 48: MK618; Post-medieval buildings (10–13) and features, Area 1.

families. From a document of 1641 comes the only evidence that Caldecotte was ever totally deserted; ..." The demesne lands of Bow Brickhill is now waste ground and hath been for time out of mind...." (New College Ms. 450). This suggests that the three families of 1563 did not survive much beyond that date.

Period 3 (Fig. 47)

The ceramic evidence indicates that in Area 1 there was a gap of something like two hundred and fifty years between the end of Period 2 and the beginning of Period 3, around the middle of the seventeenth century. The evidence of post-medieval occupation was confined to Area 1, and was centred around the south part of the medieval hollow-way. Two ditches enclosed the remains of four buildings and a number of cobbled areas. From their junction (Fig. 41, S16) to the north of these buildings one ditch snaked south while the other ran directly south-east, following the line of the silted up hollow-way. To the west of these buildings and ditches the medieval pond was recut and enlarged during this period.

The Ditches (Fig. 48)

The ditch that followed the line of the hollow-way was examined in four trenches excavated through the hollow-way in Area 1. To the north of the post-medieval buildings it survived, 1.3 m wide and 0.7 m deep, with steep sides and a flat base (Fig. 36, S246/1). A section through the hollow-way close to Building 1 (Fig. 39, S124/1) showed a post-medieval ditch (565) with very similar dimensions to 1458, 60 m to the north. At this point the ditch was 1.36 m wide and 0.8 m deep, also with steep sides and a flat base. In both these sections the post-medieval ditch cut the east side of the hollow-way, so increasing the apparent width of the latter. This was more pronounced in the section to the north, where the situation was exaggerated by two field drains running immediately to the east of 1458.

The two trenches through the hollow-way near its south-east end produced a slightly different picture of the of the post-medieval ditch (Fig. 39, S69/1 and S143/8). In both these trenches the ditch lay within the hollow-way and was 1.16 to 1.30 m wide and 500 mm deep. Like the two trenches to the north it had steep sides, but here the base was concave. In all four sections the post-medieval ditch was cut by a field drain containing a horseshoe-shaped pipe of a type made between 1826 and 1850.

Trenches through the other post-medieval ditch revealed a series of at least three recuts. At its north end the latest recut (890) was 550 mm wide and 350 mm deep (Fig. 41, S16). In a section near its south end (Fig. 41, S17) it measured 630 × 450 mm. Although most had been truncated, all the recuts seemed to have had a similar profile, with steep sides and tightly concave bases (Fig. 39, S75/8 and S160/1).

The total length of 890 from its junction with 565 to the south edge of Area 1 was 70 m, whereas a straight line between the two points was 52 m. The additional distance is a result of the meandering course of 890. These curves would surely have made 890 and the earlier ditches more susceptible to silting, as they would have interrupted the drainage of water downhill to the south. This could account for the number of recuts: 565, which followed a relatively straight course, was not recut.

These two post-medieval ditches were clearly intended to form an enclosure, and they are both shown on the 1791 map (Fig. 9) but why 890 and the earlier cuts followed the course they did is not clear. One possible explanation is that they changed course in order to serve different functions in different parts of the enclosure. The initial divergence south from 565 would have been necessary in order to create enough distance between the two to construct Buildings 10 and 11. 890 then ran south-east alongside the buildings parallel to 565, separated from it by 16 to 19 m. The proximity of 890 and 565 to the buildings would have aided drainage from them and would also have provided a convenient place to tip domestic refuse. To the south of Building 11 the ditch turned to run south-west for 12 m and then turned again and ran south for 8.0 m to the edge of Area 1. This last stretch of ditch also ran roughly parallel to 565, but the gap between the two was now increased to 30 m. Only Building 11 was within this area and that lay alongside 565, so the meandering of 890 at this point was not intended to accommodate a further building. It might be that the south half of the enclosure served as a paddock or garden area, and that the turns of the ditch were intended to enclose an area of land large enough to serve this purpose.

The Buildings

Building 10

This structure (not illustrated in detail) measured 7.5 × 5.0 m, and was marked by the remains of its north-west, north-east and south-west walls. The south-east end of the building seems to have been left open, perhaps to allow access to the large cobbled yard (433) that lay between Buildings 10 and 11. The cobbles of this yard extended along the south-west and north-east sides of the building, while the north-west side faced Ditch 890. On the south-west side of 433 Ditch 890 widened and formed a semi-circular enclave into the cobbles. It was in this area that most of the brick, tile and plaster seems to have been dumped when the buildings when demolished in Period 3/II.

The north-west and north-east wall lines consisted of shallow trenches, no more than 150 mm deep, which in places contained large ironstone blocks. Originally these trenches were probably filled with ironstone which was later robbed, and in many places the indentation left by these blocks in the base of the trench could be clearly seen. There was also evidence for the robbing of stone in Building 11, where the trenches were deeper, and considerable disturbance was caused to them when they were robbed. The north-west wall projected for 1.0 m beyond the junction with the south-west wall. This was the only example of *in situ* brickwork in any

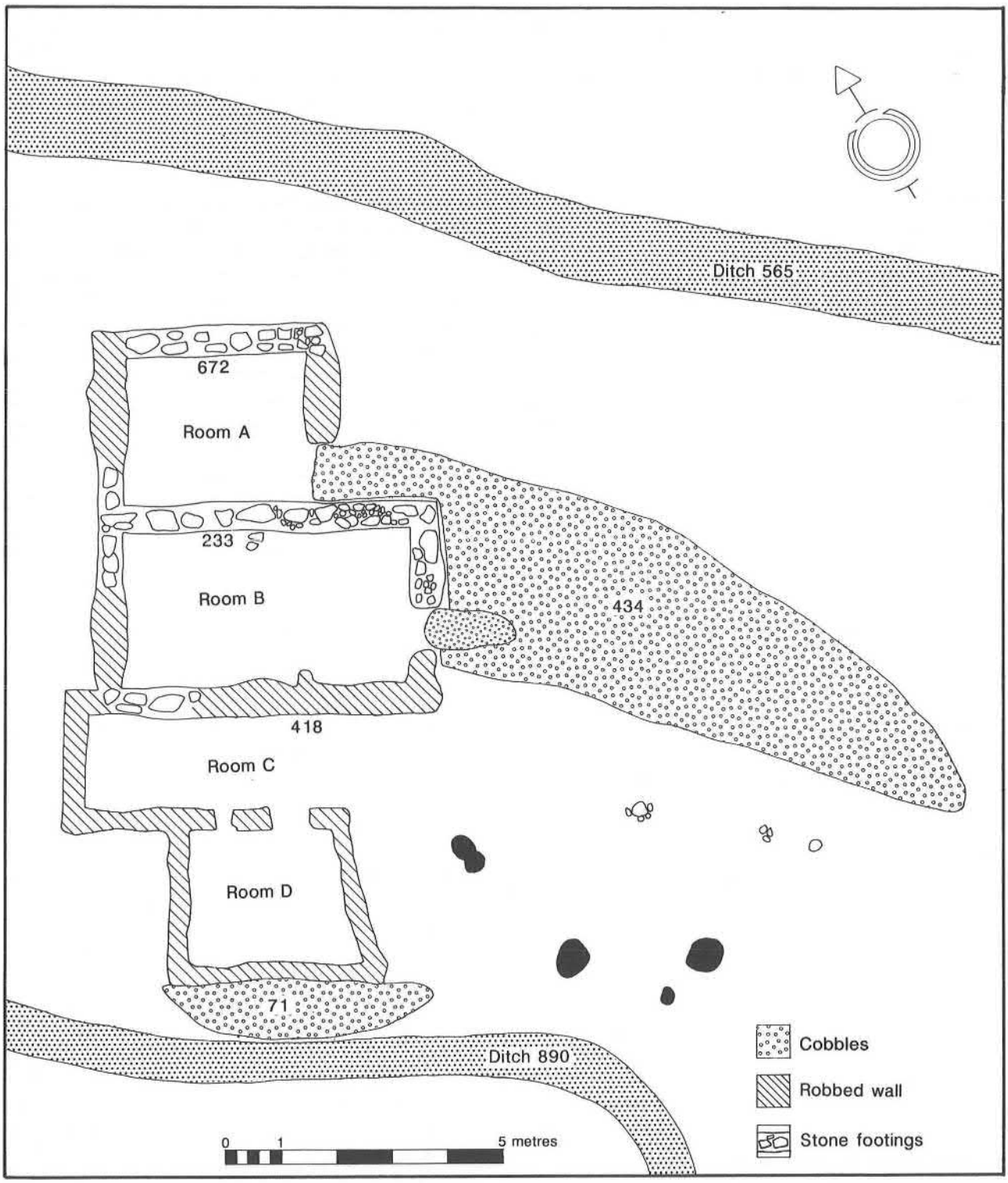


Figure 49: MK618; Post-medieval Building 11.

of the buildings. The bricks were four courses high and mortared together. They were not set into a foundation trench but simply laid straight onto the clay.

The south wall of Building 10 seems to have been constructed differently. It was marked by a deeper trench than the other walls; it measured 300 mm wide and deep, with steep sides and a flat base. This trench did not contain any stones nor did it give any indication of ever having done so, and probably served as a construction trench for a post-built wall. It was divided into two by a layer of cobbles halfway along its length. These cobbles were far denser than 433 and probably marked the position of a doorway in the south-west wall.

Building 11 (Fig. 49)

Building 11 lay 12 m to the south-east of Building 10, and a short steep slope separated it from 433. It was the most extensive of the post-medieval buildings found and consisted of four rooms (A-D).

Room A: the northernmost room, this measured 4.0 × 3.0 m. Little remained of the north-west and south-east walls, owing to extensive robbing. The surviving walls were laid in a trench 450–500 mm wide and 300–350 mm deep, with steep sides and a flat base. The entrance to this room was in the south-east wall, the gap for it being filled by part of cobble layer 434.

Room B: this was the largest of the rooms, measuring 4.0 × 6.0 m. Its north-east wall, which it shared with Room A, contained some of the largest blocks of ironstone found in the post-medieval buildings, measuring up to 750 × 450 × 300 mm. The footing trench (233) for this wall was 500 mm wide and 300 mm deep, with steep sides and a flat base. The other three walls of Room B had all suffered from robbing, but where they did survive the trenches had similar dimensions to 233, although the stones they contained were not as large. The entrance to Room B was in the south-east wall and was marked by a dense layer of cobbles set within the gap in the wall and surrounded by 434.

Room C: this room measured 10 × 2.5 m. Although it shared a wall (418) with Room B, the south-west end of Room C projected beyond Room B, as an extension had been added to the north-west end of 418. The trench for this extension and the other two walls of the room (the south-east side seems to have been left open) were similar in size and shape to the other trenches, but did not contain any evidence that there had ever been stones in these trenches. It seems that these trenches, like the south-west wall of Building 10, were intended to hold the base of a timber structure. There were two gaps in the south-west wall of this room which led into Room D.

Room D: this room measured 4.0 × 3.0 m and seems to have been constructed in the same manner as Room C. There was no indication of an external doorway leading into this room, so entrance was probably gained through Room C. A cobble layer (71) ran between the south-west wall of this Room and Ditch 890, overlying one of the earlier silted-up ditch cuts (Fig. 39, S75/8). This, along with the apparently different construction techniques, suggests that Rooms C and D were later additions to Building 11 and post-dated the drainage ditches.

Building 12

Building 12 (not shown in detail) consisted of two partly robbed walls running at right angles to each other. Between the two walls was a square-shaped cobbled area. Cobble layer 434 ran south-east from Building 11 for 13 m to a point 2.0 m east of Building 12. It might be that during Period 3/I this cobbling linked the two buildings, but that since then some of the cobbles have been lost.

Building 13

This building (not shown in detail) lay alongside and parallel to Ditch 565 in the extreme north-east of Area 1. Its three surviving wall footings, each 400 mm wide, were the best preserved examples of this type of wall found at Caldecotte. The south-west wall was 2.5 m long, while the north-east wall measured 6.5 m, and there was no evidence at all for a north-west wall. The regular outline of the occupation layer (143) which covered the interior of the building, indicated that the structure had originally enclosed an area measuring 9.0 × 3.0 m.

The Pond

The medieval pond was recut during this period. The post-medieval pond (15) was 6.2 m in diameter (Fig. 44, S20/1). Along the base of its east side was a layer of stones (28). The size of the stones in this layer varied greatly, and it also included fragments of brick and several large fragments of slag. Above this layer the later pond had silted up in a similar way to the medieval pond, even containing three layers of leaf-peat.

The environmental evidence from this feature is very similar to that from the medieval pond. Grasses dominated, but there is also a peak in seeds of the rush group, suggesting that there was trampled land in the vicinity. Cereal pollen grains are also recorded; because of their mass they do not travel far and are usually released during threshing, suggesting that cereal processing was going on nearby. As the nearest post-medieval activity was represented by the buildings in Area 1, it is possible that threshing was taking place there, and perhaps the animals which were producing the trampled ground near the pond were the ones that were being penned in Building 13.

Discussion

This complex of post-medieval buildings and yard surfaces enclosed by ditches appears to have been a single farmstead. The majority of finds came from within Building 11 and the area immediately surrounding it. The domestic nature of many of the finds and the size and number of the rooms point to Building 11 being the farmhouse.

If the south half of this enclosure did serve a purpose associated with animals such as a paddock then it is possible that the function of Building 13 was related to this, perhaps it served as an animal pen. The formation of Layer 143 may have resulted from this function.

Environmental evidence from samples taken from the post-medieval pond indicate that threshing was probably taking place fairly close to it. If Building 11 was the farmhouse and Building 13 an animal pen, perhaps Building 10 was related in some way to the arable side of farming.

The evidence from the pottery and other finds dates these buildings to the mid seventeenth to mid eighteenth centuries. The available historical evidence broadly supports this dating of the end of the buildings, as Building 11 appears on Thomas Jeffery's map of Buckinghamshire, dated 1770, but is not shown on the 1792 enclosure map.

GENERAL DISCUSSION

Considering the fact that only a small part of the medieval village of Caldecotte was made available for excavation, and that the part that was examined was peripheral to the main area of settlement, it would be unwise to attempt to draw any major inferences from the excavated evidence.

Settlement Development and Dating

From the historical evidence and the surviving earthworks, it is clear that Caldecotte was a small and not very successful settlement, and the archaeological evidence appears to bear this out. The date of establishment of the village could not be determined, but none of the pottery from Area 1 could be dated earlier than the thirteenth century, apart from sherds related to Roman agricultural activity. The occupation of Crofts A-D, presumably marking the *floruit* of the village, was dated to the late thirteenth to mid fourteenth centuries. This is significantly later than other more successful villages in the Milton Keynes area, such as Great Linford, where expansion began about the late twelfth century, and had reached its greatest extent by the late thirteenth century (Mynard and Zeepvat 1992, 14). Furthermore, expansion at Caldecotte was short-lived. By the mid fourteenth century these outlying crofts had been abandoned, and the area partly returned to cultivation. At Linford, most of the crofts created during the village's period of expansion survived until the mid seventeenth century, when they were cleared during enclosure of the parish.

Post-medieval development at Caldecotte, though more substantial, was similarly short-lived. The complex of stone-footed buildings established in the mid seventeenth century (at the earliest) on the line of the medieval hollow-way appear from cartographic evidence (p.25) to have been abandoned *c.*1780, a span of little more than a century.

The moated site also appears to have been occupied for a brief period. Ceramic evidence points to its establishment in the late thirteenth century, and occupation into the fourteenth century only. This is supported by the documentary reference of 1641 (p.21), which refers to its long-abandoned state at that time.

Structures

Medieval Caldecotte consisted exclusively of timber structures, either of sill-beam or earth-fast-post construction. This is similar to the deserted villages of Westbury and Tattenhoe, also excavated by the Unit (Ivens *et al.* forthcoming), and is to be expected in an area far removed from sources of building stone, unlike Great Linford and other villages in the north of Milton Keynes. The use of stone as a building material only appears in the post-medieval structures, presumably because it was not until that time that it was possible, and economically viable, to transport it over

Plate 15: Old Caldecotte Farmhouse (*MKAU*)

Object type	*Pub. No.*	*Context*
PERIOD 2/II:		
Copper-alloy vessel	148	176
Iron buckle	232	63
Iron buckle	233	224
Spur	267	719
Knife	292	1045
Fishing line attachment	349	640
PERIOD 2/III:		
Iron buckle	235	955
PERIOD 3/I:		
Copper-alloy buckle	31	681
Copper-alloy buckle	36	39
Button	43	51
Button	44	434
Button	54	71
Shoe	73	1031
Pin	109	475
Wine bottle	164	699
Wine bottle seal	165	475
Beaker	175	473
Egg-cup?	180	515
Spur	266	473
Knife	287	440
Knife	288	733
Hone	300	341
Strap hinge	330	621
Wood pegs	414	1031
Wood staves	415	1031
Wood bung	416	1031
Wood plank	417	1031
Wood barrel lid	418	1031
Wood plank?	419	1259
Wood object	420	1363
Wood post	421	1031
PERIOD 3/II:		
Button	45	9
Button	55	8
Button	59	9
Hook fastener	67	9
Patten	72	8
Wine bottle	163	8
Wine bottle	166	8
Bottle	167	8
Bottle	168	8
Pipeclay figurine	213	7
Knife	286	2
Worked pebble	412	8
TOPSOIL:		
Brooch	9	1
Ring	15	1
Strap fitting	16	2
Swivel and pendant	17	1
Copper-alloy buckle	24	1
Copper-alloy buckle	26	2
Copper-alloy buckle	28	2
Copper-alloy buckle	29	2
Copper-alloy buckle	30	2
Copper-alloy buckle	30	2
Button	39	2
Button	40	7001
Button	53	2
Button	60	2
Patten	70	2
Spindle whorl	101	1
Spindle whorl	102	7001
Thimble	114	2
Spoon	117	2
Scissors	120	2
Posset pot	175	2
Beaker	176	2
Vessel foot (glass)	177	64
Wine glass	178	2
Crotal	238	2
Crotal	239	2
Stirrup mount	271	2
Knife	284	2
Knife	285	2
Knife hilt plate	297	2
Hone	298	2
Hone	301	2
Padlock bolt	310	2
Padlock case	311	2
Lock escutcheon	312	1
Fishing line sinker	343	7001
Fitting	354	1
Spoon handle?	398	2
UNSTRATIFIED:		
Belt/pendant fitting	19	829
Button	42	468
Button	46	19
Patten	71	5
Spoon	116	+
Spoon	118	5001
Wine bottle	162	19, 64
Bottle	169	679
Bottle	170	64
Wine glass	179	37
Vessel base (glass)	186	70
Glass fragment	187	19
Glass fragment	188	70
Tack, decorated	206	37
Signet ring	227	37
Iron buckle	234	451
Knife handle	295	70
Knife handle	296	347
Hone	302	131
Key	314	19
Strap hinge	331	5003
Fitting	355	19
Ferrule	359	37

Table continues next column

TABLE 5: Caldecotte village (MK618); concordance table of illustrated objects/contexts/phases.

any distance. Much of the stone used in the later buildings at the village, and also the fragmentary Building 1 on the moated site, was ironstone, which is found in the Lower Greensand of the Woburn Sands Heights, to the south-east of Bow Brickhill. From the small quantities of stone and brick found on the site, it is likely that these materials were used primarily for footings (with the possible exception of the dovecote), and that even the later buildings on the site were constructed in timber. The oldest surviving building in the village, Old Caldecotte farmhouse (Plate 15), was a timber-framed structure dated to the seventeenth century (Woodfield 1986, 155). It is also worth noting that the watermill at Caldecotte was almost certainly constructed largely of timber (Petchey and Giggins 1983). The poor availability and high cost of stone in this part of the Milton Keynes area is further underlined by the relatively small areas of surfaced yard areas associated with the medieval and post-medieval structures at Caldecotte, when compared

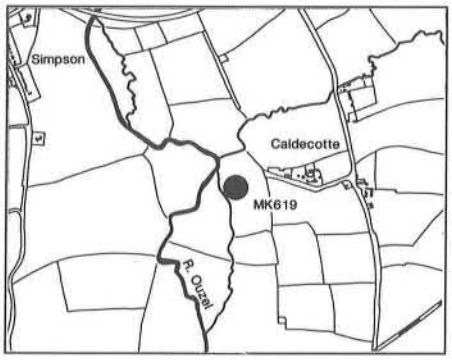
to the extensive cobbled areas at Great Linford, Westbury and other villages excavated in Milton Keynes.

Environment and Economy

From the small amount of environmental evidence recovered from the village and moated site it is difficult to construct any more than a generalised picture of the environment and agricultural practices in medieval and later Caldecotte. The bone assemblage was too small and too fragmented to say any more than that cattle predominated, as in the Roman period, but with higher proportions of horse and pig. Sheep do not appear to have attained the importance and preponderance reached elsewhere in medieval England, possibly because the village specialised in cattle rearing. The relative lack of bones from wild game animals reinforces the suggestion that the village was of low status.

Floral evidence for the village comes mainly from the pond on Croft C, and relates primarily to the environment in the pond and its immediate surroundings, and therefore to the sixteenth century onwards.

In conclusion, the overall impression obtained from the archaeological and historical record is that Caldecotte was a largely unsuccessful settlement for most of its existence. It is unfortunate that the probable nucleus of the village, the earthworks on the north side of Well Close, were not made available for excavation, as they might well have shed light on the origins and development of the village.



Caldecotte Moat (MK619)

R.J. Zeepvat

Introduction

The moated site at Caldecotte was situated 100 m west of the village earthworks, adjacent to the side channel of the River Ouzel that served the mill. The field containing the moat was named 'Berrystead Close' on the 1791 estate map (Fig. 8); documentary evidence suggests that this name was in use at least a century and a half earlier (p.21). The suffix/affix 'Bury/Berry' (from *byrig*, dative singular of *burh*, a fortified place) is a very reliable indicator of manorial association in the south-east Midlands (pers. comm. J. Chenevix Trench).

The moat earthworks covered an area of about 70 × 74 m, aligned east-west. The moat ditch was about 12.0 m wide, retaining water in its northern and western arms. Although a shallow connecting ditch survived between the moat and the river channel (Fig. 50), the water level in the moat appeared to be maintained by the fact that the ditch was dug

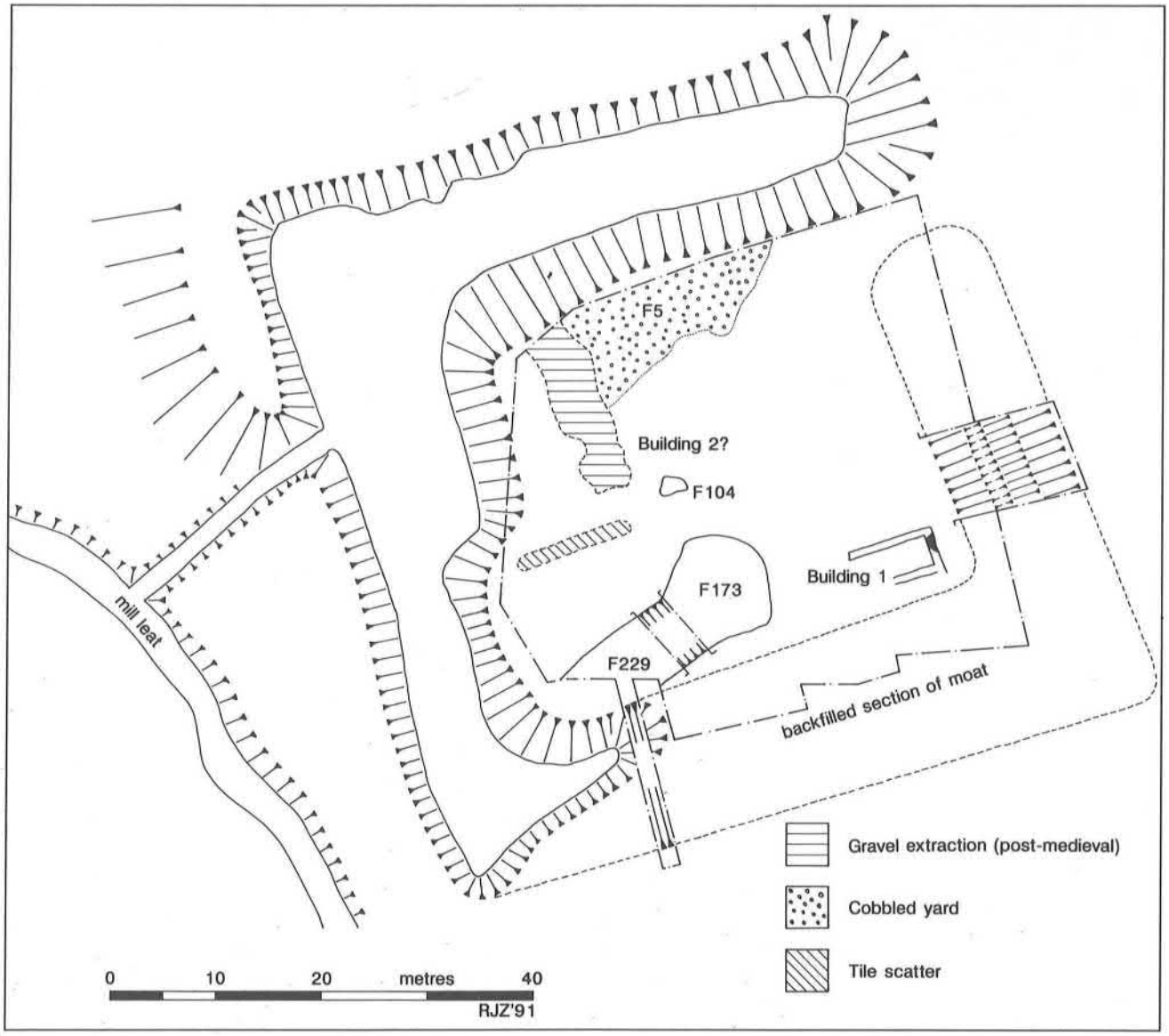


Figure 50: MK619; overall plan.

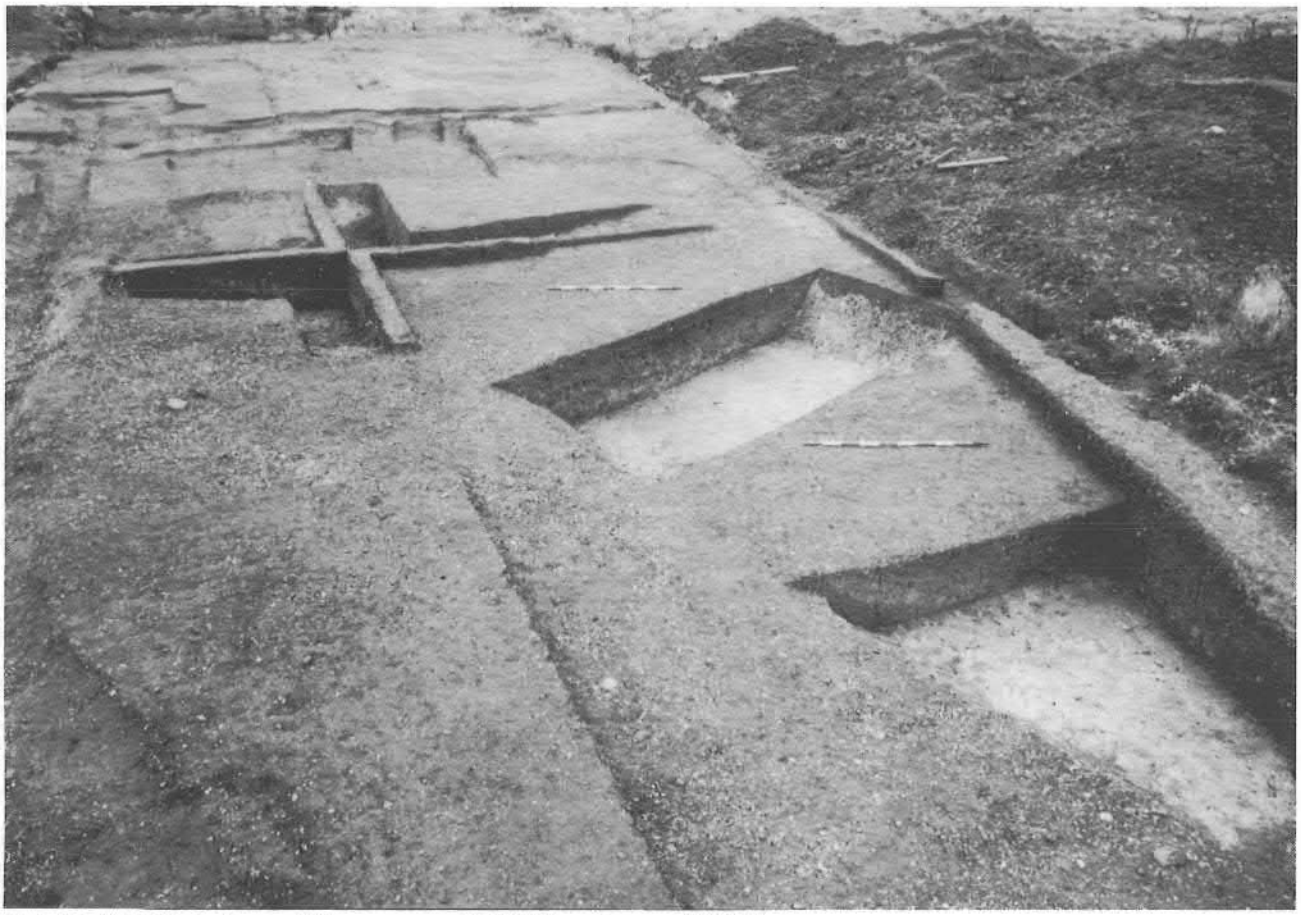


Plate 16: MK619; the late twelfth-century pond, F229, from the west (*MKAU*).

below the water table, and was aided by percolation through the gravel subsoil.

The area enclosed by the moat ditch measured 37 × 40 m. From aerial photographs taken before 1962 (Plate 3) there appears to have been a causeway across the eastern arm of the ditch, close to the north-east corner. On the same photographs, the interior appears devoid of features. However, documentary evidence records the existence of a house, derelict before 1450 (p.21).

Although noted by the Royal Commission on Historical Monuments in 1914 (RCHM(E) 1914, 67), it was not until 1969 that the moat was scheduled, by which time its eastern and southern arms had been filled in and the interior ploughed. Prior to this, small-scale gravel extraction had been carried out in the north-west corner of the moat's interior, and along its north side. The results of the excavation indicate, however, that ploughing, rather than gravel extraction, had caused the greatest damage to archaeological features in the interior.

Excavation of the moat area was carried out in 1978, supervised by the writer with assistance from R.J. Williams and R.A. Croft. The following report deals primarily with the archaeological evidence related to the construction and use of the moat area. The complex of Roman field boundary ditches and other features excavated at this time within the moat is described as part of MK44 (p.36ff).

Topsoil stripping within the moat was carried out using a Massey-Ferguson tracked excavator and dumpers. The same machinery was used to strip a 10.0 m length of the east arm of the moat, and remove from it the builder's debris and clay used to fill the moat in 1962. At a later stage in the excavation, a JCB was used to section the southern arm.

Phasing

Two phases of medieval activity were noted in the moat area, the first pre-dating the construction of the moat. These, briefly, were as follows:

Phase 1: In the south-west corner of the excavated area was a pond, dated to the late twelfth to mid thirteenth century, This feature was cut by the southern arm of the moat.

Phase 2: This consisted of the moat itself, and its associated internal features. This phase is dated to the late thirteenth to fourteenth century.

Excavated Features

Phase 1

In the south-west corner of the interior of the moat, a large rectangular feature (F229) was excavated, 6.5 m wide, at least 11 m long and 0.9 m deep, flat bottomed with steeply curving sides (Plate 16). It was aligned north-east to south-west, being cut at its south-west end by the southern arm of

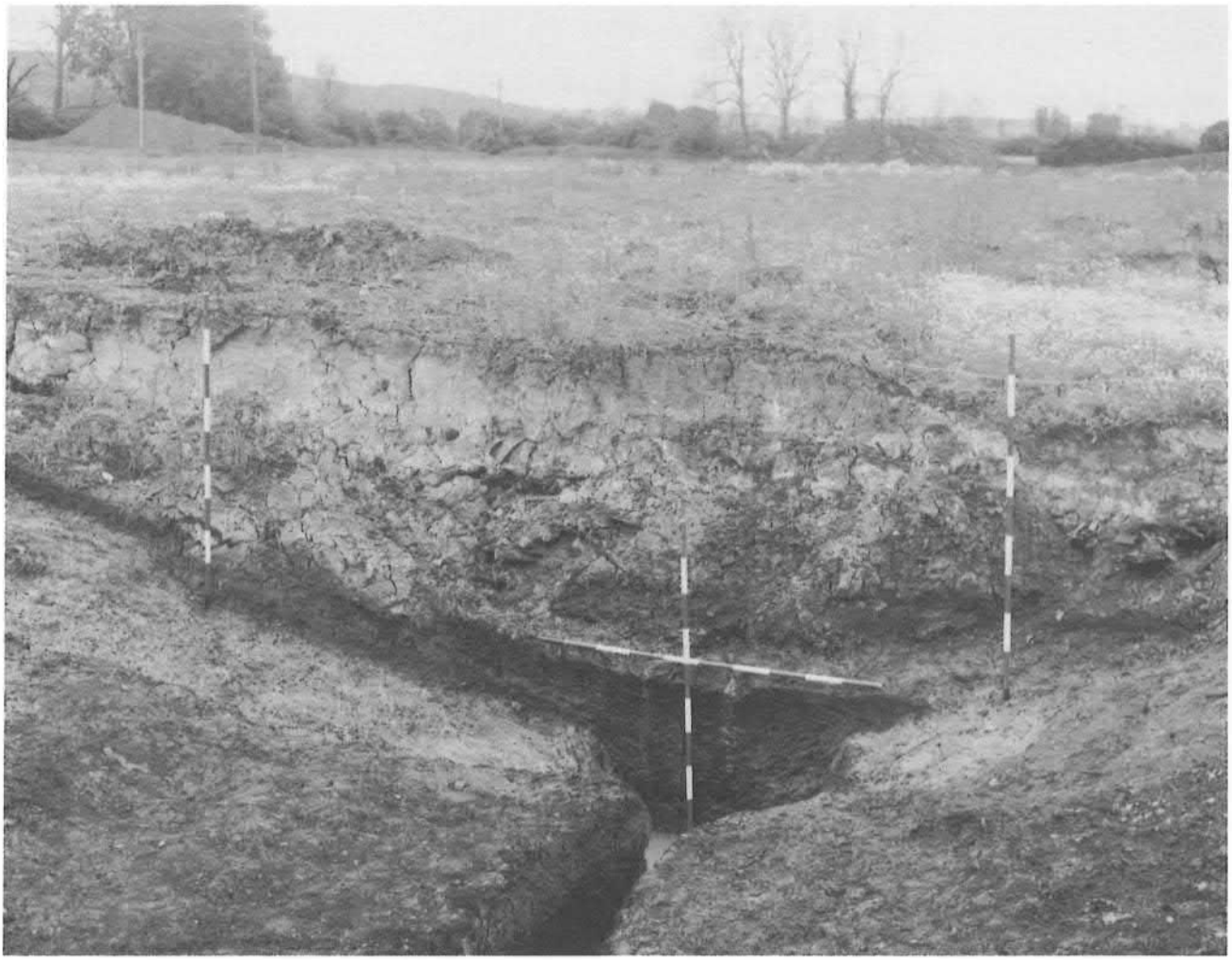


Plate 17: MK619; section through the moat, from the south (*MKAU*).

the moat, and ending at the other as a bulbous terminal (F173), approximately 10 m in diameter. It was filled with grey water-borne clays and silts, containing small quantities of stone. From its primary fill was recovered a coin of 1180–1247 (p.178, No.1), the feature containing pottery ranging in date from the late twelfth to the mid thirteenth century.

From its size and fill this feature has been identified as a fish-pond. No other features belonging to this phase were identified.

Phase 2

The moat ditch (F2), as sectioned on its eastern arm, measured 12.0 m wide and 2.6 m deep (Plate 17). It had shallow sides because of the gravel through which it was cut, steepening as it passed into the underlying clay. It appeared to have been cleared several times: the bottom had the characteristic 'scoop' associated with such a process. A second, machine-cut section of the southern arm showed that this 'scoop' did not extend beyond the east arm of the moat.

To a depth of 1.2 m below topsoil the moat contained a mixture of modern builder's debris and industrial waste, sealed with a layer of blue clay. Below this, in what had been the bottom of the moat when backfilling took place in 1962, was a deposit of black peat, indicating that the moat had contained water at that time. Below that, and covering the sides of the moat ditch, was a light brown layer representing the decayed turf and topsoil sealed by the infilling. The 'scoop' at the bottom of the moat ditch was filled with a brown peat deposit, containing thirteenth-century pottery. Sections of the moat are shown in Fig. 51.

In the interior of the moat, evidence was found of at least two buildings. Building 1 was a small rectangular structure measuring at least 4.5 × 9.0 m, aligned east-west, in the south-east corner. It was defined by the traces of the footing of its east wall, 1.0 m wide, and a smaller robber trench indicating its north and sides. The surviving length of wall footing was constructed with roughly trimmed ironstone blocks, obtained from the Greensand escarpment, 1.7 km to the south. This stone was also used for buildings in the village (p.91). No internal floors were found, all further traces of the building having apparently been removed by modern ploughing or stone robbing.

The second, larger building (Building 2) stood in the centre of the moat enclosure, towards the west side. No trace remained of its structure, and its location and possible extent were only defined by the scatter of tiles from its roof

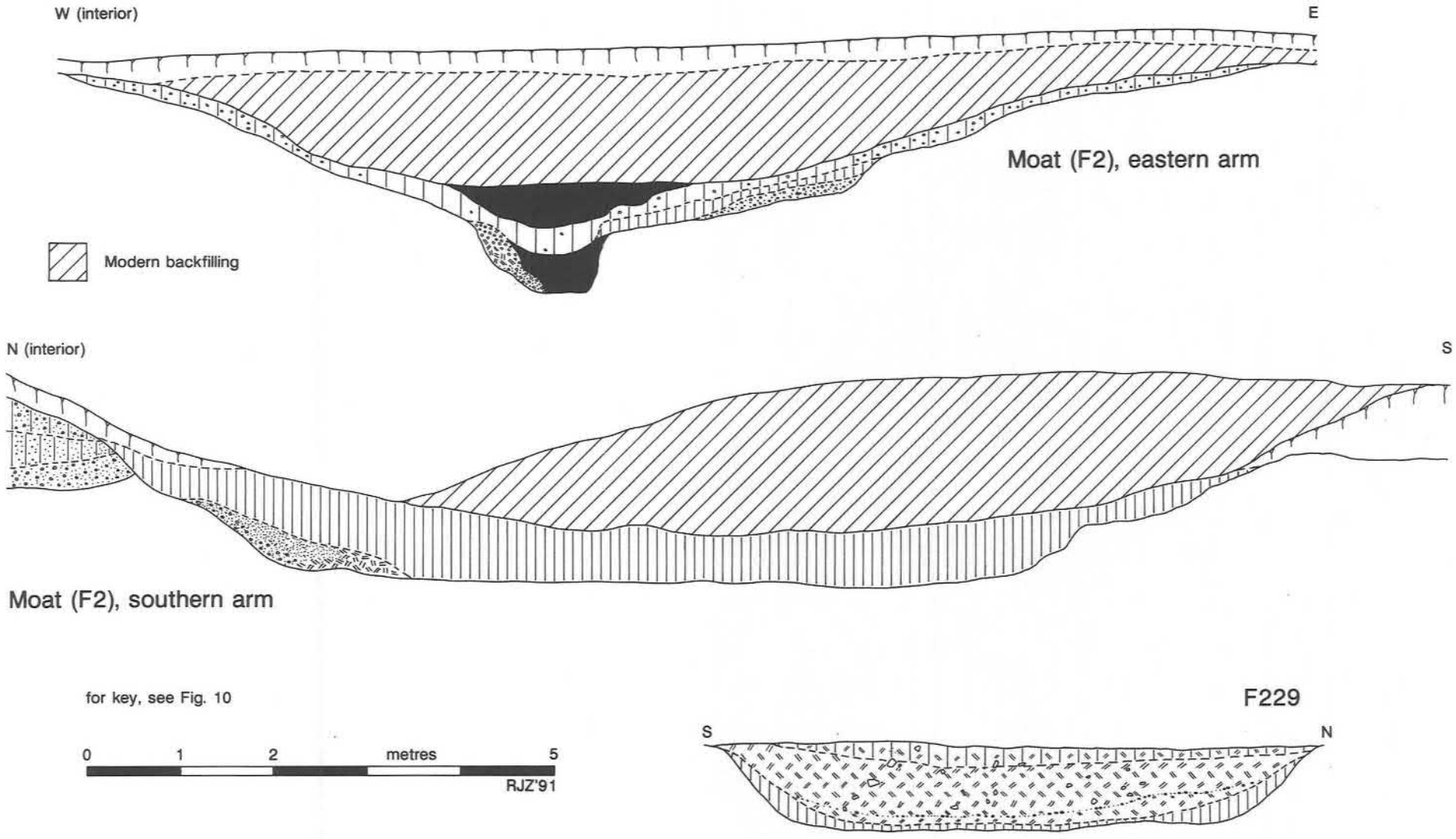


Figure 51: MK619; sections of moat and F229.

on its south and east sides (Fig. 50). A report on the tiles appears elsewhere in this volume (p.173).

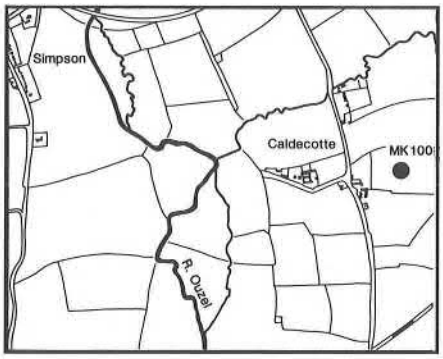
To the north of Building 2 was a yard area (F5) measuring about 20 × 8 m, occupying much of the north side of the moat's interior. It was laid partly in limestone rubble and partly in gravel; whether this represented stages of repair, or construction with materials from several sources, was not clear.

Only one other medieval feature was noted in the interior of the moat. This was a roughly circular pit (F104), 1.8 m in diameter and 0.3 m deep, in the area probably occupied by Building 2.

Discussion

Despite the destruction by ploughing of much of the interior of Caldecotte moat, it is evident from the results of the excavation that the interior was occupied by buildings in the late thirteenth and early fourteenth centuries, and documentary evidence points to the site as having been that of Caldecotte manor house. From the presence of the fishpond (F173/229) it is evident that the moat was predated by a fishpond or complex of fishponds, perhaps also associated with a house.

Caldecotte moat is one of a series of moats in the Ouzel valley, each associated with a village, and in some cases with fishponds. It is one of two that have been excavated in the Milton Keynes area, the other (MK655) being at Willen (Mynard, forthcoming), also in the Ouzel valley. Caldecotte is so far the only one of the Ouzel valley moats for which there is documentary or archaeological evidence of any internal structures; other moats in the area are presumed to have been used as fishponds, game reserves or stock enclosures (Croft and Mynard 1993, 30). In size, Caldecotte is one of the largest of the Ouzel valley moats, enclosing an area of 0.15 hectares. The largest, at Simpson, has an enclosed area of 0.18 hectares, while the smallest, Willen, enclosed only 0.05 hectares.



Caldecotte Brick Kiln (MK1008)

R.J. Williams

Description

In October 1980, a watching brief during the construction of the Caldecotte Main Drainage sewer line revealed the site of an eighteenth-century brick kiln at SP 8973 3552, about 200 m east of the junction of Caldecotte Lane and Walton Road (Fig. 4). The site was located at the approximate junction of the first terrace gravels and Oxford clay, although the exposed subsoil appeared to be a more yellow Boulder clay, and may have been a very superficial deposit.

The area around the kiln was cleared with the aid of a mechanical excavator. After machining away the rutted surface, an amorphous patch of partially-fired red sandy clay and over-fired fragmented brick and tile wasters, approximately 4.0 m across, was visible. The centre of the pile of wasters protruded slightly above the general stripped level. The sides of the feature had been sealed by a layer of yellowish-grey clay. The surrounding yellow clay subsoil showed no evidence of any peripheral burning. The wasters were clearly not the remains of stacks but the fill of pits, mixed with quantities of unfired reddened sandy clay. The feature was not excavated, but a sample of the bricks and tiles was collected.

Finds

Forty-two fragments of brick and sixteen fragments of tile were collected from the site. Many of these had been badly distorted and blistered as a result of overfiring, and a number of the bricks showed evidence of vitrification.

The bricks fell into two distinct categories. The first was a thin brick averaging 100 mm wide and 42 mm thick, made of a bright orange fabric with abundant limestone inclusions. No complete bricks were found to give the length. None of this type showed any heat distortion or vitrification. A thicker brick, 215–230 mm long, 100 mm wide, and averaging 65 mm thick was present in greater quantities than the smaller type. These had all been subjected to much greater heat distortion, and only one complete measurable example was found. Because of the much greater distortion and vitrification, the fabric was more difficult to identify. Many had turned a greyish blue in colour. It is likely that both brick types were made of the same clay, and that stacking in different parts of the kiln may have resulted in the varied distortion observed.

All the tiles were badly fragmented and distorted, and no complete examples were recovered. They averaged 18 mm in thickness, and two examples had double square peg holes. Their fabric appeared to be identical to that used for the bricks, having a sandy orange colour with abundant white limestone, and sparse iron ore and quartz inclusions.

Discussion

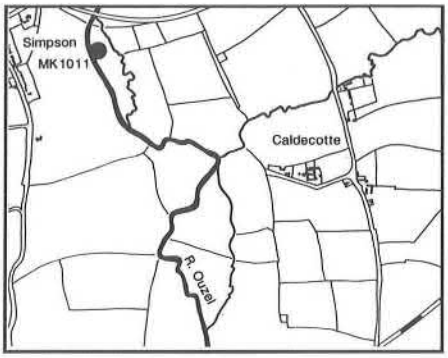
It is likely that the site represented a single firing of a small temporary clamp kiln. This was the simplest form of brick kiln, in which bricks and/or tiles were stacked on and around the fire, with a further covering of wasters to protect the core from the weather. The more delicate tiles were protected from excessive heat by being stacked between the bricks. When the firing was complete the clamp was dismantled, and the wasters probably left in a pile for re-use in the next clamp kiln.

In the absence of any dateable finds from the kiln, it is possible that some idea of its date may be inferred from evidence of the firing techniques used, or from its products. It has been shown (Cox 1979) that a high proportion of vitrified bricks often resulted from the use of wood as the primary fuel in kilns. This practice ceased in the nineteenth century, with the widespread adoption of coal as the main source of fuel.

The sizes of the bricks found corresponded roughly to the minimum sizes set out in an Act of Parliament of 1725 (*ibid.*), confirming that the kiln was of eighteenth-century date. No other dateable finds were recovered.

Excavations at Caldecotte Mill, about one kilometre to the south-west, revealed the extensive use of bricks in construction and repair work on the mill and mill house dated to 1720–1750 (Petchey and Giggins 1983). The bricks used were similar in size and fabric to the larger examples from the clamp kiln, and further confirm the suggested date for the production of bricks on this site.

It is notable that the field containing the brick clamp was marked as *Kiln Furlong Ground* on the 1791 estate map of Bow Brickhill (Fig. 8), and the field immediately to the south was called *Kiln Pits Ground*. However, no kilns, buildings or clay pits are shown, suggesting that the field names preserved the memory of earlier activities. On this evidence, the kiln can be dated no later than the late eighteenth century.



Simpson Sluice (MK1011)

R.J. Williams

Introduction

In September 1981, during the construction of Caldecotte Lake, a number of waterlogged timbers were discovered in the bank of the River Ouzel at SP 8850 3596, opposite the moat and fishponds at Simpson (Fig. 52: Plate 18). Brick-built north and south walls and a cross wall, and a number of large oak timbers protruding from the river bank, were visible. The area around the brick piers was cleaned, and the above features planned.

Description (Fig. 53)

Two brick-built walls 3.64 m apart protruded over 2.0 m from the eastern river bank. Each was approximately 0.6 m wide, constructed of alternate courses consisting of two headers and a stretcher. The tops of each wall were stepped up towards the river bank. Linking the west ends of these walls was a brick cross-wall, 0.5 m wide and at least five courses deep. Accurate measurement of the structure was difficult, as it was totally submerged. The cross-wall was constructed of three overlapping levels of brick headers. Protruding from the centre of the cross-wall were four vertical timbers, 170 × 150 mm in section, evenly spaced at 1.08 m intervals. The end timbers were roughly aligned with the inner faces of the north and south walls, and their upper ends had rotted away just above the surviving top of the cross-wall. The two central timbers had horizontal sill beams approximately 150 mm square, joined to their surviving upper ends by means of simple mortice and tenon joints. The sill beams tipped back and disappeared into the clay riverbank. Cut into their upper faces, 400 mm from the junction with the vertical timbers, were mortices 95 × 50 mm across and 90 mm deep. A possible small mortice 60 × 50 mm across and 50 mm deep was noted in the southern side of the more northerly of the central uprights. The area within the walls had been filled with shingle worked in by the river. No stratigraphy could be seen in the river bank as the area had been badly disturbed by cattle using the site as a watering place.

Immediately south of the southern wall was a section of mortared limestone and brick wall 0.7 m wide, protruding from the river bank and running parallel with the brick wall. To the south of this wall were the remains of another of similar form and construction at approximately 90° to the former, although the junction of the two had been destroyed. At the southern end of the south wall was the end of a timber, 400 mm square, protruding 800 mm from the river bank at an acute angle and also tipping back into the river bank.

To the south of this large timber was another timber 300 mm square, protruding for over 2.0 m from the bank at an angle and roughly parallel to the larger timber to the north. Halved to the upper side of this timber at its visible centre and disappearing with the bank at right angles was a timber crossmember 300 × 230 mm in section. The joint had only been halved to a depth of 90 mm, and the crossmember stood 20 mm proud of the upper surface of the main timber. On the south side of the crossmember were two large planks, 330 mm and 380 mm wide, and 30–40 mm thick, attached to the main timber by means of large headed iron nails. The ends of these planks and the crossmember had rotted away, but appeared to have originally extended beyond the main timber. At the rotted end of the main timber was an upright mortice 180 × 60 mm across and 70 mm deep: another possible mortice 170 × 60 mm and 80 mm deep was noted cut into the crossmember where it had been halved into the main timber.

Discussion

From the above observations, it was evident that the visible remains were only a small part of a larger structure. Much of this remained either buried at least 1.5 m below the level of the field, or submerged in the river, even at the lowest water levels.

Prior to the construction of Caldecotte Lake, the main channel of the River Ouzel at Simpson was man-made, to the west of the original channel, which remained as a meandering stream. This diversion of the river appears to have been made, as at other villages in the Ouzel valley, to supply water to a watermill.

In 1086, a water mill worth 10s. (VCH 1927, 239) was recorded in Simpson. Reference to a watermill in the parish also appears in 1324 (Cal. Close 1323–27, 77). The probable site of this mill lies at SP 8842 3602 (Fig. 52). To supply water to the mill a straight leat 430 m long was dug. This also supplied water to the moat and fishponds before reaching the mill. Beyond the mill, the leat expanded into a wide pond before turning back to the east to rejoin the main channel. The mill pond is still partly visible as an earthwork. Although the pond appears on the 1781 estate map of Simpson (BuCRO Ma 261/1.T), by that date the mill had

Plate 18: MK1011; Aerial view of the moat and fisponds at Simpson. The by-pass leat can be seen running from the site of the sluice (above centre) to the old river channel (*Cambridge University Collection of Air Photographs: copyright reserved*).

been demolished, leaving the pond intact as part of the landscaping connected with the manor house, with a small bridge spanning the channel on the site of the mill.

The structure described above is located at the junction of the mill stream and an even smaller leat which ran in a north-east direction from a point 70 m south of the mill site to the original river channel (Fig. 52). This small leat is clearly marked on the 1781 estate map and the 1831 OS 1st edition map.

At the watermill sites at Caldecote (near Newport Pagnell) and Willen, three separate sluice gates were present. One was at the point where the mill leat left the course of the original channel, one at the mill itself, and one at a point upstream of the mill leat where an overflow channel connected with the river. The latter was used to divert the flow of water from the mill in times of flood. The second channel at Simpson may be an earlier overflow channel.

The recorded remains at Simpson indicate at least two and possibly three phases of sluice gate construction, of which the earliest appears to have been the most southerly timber structure. Unfortunately insufficient evidence was available to permit detailed reconstruction or discussion of this structure.

The better-preserved brick and timber structure is readily identifiable as a sluice gate. The size and form of the brickwork suggested a date no earlier than the late seventeenth century, making this either the final rebuild of the timber structure or possibly of the stone structure, part of

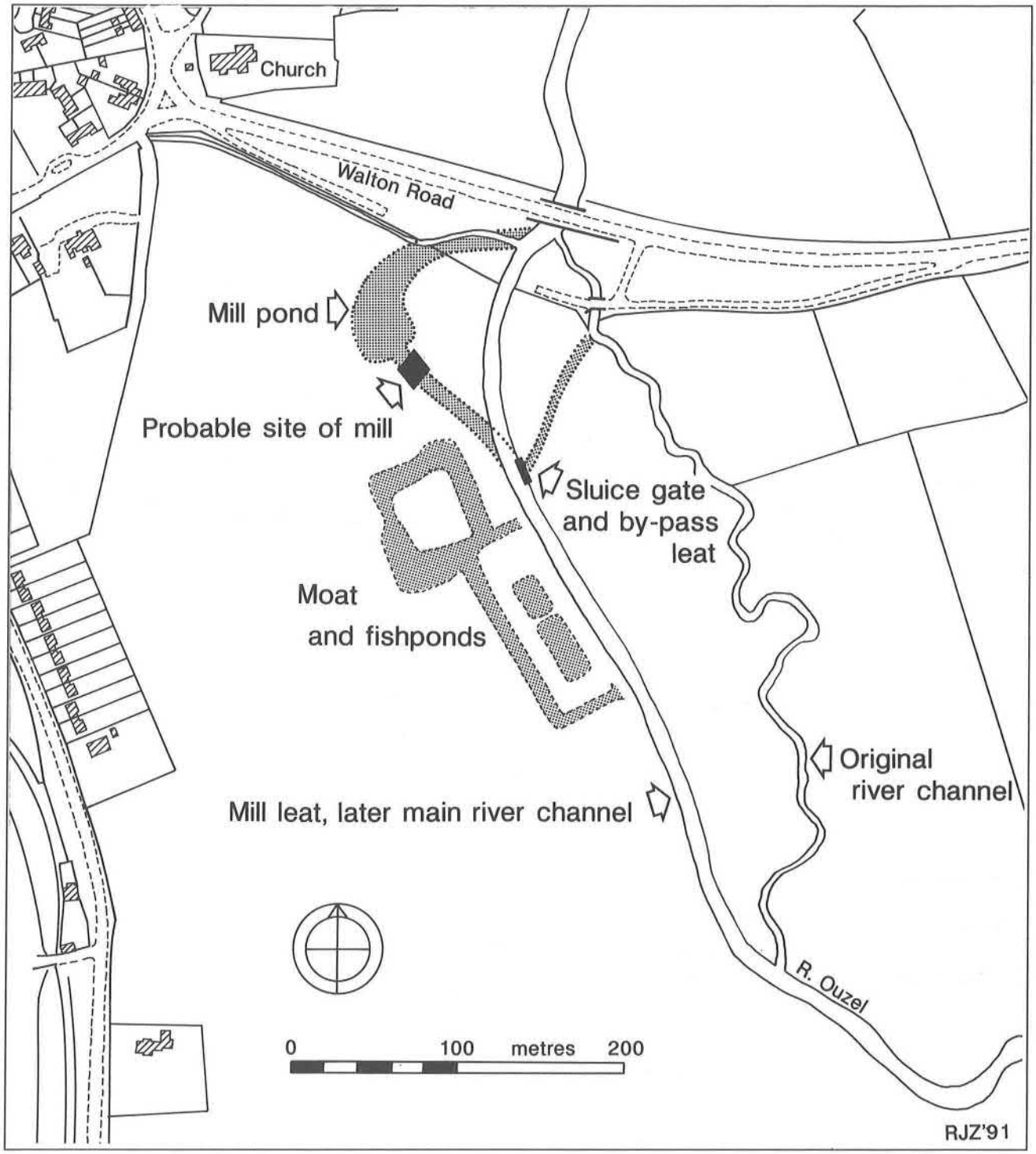


Figure 52: MK1011; site location and associated features.

which was identified between the two. The date of the stone structure is unknown, but may represent an intermediate sluice. A document refers to:

'. . . Two watermills under one roof, with the Mill House, Millholmes Meadow, fisheries and ferries which were held by the Hatch family in the seventeenth century and are probably identified with the water mill attached to the manor in the 18th and 19th centuries' (VCH 1927, 460).

In many respects the brick and timber sluice is very similar in form, dimensions and structural techniques to the waterhouse excavated at Caldecotte Mill (Petchey and Giggins 1983). The surviving upright timbers may be similar to the head staples used in mill-frame construction, and the horizontal members with mortices may equate to the binribbs separating the flow of water in the three bays.

Sluice gates using sliding paddles to control the water level would have functioned in a very similar manner to those in the waterhouse at the mill. As with the mill, each of the bays almost certainly contained eel traps, and the above documentary reference to fisheries may reflect this.

Perhaps the best local parallel for this form of sluice gate is a watercolour illustration entitled *Eel traps at Turvey*, dated

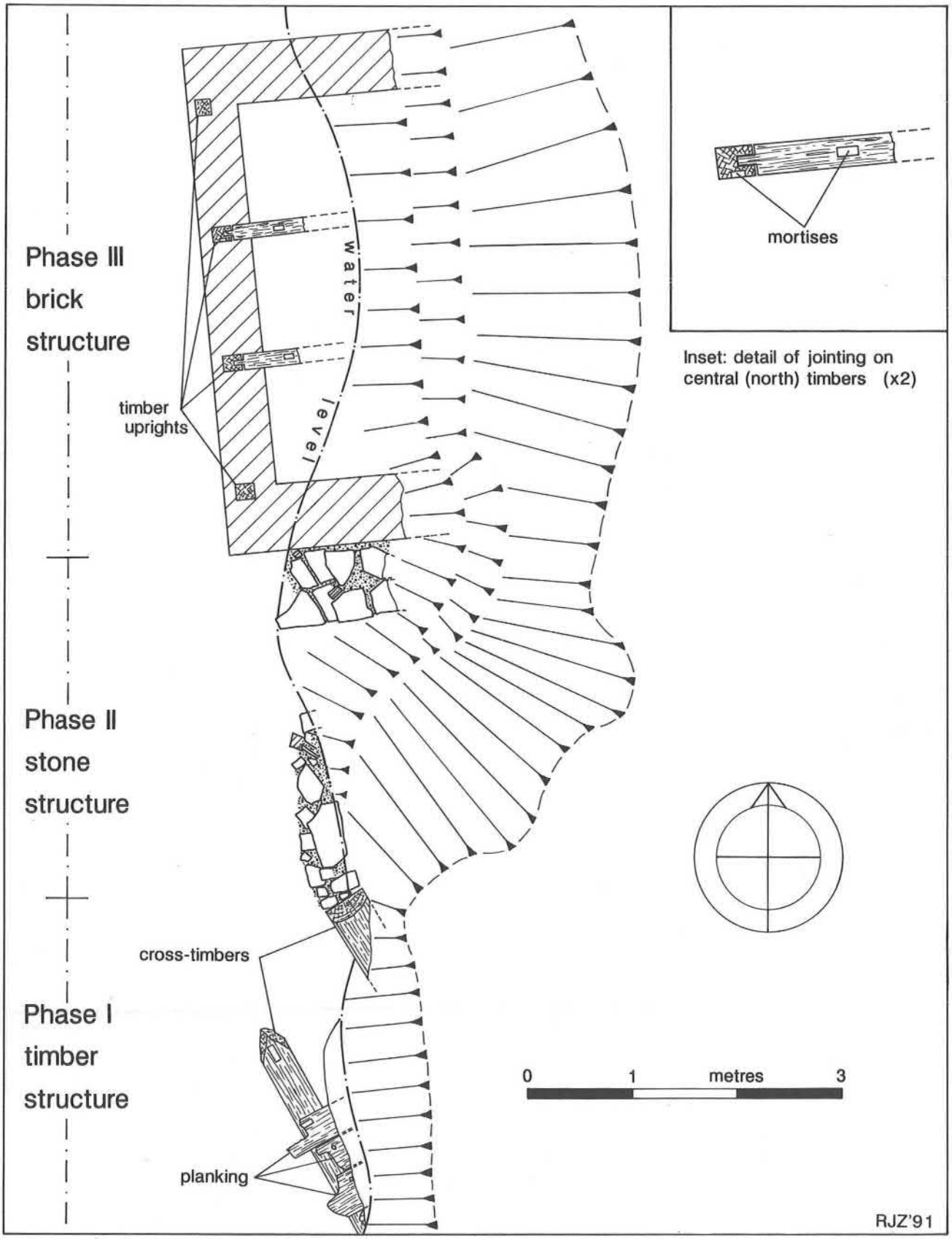
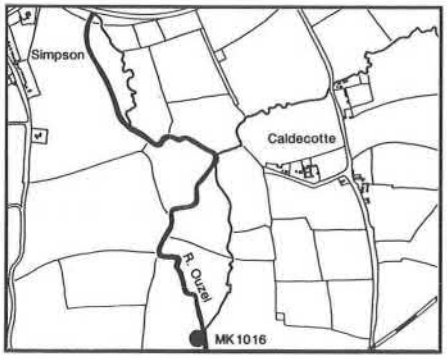


Figure 53: MK1011; overall plan.

to the mid-nineteenth century (Gray 1980), showing a scene on the River Ouse at Turvey, Beds. This depicts the sluice structure, with water flowing into an expanded side channel. The sluice is shown as having three bays, with brick or stone side cheeks and separated by wooden uprights. There appears to be a system of wooden vertical sliding paddles or *rimers* on the riverside, and the whole structure is covered by a timber walkway, on which are lying several wicker eel traps.

On the 1881 OS 1st edition (1:2500) map the line of the mill leat remained unaltered, but the mill pond had disappeared, and the channel flowed through the approximate centre of the earlier pond. More recently, the Simpson to Walton Road was realigned to the north and the course of the river altered, bypassing the site of the mill pond to the east. In 1983 the river was once again realigned during the construction of Caldecotte balancing lake.



Caldecotte Boat (MK1016)

Gillian Hutchinson

Introduction

This is a summary of the excavation of a small river boat found in a side-channel of the River Ouzel, south of Caldecotte Mill (Fig. 4). The vessel is dated to the period from the fifteenth to the seventeenth century. The boat find itself underlines the use of water transport in the Caldecotte landscape at this time. In addition, a quantity of animal bones was found in the deposits overlying the boat, and analysis of these (p.219) throws light on other activities relating to the economy of the area.

A fuller technical description of the boat is to be published in the *International Journal of Nautical Archaeology*.

Discovery and Excavation

The boat was discovered at SP 889348 in July 1982, during the construction of Caldecotte Lake (Fig. 54). The scale of the earth-moving operation and the size of the excavation machinery resulted in more than half of the boat being torn off and irretrievably dumped. Keith Fairman, the Site Engineer, deserves much credit for recognising the remains of the boat. MKAU staff recorded the stratigraphy of the hummock of earth left standing over the remaining part of the boat, and excavation of the boat was carried out by staff from the National Maritime Museum. Photogrammetric recording was undertaken by Jim Hooker from City University, London.

After excavation and on-site recording the boat was lifted onto a specially constructed pallet, wrapped and supported, and transported to the National Maritime Museum. Prior to post-excavation recording it was stored in a water tank. After conservation by polyethylene glycol impregnation at Greewich it is hoped that it will be displayed in a museum at or near Milton Keynes.

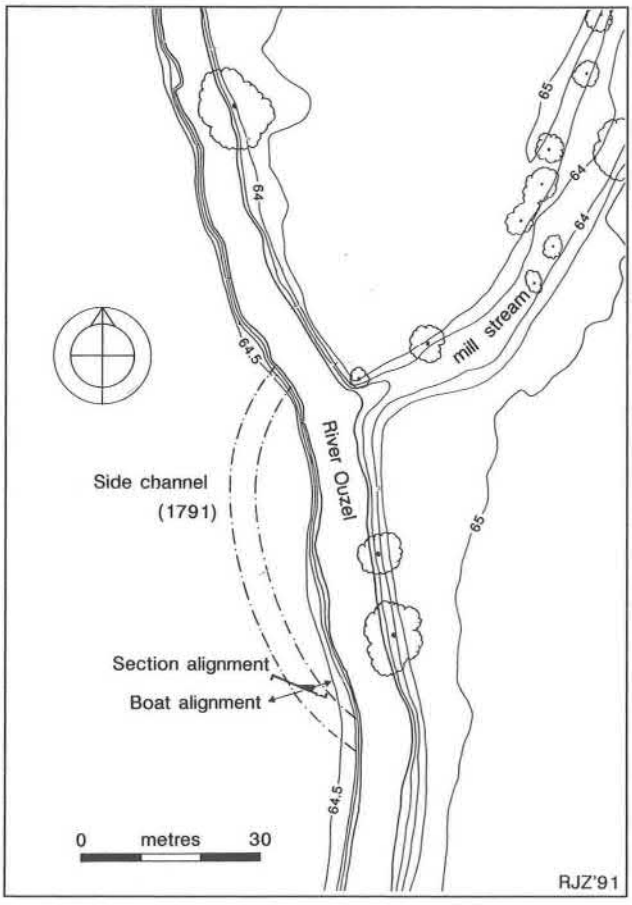


Figure 54: MK1016; site location.

Stratigraphic Context

The stratigraphic information recorded in Fig. 55 provides much information as to the circumstances of the boat's burial. The boat was lying towards the edge of an old watercourse, roughly parallel to the bank. At the time when the boat sank the river bed was clean shingle (1), indicating that the river was flowing quickly. The presence of the boat then disturbed the flow of the water, causing a layer of clay (2) derived from the river bank to be deposited at the base of the bank, and a layer of sand (3) to be precipitated out. This sand flowed under the boat and banked up over layer 2 and the shingle riverbed (1). Further waterborne sediments (16) were subsequently deposited in the boat, and banded sand (11) similar to layer 3, containing some freshwater shells and dumped animal bones, shelved from the side of the boat nearest the bank out into the channel. This reduced the depth of water on this side of the water-course, and material washed or tipped down the river bank (4, 5, 6) encroached on the channel. This part of the water-course must have undergone a marked change in character, resulting in its silting up with blue-grey clay (7) containing vegetation, wood fragments and more dumped animal bones. In this layer two sharpened roundwood stakes were found lying horizontally. Their upper parts had been broken off, and they were evidently not in their original positions. The surface of this layer shelved out into the water-course, and was overlain by clay containing much vegetable matter (13), such as might be deposited by slow-moving water running beside an overgrown river bank. The build-up of

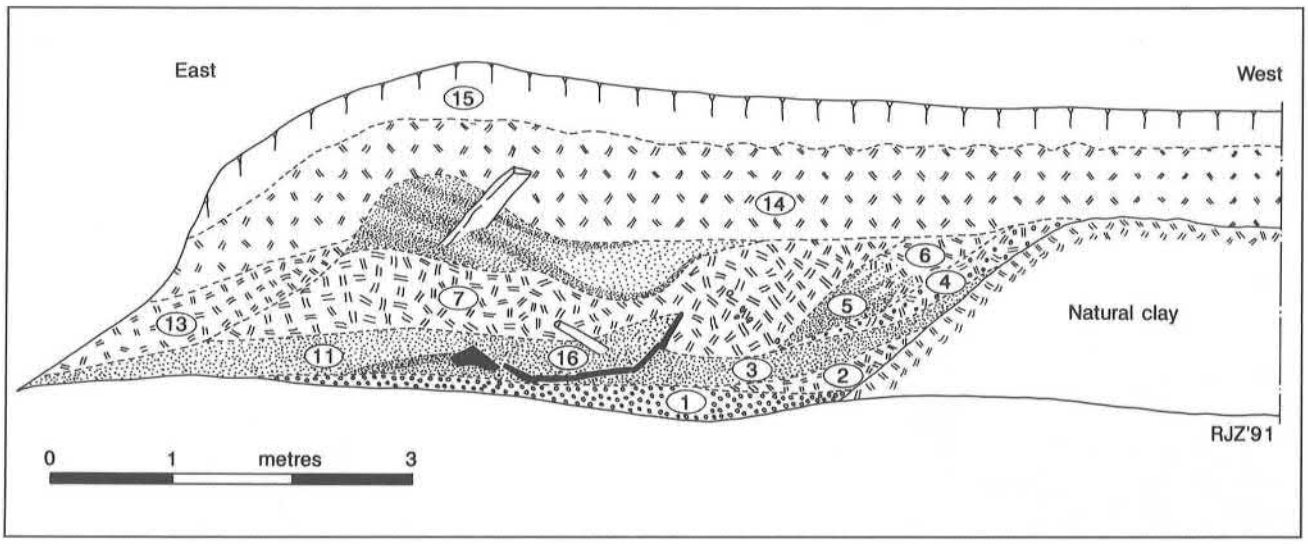


Figure 55: MK1016; section through side channel.

mottled brown gleyed clay (14), surmounted by the grey-brown ploughsoil (15) which formed the ground surface and the river bank before construction of the lake, may have accumulated through flood action. The surrounding land was close to the water-table and gently sloping. In the medieval period this area was marshland (Bucks CRO 105/36).

Fig. 54 illustrates the location of the boat in relation to the course of the River Ouzel before the excavation of Caldecotte Lake. The boat was aligned roughly south-west to north-east, with the contemporary river bank to the west of it. This ancient west bank of the Ouzel lay within ten metres of its modern position. The stratigraphy shows that the western side of the water-course where the boat was lying had become subject to deposition, and it follows that the other bank is likely to have been eroding as the river was moving gradually eastwards towards its recent course.

Dating

Unfortunately it was not possible to use dendrochronology to date the boat. The widest oak components, the planks, were through-sawn boards, meaning that many of the same tree-rings occur twice in the same cross-section, one on each side of the centre line. Therefore, although the bottom-board was 240 mm wide at the point where the sample cut was made, it revealed only twenty-four tree-rings. The after plank of the port second strake had only twenty-nine rings, and the port top strake had forty. These were inadequate for dendrochronology.

A sample taken from the twenty outermost rings of the port top strake was sent to Harwell for radiocarbon dating. The final result obtained from the sample (HAR-5201) was 410 ± 60 years BP, *c.*1540. The preliminary result (Egan 1983, 203) was forty years later, and had a larger standard error. In addition to the problems of calibration of radiocarbon dates for the medieval period, several allowances have to be made when interpreting this date: the tree might have been felled years before the boat was built; the sawyers and the boatbuilder would have removed the outermost, most recent, growth of timber (no sapwood was seen); the sample dated consisted of wood grown over twenty years, and the boat was old before it was abandoned. Therefore, the radiocarbon date suggests that the abandonment of the boat probably occurred in the sixteenth or early seventeenth century.

No datable artefacts other than the boat were recovered in the excavation, and the only other dating evidence is provided by the animal bones, which were found in Contexts (7) and (11), overlying the boat. From his study of the bone assemblage (p.219) Dr Armitage concludes that the Caldecotte bones all date from the later medieval or early Tudor periods (fifteenth to sixteenth centuries).

The boat had been severed obliquely, so that only one end remained. For convenience, this is referred to below as the bow, so that the relative positions of the boat's components can be described. Using this convention, it is clear that approximately 2.5 m of the port side and about 1.0 m of the starboard side survived. However, it is probable that the boat was double-ended (pointed at bow and stern). The presence of a mooring chain and spike attached to the surviving stem-post does not assist with the problem of identifying the end, since the Somerset turf boat (a double-ended boat which seems to belong to an ancient tradition) has mooring chains similar to that on the Caldecotte boat at both ends (McKee 1983, 107–9). Indeed, with boats which were manoeuvered by poling in either direction, as the Somerset boats were and the Caldecotte boat might have been, it is hardly appropriate to differentiate stem and stern.

The surviving part of the boat (Plate 19) consisted of part of an elm keel; a stem hewn from oak of naturally curved grain; clinker planking made from sawn oak boards, overlapping and edge-fastened with iron nails; an oak frame timber ('rib') and two fragments of oak bottom boards.

The stem was fastened to the keel by a stepped horizontal scarf, held together with two treenails (wooden pegs). Short planks ('stealers') were nailed to each side of the stem and keel to fill the angle beside the scarf area (Fig. 57). The after ends of these stealers were recessed into the bevelled sides

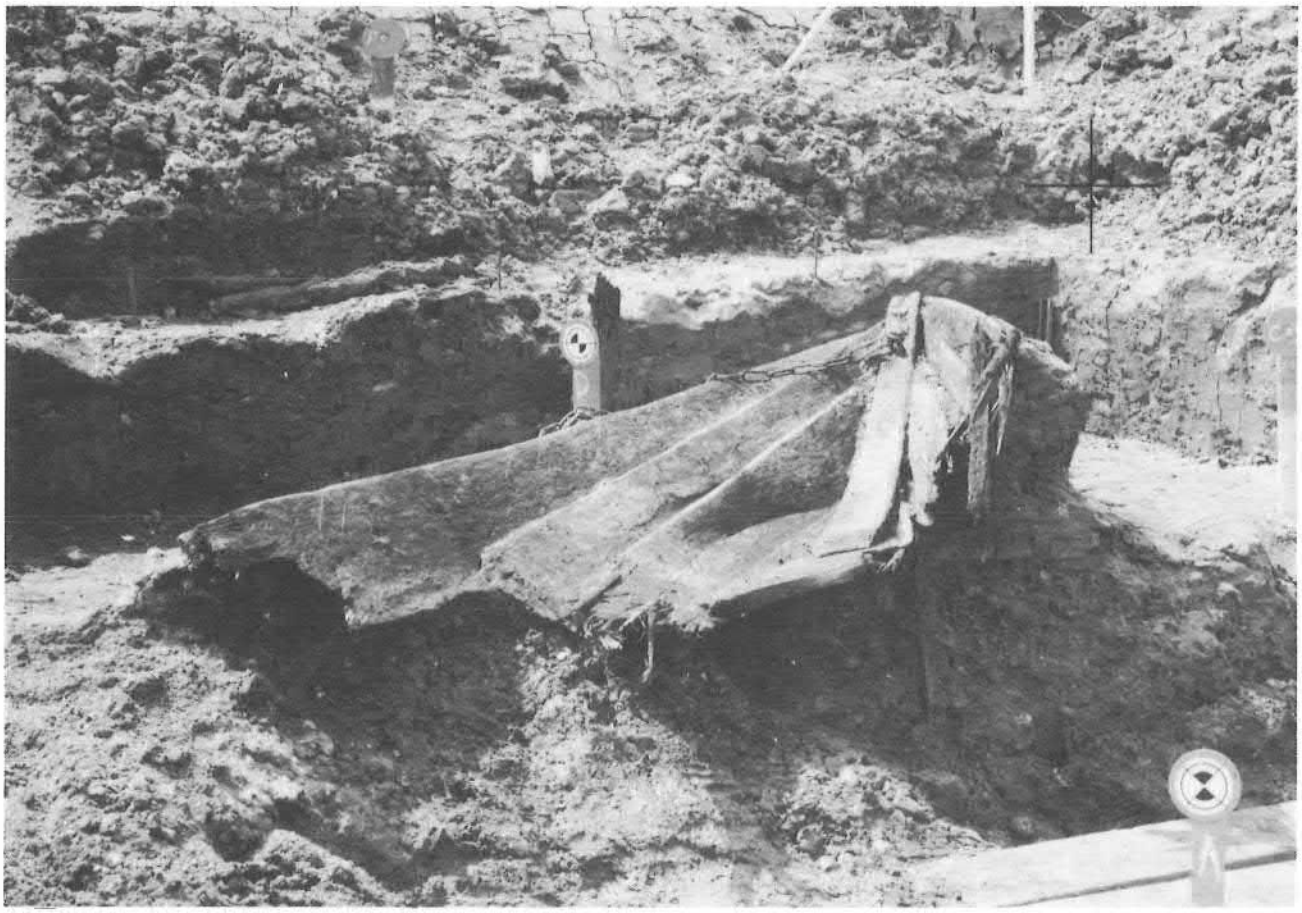


Plate 19: MK1016: the boat, after excavation (*National Maritime Museum*).

of the keel. Above the stealers three overlapping strakes (runs of planking from stem to stern) on each side were added one by one. The strakes became wider as they ran back from the stem. The maximium surviving width of the widest strake (the top strake on the port side) was 290 mm. The second strake on the port side was scarfed; two planks were joined together by overlapping them and cutting feather-edge bevels on their contact surfaces so that they lie flush with each other (a 'vertical through-splayed on edge' scarf). This is a very common way of joining planks into strakes in clinker construction, but in this case the scarf is unusually short, measuring only 60 mm.

On the upper outside edge of the top strakes additional narrow strips of wood (rubbing strakes) were nailed on. These would not have provided much extra strength, but pre-vented abrasion against such things as other boats, trees, landing stages or jetties, and against poles used for propulsion.

Only one component from the transverse framing was found. It had been detached from the planking by the mechanical excavator. The part of the port side top strake to which it was originally fastened survived, but the two strakes below that were missing. The frame was cut to fit closely against the curve and steps of the planking, and was thicker at the after edge than at the forward edge.

A flat board with a curved undamaged edge (AO A812) was found 4.0 m east of the boat in Context 11. It was not immediately apparent that it was part of the boat, but similarity was noticed between the curve of its edge and the curve of the keel plank, and that it would fit into the boat as a bottom board. Another similar board was found not stratified, and lacking any complete edges.

By the time of excavation the planks had sprung apart, as the photogrammetric sections reproduced in Fig. 56 show. To judge by the thick wads of tar and hair caulking which had been applied between the planks, the planking had not been very tight during the boat's period of use. This can be explained by the rather sparing use and irregular spacing of nails, which were clenched by turning their points over to re-enter the planking. The components of the boat appear well designed, but the fastening was not very carefully done, and this might suggest that boats of this pattern had been built for quite some time. The boat may have been abandoned because it had become too leaky. There was a mooring chain and spike hanging over the port bow, but this appeared to have been dangling and not holding the boat in position, as the spike did not penetrate into deposits which were present before the boat. It is possible that the boat had been left moored further upstream and drifted to the position in which it was found. If it had been reasonably accessible it would be surprising that it escaped being used for firewood.

The Mooring Chain and Spike (Plate 20)

The chain was attached to the boat by a U-shaped staple, flat in cross-section, driven into the inside face of the stem-post. The chain had eighteen links, eight between the staple

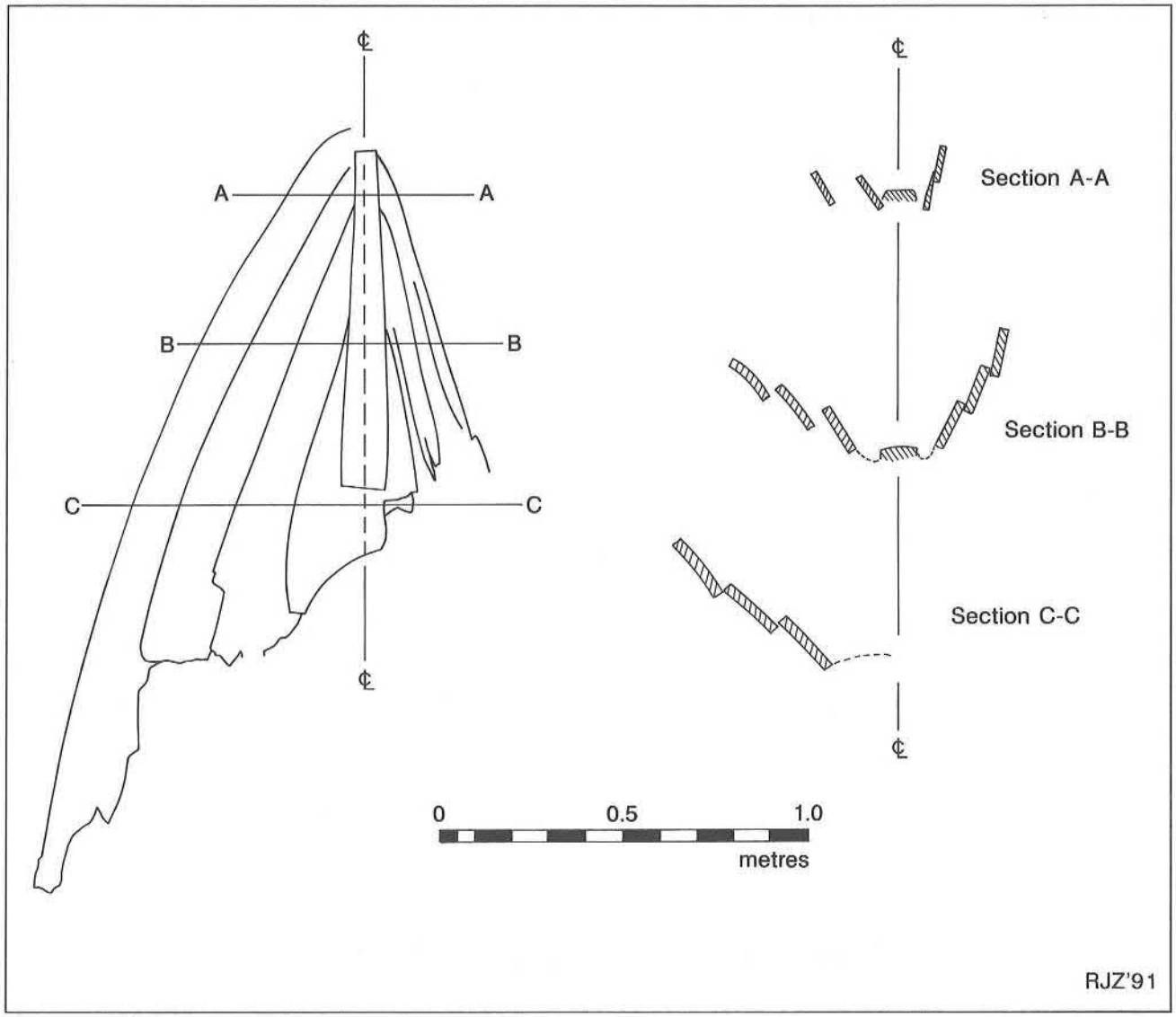


Figure 56: MK1016; plan and sections of boat.

and the swivel and ten between the swivel and the spike. The length of the chain, not including the staple and the spike, was 1.4 m. The links were wrought from bars of iron bent into oval rings of non-uniform size. The biggest links were at the ends; that next to the staple was 129 mm long and that next to the spike 113 mm long. The shortest measured 66 mm in length. Widths varied between 21 and 34 mm. Several of the links exhibited a great degree of wear and stretching, and one of them, the fifteenth from the staple, was broken right through. The chain had clearly seen long service, and this suggests that the same is true of the boat itself, although it is conceivable that this chain was reused from another boat. A swivel was incorporated into the chain to prevent it from twisting on itself and straining the links as the boat turned. The swivel was constructed of two pieces, a ring and a looped bar. A ribbon of iron was forged into a flat ring. Part of it was turned through 90° and a circular hole was punched through it. Then a bar, square in section, was passed through the hole. At one end of this bar was a knob too large to pull through the hole in the ring. The bar was bent over into a loop and the other tapered end wrapped round to close it. The final feature of the mooring chain is the spike. This is 290 mm long, square in cross-section, looped at its upper end for connection to a chain link, and tapering to a sharp point. It would no doubt have provided a firm fastening when thrust into the predominantly clay river bank. The Somerset turf boat (McKee, *op. cit.*) provides a close recent parallel to this chain. The example on display at the National Maritime Museum has regular machine-made links, and lacks the sophisticated feature of the swivel.

The Rope

Three pieces of cordage were found lying directly under and protruding from the port bow of the boat. These have been examined by Jane Squirrell, and the following information is abstracted from her report. They were all of hemp and were sufficiently similar to have all belonged to the same rope. Their total combined length is just over 700 mm. The rope was plain-laid with a right-hand twist, made up of three left-handed twist strands. One piece of cordage was the remains of an overhand knot, the second was an 110mm. length, and the third was a piece 590 mm long with an extra strand worked into one end, perhaps the remains of a splice. The circumference of the rope varied from 44 to 60 mm.

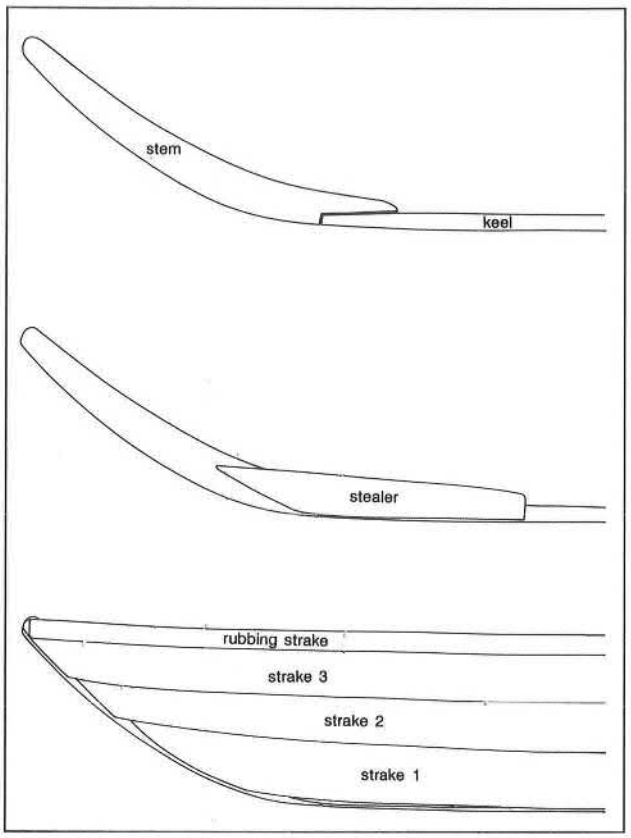


Figure 57: MK1016; reconstruction of boat.

The rope showed heavy iron staining, which suggests that it might possibly have been in contact with or tied to the mooring chain.

Discussion

Not enough of the Caldecotte boat survives for it to be possible to reconstruct with certainty its original dimensions and shape. We may surmise but cannot prove that it was double-ended. The shaping of the frame timber, which was wider away from the stem, indicated that the sides of the boat were still curving out at the frame position, which must consequently be less than half-way along the boat. It would not be unreasonable to suggest that the overall length of the Caldecotte boat was at least three times the distance from the stem-head to the surviving frame position, ie. at least 4.8 m, and it may well have been considerably longer. The outline shape of the fragment of the keel which survives suggests that the beam of the boat did not broaden greatly, and might have reached a maximum of between 1.2 and 1.5 m.

Nothing was found with the boat that could suggest what it had been used for. Possible uses include the day-to-day transport of people and goods, fishing and fowling, perhaps attending to traps, and collecting reeds and osier.

Very little is known about vernacular craft in use before the nineteenth century, and consequently the discovery of boats like this one from Caldecotte is extremely important in adding to our knowledge of the archaeology of water transport.

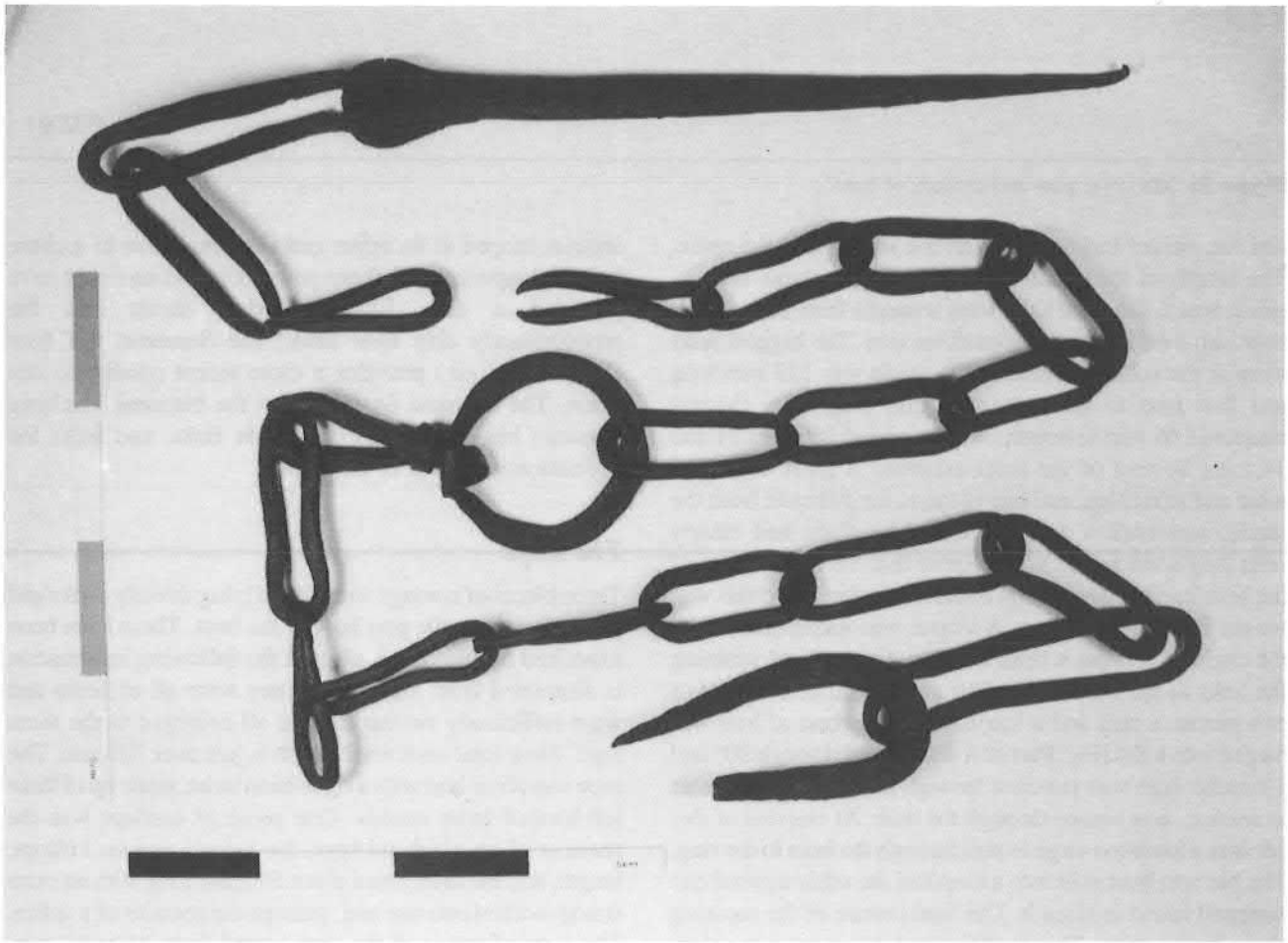


Plate 20: MK1016: the mooring spike and chain (*National Maritime Museum*).

THE FINDS

INTRODUCTION

Nicola King

Excavation, field survey and the activities of metal detectorists in Bow Brickhill parish have brought to light quantities of material which relate to many aspects of rural life in the past. Following the trend in finds research to stress the function of an object, the objects from all the sites have been grouped in a similar way to those from Great Linford (Mynard and Zeepvat 1993), which allows for comparison between these Milton Keynes sites.

Each artefact description is followed by a reference code which can be translated thus:

MK618/10007/1; unstratified.

site code/small find no./context no; context description.

Despite the different recording systems used on the sites included in this volume, all codes are given in the above order.

Concordance tables to identify the finds from each site have been included. Those for MK44 and MK618 are listed by period, the others by finds type/context. These are included at the end of the relevant excavation texts (Tables 1–5).

The following catalogue was prepared by Nicola King, drawing on the knowledge of colleague Ros Tyrrell and the specialist help of many others whose assistance is acknowledged in the text. The work of John Giorgi who originally identified the MK44 iron objects is also acknowledged. The following list details the specialist authors and their contributions.

Robert Charleston	Post-medieval glass vessels.
John Cherry	Medieval brooches.
Rod Clough	Metalworking debris
Blanche Ellis	Spurs.
Rowena Gale	Wood identification.
Nick Griffiths	Medieval decorative objects.
Gerry MacDonnell	Metalworking debris.
D.F. Mackreth	Roman brooches.
D.T. Moore	Petrological identification.
Robert Moore	Clay pipes.
Jennifer Price	Roman glass vessels.
Ros Tyrrell	Thimbles
John Watson	Petrological identification.

All artefacts are described in a single sequence, though not all are illustrated. The following abbreviations are used in the text:

dia.	diameter	ext.	exterior
g.	grammes	int.	interior
th.	thickness	max.	maximum

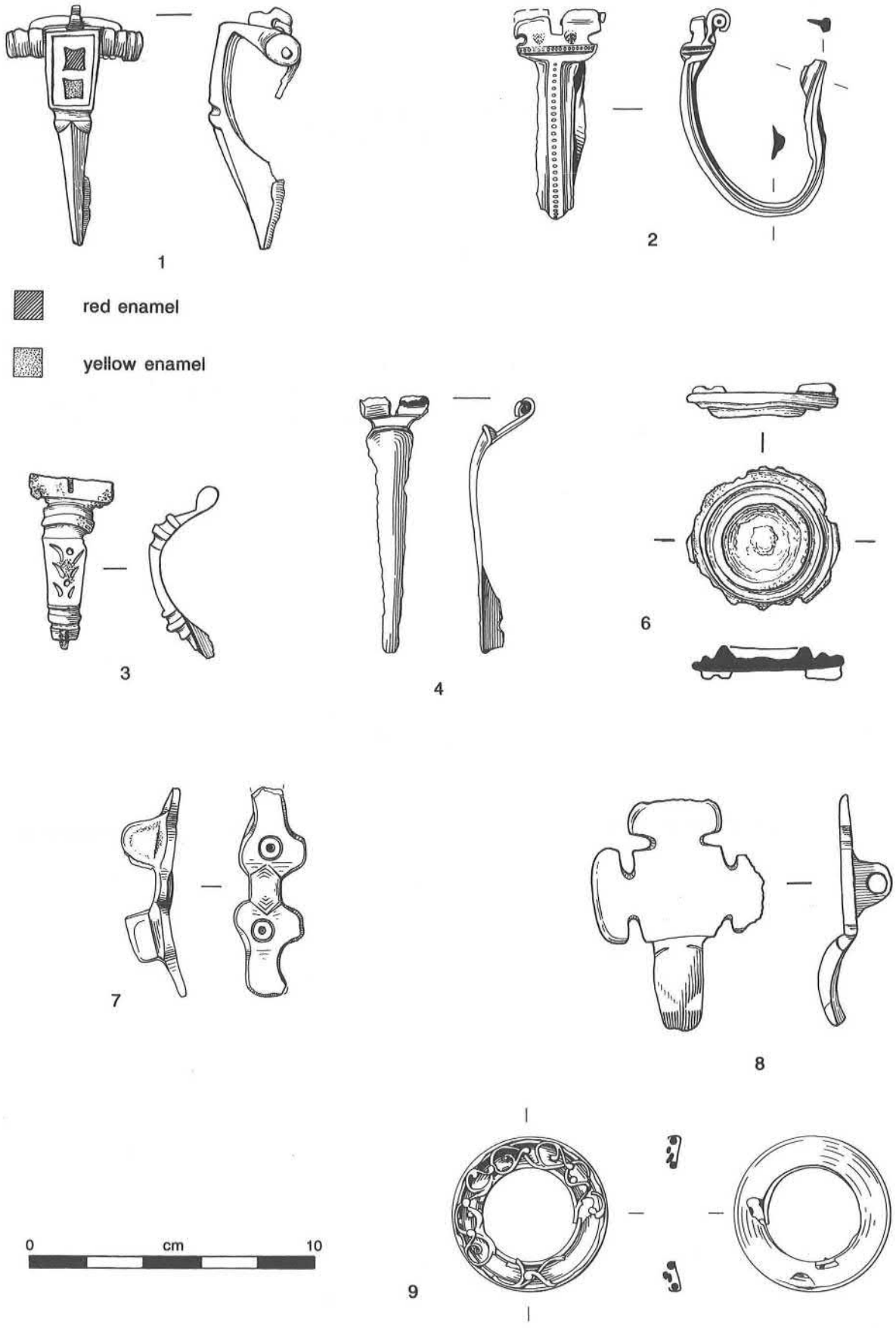


Figure 58: Copper-alloy and silver brooches, Hairpins, 1–4, 6–9 (scale 1:1).

CATEGORY 1: OBJECTS OF PERSONAL ADORNMENT OR DRESS

Brooches (Fig. 58)

Brooches have long been used to fasten and decorate clothing, only falling from favour when fashion dictated closely fitting clothing fastened with buckles, hooks and buttons. The brooches found at Caldecotte fall into Roman, Saxon and medieval groups. The six Roman brooches, described by Don Mackreth, range in date from the early first to the late second century. The dearth of brooches from MK44 in comparison to other Milton Keynes sites is noteworthy, perhaps hinting that the social and economic status of the people who lived and worked there was relatively low. The two Saxon brooches are both very simple examples of rare types. Sally Crawford advised on the small-long brooch. The medieval silver filigree brooch (**9**) is a good example of a craft technique which was uncommon and reserved for fine pieces. John Cherry suggested the likely date of this object.

Roman Copper Alloy

D.F. Mackreth

1 *Colchester derivative*. The spring is held in the Polden Hill manner: an axis bar passes through the coils of the spring and pierced plates at the ends of the wings, the chord being held by a pierced crest on the flat head of the bow. Each wing has a buried moulding at its end and a wide flute between that and the bow. The front of the bow has at its top a trapezoidal panel bordered by a groove with two concave-sided rectangular recesses. The upper contains remains of red enamel, the lower has yellow. The lower bow, divided from the upper by a groove under which is a pair of lenticular bosses, has a median arris and tapers to a pointed foot.

MK44/7/+; metal detector find.

A member of a group made somewhere in the south-west of England, **1** has one of the variant designs. The constant feature is the division of the bow into an enamelled upper part and a lower one with lenticular bosses, one design having a long lower bow divided by an extra pair of bosses in the middle and a hinged pin (eg. Butcher 1977, 59–60, fig. 8.21). The chief difference between the present design and the others is its simplicity which is marked by the lack of a foot-knob or moulding, a constant feature of the more elaborate versions. The relationship between these brooches and another which has a hinged pin, a version of the knop on the Trumpet type and a more elaborate enamelled scheme on the upper bow (eg. Nash-Williams 1930, 239, fig. 2.2; Mackreth 1985, 140, fig. 43.11) is not clear. A possible connection is shown by a brooch from Cirencester (Corinium Museum, no accession number) which has the Polden Hill spring system and a version of the Trumpet's knop. The dating of the main family is: Chew, late first to second century (Rahtz and Greenfield 1977, fig. 114.8); Caerleon, *c.*125 (Wheeler and Wheeler 1928, 162, fig. 13.9); Wroxeter, *c.*125–160/170 (Atkinson 1942, 205, fig. 36.H40); Caerleon, 130–160 (Wheeler and Wheeler 1928, 162, fig. 13.13); Camerton, third century (Wedlake 1958, 221, fig. 55.15a). The other group is poorly dated, but is reasonably consistent with the others: Gadebridge Park, Herts., *c.*75–150 (Neal 1974, 125, fig. 54.16); Brockworth, Glos., before *c.*150 (Rawes 1981, 66, fig. 8.3). The dating appears to run from *c.*100 to 175 at the latest, the Camerton example should have been residual in its context and those from late third or later contexts have not been listed because they obviously were. If further dated examples confirm a terminal date of *c.*175, it would suggest that manufacture had ceased *c.*150.

2 *"Aucissa" Hod Hill series*. The axis bar of the hinged pin had been housed in the rolled-under head of the bow. The damaged head-plate has an almost closed circular cut-out at each end, bordered by a ridge. Next to the bow is a bead-row, and in the middle had been two stamps in the form of feathers or palm leaves, of which the tip of one only can be seen. The bow is too damaged for more than its general section to be detected: it has a flat back, remains of at least one moulding on each side and a swelled centre down which ran either a bead-row or a line of punched dots. The main part of the bow ended in at least one cross-moulding. The seam resulting from the brooch having been made from rolled or folded sheet metal is opening down the back of the bow.

MK309/-/+; metal detector find.

Ostensibly an Aucissa, but the rolled-under head, the style of the cut-outs on the head-plate and the use of stamps had all passed out of use before the Aucissa proper had developed. The origin of this series lies in the Alesia, which is datable to the middle or third quarter of the first century BC (Duval 1974). That the stage of development represented by the present one had been reached by the last two decades of the first century BC is shown by examples from Dangstetten (Fingerlin 1972, 217, *Abb.* 8.6.8, *Taf.* 13.3). The same site produced examples of the last stages of the Alesia itself, as well as early specimens of the kind of foot-knob found in the later stages of the series (*ibid.*, *Abb.* 8.1–3). Apart from the fixed date provided by Dangstetten, dating is very poor, but the rolled-under head should have been replaced by *c.*AD.20 at least, and the present brooch had probably ceased to be used by then.

3 *Hod Hill*. The hinged pin is now missing. Its axis bar is housed in the rolled-over head of the bow, of which only the upper part survives. On each side of the curved main face are three curved cells with two circular ones in the middle. These cells were once filled with niello, and the whole tinned or silvered.

MK117/3/+; metal detector find.

No Hod Hill has been convincingly published from a pre-Conquest deposit. One from Baldock was assigned to the first quarter of the first century AD. but, as it would then predate its parent, this must be a mistake (Stead and Rigby 1986, 120, fig. 47.112). Another from Skeleton Green may have arrived before the Conquest, but its find spot was not securely sealed, although the layer elsewhere was certainly before 43 (Mackreth 1981, 141–142, fig. 72.55). The distribution of the Hod Hill in Britain shows convincingly that

the type was passing out of use between 60 and 70, very few surviving to be taken north into the lands added to the Province in the 70s. The distribution of those with niello suggests that they may be earlier in general than the bulk of the type. The use of heavy cross-mouldings here may be related to their occurrence on a small group which had knobs fitted to the ends of iron bars driven through the bow, and the only brooch remotely like a Hod Hill from the King Harry Lane cemetery belongs to this group. The grave was assigned to Phase 3 (Stead and Rigby 1989, 330–334, fig. 132.233.3) which is dated 40–60. However, only one near Hod Hill and one Colchester Derivative (*ibid.*, 354, fig. 154.316.4) and hardly any samian of this period (*ibid.*, 113) despite a marked presence at Verulamium, suggests such a severe dislocation between the developing urban complex and the cemetery that some explanation seems called for. While it is true that the people using the cemetery may have been barred from acquiring goods in the town, another reason is almost certainly the true one: the dating of the phases is too conservative. The earliest possible date for the cemetery is given as 15 BC. (*ibid.*, 83) and if all the phases are moved back so that Phase 3 ends *c.*40/45, the absences of some classes of material would cease to be strange.

4 *Hod Hill.* The axis bar of the hinged pin is housed in the rolled-over head of the bow. The bow has a cross-moulding at the top and tapers to the foot where the foot-knob is missing. There is an arris on the upper part only.

MK44/900/+; unstratified.

Hod Hills lacking the division of the bow into two parts are relatively rare. This specimen belongs to one of the commoner designs in this group, although it is more usual to have two or three cross-mouldings. Another common pattern may have derived from the Langton Down (eg. Allason-Jones and Miket 1984, 96, 3.14) as the flutes down the bow have the reeded appearance of the majority of Langton Downs. A much rarer group looks like an oak-leaf (eg. Olivier 1988, 48, fig. 20.57). There is no evidence to suggest that these designs have a different chronological range from the more normal Hod Hills, neither do they belong to the strain which continued in manufacture and developed into a range of enamelled designs.

5 One Colchester derivative from MK351 has been published in RMK (131, fig. 41.11). Not illustrated.

MK351/35/+; unstratified.

6 *Disc brooch.* The bilateral spring was mounted on a pierced lug. The plate is circular and has a central cell surrounded by two annular recesses. The rim round the central cell is tall and the boundary between the outer zones is slightly higher than the border of the brooch. Badly corroded, no trace of stamps, gilding or enamel survives.

MK354/2/+; unstratified.

Although in very poor condition, **6** belongs to a large family made in Britain. The earlier stages have enamelled cells with white metal appliqué series, but a few have paste intaglios (Hattatt 1987, 252, fig. 79.1209) usually mounted in a separately-made copper-alloy mount (Boon 1974, fig. 19.3). Some of the gilded series have intaglios (Mackreth 1985, 28, fig. 11.165), and these are taken to be early on typological grounds. However, the commonest decoration is a conical paste gem (Hattatt 1982, 166, fig. 71.173), although narrow spindle-like bosses with radiating ribs are also known (Hattatt 1985, 151–152, fig. 63.548; Bidwell 1985, 126, fig. 44.93). The dating of the enamelled series is based on the use of white metal trim, and a recent review (Mackreth, *in* Jackson and Potter forthcoming) concluded that it was in common use from *c.*125 to *c.*200, and some probably survived in use later. The dating of the gilded series is: Wierden, 150 into the third century, a pair (van Es and Verlinde 1977, 80, fig. 28.28); Manchester, *c.*160 to earliest third century (Bryant *et al.* 1986, 65, fig. 5.5.3102); Esch, *c.*200–250, a pair (van den Hurk 1977, 109, fig. 26, pl. IV.3); Saalburg and Zugmantel, before 260, three examples (Bohme 1972, 110, nos. 1132–1134, *Taf.* 29); Inworth, with pottery dated 250/260–370 (Going 1987, 81, fig. 40.2); Fishbourne, 280/290 (Cunliffe 1971, 106, fig. 40.43: Cunliffe 1991, 162); Brancaster, third-century pottery (Hinchcliffe and Green 1985, 44, fig. 28.5); Augst, with third-century pottery (Riha 1979, 88, *Taf.* 13.309); Maxey, late third to fourth century (Crummy 1985, 164, fig. 111.6); Nettleton, 360–370 (Wedlake 1982, 148, fig. 63.5). The main *floruit* seems to have been the third century, and it is likely that it is mainly pre-275. Although often said to be a fourth-century type, the evidence is overwhelmingly against this. The only example given from a religious site, that from Nettleton, has been included as a warning that brooches on such sites almost certainly obey different chronological rules from those found on ordinary settlement sites. There is no direct evidence that the present brooch was specifically enamelled or gilded, but the stepping up of the boundaries between the recesses towards the centre is found on all brooches of the gilded series and only rarely on the enamelled one, and examples with this are probably late in that part of the overall sequence, say late second century into the earliest third.

Saxon Copper Alloy

7 Equal-armed brooch. Cast in an adaptation of the ansate form, the ends are bulbous near the bow and diminish towards the curved tips. At the centre of each bulbous area is an incised dot-and-circle motif. The underside has the remains of the catch plate and spring clasp. The former is surrounded by iron corrosion, probably the remains of the spring. Length 36 mm.

MK354/16/+; unstratified.

This is a simple example of an uncommon type described by Hattatt as Frankish or Merovingian, dating between the late seventh to ninth centuries (*cf.* Hattatt 1985, fig. 85.680).

8 Small-long brooch, fragment. The slightly damaged head is of the undecorated cross potent type. The foot is missing and its absence makes it difficult to assign this brooch to either the primary phase (with triangular foot) or the secondary phase (with crescent-shaped foot). Width across arms 30 mm.

MK351/67/+; unstratified.

Leeds suggested that this brooch type tends to concentrate in Anglian areas pivoting on South Cambridgeshire, although early examples are widely scattered (Leeds 1945, 4–44). Hirst (1985, 58) has commented that because it is currently difficult to date small-long brooches, the relationship between English brooches and their continental antecedents should be reassessed. The dating of **8** is of relevance to the pattern of occupation in the Ouzel valley during the early and middle Saxon periods. The date of the excavated Ouzel valley sites is discussed in the Saxon pottery report (p.194). Hattatt (1985, 211) states that small-long brooches are commonest in the sixth century, and were made for the lower end of the market. If this was the case, this simple plain example is representative of the types used by the rural population, possibly indicating that Saxon occupation occurred later at Simpson than at Caldecotte, and was perhaps contemporary with the sites at Wavendon Gate and Pennyland. In form and size this brooch is similar to one from West Stow (West 1985, fig. 260.6).

Medieval Silver

9 Ring brooch. Pin missing. The base and exterior wall are formed by a shallow, flat 'U'-shaped trough formed from a single sheet of flat metal, while the interior wall consists of a silver wire. The exterior wall is reinforced with another silver wire placed within the trough. A filigree design is present in fragments within the trough; here two foliate units are used alternately. Ext. dia. 27 mm, int. dia. 18 mm.

MK618/10007/1; topsoil.

A thirteenth-century date of manufacture, possibly between 1230 and 1270 has been suggested for **9** (John Cherry, pers. comm.). A similar but smaller example from the pottery kilns at Laverstock, Wilts. is thought to be of German origin (Musty *et al.* 1969, pl. XVa). A further example, almost identical to the Laverstock brooch, was found by a metal detectorist at Walton, Milton Keynes (MKAU 1992, 34). A larger and more elaborate variation which included four settings for gem stones was found during excavations in Northampton (Goodall 1985, fig. 33.1). A date of manufacture within the thirteenth and fourteenth centuries is likely for all of these brooches.

Hairpins *(Fig. 59)*

The identification and dating of these pins is taken from Cool (1990). She examined examples of metal hairpins from all England south of a line between Chester and Lincoln, and was able to show that some types of pins were in use at different times and had discrete spatial distributions. All the pins listed below are unstratified finds; therefore the dating is taken from Cool.

Copper Alloy

10 Hairpin fragment. A circular shaft with groove around the top, beyond which the end of the shaft tapers below a small, grooved bead. This pin is an example of Cool's Group 3A, curved units between cordon heads. The only well-dated examples of this type come from deposits in London dating between the mid first and mid second century (Cool 1990, 154). Length 53 mm, shaft dia. 1.5 mm.

MK44/115/+; topsoil.

11 Hairpin fragment. A circular slightly tapering stem, with two grooves below a flattened spherical head. This pin belongs to Cool's Group 6, button and cordon head (Cool 1990, 157). These pins are dated between the second half of the first century and the early second century. They appear to have a distribution concentrated in eastern England. Length approx. 52 mm, shaft dia. 2 mm.

MK44/-/+; metal detector find.

12 Hairpin fragment. Head and part of shaft of cuboid-headed pin. The head is very irregular and it appears that the two sides of the mould slipped during casting. This may account for the fact that the head was not faceted. The shaft is circular in cross section, dia. 4.5 mm. This is an example of Cool's Group 15, faceted heads (Cool 1990, 164). It appears to be a late Roman type, dating to the late third or fourth century. Surviving length 26 mm, head width *c.*8 mm.

MK351/82/+; unstratified.

Bone

13 Fragment of ?hairpin with finely polished surface and undamaged point. Length 37 mm, dia. 7 mm.

MK44/-/L141; medieval soil spread.

Bracelet *(Fig. 59)*

14 ?Bracelet fragment. A flat copper-alloy strip with incised lines across the width of the strip. Part of a ?rivet hole present at one end of the strip, possibly to fasten two ends of the bracelet. Roman. Length 19 mm, width 3 mm.

MK44/51/+; topsoil.

Finger ring *(Fig. 59)*

15 Finger ring fragment. A flat copper-alloy sheet which may have a chased pattern on the surface, but this is unclear owing to corrosion products. Egan and Pritchard (1991, 332) give dates between the late twelfth and early fifteenth centuries for rings made from sheet metal. Dia. 19 mm, band width 5 mm, max. th. 1 mm.

MK618/10097/2; topsoil.

Decorative Fittings *(Fig. 59)*

The fittings from Caldecotte illustrate the medieval fashion for decorative metalwork which brought bright colours and sparkle to a world otherwise ruled by colour derived from organic sources. The strap fitting (**16**) follows this fashion, and illustrates the use of heraldry in the decorative arts of the thirteenth and fourteenth century.

16 Strap fitting. Cast copper-alloy with gilt and champlevé enamel decoration. The central panel has a gilt and enamel design of an oval containing a shield with three chevrons, the enamel forming the background. The enamel appears green but may originally have been red. The end panels have two copper-alloy attachment pins and are gilded, and a pattern of sinuous lines and dots is incised into the surface between the

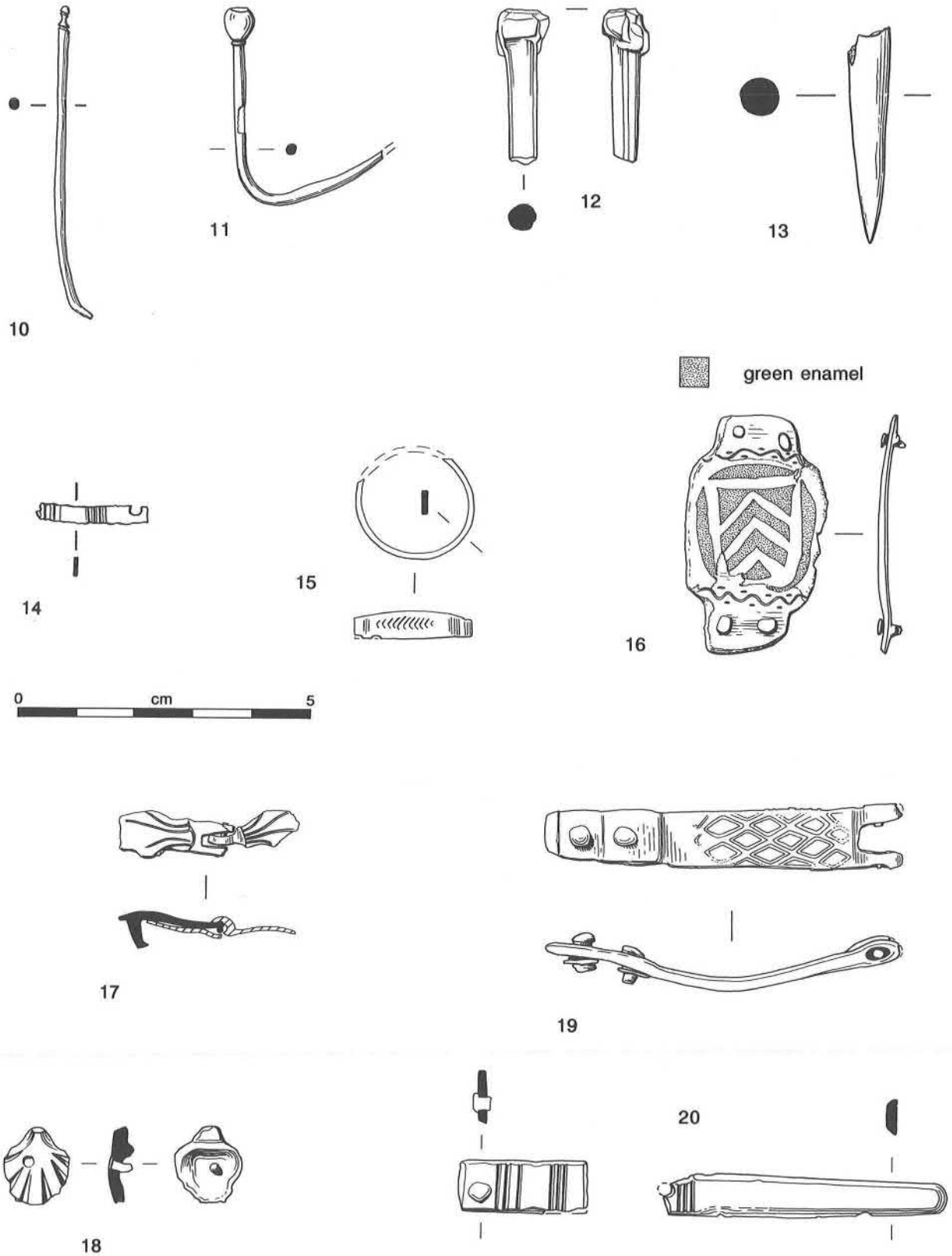


Figure 59: Hairpins, bracelet, ring and decorative fittings, 10–20 (scale 1:1).

oval central panel and the attachment pins. Nick Griffiths (pers. comm.) suggested that the arms may be those of the Earls of Suffolk, and that the fitting may have belonged to a retainer of that family. A date of manufacture within the late thirteenth or fourteenth centuries is likely (Cherry, pers. comm.). Length 39 mm, width 23 mm.

MK618/10382/2; topsoil.

17 Swivel and pendant, cast copper-alloy. The swivel is scallop-shaped, and its outer surface has some gilding remaining, with four chased lines. There is a stud on the rear for attachment to a strap. The back section is broken but present. The pendant is also scallop-shaped with remains of gilding on its surface, and four chased lines. A swivel and pendant of such small size is more likely to have been a personal ornament than one for a horse harness. The scallop shape both of this object and of **18** suggests a link with pilgrimage to Santiago di Compostella, although the protection of St James may also have been sought by the wearer of such objects who had not undertaken a pilgrimage but perhaps intended to. Dated to the late fourteenth or fifteenth century (Cherry, pers. comm.). Swivel length 19 mm, width 8 mm. Pendant length 16 mm, width 6 mm. Hinge rivet length 6 mm.

MK618/10010/1; topsoil.

18 Scallop-shaped copper-alloy stud. Cast, with the stub of a separate rivet present. A personal decorative fitting, probably from a belt. A similar example from London was found with pottery dated between *c.*1400–1450 (Egan and Pritchard 1991, fig. 126.1083). Length 13 mm.

MK354/2/+; unstratified.

19 Copper-alloy belt end or pendant fitting. Tapering rectangular shape which has been bent. Two rivets with washers on the back for attachment to leather are present at its narrow end. The broad end finishes in loops, possibly for attachment to a buckle, the remains of which may be present as fragments of metal within the loops. The front surface has a decorative lattice panel between the rivets and loops. Length 59 mm, width 7–10 mm.

MK618/11728/829; unstratified.

20 ?Strap end. A cast tapering strip in two fragments. The wider fragment is decorated with four incised lines at one end and three at the other. At the unbroken end are the remains of a small copper-alloy rivet. The tapering fragment has a broken punched hole at its wide end. The surface is partly silvered or tinned. The upper side has chamfered edges and three small grooves running across the broken end below the hole. Overall length 71 mm.

MK351/4 and 91/+; unstratified.

Buckles (Figs 60, 61)

All examples are copper alloy. MK618 produced a range of clothing and shoe buckles from the medieval and post-medieval periods, whilst other sites provided a few examples of medieval and Roman types. Large iron buckles have been assigned to Category 8, on the grounds that such large buckles were probably used as harness or cart fittings.

21 Fragment of oval buckle frame. The bar is missing. The cast frame is of triangular profile. Roman. Length 16 mm, width approx. 11 mm.

MK44/65/F81A.1; ditch fill.

22 'D'-shaped buckle frame. The bar is roughly circular in profile, although the frame is more angular. The pin is missing. The top of the frame has an incised line running inside the outer edge. ?Roman. Length 24 mm, width 17 mm.

MK44/67/+; metal detector find.

23 Frame of silvered or tinned cast ?shoe buckle. The rear is filed and chamfered. The front has an incised line around the outside edge and two lines at each end. The ends have been snapped away. Width 27 mm.

MK351/72/+; unstratified.

24 Cast oval buckle frame with traces of surface silvering or tinning. Both faces are chamfered. There is a notch for a pin at the centre of one face. ?Medieval. Length 23 mm, width 23 mm.

MK618/10006/1; topsoil.

25 'D'-shaped cast buckle, no pin. There has been such heavy wear on one side that the buckle has worn through. ?Harness buckle. Length 40 mm.

MK351/81/+; unstratified.

26 Simple round-frame buckle with cast flat frame and pin. The ring has an oval profile. The pin has a circular profile with a transverse ridge below the loop and a tapered tip where it rests on the ring. This general-purpose form has a long period of use and is therefore difficult to date accurately. This example is similar to one from Bedford (Baker *et al.* 1979, fig. 174.1369) from a context dated between the late thirteenth and late fourteenth centuries, and also another from Exeter (Allan 1984, fig. 190.56) from a context dated 1450–1500. Dia. 42 mm ext., 35 mm int.

MK618/10032/2; topsoil.

27 Fragment of square or rectangular cast buckle frame with incised linear decoration on one surface. There are pairs of grooves set slantwise between grooves outlining the edges, leaving raised plain lozenges between the grooves. Similar examples were associated with late thirteenth to fourteenth-century pottery at Colchester (Crummy 1988, fig. 18.1744), and at London associated with late fourteenth to early fifteenth-century pottery (Egan and Pritchard 1991, fig. 62.447). Width 43 mm.

MK354/5/+; unstratified.

28 Double oval cast buckle. It has a flat back and an undecorated chamfered front. Sixteenth to seventeenth century. Length 37 mm, width 34 mm.

MK618/10093/2; topsoil.

29 Double rectangular cast buckle. Anchor chape and iron pin are both present and a fragment of leather strap remains on the chape. There are incised stylised leaves and circles on the front, and traces of gilding over the bar. Late seventeenth to early eighteenth century. Length 24 mm, width 18 mm.

MK618/10043/2; topsoil.

30 Double rectangular cast buckle with pin and chape present. There are moulded raised bars decorating the front surface beside the bar and at the lip of the frame. The surface has traces of gilding. There is a rivet hole in the chape for attaching a stud to the strap. Seventeenth to eighteenth century. Length 23 mm, width 18.5 mm.

MK618/10193/2; topsoil.

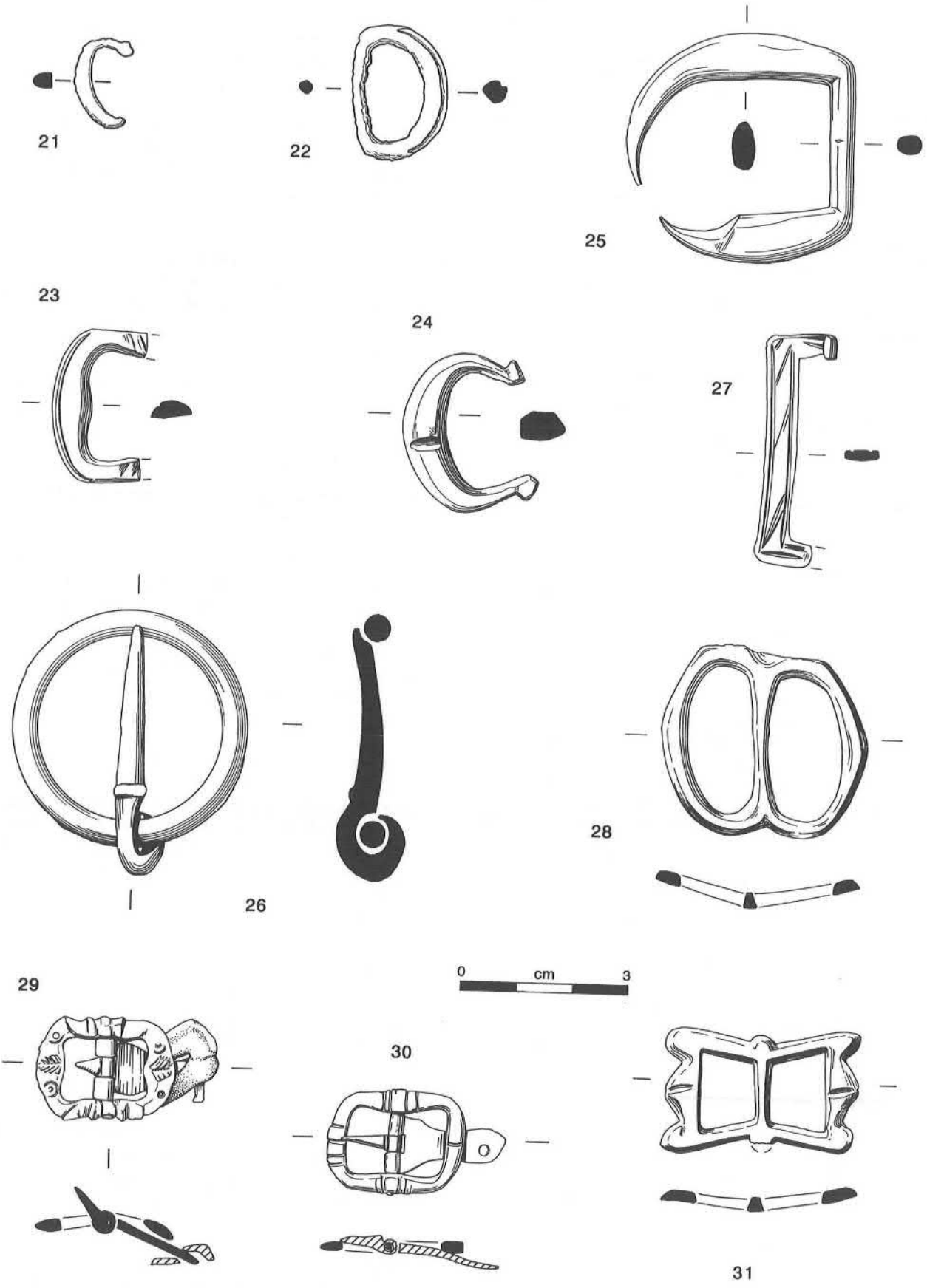


Figure 60: Buckles, 21–31 (scale 1:1).

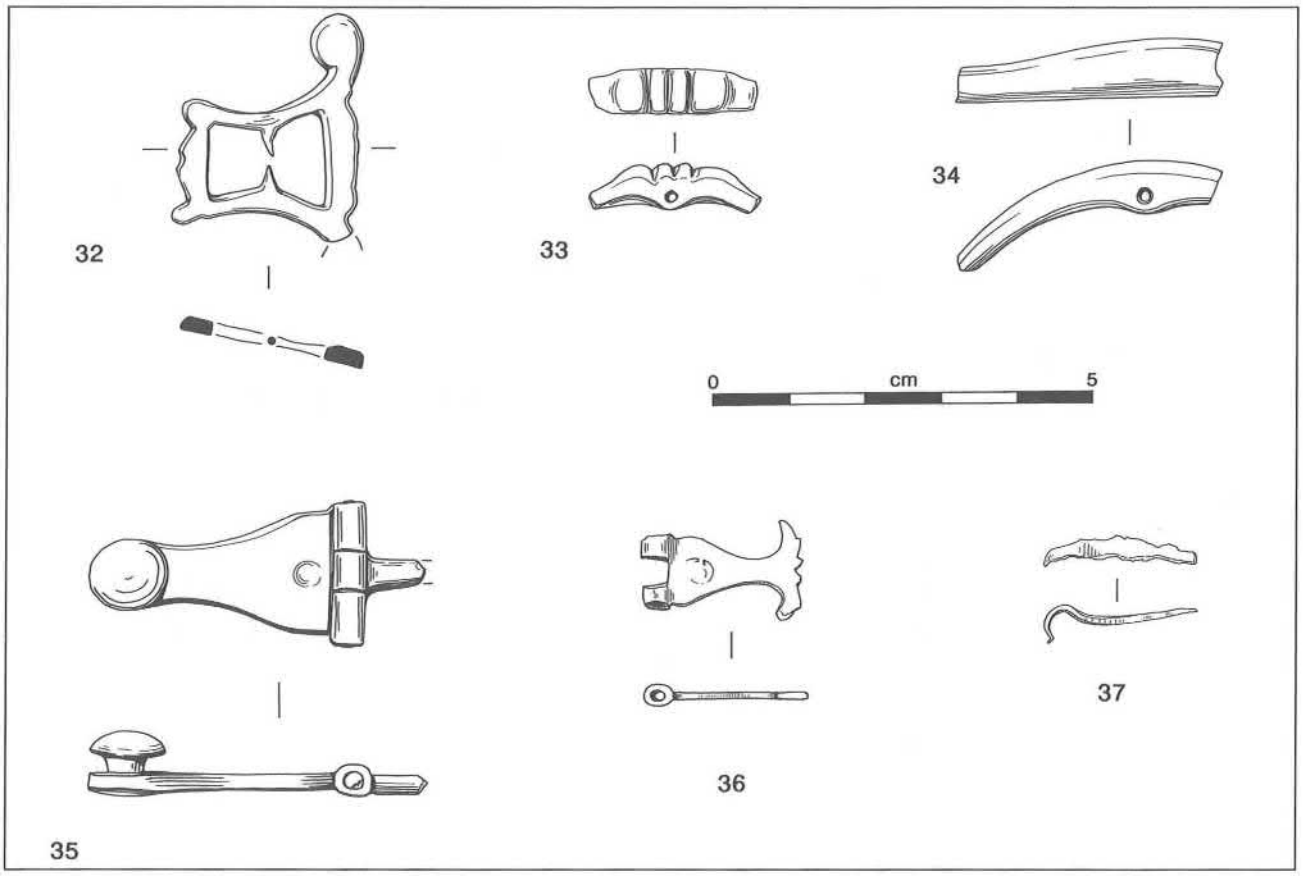


Figure 61: Buckle fittings, 32–37 (scale 1:1).

31 Double trapezoid cast buckle frame with flat back and chamfered front. A knop protrudes from each end of the bar. There are moulded notches for a pin at the centre of the frame. There are traces of gilding on the front. Seventeenth century. Length 33 mm, width 22 mm max.

MK618/11479/681; occupation layer, Period 3/I.

32 Double trapezoid cast buckle frame with exaggerated knop on one corner; the opposite corner has lost the matching knop. The bar is broken and the pin missing. Late sixteenth to seventeenth centuries. Length 24 mm.

MK1043/-/+; metal detector find.

33 Cast buckle-frame fragment with raised lines over the centre; the ends are snapped. Hole, dia. 1 mm, pierced through centre for bar. Length 22 mm.

MK354/17/+; unstratified.

34 Cast buckle frame fragment. Hole pierced through side for bar.

MK354/-/+; unstratified.

35 Buckle stud chape. A hinged chape, with a copper-alloy rivet for attachment to leather. It is of a curved triangular shape, with a circular terminal end beneath the rivet. The pin is present but broken. For use on a shoe. Late seventeenth to eighteenth centuries. Length 43 mm.

MK1043/-/+; metal detector find.

36 Anchor chape buckle fitting. Length 20 mm.

MK618/11480/39; cobble layer, Period 3/I.

37 Pin of buckle or brooch, broken tip. Undecorated. Length 35 mm. Previously published in RMK (fig. 42.54).

MK117/7/+; metal detector find.

38 Buckle pin, length 20 mm, width 2.5 mm. Not illustrated.

MK618/11341/143; floor surface, Period 3/I.

Buttons (Fig. 62)

Buttons are fittings that are easily lost, and from the post-medieval period onwards they were probably regarded as being cheap enough to discard. MK618 produced a selection of buttons ranging in size from those suitable for shoes to examples from heavy coats. Some were found in rubble contexts, and thus relate to the final phase of occupation in the early eighteenth century.

Glass

39 Black button. Flat, with two stitching holes which have a channel running between for the thread. Dia. 26 mm, th. 4 mm.

MK618/10196/2; topsoil.

Lead Alloy

40 Almost spherical button. The shank is missing. Dia. 8 mm, height 6 mm.

MK618/10079/7001; topsoil, Area 4.

41 As **40**. Dia. 8 mm, height 5 mm. Not illustrated.

MK618/10029/2; topsoil.

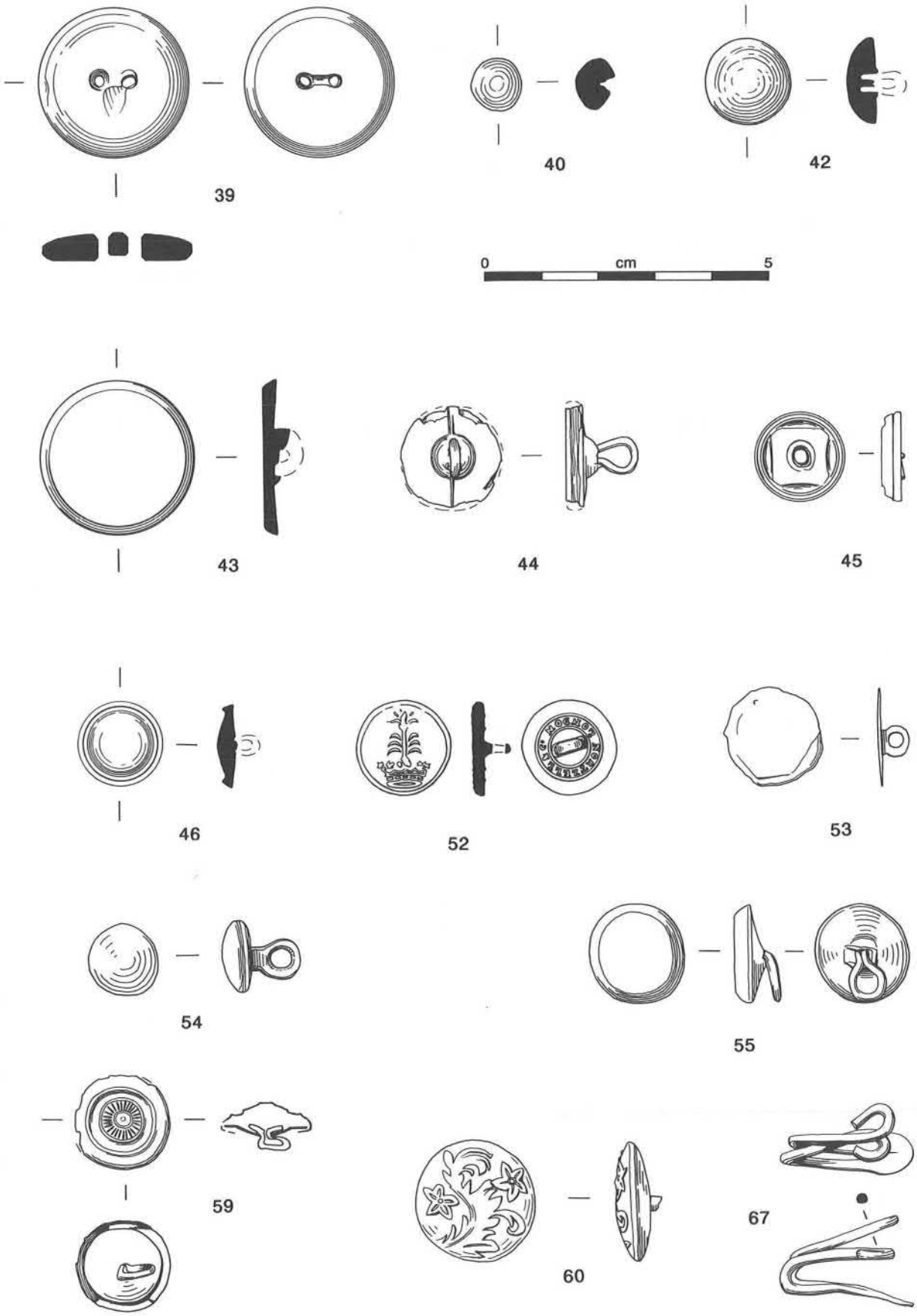


Figure 62: Buttons and fastener, 39–40, 42–46, 52–55, 59–60, 67 (scale 1:1, iron 1:2).

42 Domed button. Cast in one piece, the shank is missing. Dia. 14 mm, th. 3 mm.

MK618/11272/468; unstratified.

43 Cast button. The flat front has a chamfered edge; the back is concave with a cast shank, which is missing. Dia. 27 mm.

MK618/10641//51; ditch fill, Period 3/I.

44 Cast button. The front has a flat face; the back is domed for the shank, the edges of the front have decayed. The shank is present. Height of shank 7 mm, dia. 18 mm approx.

MK618/11190/434; ditch fill, Period 3/I.

45 Circular cast button. The front has design of incised circles within cast squares. The shank is present, but flattened. Dia. 15 mm, th. 2 mm.

MK618/10435/9; rubble layer, Period 3/II.

46 Cast button. The front is slightly convex with a flat rim. The shank is missing. Dia. 15 mm.

MK618/10490/19; unstratified.

Copper Alloy

47 Domed cast button. The front has a small, raised dot at centre. The shank is missing. Dia. 15 mm. Not illustrated.

MK44/-/+; metal detector find.

48 Cast button with domed rear section for shank. Dia. 27 mm. Not illustrated.

MK354/18/+; unstratified.

49 Fragment of cast flat button front. Silvered or tinned surface. Shank missing. Dia. 15 mm approx. Not illustrated.

MK618/10195/2; topsoil.

50 As **49**. Rear has corrosion products. Dia. 15 mm. Not illustrated.

MK618/10947/8; rubble layer, Period 3/I.

51 Cast flat button fragment. Shank missing. Dia. 25 mm. Not illustrated.

MK1043/-/+; metal detector find.

52 Flat, cast button with traces of gilding on both front and back. The front has design incorporating a crown with foliage rising from the it. The back has the inscription 'NORTZELL & Co LONDON' within concentric lines. Shank height 6 mm, dia. 16 mm.

MK44/73/L120; post-medieval/modern upcast from moat.

53 Flat button of two-part construction. The front has traces of gilding and incised hexagonal design. Shank height 5 mm, dia. 17 mm.

MK618/10030/2; topsoil.

54 Domed button of two-part construction. Shank height 8 mm, dia. 12 mm.

MK618/11481/71; cobble layer, Period 3/I.

55 Flat button of three-part construction. Shank height 8 mm, dia. 16 mm.

MK618/10946/8; rubble layer, Period 3/II.

56 Flat button of three-part construction. Shank present but flattened. Shank height 6 mm, dia. 16 mm. Not illustrated.

MK44/-/+; metal detector find.

57 Flat button of three-part construction. Shank and most of back missing. Dia. 21 mm. Not illustrated.

MK44/-/+; metal detector find.

58 Hollow button of three-part construction, shank present on back. Dia. 17.5 mm, shank height 4 mm. Not illustrated.

MK351/89/+; unstratified.

59 Domed button of three-part construction. Concentric repoussé design on front. Central panel has radiating incised lines around raised dot. Shank damaged. Dia. 16 mm.

MK618/10434/9; rubble layer, Period 3/II.

60 Hollow domed button of three-part construction. The front is gilded and has repoussé flower and leaf design. The back is slightly convex, with an incised line around the shank, which is missing. Dia. 20 mm.

MK618/10042/2; topsoil.

61 Three-part button. The front has a grid, punched from the rear, of four by four squares within a ring. The shank is present, height 4 mm Dia. 14 mm. Not illustrated.

MK1043/-/+; metal detector find.

62–66 Button back discs and disc fragments of silvery appearance. The fronts are concave with a flat rim approx. 1 mm wide. The backs are convex. Shank height 7–8 mm, dia. 16 mm, 20 mm and 25 mm. Not illustrated.

MK618/10041/2, MK618/10106/2, MK618/10194/2, MK618/10277/2; topsoil: MK1043/-/+; metal detector find.

Fasteners *(Fig. 62)*

These were used to hold up stockings and discretely fasten clothing. Both examples are copper alloy.

67 Hook fastener. Formed from bent wire, dia. 2 mm. Looped ends for attachment to clothing, flattened area in centre for hooking. Some traces of white metal on surface. Length 23 mm.

MK618/10433/9; rubble layer, Period 3/I.

68 Hook fastener. Formed from bent wire, dia. 1.5 mm. Broken at flattened area. Otherwise as **67**. Length 20 mm. Not illustrated.

MK618/10748/70; unstratified.

Pattens *(Fig. 63)*

Pattens were used to protect the shoes and feet from water and mud. It is not surprising to see examples of pattens surviving from MK618, where extensive use was made of cobble surfaces to stabilise the soil, implying soft surfaces in wet weather. All examples are iron.

69 Patten fitting plate with two rivets present. Height 23 mm. Not illustrated.

MK351/88/+; unstratified.

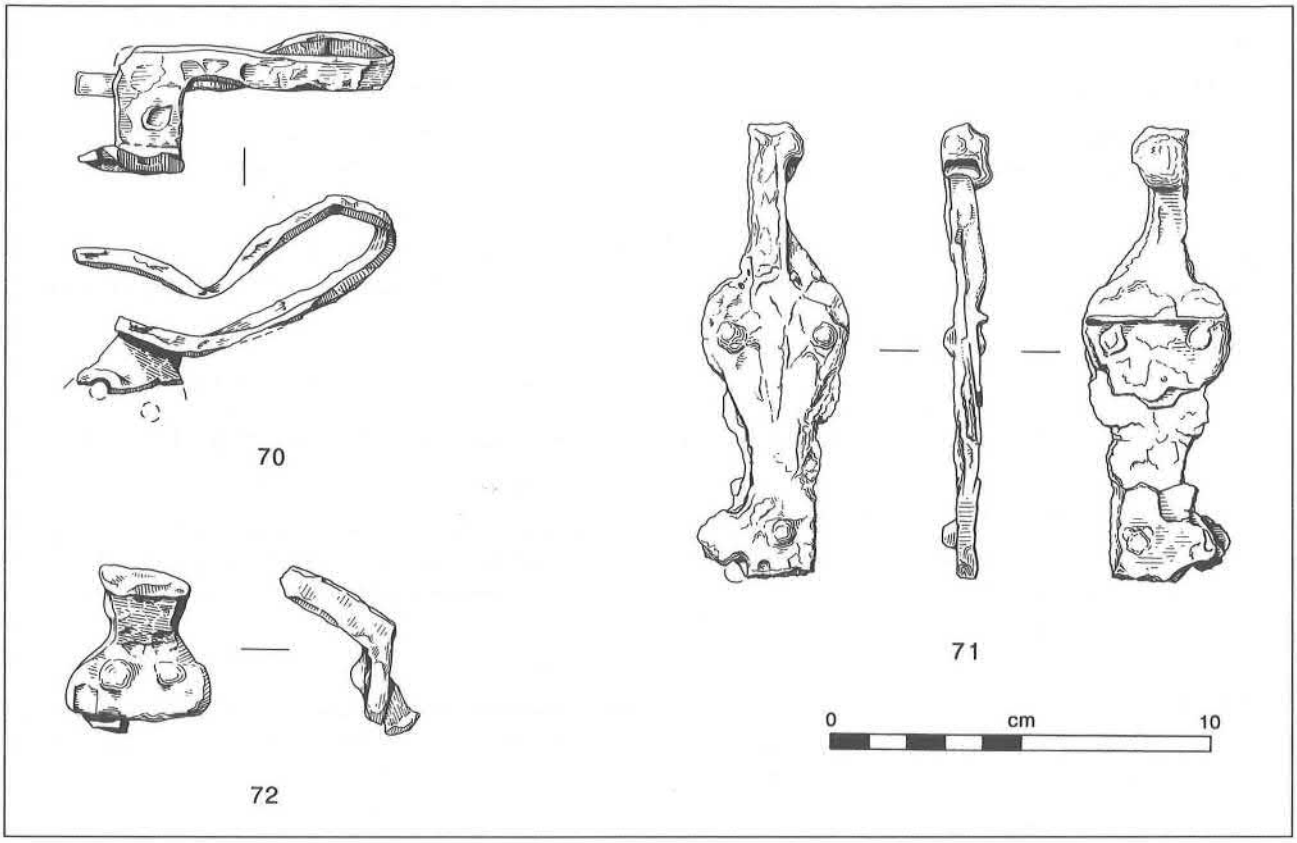


Figure 63: Pattens, 70–72 (scale 1:2).

70 Patten fitting plate fragment and part of bent plain loop. There are two rivet holes indicated. Height 25 mm.

MK618/10052/2; topsoil.

71 Patten fitting plate. One rivet is present and a further hole is visible on the x-ray. Height 25 mm.

MK618/10400/5; unstratified.

72 Patten fitting plate fragment and part of a bent plain loop. Two rivet holes are indicated on the x-ray. Height 28 mm.

MK618/10596/8; rubble layer, Period 3/II.

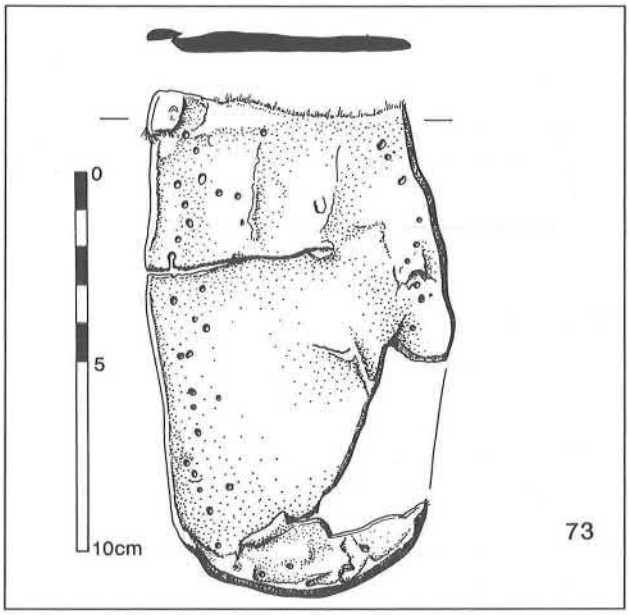


Figure 64: Shoe fragment, 73 (scale 1:2)

Shoe (Fig. 64)

73 Fragment of leather shoe sole or insole. There are circular stitching holes pierced around the edges approximately 8 mm from the edge. Length 132 mm, width 83 mm, max. thickness 4 mm.

MK618/11780/1031; pond fill, Period 3/I.

CATEGORY 2: TOILET INSTRUMENTS

Twenty-six complete or fragmentary toilet instruments were recovered during excavations at MK44, including twenty-two complete or fragmentary toilet spoons. Following the convention employed in the Bancroft report (Williams and Zeepvat 1993), the term 'toilet spoon' is used to describe implements with a flat scoop, those with a cup-shaped scoop being called 'ligulae'. It should be noted that all examples from MK44 were of the flat-scooped, toilet spoon, variety. A further subdivision was noted: those toilet spoons with the scoop in line with the shaft (twelve examples), and those with it set at an angle (four examples). It is generally accepted that toilet spoons were used to extract cosmetics from small containers, or as the equivalent of the modern cuticle-pushing 'hoof' (Crummy 1983, 59), and it is possible that the angle of the scoop indicates such a functional difference. Three of the four angled-scoop toilet spoons have two small grooves, one on either side of the junction with the shaft, perhaps imitating 'rat tails' found on *cochleare* spoons, though no parallels for this have been located. These grooves do not occur on the straight-scoop toilet spoons, perhaps again hinting at functional differences between the angled and straight toilet spoons.

The remains of crucibles and channel hearths used for processing copper alloys were found at MK44. From this evidence, along with the large number of toilet objects and fragmentary strips, rods and wires, it has been suggested that manufacture of these objects was taking place at the site. However, no moulds were discovered, and the toilet instruments could represent fragments of scrap being processed on the site. X-ray fluorescence analysis of the alloys might have identified which, if any, of the finds had a similar composition. However, time and budgetary considerations did not allow this.

Nail Cleaner (Fig. 65)

74 Nail cleaner, copper alloy, Crummy Type 2A. Slightly waisted leaf-shaped blade, decorated on one side with a St Andrew's cross between parallel lines, and a vertical line. The bent suspension loop is at right angles to the plane of the blade, and the junction has a spool, reel and bead moulding. Crummy (1983, 58) dates this type from the mid to late first century, continuing into the second century. Length 74 mm, width 15 mm.

MK44/120/+; metal detector find.

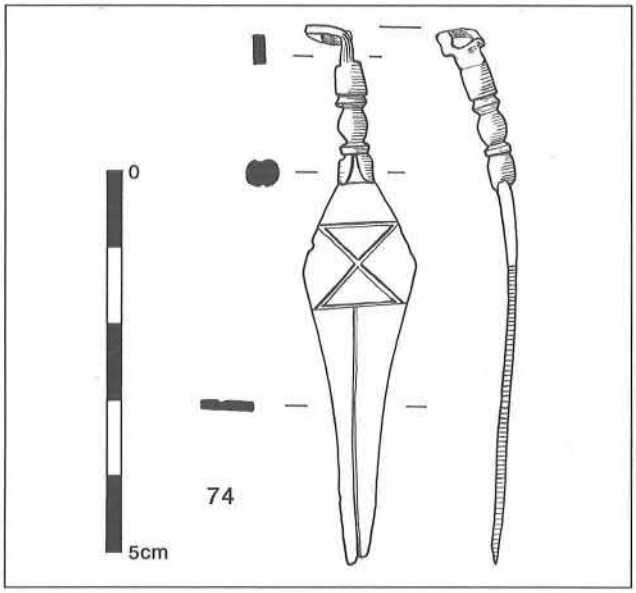


Figure 65: Nail cleaner, 74 (scale 1:1).

Tweezers (Fig. 66)

75 Tweezers, copper alloy. Decorated with parallel grooves 1.0 mm from outside edge. The blades are flared with turned-in ends. Two similar examples are known from Magiovinium (Neal 1987, fig. 26.73–74), and one from Bancroft villa (RMK fig. 43.65). Length 42 mm.

MK44/3/+; metal detector find.

76 Tweezers, copper alloy. Beaten and folded to shape from strip. The blades are parallel-sided; one is bent outwards, the other broken. 'V' shaped indentations decorate the edges of the top of the blades for approximately 12.0 mm. Decorative indentations also appear on a pair of tweezers from the first period of occupation (43–75) at Fishbourne (Cunliffe 1971, fig. 42.66). Length 50 mm, width 5 mm.

MK44/20/L60C.1; occupation layer.

77 Tweezers, iron. Bent strip with a loop acting as the spring. Iron tweezers have been found in both Roman (Manning 1974, 185, fig. 78.664) and Saxon contexts (West 1985, fig. 97.1). Length 59 mm.

MK44/123/F122A.1; posthole.

Toilet Spoons (Fig. 67)

All examples are copper alloy.

?Angled Scoop

78 Toilet spoon. A bent tapering circular-profile shaft. The underside of the trapezoidal scoop has indentations either side of the shaft junction, perhaps in imitation of the 'rat-tail' junction of *cochleare* spoons. Length 111 mm, max. shaft dia. 2.5 mm, scoop width 6 mm.

MK44/66/F92B.2; ditch fill.

79 Toilet spoon. A tapering, circular profile shaft with deliberate shoulder 20 mm before the polygonal scoop. The underside of the scoop has indentations as **78**. Length 113 mm, max. shaft dia. 2 mm, scoop width 6 mm.

MK44/43/F114A.1; fill of channel hearth.

80 Toilet spoon fragment. A bent, tapering, circular profile shaft. The underside of the pentagonal scoop has indentations as **78**. Length 44 mm, max. shaft dia. 2 mm, scoop width 5.5 mm. Not illustrated.

MK44/107/F165G.1; ditch fill.

81 Toilet spoon fragment. A bent, tapering, circular profile shaft with an oval scoop. Length approx. 65 mm, max. shaft dia. 2 mm, scoop width 4 mm. Not illustrated.

MK44/111/+; unstratified.

Straight Scoop

82 Toilet spoon. A bent rectangular strip shaft with an oval scoop. Length 110 mm, max. width of shaft 3.0 mm, scoop width 6.0 mm.

MK44/79/F119C.1; gully fill.

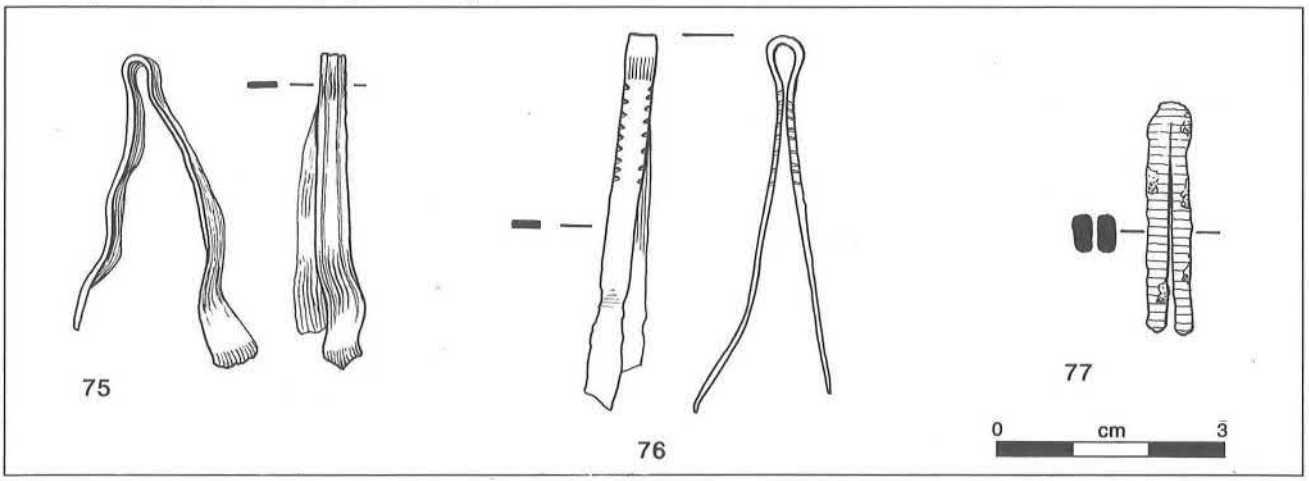


Figure 66: Tweezers, 75–77 (Scale 1:1).

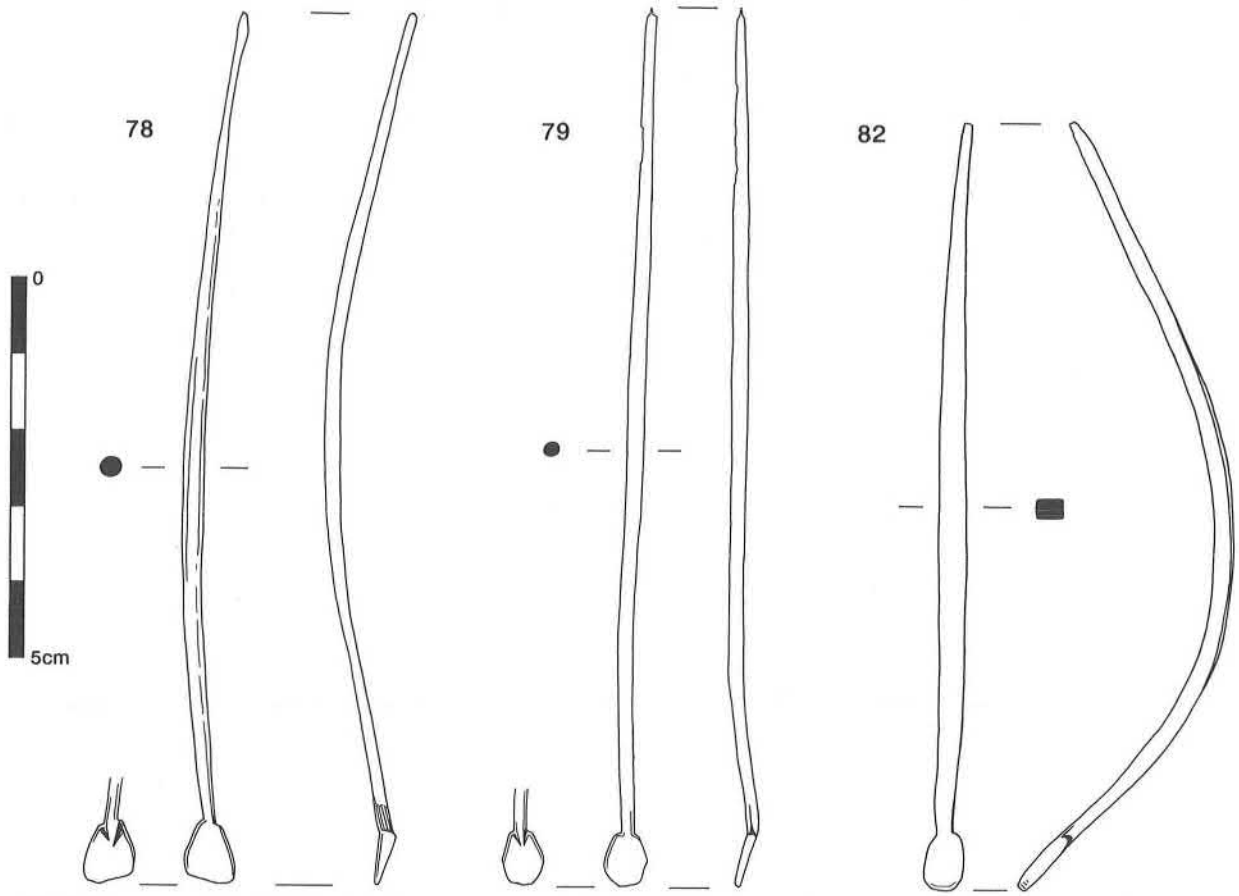


Figure 67: Toilet spoons, 78, 79, 82 (scale 1:1).

83 Toilet spoon. A curved, tapering strip with a wedge-shaped scoop. A central groove is present on one side of the shaft above the scoop for approximately 20 mm, indicating that the strip was folded to form the shaft. Length 100 mm, max. width of shaft 4.0 mm, scoop width 5.0 mm. Not illustrated.

MK44/14/F30F.1; gully fill.

84 Toilet spoon. A slightly bowed, tapering, strip shaft with hammered indentations on the inside of the curve, which give an undulating surface and slightly wavy edges to the strip. A sub-rectangular scoop. Possibly an unfinished object. Length 97 mm, max. width of shaft 3.0 mm, scoop width 4.5 mm. Not illustrated.

MK44/163/F117.1; gully fill.

85 Toilet spoon. A bent rectangular-strip shaft with a roughly oval scoop. Length approx. 112 mm, max. width of shaft 2.5 mm, scoop width 5.0 mm. Not illustrated.

MK44/78/F119C.1; gully fill.

86 ?Toilet spoon fragment. Formed from tapering, rectangular-profile strip. The scoop is set asymmetrically and at right angles to the widest face of the shaft. Length 75 mm, max. width of shaft 2.5 mm, scoop width 3.5 mm. Not illustrated.

MK44/9/F30C.1; gully fill.

87 Toilet spoon fragment. A circular-profile shaft with an asymmetrical sub-rectangular scoop. Length 21 mm, width of shaft 1.5 mm, scoop width 6.0 mm. Not illustrated.

MK44/15/F30F.1; gully fill.

88 Toilet spoon fragment. A bent, tapering, circular-profile shaft with a circular scoop. Length 115 mm, max. shaft dia. 2.5 mm, scoop width 6.0 mm. Not illustrated.

MK44/70/F50; gully fill.

89 Toilet spoon fragment. A bent, tapering, circular-profile shaft which flares before a fragmentary scoop. Length approx. 107 mm, max. dia. 2.0 mm. Not illustrated.

MK44/47/F62B.1; fill of channel hearth.

90 Toilet spoon fragment. The shaft of tapering, circular profile for the final 45 mm, the remainder of flared flat profile, leading to a circular scoop. Length 95 mm, max. shaft width 4.0 mm, scoop width 5.5 mm. Not illustrated.

MK44/175/F77.2; cobbled surface.

91 Toilet spoon fragment. A circular-profile shaft with an asymmetrical scoop. Length 42 mm, max. shaft width 2.0 mm, scoop width 5.0 mm. Not illustrated.

MK44/105/F131A.1; fill of channel hearth.

92 Toilet spoon. A circular-profile shaft with a circular scoop. Length 77 mm, max. shaft width 2.3 mm, scoop width 4.5 mm. Not illustrated.

MK44/52/+; topsoil.

93 ?Toilet spoon fragment. Formed from a flat strip which was cut and folded to give a rounded shaft. The shaft is flattened near the scoop which lies to one side of the shaft. Length 41 mm, max. shaft width 2.0 mm, scoop width 6.5 mm. Not illustrated.

MK44/60/+; unstratified.

94 Toilet spoon. Formed from a flat strip, which has been folded and drawn to give a rounded-profile shaft for its final 75 mm, while the remainder is flatter and shows the fold. The scoop is damaged. Length approx. 110 mm, max. shaft width 4.0 mm, scoop width 5.5 mm. Not illustrated.

MK44/4/+; unstratified.

Toilet Spoon Shaft Fragments

Six toilet spoon shaft fragments were identified among the wires and strips. None are illustrated.

95–98 Four fragments of toilet spoon shafts. All with tapering circular profile, dia. 2–3 mm, lengths 63–120 mm.

MK44/75/L123; clay layer: MK44/104 and 108/F165G.1; ditch fills: MK44/109/+; unstratified.

99 Bent, circular and rectangular profile similar to **90**. Length approx. 95 mm, max. width 3 mm.

MK44/44/+; unstratified.

100 Bent, rectangular-profile, tapering strip. Length 92 mm, max. width 3.5 mm.

MK44/57/+; unstratified.

CATEGORY 3: OBJECTS USED IN THE MANUFACTURE OR WORKING OF TEXTILES

Spindle Whorls (Fig. 68)

Compared with the lead examples from Winchester, which vary in weight from 27.7 to 67.5 g, those from MK618 fall at the lower end of the range, a weight suitable for spinning standard weight wool (Woodland 1990, 216). The weight of bone whorls is of uncertain consequence, since soil conditions can alter the composition and weight of bone during burial. However, the large size of the bone and clay examples found suggests that they were used for spinning coarser yarns, or plying multiple threads (*ibid.*, 218).

101 Spindle whorl, lead. Plano-convex shape. Hole dia. 11 mm, dia. 28 mm, height 11 mm, weight 34.7 g.

MK618/10003/I; topsoil.

102 Spindle whorl, lead. Plano-convex shape. Hole dia. 8.0 mm, dia. 25 mm, height 8.0 mm, weight 20.6 g.

MK618/10077/7001; topsoil, Area 4.

103 Spindle whorl, lead. Bun shaped. The top is slightly damaged. Hole, dia. 7.5 mm, slightly off-centre. Dia. 23 mm, height 9 mm, weight 22.2 g.

MK351/91/+; unstratified.

104 Spindle whorl, fired clay. Domed fragment. Sand and grog tempered grey-fired fabric with orange surface. Probably Iron Age or early Roman. Hole dia. *c.*12 mm, estimated dia. *c.*50 mm, weight 13.7 g, estimated total weight 30–35 g approx.

MK351/1/+; unstratified.

105 Spindle whorl, fired clay. Half of a conoid rounded whorl. Fabric grey-brown with sand temper. Outer surface smooth, almost burnished. One similar whorl was recovered from Gorhambury (Neal *et al.* 1990, fig. 145.1029). Dia. 45 mm, height 29 mm, weight 27 g (approx. total weight 54 g).

MK44/140/F111B.1; fill of channel hearth.

106 Spindle whorl, bone. Cut from cross-section of long-bone, probably horse or ox. The central hole is surrounded on one side by seven concentric rings which extend over the edge. Possibly Saxon, *cf.* West Stow (West 1985, fig. 244.12–13). Hole dia. 15 mm, dia. 47 mm, th. 15 mm, weight 37.3 g.

MK44/137/F148.1; pit fill.

Loomweights (Fig. 69)

107 Triangular loomweight fragment, fired clay. Pierced across two of the angles with circular-profile holes before firing. One of the pierced angles is grooved or worn on the outside, over the angle. The object tapers from pierced sides towards the unpierced side. Side length 220 mm, max. th. 75 mm, weight 1.84 kg. Perforation dia. 10 mm.

MK44/186/F10E.1; ditch fill.

Similar examples of this late Iron Age form were recovered from Gorhambury, Herts. (Neal *et al.* 1990, fig. 145.1032) and Weekley, Northants. (Jackson and Dix 1988, fig. 28.103). Both sites show occupation continuing without interruption from the Iron Age to the Roman period in a rural context. Sixty-two loomweights were discovered at the Iron Age site at Danebury between 1969 and 1978 (Poole 1984, 401–406). Of these, fifty-one were triangular with perforations across the angles. Side lengths ranged from 120–200 mm, widths between 49 mm and 85 mm, and five masses were given between 1.02 kg and 1.88 kg. The perforations were of diameters ranging between 8.0 and 18 mm. Therefore, the Caldecotte loomweight falls at the upper range of size and weight for triangular loomweights when compared with the Danebury examples. It is unclear what thickness of thread would have been used on an Iron Age warp-weighted loom and whether these would have been passed through the perforations of the loomweights, as such small perforations do not appear to be able to accommodate large bundles of threads.

108 Loomweight fragment, fired clay. Bun-shaped, with triangular profile and asymmetrically-placed hole, suggesting an early medieval date. Max. width 40 mm.

MK618/11674/683; weathered natural, Period 1.

Pin (Fig. 70)

Pins of drawn copper-alloy wire with spiral wound heads were available from the thirteenth century onwards. They were used largely for discreetly pinning veils and clothing. Following the convention used in the Winchester report (Biddle and Barclay 1990, 560), the pin is included here to distinguish it from decorative dress items. Small pins were probably used in dressmaking, tailoring, and possibly also lace making, but did not really come into their own until the mid nineteenth-century introduction of paper patterns necessitated a more precise manipulation of fabric.

109 Pin, copper alloy with wire-wound head. Slightly bent. Length 5 mm.

MK618/11315/475; ditch fill, Period 3/I.

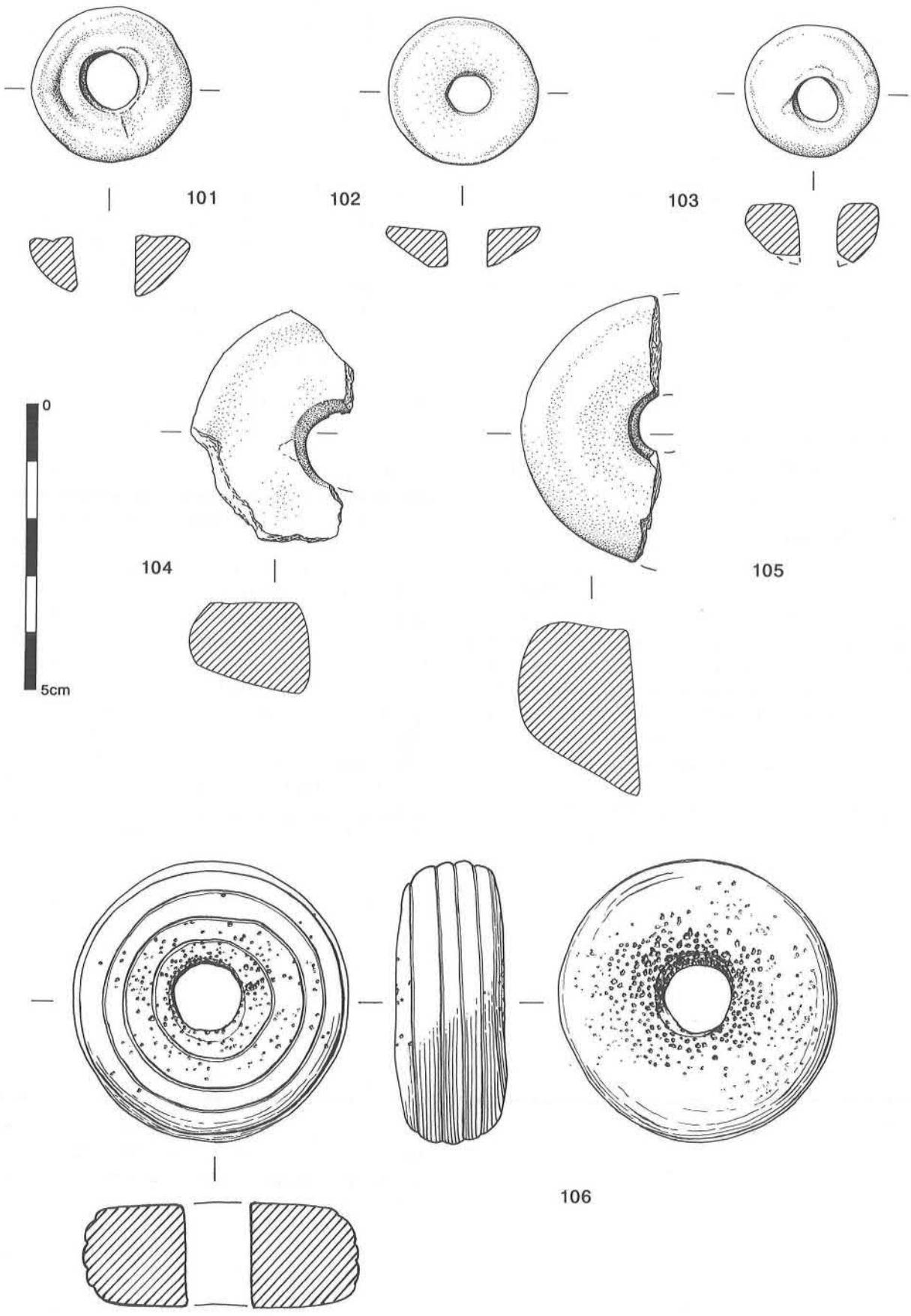


Figure 68: Spindle whorls, 101–106 (scale 1:2).

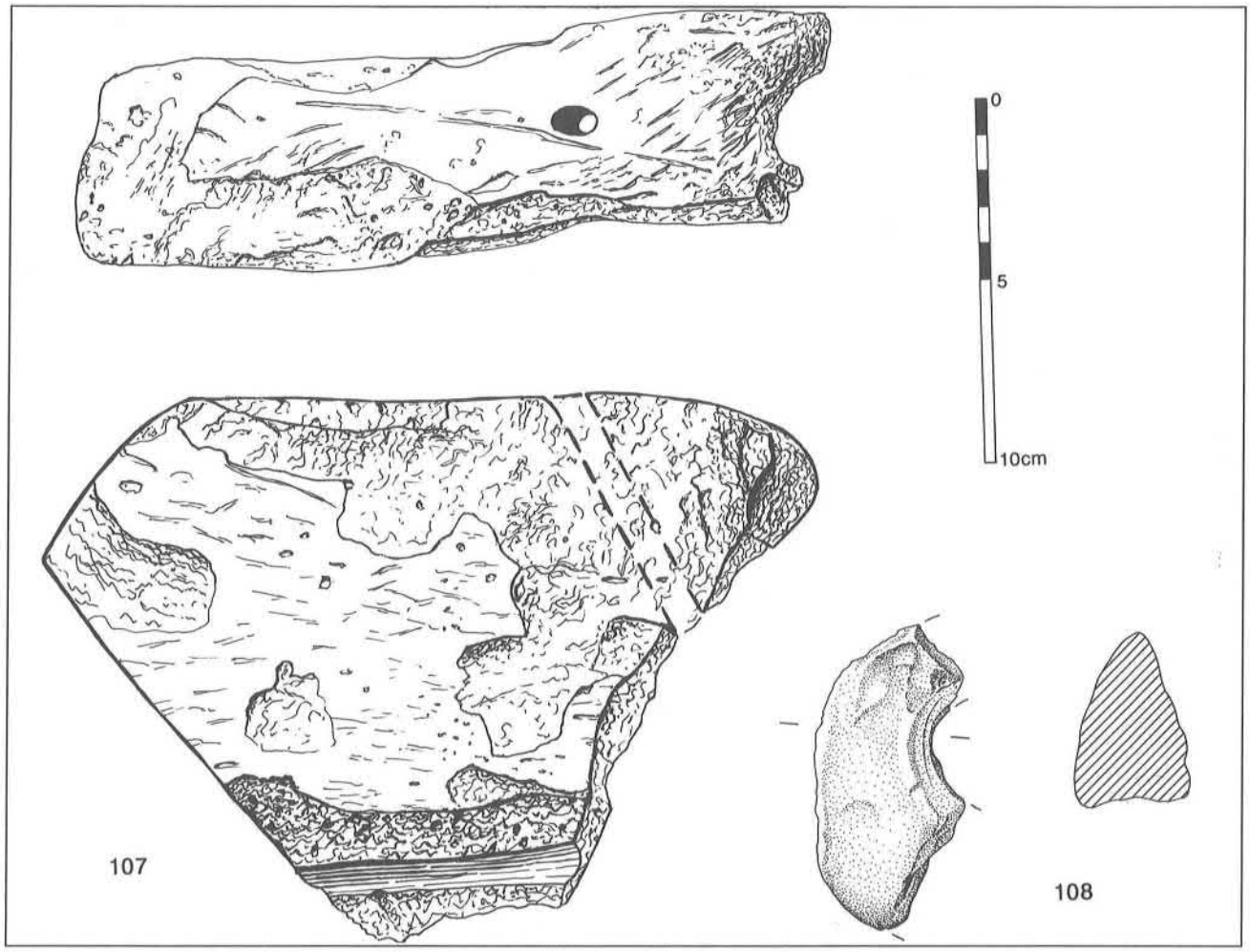


Figure 69: Loomweights, 107–108 (scale 1:2)

Needles (Fig. 70)

Crummy (1983) suggests that copper-alloy needles similar to the three described below are late Roman. Those from Colchester derive from third and fourth-century contexts (*ibid.*, 67), and this tallies with examples from other sites within Milton Keynes (eg. RMK, fig. 43.71).

110 Needle, complete, but broken at eye. Crummy Type 3 (Crummy 1983, fig. 70.1991). An oval-profile shaft, tapering to a conical point. There is a groove both above and below the eye, which appears to have been cut when cold. Length 79 mm, max. width 2.5 mm.

MK44/91/+; unstratified.

111 Needle fragment, broken at eye. A tapering cylindrical rod with grooves running longitudinally on both sides below the eye. Length 102 mm, max. width 2.5 mm. Not illustrated.

MK44/7/F11.4; pit fill.

112 Needle fragment. A tapering cylindrical rod with a groove running longitudinally on one side at wider edge for 12 mm. Length 48 mm, width 2 mm. Not illustrated.

MK44/21/F30F.1; gully fill.

113 Steel needle, modern. Length 51 mm. Not illustrated.

MK44/119/F165F.1; ditch fill.

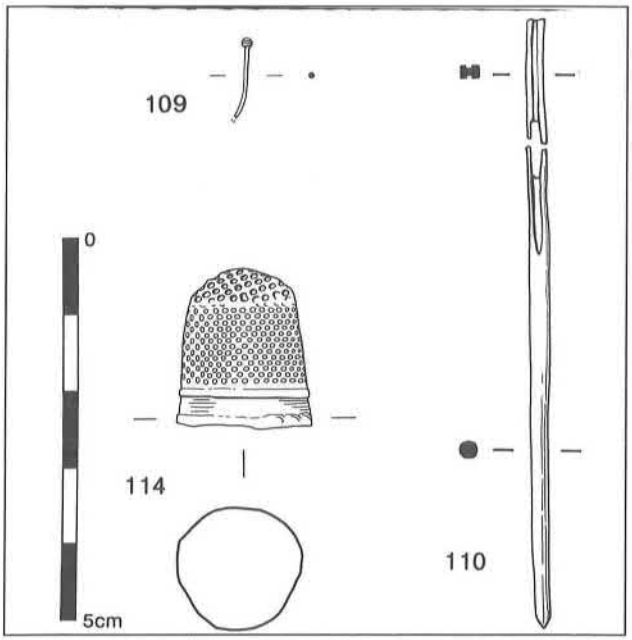


Figure 70: Pin, needle and thimble, 109–110, 114 (scale 1:1).

Thimbles (Fig. 70)

R.E. Tyrrell

114 Thimble, copper alloy. Machine knurled with the pits stamped horizontally around the sides and a 'waffle' pattern on top. A plain band decorates the rim. It shows signs of

extensive wear. A similar thimble was found at Aldgate, London (Thompson *et al.*1984, 115, fig. 57.90) in a context dated *c.*1670–1700. Dia. 15 mm, height 21 mm.

MK618/10044/2; topsoil.

115 Thimble, copper alloy. Flattened, machine knurled with the pits stamped horizontally around sides, the rim is finished with two narrow plain bands. Top missing. Height 17 mm. Not illustrated.

MK618/10127/2; topsoil.

CATEGORY 4: HOUSEHOLD UTENSILS AND FURNITURE

Spoons (Fig. 71)

116 Spoon, grey metal. Cast in one piece with a fig-shaped bowl, which is broken but complete. The circular maker's stamp on the bowl has the letters 'FS' within a beaded border. The tapering circular stem has an acorn knop. Similar to an example from London dated to the late fourteenth or early fifteenth century (Ward-Perkins 1967, plate XXVII.4), two fifttenth-century spoons from Coventry (Muldoon and Brownsword nd., 68/1, 23/1 and 49/227/210), and also to a sixteenth-century example in a private collection (Hornsby *et al.* 1989, fig. 34d). Length 170 mm, bowl length 73 mm, width 50 mm.

MK618/11773/+; Metal detector find, Caldecotte Farm pond.

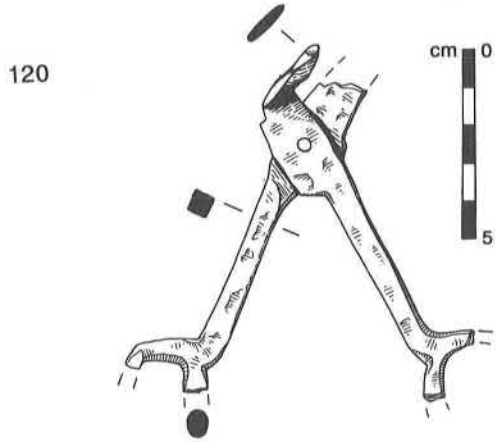


Figure 72: Scissors, 120 (scale 1:2).

117 Complete copper-alloy spoon with a worn fig-shaped bowl. A circular maker's stamp is visible on the bowl near the handle, but the detail is not discernable. The tapering handle is of rounded rectangular profile. The surface has traces of grey metal coating on the bowl and the handle. The seal type knop is similar to an early seventeenth-century example from Coventry (Muldoon and Brownsword nd., 68/123/3), and to one from Cowlam, East Yorks., a village deserted between 1674 and *c.*1680 (Brewster 1988, fig. 35.193). Length 164 mm, bowl length 56 mm, width 48 mm.

MK618/10045/2; topsoil.

118 Spoon handle, grey metal. The object flares from a circular profile end, dia. 4.0 mm, to a flattened triangular area, max. width 11 mm. Length 90 mm.

MK618/10058/5001; unstratified, Area 3.

119 Teaspoon bowl, copper alloy. Some silvering of its surface. The metal is very thin, <1.0 mm. Length 42 mm. Not illustrated.

MK351/80/+; unstratified.

A possible copper-alloy spoon handle (**398**) is described in Category 13.

Scissors (Fig. 72)

Scissors became commonly used in domestic situations during the post-medieval period, replacing shears. Those found at Caldecotte appear suitable for light domestic work. All examples are iron.

120 Scissors. Cranked hoops, with both the hoops and the blades broken. Similar to a pair from a demolition layer at Cowlam, dated to the late seventeenth century (Brewster and Hayfield 1988, fig. 17.48). Handle length 45 mm.

MK618/10579/2; topsoil.

121 Fragment of scissors handle and loop. Handle length 45 mm. Not illustrated.

MK618/11287/110; unstratified.

122 X-ray shows fragment of scissors blade, handle and part of hoop. Handle length 35 mm. Not illustrated.

MK618/11057/347; unstratified.

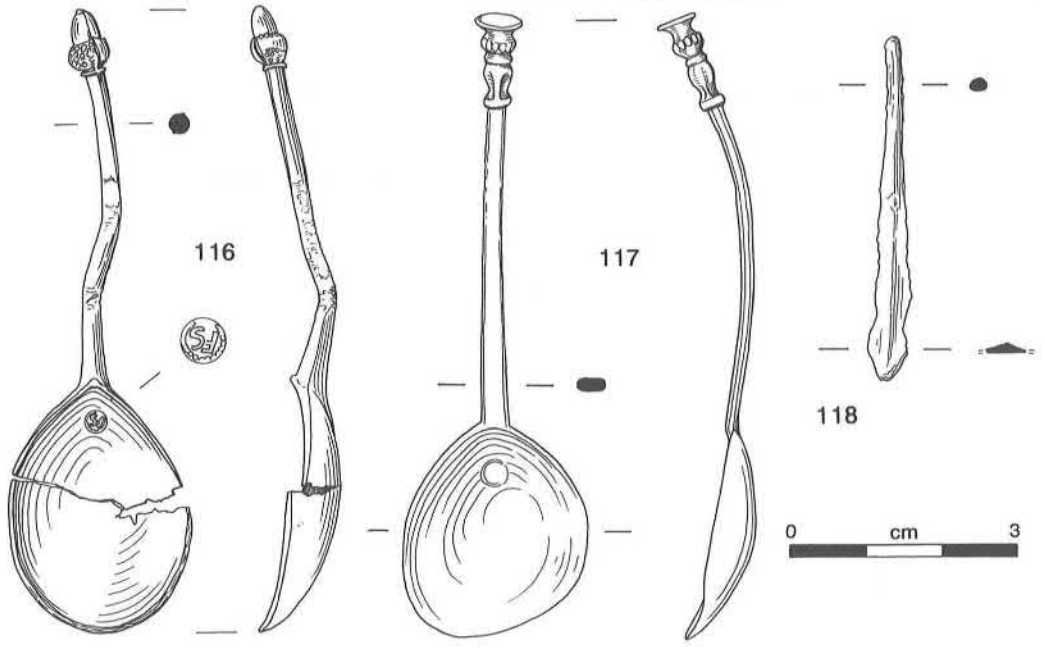


Figure 71: Spoons, 116–118 (scale 1:2).

Querns (Fig. 73)

Stone identification by Dr J. Watson.

A variety of quern materials was recovered from the Caldecotte area. All examples appear to be of rotary querns; no saddle querns or millstones have been identified. The following catalogue lists the querns by material. It has not been possible to date these querns on typological grounds alone, except for **123**, and therefore dating is related to the context or phase of recovery.

The Puddingstone example (**123**) is of Roman origin, as this stone does not seem to have been used for querns outside the Roman period. The remainder are either of lava or millstone grit. Lava from the Mayen quarries of Rheinland-Pfalz was worked from the Iron Age onwards. In Britain lava querns appear in the Roman and early medieval periods, continuing in use throughout the medieval period and possibly beyond (King 1987, 95). Millstone grit was used from the late Iron Age into the medieval period for making querns. Biddle (1990, 883) comments that hand querns largely went out of use in Winchester during the thirteenth century, a time when ownership of hand querns may have been prohibited by landowners who also owned watermills. There does not appear to be a similar replacement in rural areas (King 1987, 95), where direct control by a landlord may not have been possible.

123 Puddingstone upper quern stone, almost complete. The feed hole has a diameter of 75 mm at its mouth. There is a handle hole present which is slanted inwards towards the base. Dia. 255 mm, height 125 mm.

MK117/48/104; pit fill.

124 Millstone grit. Fragment of rotary quern upper stone. The concave grinding surface is very worn. Dimensions: 115 × 120 × 30 mm. Not illustrated.

MK44/281/F11.3; pit fill.

125 Millstone grit. Probable quern stone fragment. Dimensions: 120 × 95 × 30 mm approx. Roman. Not illustrated.

MK44/690/F11; pit fill.

126 Millstone grit. Fragment of rotary quern, probably upper stone. The grinding surface is smooth. The outer edge is roughly fluted, the upper surface is flat. Dimensions: 205 × 160 × 60 mm max. Not illustrated.

MK44/250/1; topsoil.

127 Coarse millstone grit. Fragment of rotary quern upper stone. The concave grinding surface is quite worn. The upper, outer, surface is slightly convex. The central hole is worn smooth. Dia. approx. 460 mm, th. 45 mm at outer edge, 20 mm at inner. Roman. Not illustrated.

MK44/473/L163; cobble surface.

128 Millstone grit. Three-quarters of a rotary quern lower stone. The convex grinding surface is worn and smooth. The lower surface is roughly finished. Dia. approx. 360 mm, th. 40 mm at edge, 73 mm at centre. Roman.

MK44/473/L163; cobble surface.

129 Millstone grit. Fragment of rotary quern upper stone. The concave grinding surface is quite worn. The upper, outer, surface is slightly convex. Dia. *c.*420 mm, max. th. 40 mm. Roman. Not illustrated.

MK44/507/F186C.3; fill of field boundary ditch.

130 Millstone grit. Fragment of rotary quern upper stone. The grinding surface is slightly worn, some pecked lines are visible approx. 13 mm apart. Dia. approx. 500 mm, th. 43 mm at outer edge. Not illustrated.

MK44/517/F197; pit fill.

131 Millstone grit. Fragment of ?quern. The surface is slightly concave. Dimensions 290 × 280 × 45 mm max. Roman. Not illustrated.

MK44/27/42; fill, Pit 41.

132 Millstone grit upper quern stone fragment. The surface is worn, and no signs of working are visible. Max. th. 65 mm. Not illustrated.

MK117/25/1; topsoil.

133 Millstone grit rotary quern lower stone fragment. Some grooves are visible radiating from centre to edge, 10–15 mm apart on upper surface. The lower surface also has a groove running concentrically around the edge, 7.0 mm from edge, width 10 mm. Thickness of stone 40 mm. Not illustrated.

MK351/9/+; unstratified.

134 Millstone grit rotary quern lower stone fragment. Some worn grooves run concentrically around the upper surface. Lower surface is finished with a marked lip. Thickness at edge 44 mm. Not illustrated.

MK351/2–7/+: unstratified.

135 Millstone grit rotary quern upper stone fragment. The surface is worn, but with vestigial concentric grooves visible. Thickness at edge 60 mm. Not illustrated.

MK354/-/+; unstratified.

136 Millstone grit. Fragment of rotary quern upper stone. The concave grinding surface is smooth towards the edge, some striations are present towards the centre. Dia. unknown, max. th. 48 mm. Not illustrated.

MK618/10994/2; topsoil.

137 Coarse millstone grit. ?Quern fragment. Dimensions: 67 × 50 × 45 mm. Not illustrated.

MK618/10752/63; ditch fill, Period 2/II.

138 Coarse millstone grit. ?Quern fragment. Dimensions 44 × 25 × 22 mm. Not illustrated.

MK618/10808/118; occupation layer, Period 3/I.

139 Vesicular lava, probably Rheinland-Pfalz. Fragment of quern stone. One face is worn smooth. Dimensions: 75 × 65 × 45 mm. Not illustrated.

MK44/11/3; topsoil.

140 Vesicular lava, probably Rheinland-Pfalz. Nine small fragments of ?quern. Dimensions of largest: 35 × 30 × 22 mm. Not illustrated.

MK44/12/13; fill, Ditch 4.

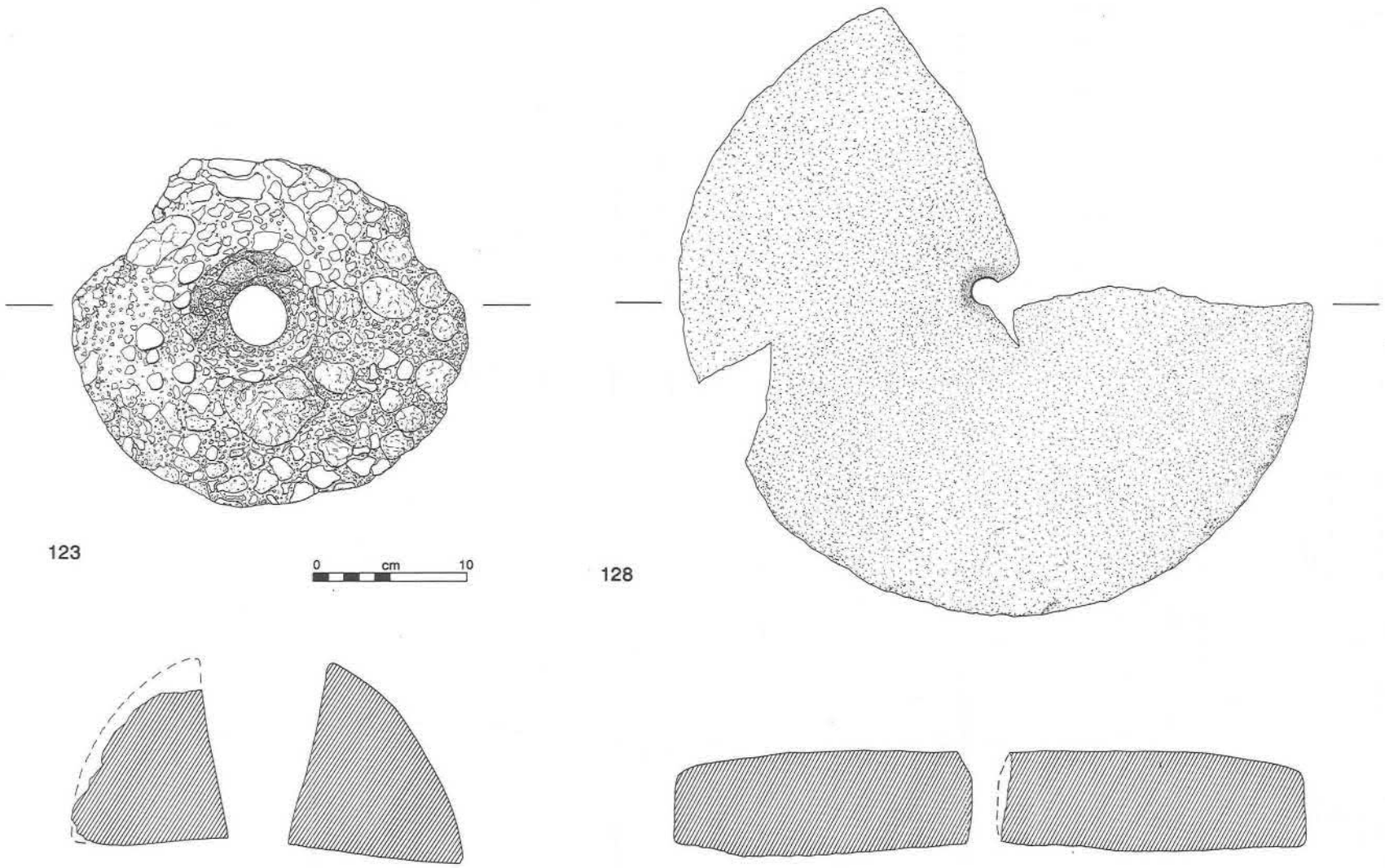


Figure 73: Querns, 123, 128, (scale 1:4).

141 Lava fragment, probably Rheinland-Pfalz. Not illustrated.

MK44/-/F115; ditch fill.

142 Rheinland-Pfalz lava. Fragment of quern, one smooth surface. Dimensions: 83 × 62 × 20 mm. Not illustrated.

MK618/12060/1; topsoil.

143 Rheinland-Pfalz lava. Fragment of quern, one smooth surface. Dimensions: 55 × 35 × 25 mm. Not illustrated.

MK618/11847/170; unstratified.

144 Rheinland-Pfalz lava. Fragment of quern. Dimensions: 95 × 78 × 43 mm. Not illustrated.

MK618/11608/661; land drain fill, modern.

145 Rheinland-Pfalz lava. Fragment of quern. Roughly rectangular profile with one smooth surface. Length 125 mm, width 110 mm, th. 63 mm. Not illustrated.

MK618/11616/681; occupation layer, Period 3/I.

Mortars (Fig. 74)

Mortars were used from the medieval period for two main domestic functions; for pounding herbs, meat or vegetables, or for the grinding of spices and small quantities of grain (Biddle and Smith 1990, 891). In Britain they occur in a variety of materials including the two represented here, fossiliferous and non-fossiliferous limestone.

146 Mortar fragment. Fossiliferous limestone, probably originating from the Upper Purbeck beds. Rim flat, exterior shaped to give rim profile, but rim not extending beyond the body. From Southampton (Platt and Coleman-Smith 1975) are illustrated a selection of stone mortars, including fossiliferous limestone examples dated between *c.*1250 and *c.*1350. One (*ibid.*, fig. 268.2207) appears similar in form to the Caldecotte example. Only one fossiliferous limestone example was recovered in Winchester, from a fifteenth-century context (Biddle 1990, 904), although others in different stones were found dating from the thirteenth century onwards (*ibid.*, 883). Int. dia. 260 mm, thickness at base of fragment 45 mm.

MK44/267/F5.1; gravel surface.

147 Mortar rim fragment, limestone. Rim has a lug and a slight indentation below the rim. The top surface of the lug is slightly recessed. There are signs of recent damage in plough soil. Int. dia. 180 mm.

MK795/-/+; unstratified.

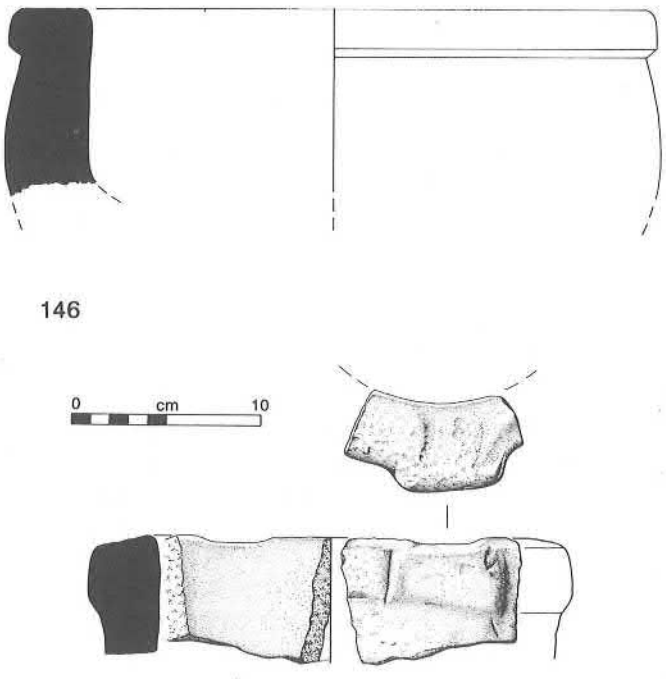


Figure 74: Mortars, 146–147 (scale 1:4).

Vessels

Metal (Fig. 75)

148 Vessel rim fragment, copper alloy. Turning marks are visible inside. The wall thickens towards the rim, where a decorative raised line is present 3.0 mm from the edge. Dia. 80 mm approx.

MK618/10802/176; cobble layer, Period 2/IIb.

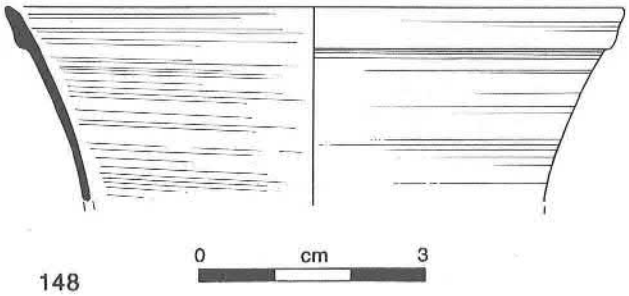


Figure 75: Metal vessel rim, 148 (scale 1:2).

Glass - Roman (Fig. 76)

Jennifer Price

Forty-six fragments of Roman vessel glass were found during excavations at MK44. Twenty-four of these came from tableware, representing at least ten vessels, and all but one of the remaining twenty-two were from blue-green containers. Of these, seventeen fragments were from square bottles, representing at least three vessels, three came from one or more cylindrical bottles, and one was a shoulder fragment and so not identifiable. The remaining piece is from a small square-sectioned colourless container. The date range of the material appears to be between the first and fourth centuries, but with the majority of the datable material coming from the first and second centuries. A full catalogue of the glass is retained in the site archive.

Coloured

149 Globular jar or jug body fragment. Yellow brown; some very small round bubbles, little visible weathering. Part of wide convex curved upper body below rim, with portions of three vertical ribs. Dimensions 27 × 42 mm; th. 1.0–11.5 mm. Not illustrated.

MK44/178/L60B.1; occupation layer.

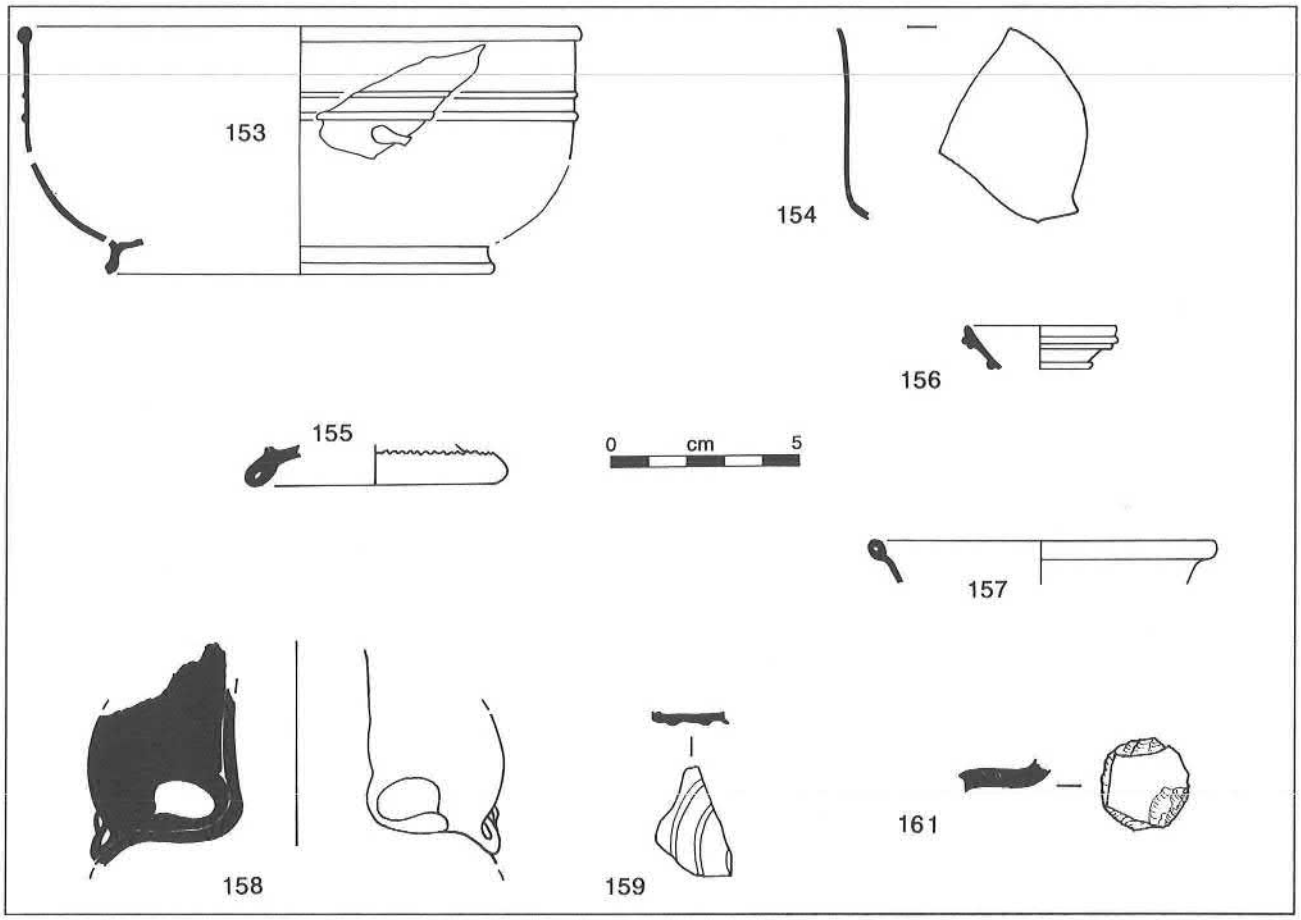


Figure 76: Roman vessel glass, 153, 155–158 (scale 1:2).

Globular ribbed jars and jugs were in common use in Britain, the lower and middle Rhineland and north and central Gaul in the later first and early second century (Isings 1957, Forms 67c and 52). These jars and jugs were quite frequently made in brightly coloured glass, though blue-green examples were always more common, and they are found in Britain on settlement sites and in burials. Ribbed yellow brown jars with vertical collar rims are known at Colchester (Thorpe 1935, 28, plate IIIb), Shefford, Beds. (Liversidge 1969, plate 34, top left) and Silchester (Boon 1974, 230–2, fig. 36.5), and there is a discoid jug from Enfield (Price 1977, 155–8, fig. 27.2 and plate 7), but in many cases the fragments may come from either jars or jugs, as at Verulamium (Charlesworth 1974, 206, fig. 92g) and Park Street, Towcester (Price 1980, 66 and fig. 16.10).

150 Body fragment. Deep blue green (peacock blue); few very small round bubbles; no visible weathering. Small part of narrow neck(?), with portions of five close-set vertical ribs. Dimensions 14 × 12 mm; th. 2.5 mm. Not illustrated.

MK44/129/F1.4; modern pit fill.

151 Body fragment. Yellow green; one elongated bubble; no visible weathering. Small part of narrow neck(?). Dimensions 18 × 12 mm; th. 3 mm. Not illustrated.

MK44/130/F1.4; modern pit fill.

150 and **151** may come from later first or early second-century jugs with long narrow necks and either globular and discoid bodies, as at Enfield, or conical bodies, as Grange Road, Winchester (Harden 1967) and Park Street, Towcester (Price 1980, 66, fig. 15.7 and 9), though it is quite possible that both pieces are modern. **150** in particular is a most unusual colour for a jug of this kind.

Blue-Green

152 Truncated conical beaker body fragment. Very bubbly, black specks; weathering lines on outside surface. Small part of straight side tapering in, with faint diagonal mould-blown ribs. Only a very small part of this vessel survives, but the quality of the glass and the nature of the decoration suggest strongly that it has come from a fourth-century conical beaker with spiral ribbing on the body. Dimensions 16 × 16 mm, th. 1.0 mm. Not illustrated.

MK44/112/III+; unstratified.

Conical beakers were in common use in the north-western provinces throughout the fourth century (Isings 1957, Form 106), and most of them were free-blown with fine abraded lines, though other forms of wheel-cut and trailed decoration also occur, as may be seen in the Lankhills cemetery, Winchester (Harden 1979, 213–5 and fig. 27.IIA). Very few fragments of conical beakers with spiral ribbing have been noted hitherto in Britain, apart from one at Caistor-by-Yarmouth (Price and Cool forthcoming (a), no. 107), though they occur frequently in late fourth-century contexts in eastern Gaul and the Rhineland.

153 Cylindrical bowl with trails. Small bubbles; very little visible weathering. Vertical solid rounded rim, edge rolled out, straight sided upper tubular base ring and concave base (mostly round upper body). The illustration of **153** has been reconstructed from twelve fragments of rim, body and base and may not be accurate in respect of the height of the vessel or of the dimensions of the base-ring. Rim diameter 150 mm; thickness 1.0–1.5 mm.

MK44/126/F108A.1; and MK44/124/F108B.1; ditch fills.

This is not a common vessel form, and although a somewhat similar example is known in second-century contexts in Italy (Isings 1957, Form 87), the best parallels for this piece appear to be the undecorated blue-green bowls from the third-century cemetery at Brougham, Cumbria (unpublished).

154 Cylindrical bowl body fragment. Many small bubbles, mostly oval and aligned horizontally; dull. Part of almost vertical side from wide vessel with rounded carination. Present height approx. 54 mm; th. 1.5–2.0 mm. Not illustrated.

MK44/153/F92B.3; ditch fill.

This fragment lacks the tubular rim and applied 'tene' base-ring, but is easily recognisable as a vessel type well-known in early Roman contexts in many parts of the Roman world (Isings 1957, Form 44). The bowls, which were made in strong colours as well as blue-green glass, and sometimes decorated with vertical or diagonal ribs on the body in the area of the carination, are frequently found on Romano-British sites in late first and early to mid second-century contexts. Plain examples are known at Richborough (Bushe-Fox 1949, plate LXVIII, 369 and 372), Blackfriars, Carlisle (Price forthcoming (a), no. 39), and Felmongers, Harlow (Price 1987, nos 3–5), while ribbed ones have been found at Hemel Hempstead (Charlesworth 1976b, 117, fig. LXIVa, plate 41) and Faversham (Brailsford 1958, 42, 6, and plate 12).

155 Base fragment, bowl(?). Some small bubbles; dull, 'grainy' surfaces. Part of everted tubular base ring and concave base. Broken edge of lower body carefully grozed. Wear marks on base edge. Present height 10 mm, base dia. 70 mm, th. 3.0 mm.

MK44/117/F89C.1; gully fill.

This base fragment could have come from very many bowl forms current in the first to third centuries, so precise identification is not possible. The chief interest of this fragment rests in the fact of its re-use for some secondary purpose; the re-use of base-rings by carefully grosing the broken edges of the original vessel is attested on many sites in Roman Britain, which suggests that the small round discs thus obtained were extremely desirable, perhaps as small plates, lids, counters, for some decorative purpose, or simply as keepsakes.

156 Small flask or jug with trails rim fragment. Many small bubbles, some black specks; surfaces worn. Part of rounded rim edge and funnel mouth with three spiral trails below rim. Present height 11 mm; rim dia. 40 mm; th. 2.0 mm.

MK44/155/F101.1; modern disturbance.

The quality of the glass suggests that this is a late Roman vessel, and it most probably comes from a flask or jug with funnel mouth produced in the late third or fourth century (Isings 1957, Forms 120–121). In Roman Britain the jugs have been noted in burials more frequently than flasks, as at Lankhills (Harden 1979, 217, fig. 27.310, class V), Colchester (Thorpe 1935, 31 and plate IVC), Ospringe, Kent (Whiting *et al.* 1931, 68–9, 503, plate XLII), and York (Harden 1962, 140–1, fig. 58 and plate 67, H.12). Fragments from similar blue-green, greenish and colourless rims, with or without handles, have also been found on many late Roman sites, as at Portchester (Harden 1975, 371, 16 and fig. 198), Northchurch, Herts. (Charlesworth 1976a, 33, 15–16 and fig. XIX), and Frocester Court, Glos. (Price 1979, 44–5, 34, 37 and 38, and fig. 17), and a flask is known from a third-century grave at Brougham, Cumbria.

157 Rim fragment, jar(?) Some small bubbles and grey matter; dull. Part of everted rim, tubular edge rolled in and flattened, neck tapering in. Present height 12 mm; rim diameter 90 mm, thickness 1.0 mm.

MK44/134/F90A.1; fill of channel hearth.

This fragment most probably comes from a jar with a tapering neck. These vessels were produced in many sizes, and usually had a globular or ovoid body, sometimes indented, and a concave base. Such small jars were very rarely included in burials, so most examples are very fragmentary, though they were probably in quite common use in the second century. Fragments similar to **157** have been noted at the late second-century glass production site at Mancetter, Warks. (Price and Cool forthcoming (b)), and others are known from Antonine deposits, as in a pit at Felmongers, Harlow, a deposit dated to *c.*160–70 (Price forthcoming (b)), and the latrine drain of the commandant's house at Housesteads (Charlesworth 1971, no. 10). This deposit was originally supposed to date from *c.*139–42, but further study has shown that the drain also contained later second-century material (Charlesworth 1975, 24).

Greenish Colourless

158 Dolphin bottle body and handle fragment. Bubbly, mostly round but some oval bubbles in vertical alignment in neck; dull, strain cracks. Part of narrow cylindrical neck with slight constriction above horizontal shoulder, cylindrical body (mostly missing). Dolphin-shaped handle applied onto shoulder and neck and bent and manipulated out and down, forming a prominent angular ridge and folded terminal on the edge of the shoulder. Present height 58 mm; neck dia. approx. 35 mm; th. 3.0–4.0 mm.

MK44/28/F1; modern pit fill.

This fragment of a dolphin-handled bottle comes from a well-known type of vessel which was in widespread use in the north-west provinces in the late Roman period (Isings 1957, Form 100). In Britain, a few examples have been found in burials and are substantially complete, as at Lankhills (Harden 1979, class IX, fig. 27), Ospringe (Whiting *et al.* 1931, 58–9, 448 and plate XXXVIII), Lullingstone (Meates 1979, 128), and perhaps York (Harden 1962, 141, fig. 89, HG 182), but most pieces are very fragmentary.

Dolphin bottles may be divided into two groups, according to the way the handle is formed. On **158**, together with the two examples from Lankhills and others from Ospringe, Lullingstone, Shakenoak (Harden 1973, 104, fig. 52.232), Dorchester-on-Thames (Charlesworth 1984, 155 and fig. 39.15) and Caerwent (Boon 1972–3, 113 and fig. 1.4), the handles are applied to the shoulder and neck and then bent out and down to form a prominent thin pointed ridge and a folded 'dolphin snout' on the edge of the shoulder. By contrast, on the second group, which includes the York vessel and fragments from Lankhills (Harden 1979, 220, fig. 91.41), Chew Park, Somerset (Harden 1978, 289, fig. 113.5), Frocester Court (Price 1979, 44, fig. 17.42) and Barnsley Park (Price 1982, 182, 37), the handles are applied to the lower neck and shoulder and then bent up and in to form a broad rounded handle and a folded 'dolphin snout' at the top of the handle on the neck. The dating evidence for these bottles from Lankhills suggests they were in use in the later third and earlier fourth century, though the fragment from Dorchester on Thames came from a very late fourth or early fifth-century pit, so some examples appear to have continued in use after *c*.350.

Containers: Blue-Green

159 Small square bottle base fragments. Very bubbly; little visible weathering. Part of base edge and flat base with three carelessly marked concentric ridges. Underside pockmarked from mould. Dimensions 22 × 29 mm; th. 1.5–2.5 mm. Not illustrated.

MK44/102/F10G.1; ditch fill.

Square bottles were being produced by the Claudian period, but are not very common until the Neronian or early Flavian period. From that time until at least the late second century they were present on virtually every site in Britain and elsewhere in the western provinces, and are often found in very large quantities (Isings 1957, Form 50). These vessels were manufactured in a wide range of sizes to contain a variety of liquid and semi-liquid substances, and were usually strongly made in thick glass with one angular handle, and blown into a square-sectioned body mould with a decorated base. The concentric ridges on **159** are a very common device, perhaps used to strengthen the base rather than as a manufacturer's trade mark, but the quality of the glass is most interesting as it is much more bubbly than the majority of these vessels, and may indicate a local centre of production.

Also seven body fragments, very similar glass from:

i) MK44/135/F9C.1; ditch fill.

ii) MK44/134/F90A.1; gully fill.

iii) MK44/127/F92A.1; ditch fill.

iv) MK44/150/F92A.2; ditch fill (joins **133**).

v) MK44/133/F92B.3; ditch fill.

vi) MK44/132/F92C.2; ditch fill.

vii) MK44/128/F111C.1; fill of channel hearth.

Other body fragments of square bottles from:

i) MK44/169/F27C.1; ditch fill.

ii) MK44/185/F30F.1; gully fill.

iii) MK44/156/L100; medieval soil layer.

iv) MK44/131/F108C.1; ditch fill.

v) MK44/113/L120; layer.

vi) MK44/158/L170; soil layer.

vii) MK44/253/+, MK44/254/+ and MK44/181/+; topsoil.

viii) MK44/114/+; topsoil.

ix) MK44/182/+; topsoil.

160 Two adjoining body fragments, cylindrical bottle(?). Many mostly small, oval bubbles aligned vertically, some black specks and lumps; dull, some weathering streaks on outside surface. Part of straight side, curving in at base angle (or shoulder). Present height 70 mm; body dia. approx. 140 mm, th. 2.0–2.5 mm. One other body fragment. Not illustrated.

MK44/141/F165B.3; ditch fill.

The cylindrical bottle was also a very common form of container in the first and early second century (Isings 1957, Form 51). Many of the features of cylindrical bottles (eg. rim, neck, shoulder and handle) are identical with those of square bottles, but the cylindrical body is not mould-blown and the base is concave and undecorated.

161 Small square bottle or flask body fragment. Small bubbles and black specks; dull, wear on outside surface. Part of two vertical sides and angle of third. Present height 25 mm; width of wide 20 mm; thickness 1.5–2.0 mm. Not illustrated.

MK44/126/F108A.1; ditch fill.

This fragment comes from a small square-sectioned vessel of a type known as 'Mercury bottles', which usually occur in second and third-century contexts in the western provinces (Isings 1957, form 84:P, Stern 1977, 64–72, 18, plates 12 and 13). The name relates to the god Mercury, who is quite frequently depicted on the base of these vessels, though other designs and completely plain bases are also known. Most Mercury bottles have very thick walls, though a thinner variant is also known. Both versions occur quite frequently in northern and central France, as in the collections of the Musées Départementaux de Seine-Maritime, Rouen, where some examples have been found in third and fourth-century burials (Sennequier 1985, nos 165–72), but they have not often been noted in Britain, except for one from Ospringe (Whiting *et al.* 1931, plate XVII.151), and fragments from Chester and Fishbourne (Harden and Price 1971, 357–8, no. 87, fig. 142).

Glass - Post-Medieval (Fig. 77)

Only the diagnostic fragments from MK618 appear in this report. Table 6 lists the contexts producing vessel glass fragments and the number of fragments of each type of glass, joining fragments being counted as one. Comments on this assemblage were provided by R.J. Charleston.

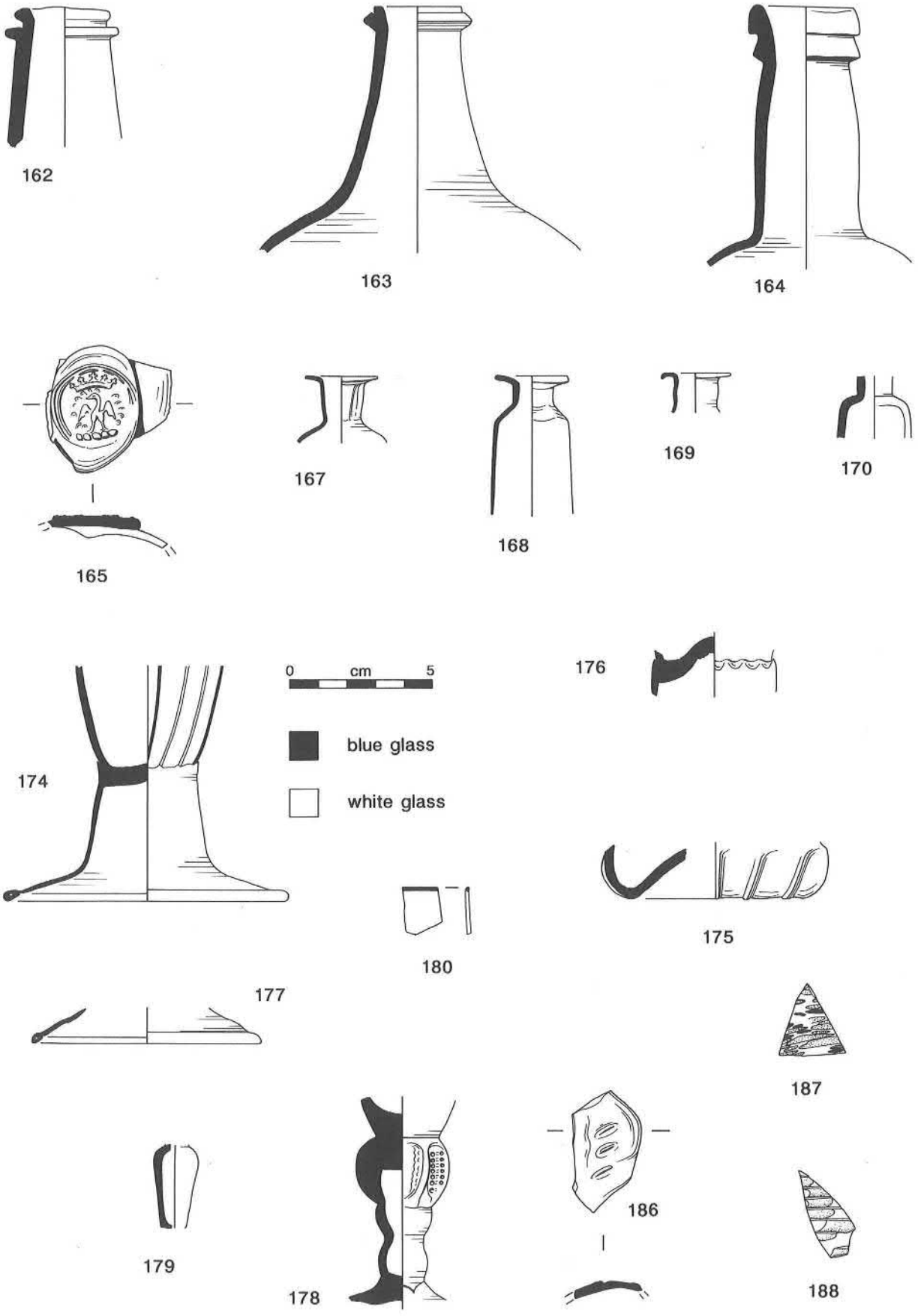


Figure 77: Post-medieval vessel glass, 162–165, 167–170, 174–180, 187–188 (scale 1:2).

Cont.	Wine bottles	Small bottles	Drinking vessels	Other forms	Unidentified fragments green	clear	brown	white	Total
2	5	6	5	–	22	4	–	–	42
5	1	–	–	–	1	–	–	–	2
6	–	–	–	–	1	–	2	–	3
7	–	–	–	–	3	–	–	–	3
8	3	2	–	–	7	–	–	1	13
9	–	1	–	–	–	–	–	–	1
10	–	–	–	–	3	–	–	–	3
19	3	–	–	–	20	1	1	–	25
37	–	2	1	–	3	–	–	–	6
38	1	1	–	–	–	–	–	–	2
46	–	–	–	–	–	–	1	–	1
48	–	–	–	–	1	–	–	–	1
51	1	–	–	–	–	–	–	–	1
64	3	1	–	1	12	1	–	–	18
65	–	–	–	–	1	–	–	–	1
70	–	1	–	–	4	1	1	–	7
74	1	–	–	–	–	–	–	–	1
117	–	–	–	–	1	–	–	–	1
169	–	–	–	–	1	1	–	–	2
174	–	–	–	–	1	–	–	–	1
185	–	–	–	–	4	1	–	–	5
190	–	–	–	–	1	–	–	–	1
236	1	–	–	–	–	–	–	–	1
257	–	–	–	–	–	1	–	–	1
260	–	1	–	–	–	–	–	–	1
261	–	–	–	–	1	–	–	–	1
270	–	–	–	–	2	–	–	–	2
277	1	–	1	–	1	–	–	–	3
304	–	–	–	–	1	–	–	–	1
334	–	–	–	–	1	–	–	–	1
403	–	–	–	–	–	–	1	–	1
408	–	–	–	–	1	–	–	–	1
427	–	–	–	–	2	–	–	–	2
434	–	–	–	–	–	1	–	–	1
468	–	–	–	–	1	–	–	–	1
469	–	–	–	–	1	–	–	–	1
473	–	–	1	–	1	–	–	–	2
475	3	–	–	–	5	–	–	–	8
512	1	–	–	–	2	–	–	–	3
515	1	–	1	–	2	–	–	–	4
543	–	–	–	–	1	–	–	–	1
679	–	1	–	–	–	–	–	–	1
699	1	–	–	–	–	–	–	–	1
759	–	–	–	–	1	–	–	–	1
846	–	1	–	–	–	–	–	–	1
1548	–	1	–	–	–	–	–	–	1
5001	–	–	–	–	1	–	–	–	1
7028	–	–	–	4	–	–	–	–	4
TOTAL	**26**	**18**	**9**	**5**	**110**	**11**	**6**	**1**	**186**

TABLE 6: Summary of vessel glass from MK618, by type/context.

The vessel glass assemblage from MK618 illustrates some of the range of vessels available in the period between the late sixteenth and eighteenth centuries, most of the material being of late seventeenth and early eighteenth-century date. Wine bottles, small cylindrical apothecaries' bottles, wine glasses, beakers and a posset pot or mug are represented. All the glass is probably of English manufacture, excluding perhaps **175**, the posset pot or mug, which may be Venetian. Relatively few wine bottles were recovered in comparison to the vessel glasses, either because bottles were returned to the supplier, disposed of in an unexcavated part of the site, or misidentified. As at Great Linford (Mynard and Zeepvat 1992), most of the glass was recovered from unstratified or demolition contexts.

Wine Bottles

162 Rim, olive green, *c.*1690.

MK618/10499/19 and MK618/11294/64; unstratified.

163 Rim and shoulders, olive green, *c.*1720–1725.

MK618/11062/8; rubble layer, Period 3/II.

164 Rim, olive green, *c.*1800.

MK618/11609/699; ditch fill, Period 3/I.

165 Seal. Swan with outstretched wings below ?earl's coronet, above a line of five raised dots. Surface covered with decomposition products, glass appears to be pale green. Probably a tavern bottle. Sealed bottles occur from 1655 onwards, so this vessel probably dates to the later seventeenth century. In or around 1720, it was recorded by Cole that once there were several large inns at Fenny Stratford, but in 1720 only four remained, including "...The Swan: this was an Inn, as appears by old deeds, in 1472." (Bradbrook 1903, 241). Fenny Stratford is approximately 1.75 km from Caldecotte, and therefore a likely source of the seal.

MK618/11279/475; ditch fill, Period 3/I.

166 Base, pale green, early eighteenth century. Not illustrated.

MK618/11062/8; rubble layer, Period 3/II.

Small Bottles

167 Flared rim, light blue green. Rim dia. 24 mm, neck dia. 12 mm.

MK618/10695/8; rubble layer, Period 3/II.

168 Flared rim and shoulders, light blue green. Rim dia. 27 mm, neck dia. 12 mm, body dia. approx. 30 mm.

MK618/10996/8; rubble layer, Period 3/II.

169 Flared rim, light green. Rim dia. 25 mm, neck dia. 12 mm.

MK618/11460/679; unstratified.

170 Neck and shoulder of rectangular bottle. Clear. Width approx. 25 mm.

MK618/10703/64; unstratified.

171 Base, green cylindrical bottle. Ext. dia. 35 mm. Not illustrated.

MK618/10281/2; topsoil.

172 Base, green cylindrical bottle. Ext. dia. 35 mm. Not illustrated.

MK618/10467/2; topsoil.

173 Rim and four body fragments. Light green. Not illustrated.

MK618/10735/70; unstratified.

Drinking Vessels

174 Beaker fragments. Clear, greyish metal with incorporated threads of opaque white and blue. The threads were applied to the surface before the bowl was formed and they meet together at the base of the bowl. The separate pedestal foot has upward-pointed "claws" corresponding with the threads on the bowl. The rim of the foot is folded. The glass is probably of English manufacture, most likely of early seventeenth-century date. A red-and-white striped example was found in North Lane, Canterbury (Egan 1990, fig. 4.180) and dated similarly by Charleston. However, blue and white ornamentation is more common at this period. Foot rim dia. 100 mm.

MK618/11298/473; ditch fill, Period 3/I.

175 Posset pot or mug, three base fragments. Slightly milky metal with green tinge and mould-blown ribbing. Probably a soda glass made in England, or in Venice to suit the English market, around 1670. Approx. ext. dia. 70 mm.

MK618/10129/2, MK618/10789/2; topsoil, and MK618/10939/64; unstratified.

176 Beaker fragment. Very thick smoky grey metal. The stub of the bowl suggests mould-blown ribbing. The separate pedestal foot was added after the body was moulded and linked by spikes drawn upwards around the edge to correspond with the rib on the bowl. This beaker may represent the continuation of an older form in a new fashion, as the Civil War disrupted the glass industry, and new forms were developed in the later seventeenth century. The English glass manufacturers answered to a taste for robust glass such as this about 1670. Dia. 45 mm.

MK618/10128/2; topsoil.

177 Fragments of foot with a folded rim in brown glass. Brown glass appears to have become fashionable in the late seventeenth century. These fragments probably date from the period between the late seventeenth and early eighteenth centuries. Dia. approx. 80 mm.

MK618/10278/2; topsoil; MK618/10954/277; unstratified.

178 Hollow-blown wine-glass stem having applied pincered 'propeller' ornament, with stubs of separately formed bowl and foot attached. Clear lead glass with slight grey tinge. The glass is very heavy, possibly containing up to 30% lead. The stem was formed in two parts. The lower blown section with a hollow centre is waisted and tapers to the foot. The upper zone was formed from a separate gather of glass and has six wings formed by pinching with waffle-patterned pincers. Manufactured *c.*1700. Stem length 52 mm, width 32 mm max. across wings.

MK618/10465/2; topsoil.

179 Blown inverted baluster knop wine-glass stem in clear glass. Early eighteenth century. Length 29 mm, dia. 18 mm max., 9.0 mm min.

MK618/10905/37; unstratified.

180 Three rim fragments of opaque white metal with a translucent blue trailed edge, probably from a dish. Small vessels identified as 'cgg cups' occur in this combination of materials in the late eighteenth century, and are considered to be of English manufacture. Th. 1.5 mm, Blue edge th. 1.0 mm.

MK618/10486/2; topsoil: MK618/11358/515; levelling layer, Period 3/I.

181 Two fragments of polygonal base of tumbler or large wine glass. Clear metal, mould blown and wheel facetted. Early nineteenth century. Not illustrated.

MK618/10012/2; topsoil.

Other Forms

182 Complete wide-necked, machine-moulded jar, in pale green glass. The base has the letters 'RYLANDS BARNSLEY' arranged in a circle. Int. neck dia. 45 mm. Shoulder width 64 mm, height 125 mm. Not illustrated.

MK618/10721/7028; ditch fill, modern.

183 Complete wide-necked, machine-moulded jar, in blue-green glass. Int. neck dia. 58 mm, shoulder width 75 mm, height 116 mm. Not illustrated.

MK618/10722/7028; ditch fill, modern.

184 Complete wide-necked, machine-moulded jar, in pale green glass. The letters 'C' over 'A 2' above '8 A' on base. Int. neck dia. 55 mm, shoulder width 72 mm, height 118 mm. Not illustrated.

MK618/10723/7028; ditch fill, modern.

185 Complete wide-necked, machine-moulded jar, in pale green. Int. neck dia. 54 mm, shoulder width 70 mm, height 118 mm. Not illustrated.

MK618/10724/7028; ditch fill, modern.

Unidentified Fragments: Clear

186 Fragment ?base, of yellowish clear metal with numerous bubbles. Mould blown with three parallel, short, indented lines. Th. 1.5–3.0 mm.

MK618/10767/70; unstratified.

Unidentified Fragments: Brown

187 Fragment of brown metal, which appears black, with white bands embedded in the outer surface. The white bands appear blue in places, seemingly due to internal reflection of light. Probably of English manufacture. Late seventeenth to early eighteenth century. Th. 2.5 mm.

MK618/10560/19; unstratified.

188 Fragment of gingery brown glass with white threads combed and marvered on the surface. Probably of English manufacture. Late seventeenth to early eighteenth century. Th. 1.0–2.0 mm.

MK618/10690/70; unstratified.

Vessel Repairs

None illustrated.

189 Lead pottery repair plugs.

1 Length 28 mm, width 24 mm, th. 8.0 mm.

2 Length 18 mm, width 16 mm, th. 11 mm.

MK309/-/+; metal detector find.

190 Lead pottery repairs.

1 Length 47 mm, width 25 mm, th. 11 mm, weight 64.0 g.

2 Length 25 mm, width 18 mm, th. 12 mm, weight 21.2 g.

MK44/5/+; unstratified.

191 Large repair plug from sand-tempered vessel (th. 3.0 mm). The plug has an irregular outline. One face is smooth and black, the other is rougher. Dia. 40 mm, weight 134.4 g.

MK351/39/+; unstratified.

192 ?Pottery repair plug. Almost conical with flange at narrower end. Height 18 mm, dia. 17–22 mm, weight 25.4 g.

MK351/33/+; unstratified.

193 Repair plug, roughly ovoid shape. Vessel thickness 2.0–3.0 mm. Length 32 mm, width 22 mm, weight 45.7 g.

MK351/6/+; unstratified.

194 Almost circular plug. Vessel thickness *c.*2.0 mm. Dia. 18 mm, weight 19.5 g.

MK351/91/+; unstratified.

195 Vessel repair plug. Weight 6.0 g.

MK354/12/+; unstratified.

196 Pottery repair plug. Length 18 mm, width 11 mm, th. 10 mm, weight 6.3 g.

MK844/-/+; metal detector find.

Furniture fittings (Fig. 78)

Knobs

197 Poppy-head fitting, slightly damaged. Solid cast copper-alloy decorative fitting with remains of square-sectioned iron attachment beneath. Similar to an example from a fourth-century level at Lullingstone (Meates 1987, fig. 29.147) which is described as a knob or finial, possibly from a lynch-pin. Height 22 mm, dia. 21.5 mm.

MK44/139/L124; soil layer.

198 Stylised bird's head fitting. Cast copper alloy in the form of an ?eagle's head with ?fruit in beak. It appears to be filled with lead. The eyes were incised into its surface, as were some stylised feathers. A collar, with tinned or silvered surface, is present for attachment. Two similar but larger examples, described as cart fittings, were found in Cirencester (Wacher and McWhirr 1982, fig. 57.105–106).

MK44/50/+; topsoil.

199 Dome-headed knob, copper alloy. The dome narrows towards the shaft and expands again to a stop where the corroded remains of a central iron rod are situated. Dia. 18 mm.

MK354/9/+; unstratified.

200 Oval-headed knob, lead alloy. Mushroom-shaped knob with a pronounced foot which is attached to a further lead alloy plate by an iron fixing pin. Head width 24 mm, height 22 mm.

MK354/10/+; unstratified.

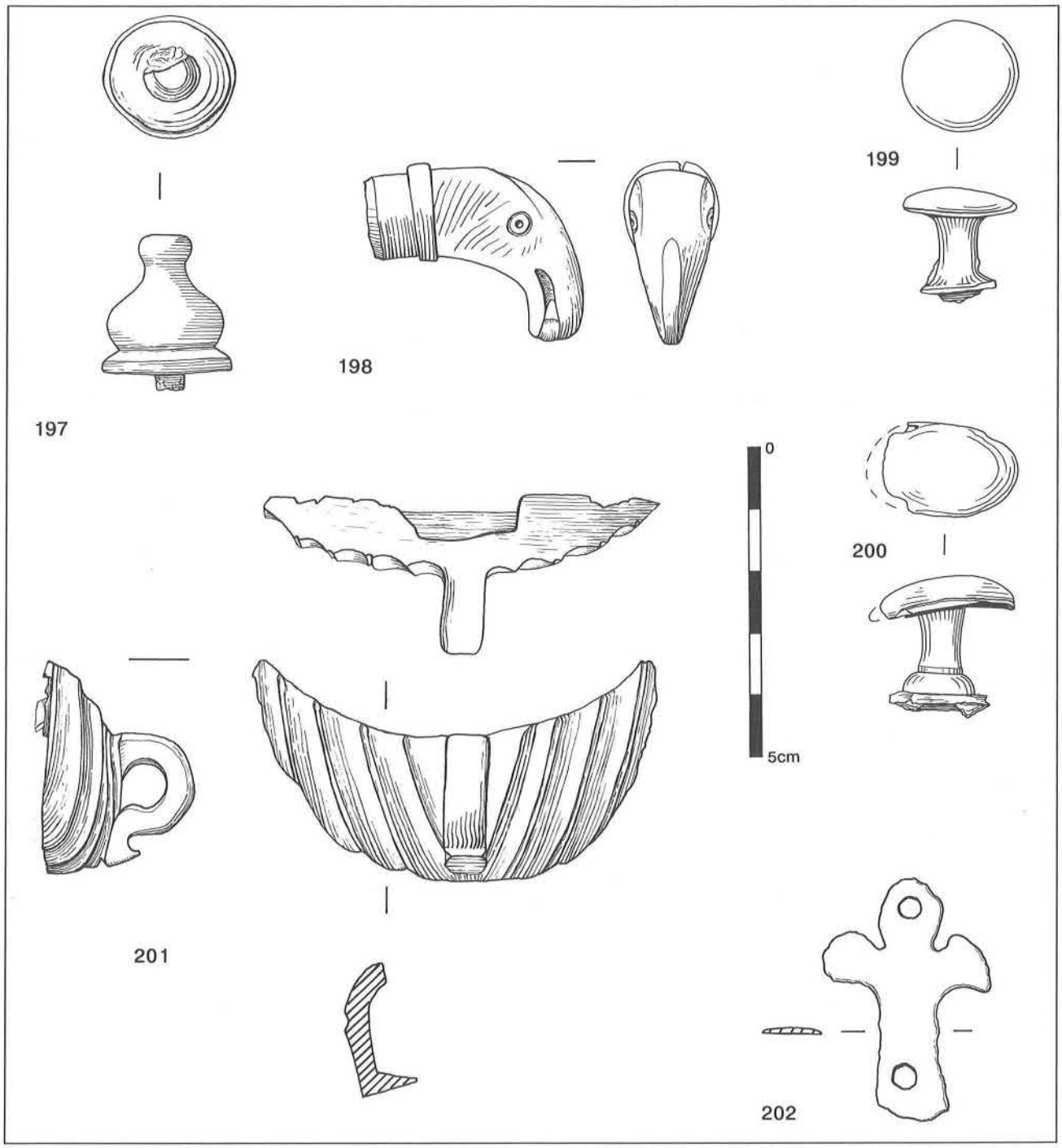


Figure 78: Knobs, handles and fitting, 197–202 (scale 1:1).

Handle

201 Handle? Cast copper alloy. Curved lunar shape with strigilated outer surface. 'D'-shaped handle appears to be part of the same casting and is of rectangular profile. The handle is situated slightly off-centre. A slightly overturned lip inside the bow of the object has a rectangular central recess, perhaps for attachment purposes. Width of object 65 mm.

MK44/8/3; topsoil.

Fitting

202 Fleur-de-lys escutcheon. Flat, cast copper-alloy object with circular fitting holes, dia. 3.0 mm, at top and bottom of central axis. Length 39 mm, width 27 mm, th. 0.5 mm.

MK44/-/+; metal detector find.

Dome-headed studs (Fig. 79)

Studs such as these were normally used to decorate items such as furniture or chests. The smaller example (**205**) may have been intended for use in upholstery. None of these examples appear to have been used.

203 Stud, copper alloy. Tapering, rectangular-profile stem. Length 30 mm, head dia. 11 mm.

MK44/30/+; topsoil.

204 Stud, copper alloy. Tapering, hexagonal-profile stem. Length 26 mm, head dia. 8 mm.

MK44/67/F111B.1; gully fill.

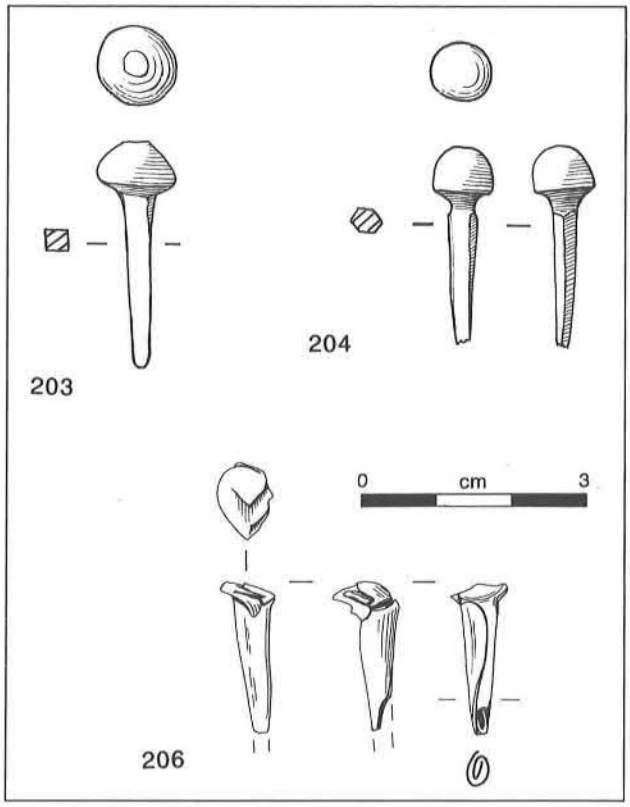


Figure 79: Studs, 203–204, 206 (scale 1:1).

205 Stud, copper alloy. Straight, rectangular-profile stem. Length 17 mm, head dia. 4 mm. Not illustrated.

MK44/55/+; topsoil.

Other Forms (Fig. 79)

206 Decorative tack, copper alloy. Sheet rolled into tapered shape. Similar to a post-medieval example from Bedford (Baker 1979, fig. 173.1328). Length 18 mm.

MK618/11848/37; unstratified.

Firetongs

207 Iron fire tongs. Seal top, ball joint. Terminals missing. Not illustrated.

MK618/10431/2; topsoil.

CATEGORY 5: OBJECTS USED FOR RECREATIONAL PURPOSES

Marbles

208 Two marbles were found at MK618. Neither are illustrated.

i. Chalk, dia. 15 mm.

MK618/11037/219; construction trench fill, Period 3/I.

ii. Pipeclay, dia. 17 mm.

MK618/10995/8; rubble layer, Period 3/II.

Counters (Fig. 80)

Glass counter by Jenny Price.

209 Counter, bone. The obverse is countersunk with an indentation from a lathe centre. The reverse is flat and polished. Dia. 20 mm, th. 3 mm.

MK44/3/F27.1; ditch fill.

210 Counter, glass. Bottle body fragment. Small bubbles; weathering streaks on outside surface. A small part of a shoulder and neck junction which has been reworked for some secondary purpose into a disc with grozed edges. Tooling mark visible. The re-use of broken vessel glass has already been noted in the Roman period in connection with **155** (p.135), and it seems probable that this piece was intended as a gaming piece or counter. Diameter 23–25 mm, th. 5 mm. Not illustrated.

MK44/154/F93B.1; ditch fill.

211 Counter, made from first-century South Gaulish samian body fragment. Dia. 17 mm, th. 4.5 mm. Not illustrated.

MK44/72/F92A.1; ditch fill.

212 Counter, made from first-century South Gaulish samian body fragment. Dia. 19–22 mm, th. 5–6 mm. Not illustrated.

MK44/151/F92B.1; ditch fill.

Pipeclay Figurine (Fig. 80)

213 Pipeclay figurine fragment. Male torso, between waist and thighs. The figure wears a coat with button decoration at the top of two hemline pockets and along the right-hand side of

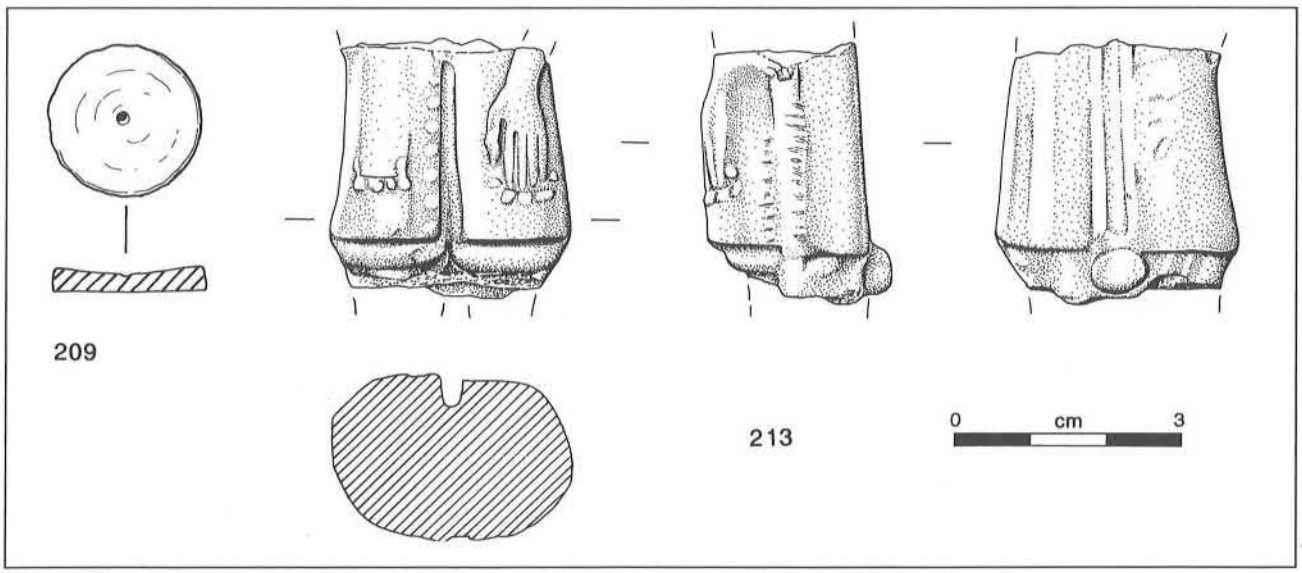


Figure 80: Counters and pipe-clay figurine, 209–213 (scale 1:1).

the front edge. The left hand is positioned above the left pocket. The back of the coat appears to be vented. A large ?button or casting sprue is situated below the edge of the coat at the centre back. The figure is quite well-worn and is probably a fragment of a toy. A similar, more complete fragment was recovered from excavations at Aldgate (Weinstein 1984, 122–123). The dress of the Aldgate figure was dated to the 1680s, and a similar date is probably indicated for this fragment.

MK618/10650/7; rubble layer, Period 3/II.

Clay Pipes

W.R.G. Moore

The clay pipes from MK618 consist of thirteen bowls, twenty-two bowl fragments and 331 stem fragments. They date from about the mid seventeenth to the mid eighteenth century.

Stems

The stem fragments were found in small quantities in many different contexts, with the exception of 106 pieces from Context 2 (topsoil). The measurement of stem bores gives a general indication of the range in date (Walker 1967). Wide bores are predominantly seventeenth century, medium bores (6/64 inch) mainly 1660–1760 and narrow bores predominantly eighteenth to nineteenth century. The Caldecotte stems taken as a whole divide into:

Bore	*No*	*%*
wide	97	29
medium	172	52
narrow	62	19

Using the Harrington data, it can be calculated that with a constant rate of deposition these percentages would result from a period of smoking from about 1665 to 1720. If in fact the deposition rate tailed off at the beginning or end of the period, the date range would be extended accordingly.

The stems from Context 2 were also looked at as a separate group. They were found to have almost the same composition as the non-Context 2 finds, though with slightly more later material (22% compared with 17% narrow bores).

Bowls

Some thirteen bowls were sufficiently complete to be classified and dated using Oswald's general typology (Oswald 1975, 37–41). The results correspond with the stem-bore evidence. They are listed in Table 7.

CATEGORY 6: OBJECTS EMPLOYED IN WEIGHING AND MEASURING

Steelyard Weights (Fig. 81)

214 Steelyard weight, lead. Biconical shape. The remains of an iron suspension ring are present at the top. Probable intended weight 1 *libra*. Dia. approx. 45 mm, weight 308.3 g.

MK309/-/+; metal detector find.

215 Steelyard weight, lead. Biconical shape. The remains of an iron suspension loop are present at the top. Probable intended weight 1 *libra*. Dia. 40 mm, weight 313.4 g. Previously published as RMK 209. Not illustrated.

MK351/15/+; unstratified.

216 Steelyard weight, lead. Roughly dome shaped. The remains of an iron suspension loop are present at the top. Probable intended weight 10 *unciae*. Dia. 40 mm, weight 261.24 g. Previously published as RMK 208. Not illustrated.

MK354/1/+; unstratified.

Balance Weights

Objects **217** and **218** have been placed in this section because their weights are equivalent to divisions of an *uncia*. However, it is possible that they were intended to be gaming pieces.

217 Flat oval lead disc with pierced hole, dia. *c*.1.0 mm, near centre and three incised lines, 4.0 mm apart, to one side of the hole. The underside is flat. Its weight is close to one quarter of an *uncia* (Frere 1972, 160). Length 23 mm, width 18 mm, weight 7.4 g.

MK354/6/+; unstratified.

218 Flat lead disc with straight edge on one side. Cut from sheet of lead. Its weight is equivalent to one sixth of an *uncia*. Dia. 18 mm approx., th. 1.5 mm, weight 4.5 g.

MK354/6/+; unstratified.

Other Weights (Fig. 81)

Five weights of similar shape and mass were discovered at MK619, in contexts dated to the medieval period. They are all roughly circular with a central hole, and appear to have been cast. That five very similar weights were recovered is unusual, perhaps indicating that these were not used for measuring weight but for some other purpose, such as fishing or bird catching, which required roughly even weights spaced around a net or trap.

Date	*Type*	*Quantity*	*Contexts*
c. 1640–70	G17	2	19; unstratified: 334;
c. 1660–80	G6	1	19; unstratified.
c. 1660–80	G7	2	110; unstratified: 347; construction trench fill, period 3/II.
c. 1660–80	G18	3	2; topsoil: 6 and 65; unstratified.
c. 1670–1700	G7/8	2	8; rubble layer, period 3/III: 37; unstratified.
c. 1680–1720	G9	2	2; topsoil: 185; rubble layer, period 3/III.
c. 1730–80	G12	1	8; rubble layer, period 3/III.

TABLE 7: Clay pipes, MK618.

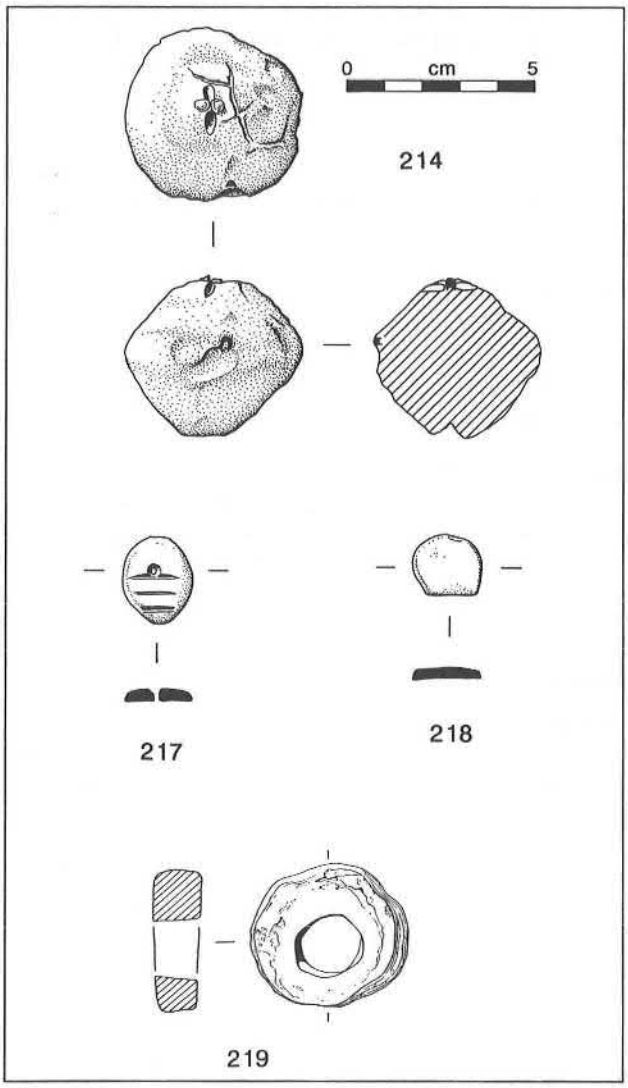


Figure 81: Steelyard, balance and other weights, 214, 217–218, 219–223 (scale 1:2).

219 Dia. 38–41 mm, th. 11 mm, weight 127.8 g.

MK619/144/F173C.1; medieval pond.

220 Dia. 37–42 mm, th. 12 mm, weight 135.5 g. Not illustrated.

MK619/80a/L100; medieval soil spread.

221 Dia. 39–42 mm, th. 10 mm, weight 119.3 g. Not illustrated.

MK619/80b/L100; medieval soil spread.

222 Dia. 37–41 mm, th. 7.0–12 mm, weight 110 g. Not illustrated.

MK619/157a/L100; medieval soil spread.

223 Dia. 37–42 mm, th. 9.0–13 mm, weight 133.4 g. Not illustrated.

MK619/157b/L100; medieval soil spread.

CATEGORY 7: OBJECTS ASSOCIATED WITH WRITTEN COMMUNICATION

Styli (Fig. 82)

224 Stylus, iron. Manning Type 1 (1985, plate 35.N1). Length 98 mm.

MK44/198/F122B; posthole.

225 Stylus, copper alloy. Manning Type 3 (Manning 1985, 85). The tapering, rectangular-sectioned erasing blade finishes in a rounded, flat end. There is a distinct shoulder where the blade joins a tapering, circular-profiled point, which is bent. Length 97 mm, width of eraser 6 mm.

MK44/168/F119C.1; gully fill.

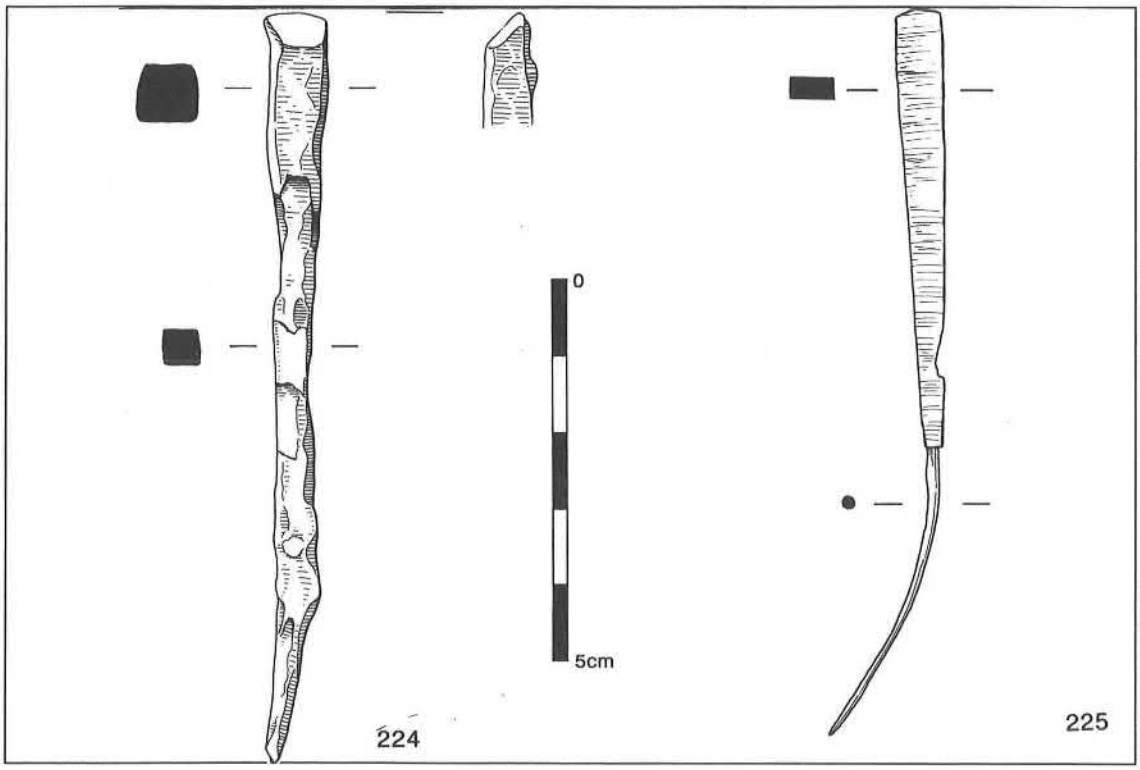


Figure 82: Styli, 224–225 (scale 1:1).

Seal Matrices (Fig. 83)

226 Copper-alloy seal matrix with hexagonal handle ending in a circular-section loop. In the centre of the matrix the Agnus Dei is depicted and surrounded by the legend 'ECCE AGNUS DE' in retrograde Lombardic script. Similar to Cherry 1991a, fig. 5.13, which has the shorter inscription 'ECCE AGNUS'. Cherry (1991a, 32) gives the 1330s as the most popular time for this type of seal. Dia. 17 mm.

MK844/-/+; metal detector find.

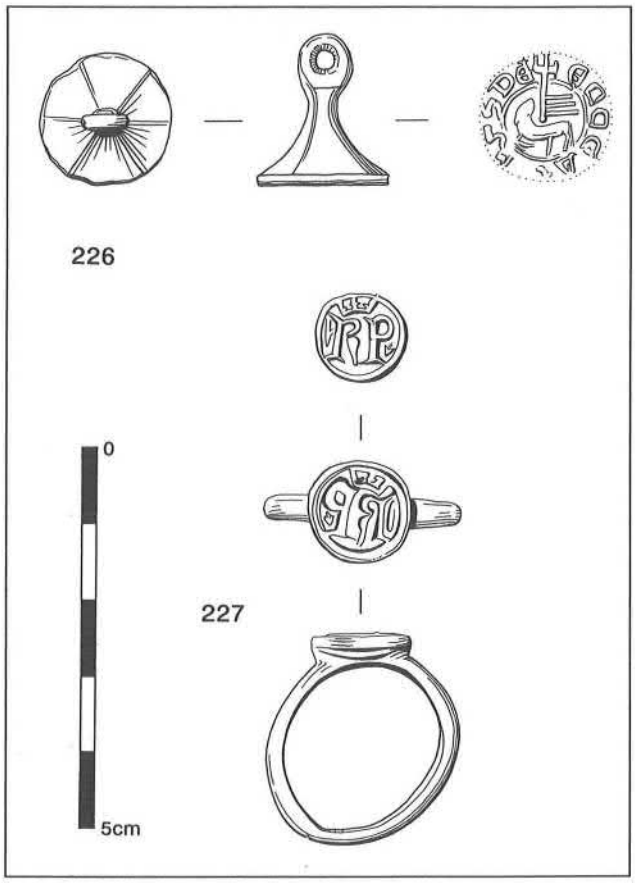


Figure 83: Seal matrices 226–227, (scale 1:1).

227 Signet ring, copper alloy. The circular bezel is engraved with the retrograde letters 'RP' between leafy sprays and below a crown. The ring hoop is of semicircular section. John Cherry commented that the ring probably dates to the fifteenth century, possibly as late as the sixteenth century. Rings with pairs of initials are rare, single letters such as 'R' or 'T' being relatively common (Cherry 1991b, fig. 12.20–22). Dia. 25 mm, bezel dia. 13 mm.

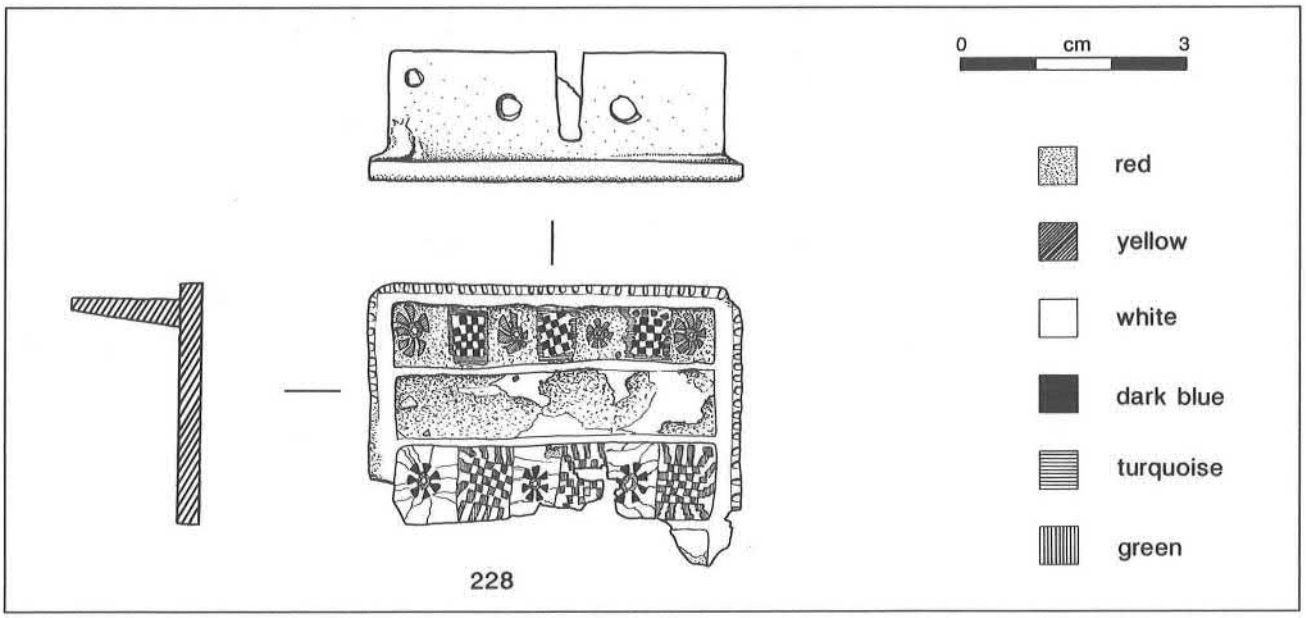
MK618/11033/7; unstratified.

Seal-Box Lid (Fig. 84)

228 Fragment of square or rectangular seal-box lid with both champlevé and millefiori enamel decoration. The incomplete cast lid is decorated around the surviving edges with incised notches. The upper surface is divided by copper-alloy walls into three strips, although the fragment at the broken edge has a further channel, suggesting that at least one more strip was present. Two of the strips have millefiori cubes and roundels, while a dark friable mass present within the other strip may be the decayed remains of red enamel. A small quantity of a similar substance is present in the channel at the broken edge. Other examples of millefiori seal box lids are symmetrical and have five channels; the presence of a fourth strip suggests that there were originally five on this lid, and that the box was square.

The millefiori pieces were applied directly to the surface of the lid. Four types of millefiori canes are present, two examples used in each of the strips. One strip contains four yellow 'flowers' and three chequered squares. The yellow flowers are made from eight yellow wedge shapes surrounding a reddish-orange ring, which in turn surrounds a yellow centre. Only one flower retains all eight wedges, the others having six or seven. The background colour has decayed in all cases. The chequered squares have a five-by-five arrangement of alternating white and translucent dark blue glass within a pale turquoise blue border. The other strip contains three chequered squares alternating with three dark blue 'flowers'. The dark blue 'flowers' have seven wedges arranged around a reddish-orange ring, which in turn surrounds a white centre. The background is also white. The chequered squares have a seven-by-six arrangement of alternating opaque pale yellow and translucent bluish-green canes.

Figure 84: (below) Seal-box lid, 228 (scale 2:1).



The Caldecotte lid has deep side walls. This is unusual because seal box lids are usually flat, the base alone having walls, a locating pin and groove being used to join the two pieces. The walls of the lid are damaged. One long side is complete and has four perforations in it. One is a small pivot hole, dia. 1.0 mm, in an area of thickened metal at one end. There does not appear to be a wall at right angles to this one, suggesting that the box hinged at this point. The notch for the seal strings is sited centrally in the wall. On either side of the notch are placed small holes, dia. 2.0 mm, the function of which is unknown, but perhaps the base was not perforated, as is usually the case. The remains of another wall set at right angles appear at the end opposite the pivot hole. Length 24.5 mm, width 18.5 mm approx.

MK44/49/+; topsoil.

Enamelled seal-boxes are usually assumed to belong to the second or third-century *floruit* of the enamellers' art (Crummy 1983, 103). Very few millefiori seal-box lids are known in Britain. Bateson (1981, 49) located two examples out of 200 enamelled seal-box lids. No exact parallels for the Caldecotte box have been noted. Hattatt (1989, fig. 25, 155) describes one example found in the Middle East which is of similar construction and has five enamelled cells, including two with millefiori decoration. The millefiori is in the two outermost cells of the lid and in the form of blue floral cubes alternating with three blue chequerboard squares. The central cell has blue enamel with three white dots. The other channels are filled with green enamel with brownish flecks. Hattatt's example also has a deep wall with a small hole pierced at the edge, similar to the Caldecotte example. Hattatt states that this was probably for a long hinge pin which was rivetted over at each end.

A square example from Colchester has five strips of colour, three of which contain circular mosaic 'eyes', and the edge of the box top is notched in a similar manner to the Caldecotte example. It was discovered in a context dated *c.*250 to *c.*300 (Crummy 1983, fig. 106.2522). This box is of similar construction to the Caldecotte and Hattatt examples, with deep walls and an internal iron rivet to hinge the walls.

Bateson (1981) listed the types of millefiori cube present on the brooches and seal boxes. Of the four types present on the Caldecotte lid, only the five-by-five arrangement of white and translucent dark blue squares surrounded by a pale blue border is present in Bateson's typology, as type B7 (*ibid.*, Appendix C).

The similarity of construction methods and decorative schemes suggests that these three objects are related. The fact that they are not constructed in the same way as other seal boxes may indicate that they were used for another purpose, although there is no evidence to suggest what this might be.

Although numerous articles decorated with millefiori enamel exist, there is a lack of easily available information regarding millefiori and the types of objects which it decorates. More detailed research into millefiori decoration during the Roman period is required to increase our understanding of this skilled decorative art.

CATEGORY 8: OBJECTS ASSOCIATED WITH TRANSPORT

Buckles (Fig. 85)

Large iron buckles such as those described below are generally thought to be harness buckles rather than clothing items, particularly in the case of those with rolling bars, which would reduce chafing. The following examples are probably a mixture of clothing and harness buckles, but have all been included in this section for ease of reference. It is difficult to date iron buckles on the basis of typology alone, as the simple forms continue in use into modern times.

229 'D'-shaped buckle. The pin has slipped onto curved frame, the original position on the bar is indicated by a groove in the frame opposite the bar. Pin end missing. Buckle length 32 mm.

MK619/97/F229B.1; pond.

230 Buckle fragment. The corroded buckle is either a double buckle or one with two prongs projecting from the cross-bar for attachment to leather. Probably post-medieval.

MK351/68/+; unstratified.

231 Looped pin, possibly from buckle. 'D'-shaped bar profile, rounded end. Length 60 mm.

MK351/49/+; unstratified.

232 Square buckle fragment. Pin present. Bar width approx. 5 mm, strap width approx. 26 mm. Dimensions 35 × 35 mm.

MK618/10674/63; ditch fill, Period 2/II.

233 Rectangular buckle. Tapered pin and rolling bar. Bar width 7 mm. Strap width 55 mm. Dimensions 75 × 72 mm.

MK618/11729/224; dovecote construction trench fill, Period 2/II.

234 Rectangular buckle, square-section bar 6 mm wide. Tapered pin. Strap width 42 mm. Dimensions 55 × 47 mm.

MK618/11269/451; unstratified.

235 Square buckle. Rounded square-section bar, 6 mm wide. Pin broken, but present. Strap width 25 mm. Dimensions 37 × 37 mm.

MK618/11769/955; ditch fill, Period 2/III.

Crotals (Fig. 86)

All are of copper alloy.

236 Heavily worn example retaining the iron pellet and square attachment ring. Decorated below the central rib with incised radiating lines, and in the centre, either side of the 'dumbbell' split opening, is an open riveted 'T' and the letters 'AG'. Dia. 30 mm at girth.

MK351/86/+; unstratified.

237 Another example, identical to **236**. Not illustrated.

MK351/16/+; unstratified.

238 Worn but complete with the squared attachment ring and iron pellet still present. Two holes, dia. 4 mm, in the upper

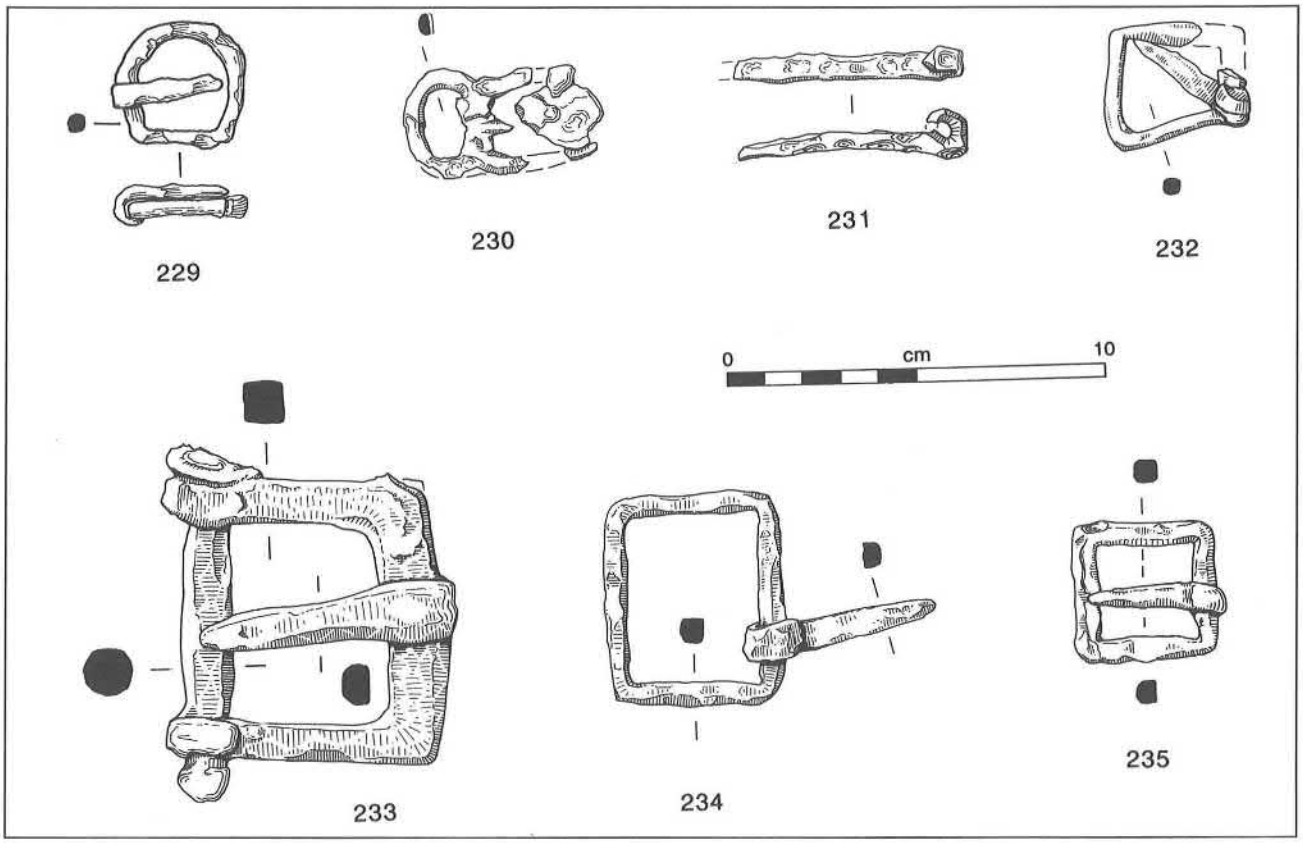


Figure 85: Iron buckles, 229–235 (scale 1:2).

half. The upper half is decorated with an incised looped design. The lower half has an incised cross in a shield and a lobed 'V' shape on the opposing sides of the 'dumbbell' shaped mouth, and lines parallel to the mouth slit. Dia. 26 mm at girth.

MK618/10105/2; topsoil.

239 Worn and damaged, the attachment ring is missing and the mouth damaged. Two holes in the upper half, dia. 5–7 mm, and possibly a palmate design. There is a palmate design incised on the lower half. Dumbbell-shaped mouth. Dia. 32 mm at girth.

MK618/10578/2; topsoil.

240 Badly corroded fragment, probably undecorated. Dia. 35 mm at girth. Not illustrated.

MK618/11495/621; levelling layer, Period 3/I.

Harness

241 ?Cheek piece. Square profile iron bar, length 70 mm, max. width in centre 8 mm, tapering to 5 mm before rounded pyramidal terminals, dia. 9 mm. Not illustrated.

MK619/466/L141; medieval soil spread.

242 Harness fragments, iron. Ring, dia. 32 mm, square section, attached to an elongated link, length 46 mm, width 20 mm, by a swivel link, length 30 mm. Attached to the elongated link is a looped tag, length 24 mm. Function unknown. Overall length 98 mm. Not illustrated.

MK44/232/II; unstratified.

Hipposandals

243 Part of a wing and sole, too fragmentary to identify the type. Length 69 mm, width 46 mm. Not illustrated.

MK44/223/F106A.1; pit fill.

244 ?Fragment of hipposandal wing. Length 56 mm. Not illustrated.

MK44/16/1; topsoil.

Horseshoes

Excavations at MK618 produced fifteen horseshoes, complete and fragmentary, all from topsoil and unstratified contexts. They are all of common types and therefore have not been illustrated. As at Great Linford the assemblage was identified and dated, where possible, according to Sparkes (1976), and the terminology used is taken from that publication. Measurements given are all width × length.

245 Guildhall horseshoe. No calkins, but the metal is thicker at the end of the branches. Seven countersunk nail holes are spaced evenly around the edge. The outer edge is rounded, the inner edge is arched but not pointed. 100 × 115 mm.

MK44/452/L124; medieval soil spread.

246 Guildhall horseshoe with one turned-down calkin. It has seven rectangular nail holes, three sited in each branch, and one in the centre. The inner edge is rounded. The inner edge is a slightly pointed arch. 96 × 114 mm.

MK44/466/L141; medieval soil spread.

247 Keyhole type with four nails in one branch. Mid seventeenth century. 115 × 115 mm.

MK618/10053/II; topsoil.

248 Keyhole type, partly fullered with folded calkins on each branch. It has eight nailholes and two nails still present. Late seventeenth century. 130 × 135 mm.

MK618/10583/II; topsoil.

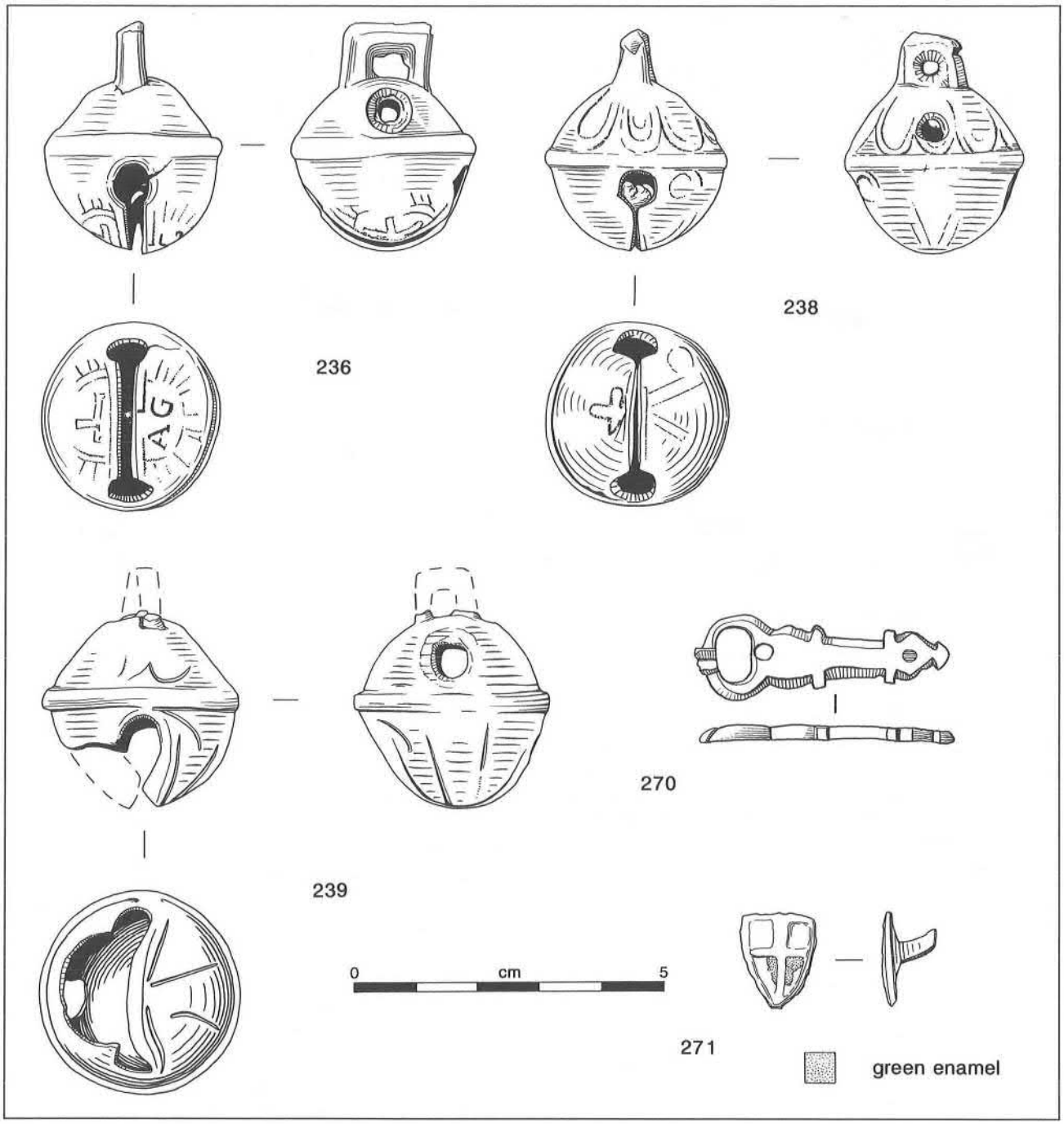


Figure 86: Crotals, spur buckle and stirrup mount, 236, 238–239, 270–271 (scale 1:1).

249 Keyhole type which is partly fullered. Eight nailholes are present. Late seventeenth century. 138 × 137 mm.

MK618/10584/2; topsoil.

250 Keyhole type. 110 × 106 mm.

MK618/10807/192; unstratified.

251 Tongue type with ten nailholes, one nail still in position. Eighteenth century. 125 × 122 mm.

MK618/10018/1; topsoil.

252 Tongue type with six nailholes, two nails still in position. Early eighteenth century. 107 × 110 mm.

MK618/10023/II; topsoil.

253 Tongue type which is partly fullered. It has eight nailholes, and two nails are present. Early to mid eighteenth century. 113 × 117 mm.

MK618/10037/2; topsoil.

254 Tongue type with eight nailholes and two nails in position. Early eighteenth century. 125 × 125 mm.

MK618/10432/2; topsoil.

255 Tongue type fragment. 105 × 112 mm.

MK618/10742/2; topsoil.

256 Tongue type, unevenly worn, with eight nailholes. Early eighteenth century. 146 × 132 mm.

MK618/11621/833; unstratified.

257 Tongue type with six nailholes. Early eighteenth century. 110 × 120mm.

MK618/11692/5001; topsoil.

258 Toe-clip rim horseshoe without calkins. A small trough only partially visible may be sufficient evidence to suggest fullering. No nail holes are visible owing to corrosion. This type is believed to have come into fashion in the early 1800s, initially for use on draught horses and later on riding horses (Sparkes 1976, 24). 135 × 135 mm.

MK44/5/1; topsoil.

259 ?Wavy-rim horseshoe fragment with turned-over calkin. Two nail holes are visible close to the wavy edge, one with an oval countersinking. This wavy-rim form continued in use into the thirteenth century (Sparkes 1976, 10). Length 100 mm.

MK44/30/44; fill, Pit 43.

260 Curved flattened strip. Very poorly preserved with evidence of two or more nail holes on the outer edge. Width 25 mm.

MK351/21/+; unstratified.

261 Part of heel of horseshoe with blunt tapered end and remains of two nail holes on outer edge. Length 96 mm.

MK351/66/+; unstratified.

262 Fragment of branch, nail still in position.

MK618/10033/II; topsoil.

263 Fragment of branch with turned over calkin.

MK618/10147/2; topsoil.

264 Tongue type fragment. Length 105 mm.

MK618/10711/2; topsoil.

265 Fragment of branch, nail still in position.

MK618/11483/664; unstratified.

Spurs (Fig. 87)

Blanche Ellis

Two fragments of iron spurs were found at MK618, and one at MK44. One previously unpublished spur from Caldecotte Mill (MK961) has also been included.

266 Rowel spur fragment. Very severely rusted with heavy accretions where the neck and sides join and also on the attachments. The front ends of both sides are missing, while the extremity of the rowel box has deteriorated and no longer has a rowel or rowel pin. The spur is small and slender, its sides are horizontally straight and the neck is fairly straight but has a drooping rowel box with proportionately broad rowel bosses. With the spur are two separate stud attachments for the spur leather. The x-ray shows one of these to be almost complete, the other has lost most of the ring by which it would have been looped on to the terminal at the front end of one of the spur sides. In use the stud, probably of simple mushroom shape, would have been pressed through a slit in the leather. Possible slight traces of non-ferrous plating are visible on the x-ray; iron spurs were very frequently tinned (Jope 1956, 35–42). Typologically the spur dates to the period of the late seventeenth to early eighteenth centuries. Overall length approx. 60 mm, length of neck 25 mm, length of more complete attachment 23 mm.

MK618/11339/473; ditch fill, Period 3/I.

267 Rowel spur fragment. Heavily encrusted with rust and accretions. Consisting of a short straight neck, two-thirds of which is divided by the rowel box. Conical rowel bosses remain, although the rowel and its pin are missing. Both sides have broken off leaving stumps, one of which projects slightly downwards from its junction with the neck; the other is now distorted. Impossible to date with certainty in its present condition, but the form of the neck does suggest the probability that it was made in the late seventeenth century. Length of neck 30 mm.

MK618/11694/719; cobble layer, Period 2/II.

268 Rowel spur. The sides, of flat section, are mainly horizontally straight alongside the wearer's foot but their front ends turn up towards their terminals. One terminal has rusted away and only the lower half of one ring remains of the other. Where the sides join their top edge is drawn up into a small crest curling over the neck which projects from below it. The long neck is of round section and has broken across the rowel box, most of which is missing, along with the rowel and its pin. All surfaces are pitted by rust but high magnification reveals minute specks of brightness which may be the last remaining traces of non-ferrous plating, probably tinning (Jope 1956, 35–42; Saunders 1991, 54 and 61). Typologically probably first half of the sixteenth century, although possibly very late fifteenth century. In England the fashion for long-necked spurs, contemporarily called long spurs, lasted throughout the fifteenth and into the first half of the sixteenth century. Most of the earlier long spurs had deeply curved sides, but as the fashion developed spur sides became straighter, so that the later ones often had straight sides with only their front ends turned up as in this case. Overall length 136 mm. Length of neck (rowel box incomplete) 63 mm.

MK44/466/L141; medieval soil spread.

269 Rowel spur. The 'D'-section sides are horizontally straight as they arc around the wearer's heel. They were given flexibility by the presence of a hinge about half-way along each side; the hinges survives with their vertical pins flanked by small ridges, but the front ends of both sides are missing. The very short oval section neck droops slightly. The remains of a small rowel of about six sharp points are rusted into the rowel box. Spurs with hinged sides were occasionally made throughout the post-medieval period and were quite often worn with the solid and inflexible riding boots of the eighteenth century, a period which is suggested by the proportions and form of this spur, especially of its neck. The pair of large French hunting boots with comparable hinged spurs worn by Crown Prince Gustav (later King Gustav III) of Sweden at Versailles in 1771 are preserved in the Livrustkammaren (Royal Armoury), Stockholm (Ekstrandt 1980, 101, fig. 16). Overall length (back to centre of front) 63 mm, length of neck 17 mm. Not illustrated.

MK961/696/+; topsoil.

Spur Buckle (Fig. 86)

270 Buckle with loop and plate in one piece. Two rivet holes for attachment to strap, containing traces of iron corrosion. Tang missing. Date range 1250–1400. Length 42 mm.

MK1019/1/+; metal detector find.

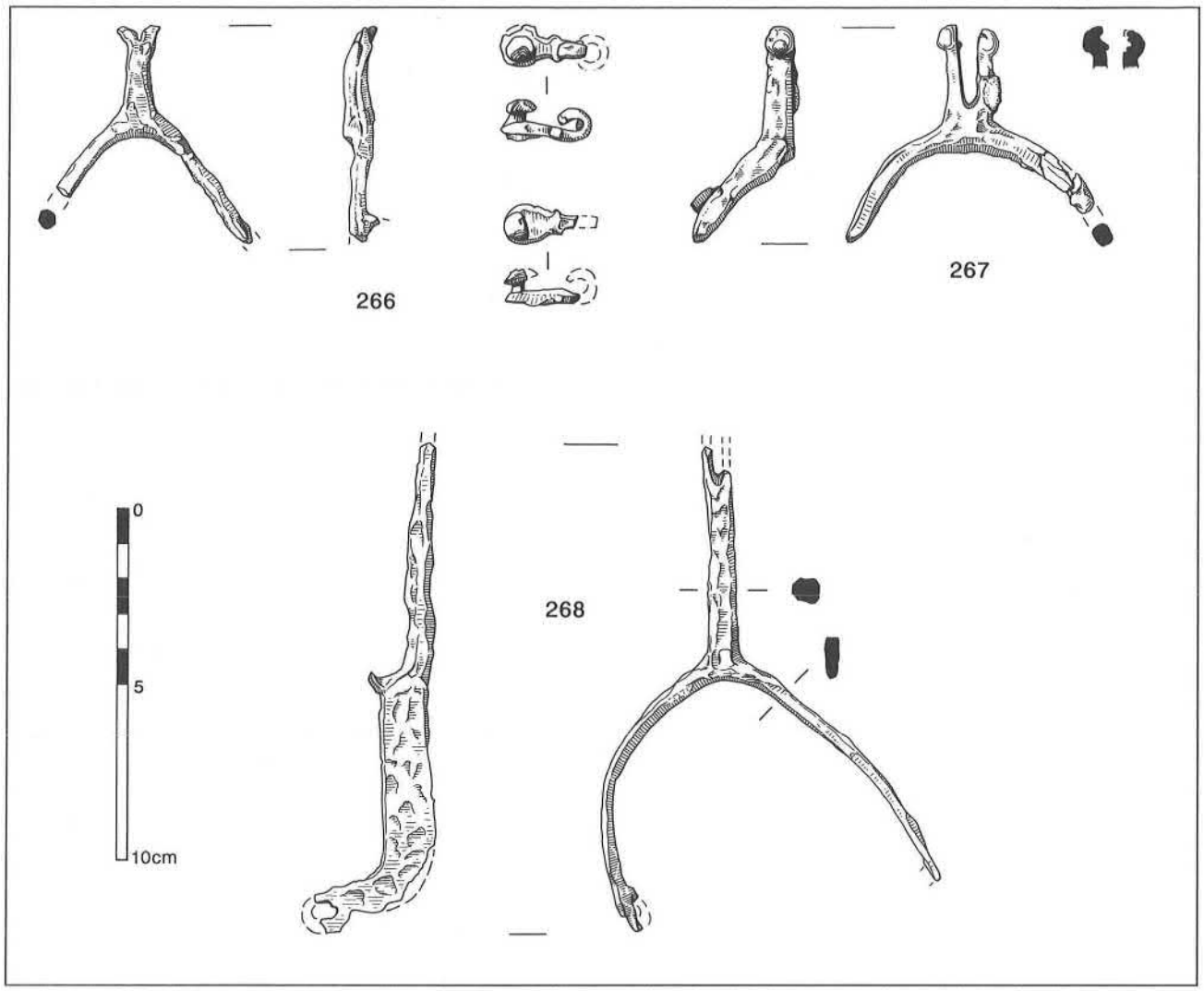


Figure 87: Spurs, 266–268 (scale 1:2)

Stirrup Mount (Fig. 86)

271 Shield-shaped fitting, cast copper alloy. The fitting stud on the rear appears to be broken. The cross design on the front has traces of green enamel in two quadrants. Fittings such as these were attached to the top of stirrups by passing the stud through two layers of iron and a double thickness of leather strap (Griffiths 1989, 1). Length 15 mm, width 12 mm.

MK618/10092/2; topsoil.

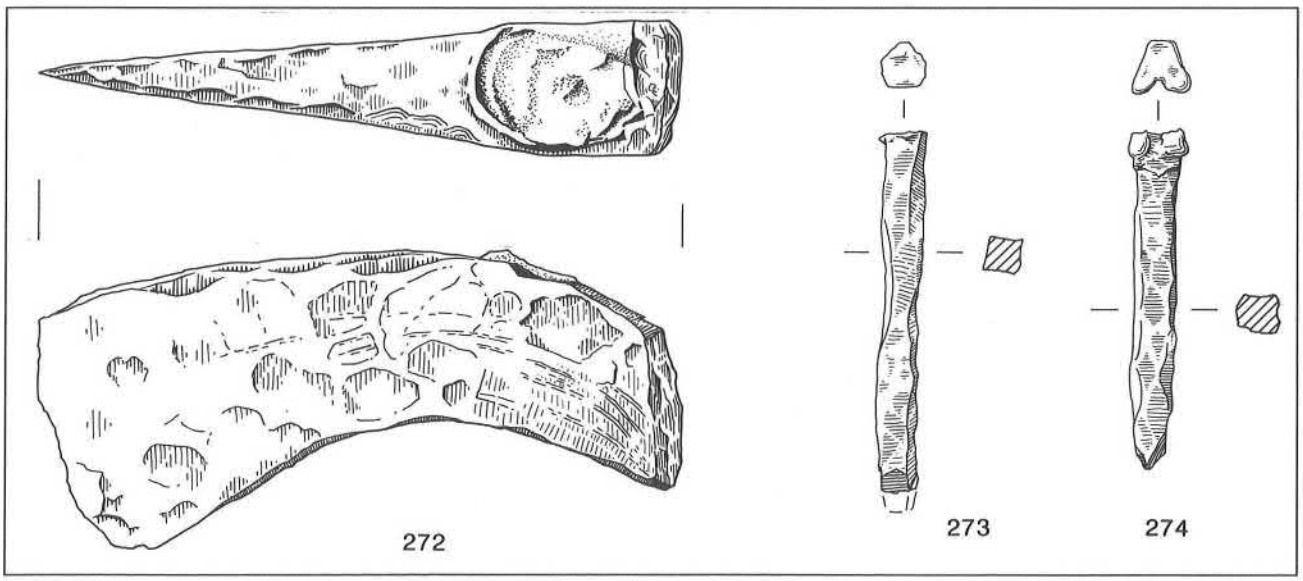


Figure 88: Iron craft tools, 272–274 (scale 1:2).

CATEGORY 9: TOOLS

Craft Tools (Fig. 88)

All examples are iron. Identification of MK44 objects was undertaken by J. Giorgi.

272 Axe. Manning Type 4 (Manning 1985, 16). The oval eye is blocked by corrosion. The form is strongly curved with a heavy poll. Length 165 mm, max. blade width 68 mm.

MK44/-/+: metal detector find.

273 Chisel or wedge. It has a square-sectioned stem with a bevelled blunt end. The head is flat and slightly flared. Length 94 mm, width 9 mm.

MK44/241/+; unstratified.

274 Chisel or wedge. The section is square with a damaged head which leans to one side. Length 89 mm, width 10 mm.

MK44/199/F78.3; soil spread.

275 Modelling tool fragment. Fragment of a rectangular cross-sectioned stem with a splayed triangular blade set at an angle to the stem. The edge of the blade has a 'V' shaped indentation set to one side. The object appears similar to an example from London (Manning 1985, plate 1.C9). The function of such objects is unknown, but it is assumed that they were used for modelling clay, wax or wet plaster, and thus could have been used by many professions. Length 54 mm, width of blade 23 mm. Not illustrated.

MK44/465/F136.1; unlocated.

276 Awl. Tapering pyramidal head with a stem which thins to a fine point. Manning Type 4 (1985, plate 16, E9). Probably a leatherworking tool. Length 113 mm. Not illustrated.

MK44/191/F11; pit fill.

277 Spike. X-ray suggests it may be a bradawl, but the object is too decayed for further comment. Length 137 mm. Not illustrated.

MK117/6/+; metal detector find.

Knives (Fig. 89)

Examples of iron whittle tang, scale tang and pocket knives were recovered from MK44 and MK618. All were of a domestic or personal nature, and none was complete. Identification of the MK44 objects was undertaken by J. Giorgi.

278 Knife blade. A triangular-section narrow blade with slightly convex sides and a down-turned end. The convexity and narrowness of the blade may be due to consistent whetting and sharpening of the blade. The tang or handle, most of which is missing, is square in cross-section and is in line with the blade. Length 85 mm.

MK44/92/L141; medieval soil spread.

279 Knife blade. A triangular blade with end missing. The lozenge-section tang appears to have been originally set in line with the blade. Triangular blades have been found in both Roman (Manning 1985, plate 54.Q34) and medieval contexts (Biddle 1990, fig. 255.2748). Length 75 mm.

MK44/243/+; unstratified.

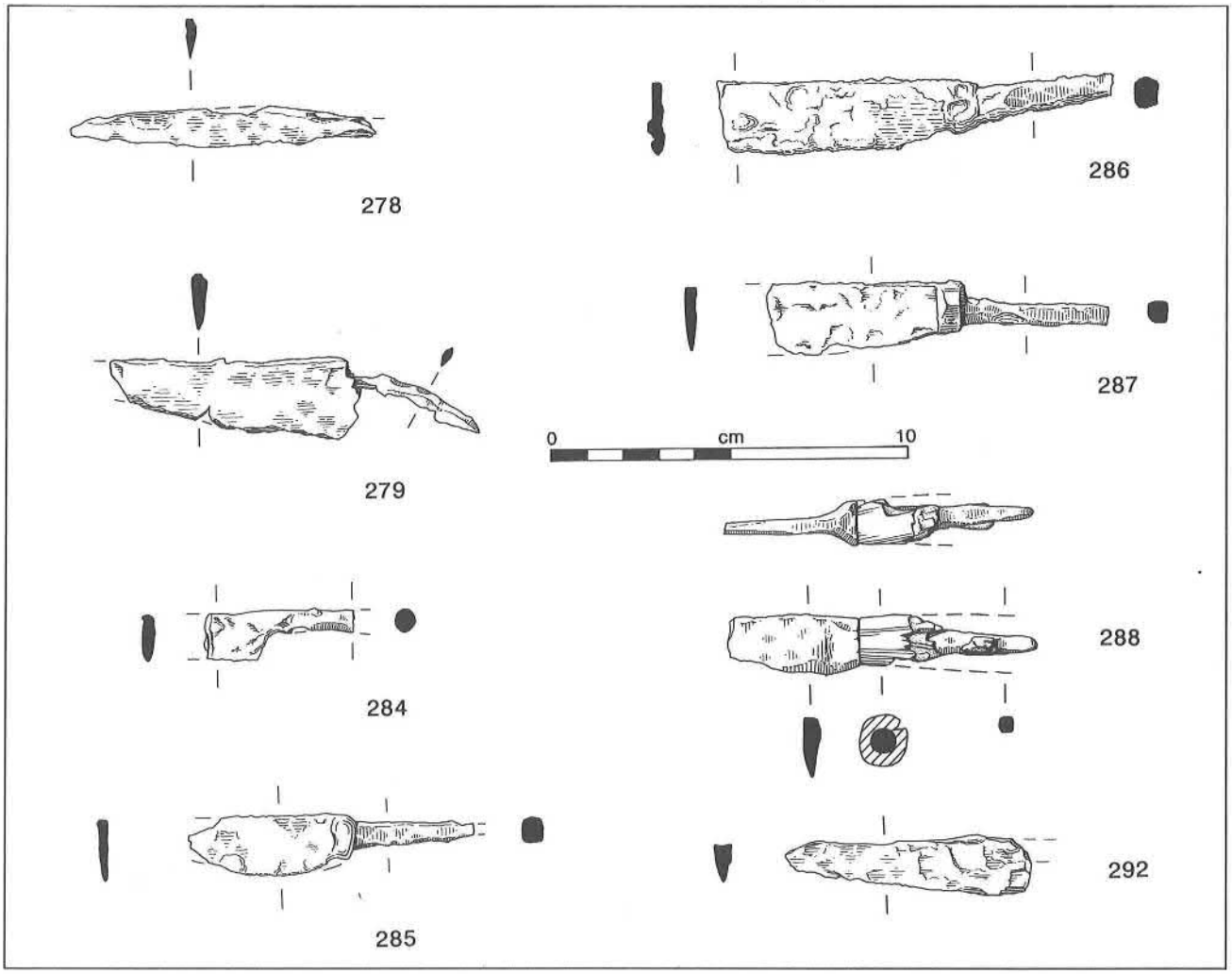


Figure 89: Knives, 278, 279, 284–288, 292 (scale 1:2).

280 Tanged knife fragments. The back of the blade is slightly convex. The tang is set in line with the blade and the end of the blade is missing (Manning 1976, 54, fig. 21.121). A common multi-purpose knife. Total length 80 mm. Not illustrated.

MK44/18/+; unstratified.

281 Knife blade. The slightly convex edges taper to a rounded point. No tang visible. Length 84 mm. Not illustrated.

MK44/397/F109A.1; ditch fill.

282 Fragment of blade. A triangular cross-section blade with a bent lower edge. Length 40 mm, width 30 mm. Not illustrated.

MK44/465/F136.1; unlocated.

283 Knife blade fragment. No tang present. Probably straight upper edge and curved lower edge to the blade. Blade has almost triangular profile. Length 80 mm, width 23 mm. Not illustrated.

MK351/1/+; unstratified.

284 Whittle-tang fragment. Length 42 mm, width of blade 14 mm.

MK618/10024/2; topsoil.

285 Fragment of whittle-tang knife with bolster. A short, pointed blade is indicated on the x-ray. Overall length 80 mm, including-tang 34 mm, blade width 17 mm.

MK618/10580/2; topsoil.

286 Whittle-tang fragment. Bolster is evident on x-ray. Overall length 111 mm, blade length 70 mm, width 20 mm.

MK618/11195/38; rubble layer, Period 3/II.

287 Whittle-tang fragment. Bolster is evident on x-ray. Overall length 96 mm, blade length 45 mm, width 21 mm.

MK618/11226/440; construction trench fill, Period 3/I.

288 Whittle-tang fragment, with fragments of bone handle present in corrosion products. Overall length 87 mm, tang length 48 mm, blade width 15 mm.

MK618/11614/733; ditch fill, Period 3/I.

289 Scale-tang fragment. The x-ray shows possible rivet hole in tang. Length 43 mm, width of blade 12 mm. Not illustrated.

MK618/10336/2; topsoil.

290 Pocket knife fragments. The x-ray shows three rivets used in construction. Length 78 mm, width 15 mm. Not illustrated.

MK618/10279/2; topsoil.

291 Pocket knife fragment. The x-ray shows three rivets used in construction. Length 90 mm, width 15 mm. Not illustrated.

MK618/10532/37; unstratified.

292 ?Knife blade. Length 68 mm, width 17 mm max.

MK618/11784/1045; cobble layer, Period 2/II.

Cleavers (Fig. 90)

Both are iron.

293 Socketed cleaver fragment. The blade is in line with the socket. Most of the blade is missing, and what remains is damaged and corroded. The socket may contain the remnants of a nail or rivet, although this may be corrosion. The fact that the object is socketed suggests that it was a cleaver rather than a knife, and the relationship between the blade and socket probably rules out the possibility of it being a reaping hook or bill hook. Length 100 mm. Roman.

MK44/85/L180; occupation layer.

294 Cleaver. Socket and blade incomplete. Back of the blade is straight and it continues in line with the socket. The remnant of the blade edge is also straight. Socketed cleavers have been found in many Roman contexts (eg. Manning 1985, plate 57.Q97–100). Length 118 mm.

MK44/528/F220; posthole.

Knife Handles (Fig. 91)

295 Whittle-tang knife handle, bone, almost complete. The iron tang is present within the handle. The handle tapers towards the blade and has a rounded end. The surface has flaked. Length 57 mm, max. dia. 16 mm.

MK618/10813/70; unstratified.

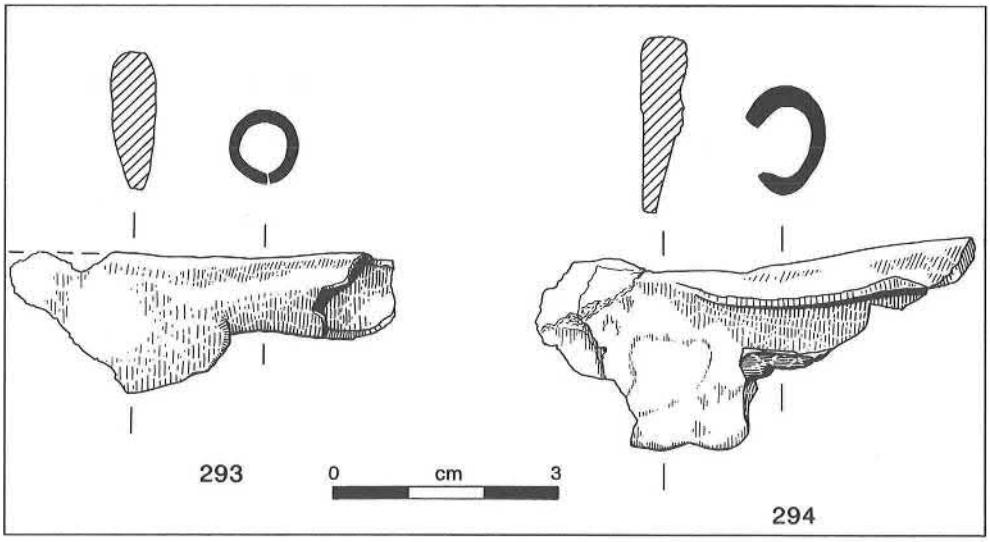


Figure 90: Cleavers, 293–294 (scale 1:2).

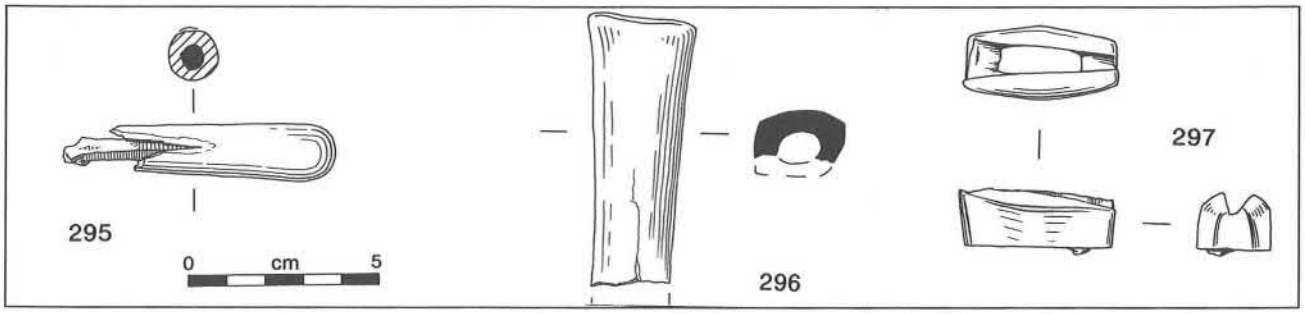


Figure 91: Knife handles and knife hilt plate, 295–297 (scale 1:1).

296 Whittle-tang knife handle fragment, bone. Approximately half of a handle with two opposing flat edges, it is curved between. Length 35 mm.

MK618/11054/347; unstratified.

Knife Hilt Plate (Fig. 91)

297 Cast copper alloy, of elongated heater shape. One side bevelled and shaped to fit around blade, the other flat. Rectangular slot for whittle-tang handle (Biddle 1990, 860). Length 18.5 mm, width 9 mm.

MK618/10031/2; topsoil.

Hones (Fig. 92)

The hones were subjected to visual examination by Dr. J. Watson and D.T. Moore. Thin-sectioning of several pieces was suggested to identify the source of the stone more accurately. This was not undertaken because it would not have generated any further information regarding the function of the objects. Norwegian Ragstone was perhaps the most widespread English hone material of the medieval period (Ellis and Moore 1990, 280). It is noteworthy that Caldecotte produced only one fragment of this stone. The remainder are various types of sandstone, perhaps originating in Northamptonshire. The forms of the cylindrical fragments indicate probable use in the sharpening of long blades, for example the scythes and knives typically found in post-medieval agricultural contexts. Most hones appear to have had primary uses as hones and not to have had a prior use for another purpose. Two fragments (**299** and **307**) may be erratics brought to the area during glaciation. These do not show evidence of having been worked into hones, but could have served this function.

Schists

298 Norwegian Ragstone. Fragment of rectangular sectioned hone. Regularly worn with point sharpening groove on one of the wide faces. Length 67 mm, width 35 mm, th. 17 mm.

MK618/10280/2; topsoil.

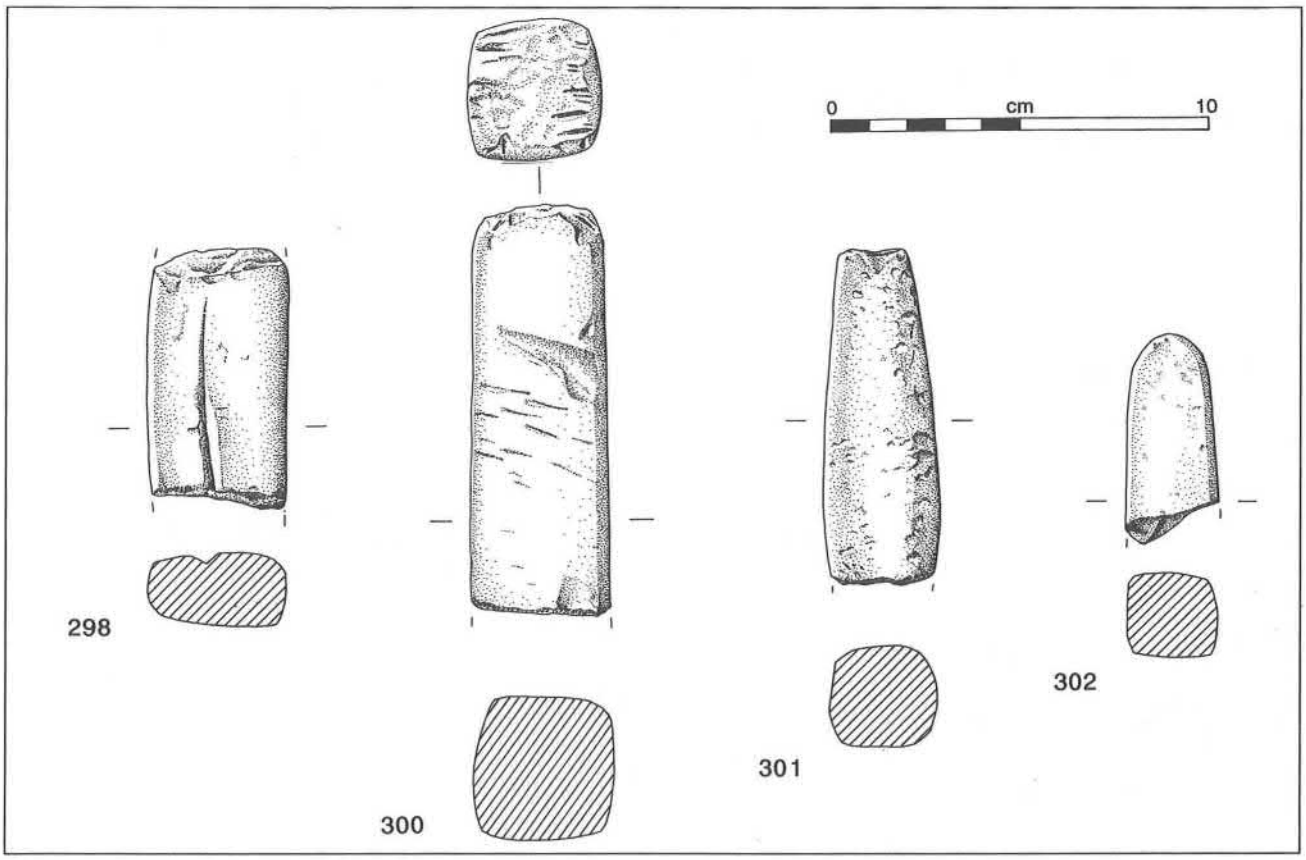


Figure 92: Hones, 298, 300–302 (scale 1:2).

299 Schist with numerous biotites. Wedge-shaped, with grooves on two sides, but not positively identified as a hone. Length 112 mm, width 28 mm, max. th. 23 mm. Not illustrated.

MK618/10038/2; topsoil.

Sandstones

300 Micaceous sandstone. Complete, well-worn stone. One face has a wear grove and numerous short, shallow cuts, the opposite face also has shallow wear grooves. One end has numerous cuts. Length 108 mm, width 38 mm, th. 35 mm.

MK618/11416/341; levelling layer, Period 3/I.

301 Probably originally square-sectioned hone, worn to circular profile at one end. Length 88 mm, width 28 mm, th. 26 mm.

MK618/10466/2; topsoil.

302 Fragment of parallelogram-section stone with rounded end. Length 55 mm, width 25 mm, th. 23 mm.

MK618/11095/131; unstratified.

303 Fragment of rounded-section stone with one flattened side. Length 47 mm, width 36 mm, th. 35 mm. Not illustrated.

MK618/10952/8; rubble layer, Period 3/II.

304 Micaceous sandstone. Fragment of almost circular section hone. Length 60 mm, dia. 26 mm. Not illustrated.

MK618/11036/8; rubble layer, Period 3/II.

305 Micaceous sandstone. Fragment of rectangular-section stone which has a rounded end. Wear has narrowed the stone on opposing sides. Length 60 mm, width 30 mm, th. 25 mm. Not illustrated.

MK618/11094/131; unstratified.

306 Sandstone or grit, possibly a Coal Measures Sandstone. Fragment of evenly tapering rectangular profile stone. Length 65 mm, width 27 mm, th. 25 mm. Not illustrated.

MK618/11453/475; ditch fill, Period 3/I.

Others

307 Silty sandstone. Irregularly worn object, not positively identified as a hone. Length 72 mm, width 21 mm, th. 15 mm.

MK618/12015/1031; pond fill, Period 3/I.

CATEGORY 10: LOCKS, KEYS AND HINGES

Locks (Fig. 93)

All examples are iron.

308 Barrel padlock bolt. It has four spines, with three spring fragments rusted into position. The closing-plate shape is uncertain. It appears to be a Winchester Type B barrel padlock (Goodall 1990, 1001), used from the eleventh to sixteenth century.

MK44/466/L141; medieval soil spread, Area 2.

309 Barrel padlock bolt. It has three spines, with one spring fragment rusted into position. There is a circular closing-plate, dia. 30 mm. The type is uncertain.

MK44/466/L141; medieval soil spread.

310 Barrel padlock bolt. It may have two spines. End plate dia. 26 mm.

MK618/10709/2; topsoil.

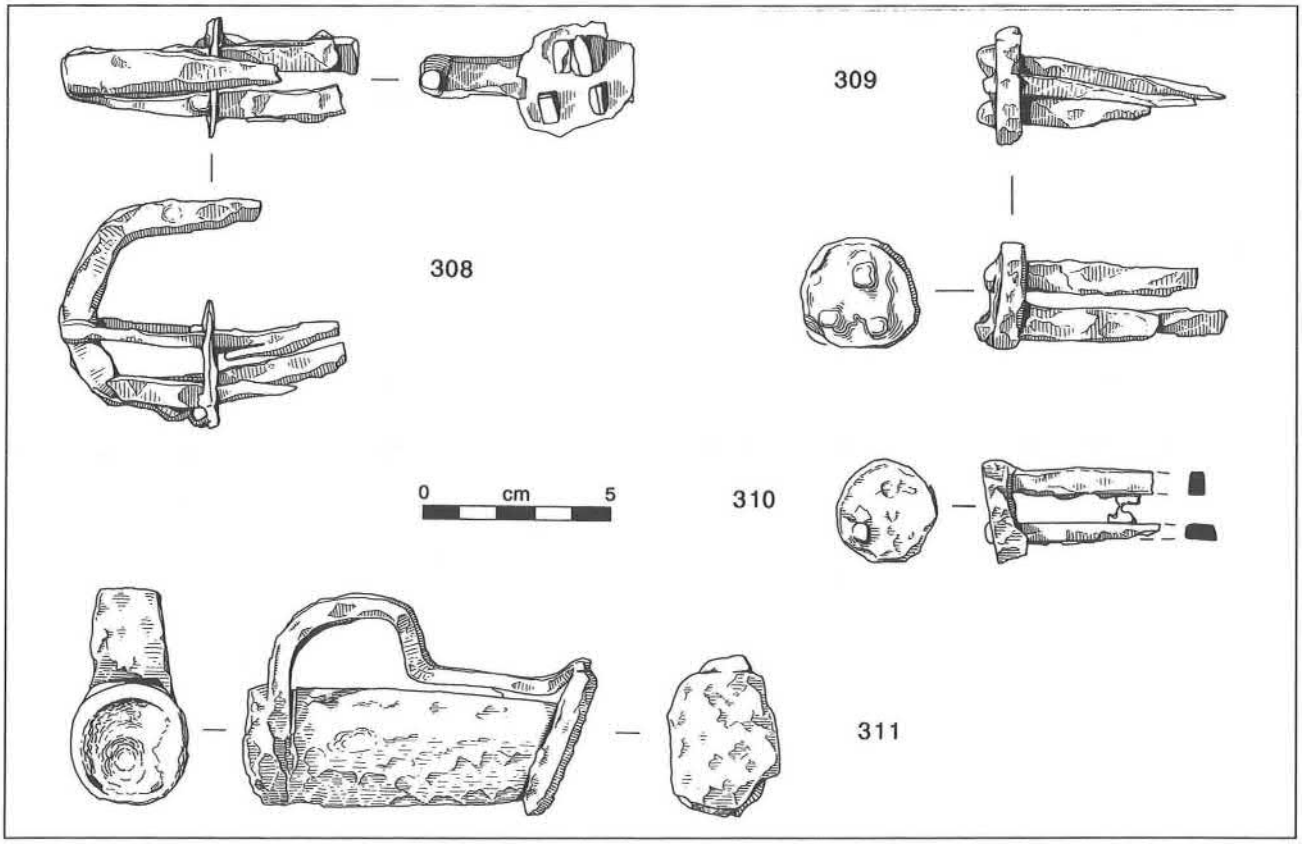


Figure 93: Locks, 308–311 (scale 1:2).

311 Barrel padlock case. The bolt and hasp are missing. A Winchester Type B padlock (Goodall 1990, 1001). Overall length 90 mm, dia. 28 mm.

MK618/10144/2; topsoil.

Lock Escutcheon (Fig. 94)

312 Irregular circular copper alloy sheet, pierced in the centre with 'keyhole' shape and decorated around the edge with a pattern of triangles and circles. The keyhole area is defined by an incised and raised circular design. Dia. 44 mm approx., th. <1.0 mm.

MK618/10009/1; topsoil.

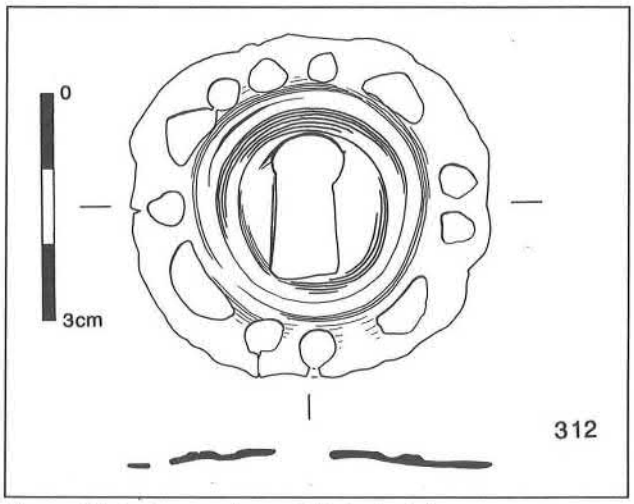


Figure 94: Lock escutcheon, 312 (scale 1:1).

Keys (Fig. 95)

All examples are iron.

313 Barrel padlock key. The shank is rectangular in cross-section and bifurcated for part of its length. It is set centrally to the bit, which has quatrefoil wards. The bow is circular. This Winchester Type B padlock key is an unusual form in Britain, occurring in the twelfth and thirteenth centuries (Goodall 1990, 1006). Length 127 mm.

MK44/233/F171; pit fill.

314 Key. Oval bow with a broken, straight stem ending flush with the bit, which is in line with the stem. Length 80 mm, width of bit 20 mm.

MK618/10493/19; unstratified.

315 Lever-lock key. The circular profile shank has a circular bow formed by turning over the end of the shank. The bit is square, and corrosion may have hidden the wards. The shank protrudes beyond the end of the bit. Length 60 mm.

MK44/-/+: unstratified.

316 'L'-shaped ?lift-key fragment. The shank is rectangular in cross-section and the bit square in cross-section, with a step between the bit and shank. The bit and part of the shank are missing. Length 104 mm.

MK44/227/F11.2; pit fill.

Handles

317 Door handle. Iron. A rectangular-sectioned ring, with a hole in a flattened, widened section. There are remnants of an almost pyramid-headed nail present within the hole. Ring dia. 80–75 mm. Not illustrated.

MK44/2/+; unstratified.

318 Furniture handle fragment. Iron. A flat triangular-sectioned strip, with a flattened end for attachment. Length 68 mm. Not illustrated.

MK44/47/168; fill, Gully 167.

Hinges

Finds from MK44 and MK618 include a variety of pivot and strap hinges. The pivot was secured into masonry or wood and the door would then be suspended from the pivot by the eye of a strap fixed to the door with nails or rivets. It should be noted that at MK618 all these objects came from unstratified layers or were associated with rubble deposits, perhaps indicating that such objects would be reused during the normal life of a building, only entering the archaeological record at the time of abandonment. All examples are iron.

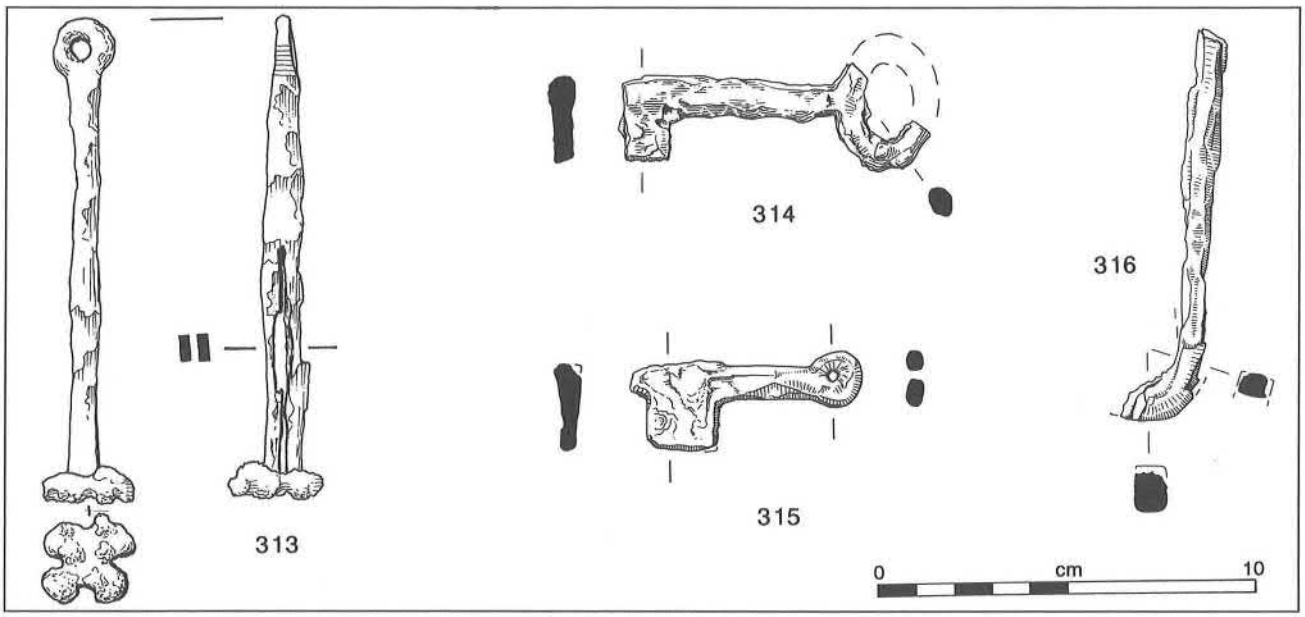


Figure 95: Keys, 313–316 (scale 1:2).

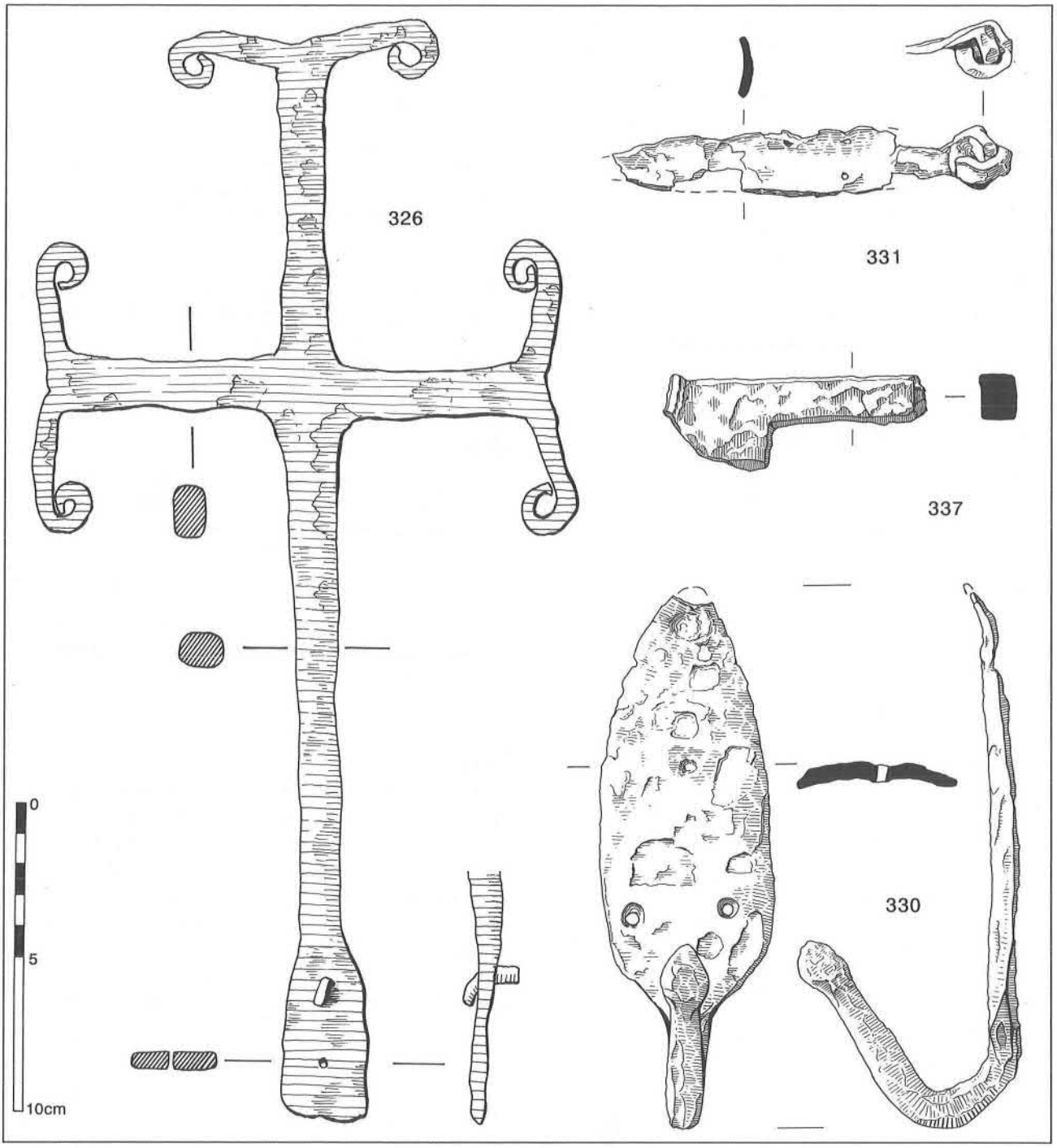


Figure 96: Pivot and strap hinges, 326, 330, 331; hooked door latch 337 (scale 1:2).

Strap Hinges (Fig. 96)

319 Hinge strap fragment. Probably part of a U-shaped door hinge or similar object. A bent sheet of iron with slightly tapering edges, one face is concave, the other is flat. Part of a rectangular nail hole is present at one end. Length 110 mm, width 28 mm. Not illustrated.

MK44/228/+; unstratified.

320 Strap fragment. ?Nail in position at one end. Length 37 mm. Not illustrated.

MK44/320/F58; pit fill.

321 Strap fragment. Slightly curved, flat object. One edge has two semi-circular perforations which may be due to corrosion. Length 53 mm, max. width 21 mm. Not illustrated.

MK619/246/F229.2; pond fill.

322 Strap fragments. Very corroded. Total length 78 mm, max. width 24 mm. Not illustrated.

MK44/242/F31G.1; pit fill.

323 ?Strap fragment. Very corroded. Length 51 mm, width 20 mm. Not illustrated.

MK44/236/L60B.1; occupation layer.

324 ?Fragment of hinge strap. Rectangular strip with one curved end. Length 46 mm, width 11 mm. Not illustrated.

MK619/492/L176; medieval soil spread.

325 Strap fragment. Length 84 mm, max. width 17 mm. Not illustrated.

MK44/241/+; unstratified.

326 ?Hinge strap. Cross-shaped in plan, with curled arms at the end of the branches. The end of the longest branch is flattened, with traces of one nail or rivet and one nail hole. Length 350 mm, width 164 mm.

MK44/33/F78.2; medieval soil spread.

327 Strap hinge fragment. Bent tapering strip with rounded end and slightly curved across width. Three nail holes visible. Strip broken before ring terminal. Length 210 mm, width 34 mm, th. 2 mm. Not illustrated.

MK351/13/+; unstratified.

328 Tapering strip fragment with nail through one end. Length 55 mm, width 21 mm. Not illustrated.

MK351/3/+; unstratified.

329 Strap hinge fragment. The hanging eye is broken. It is a shaped plate with three nails present, and holes indicated for two more. Length of plate 70 mm, width 35 mm. Not illustrated.

MK618/10400/5; unstratified.

330 Strap hinge. Leaf-shaped, slightly curved plate with open ended hanging loop. The x-ray shows three holes, dia. 5 mm, in plate. Length of plate 130 mm, max. width 57 mm.

MK618/11496/621; levelling layer, Period 3/I.

331 Strap hinge. Slightly curved, tapering plate, slightly damaged. Looped hinge. X-ray shows pin still present. Length of plate 90 mm, max. width of plate 22 mm.

MK618/10726/5003; unstratified.

Pivot Hinges

All examples are iron. None illustrated.

332 Hinge pivot. Ends of both arms damaged. Spike length 35 mm, round arm length 23 mm, dia. 5 mm.

MK44/191/F11; pit fill.

333 Hinge pivot. Round arms slightly damaged. Spike length 63 mm, round arm 32 mm, dia. 12 mm.

MK44/244/F110B.1; unlocated.

334 Hinge pivot. Spike length 80 mm, round arm 41 mm, dia. 10 mm.

MK619/381/F100; medieval soil layer.

335 Hinge pivot. Spike length 47 mm, round arm 42 mm, dia. 7 mm.

MK618/10951/8; rubble layer, Period 3/II.

336 Hinge pivot. Spike length 118 mm, round arm 72 mm, dia. 12 mm.

MK618/11455/666; unstratified.

Other Door Furniture

All examples are iron.

337 Hooked door latch. Rectangular-profile bar, th. 11 mm. Overall length 83 mm, including bar 48 mm.

MK618/10953/277; unstratified.

338 Hinge fitting or bracket. Two rectangular-profile, tapering arms joined at right angles. Length 120 mm and 45 mm, max. width 30 mm. Not illustrated.

MK618/10394/8; rubble layer, Period 3/II.

339 Hooked object, possibly fragment of hasp. Formed from bar, th. 8 mm, which curves to folded terminal. Length 60 mm, width 10 mm. Not illustrated.

MK618/11598/486; cobble layer, Period 3/I.

CATEGORY 11: OBJECTS ASSOCIATED WITH AGRICULTURE AND FISHING

Agriculture (Fig. 97)

340 Sickle blade fragments, iron. Tang missing. Manning Type 2 (Manning 1985, 51). Length approx. 240 mm.

MK44/37/126; depression fill.

341 Harrow fragment, iron. Modern. Not illustrated.

MK618/10054/2; topsoil.

342 Animal trap, steel. Modern. Not illustrated.

MK618/10685/7028; ditch fill.

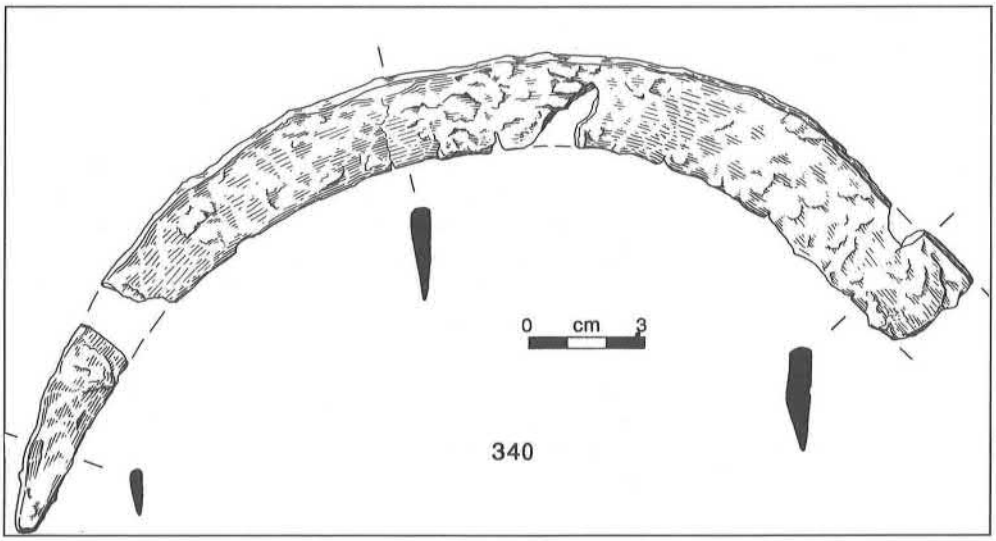


Figure 97: Sickle, 340 (scale 1:2).

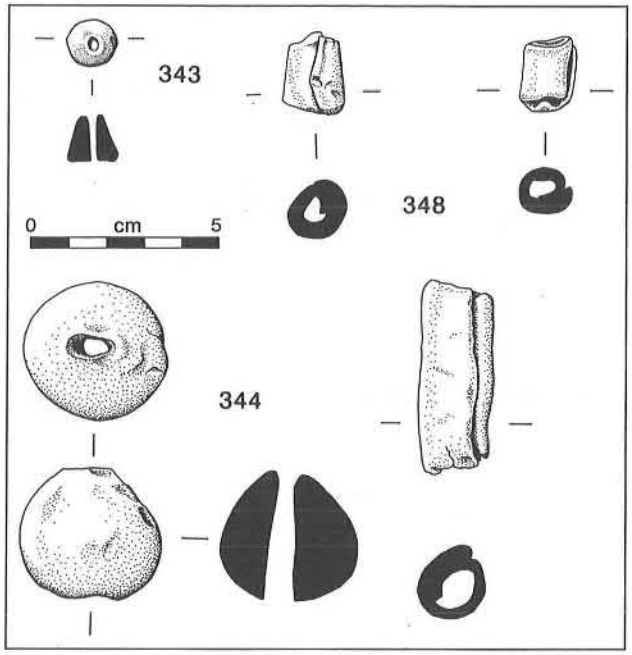


Figure 98: Lead fishing weights, 343–347, 348 (scale 1:2).

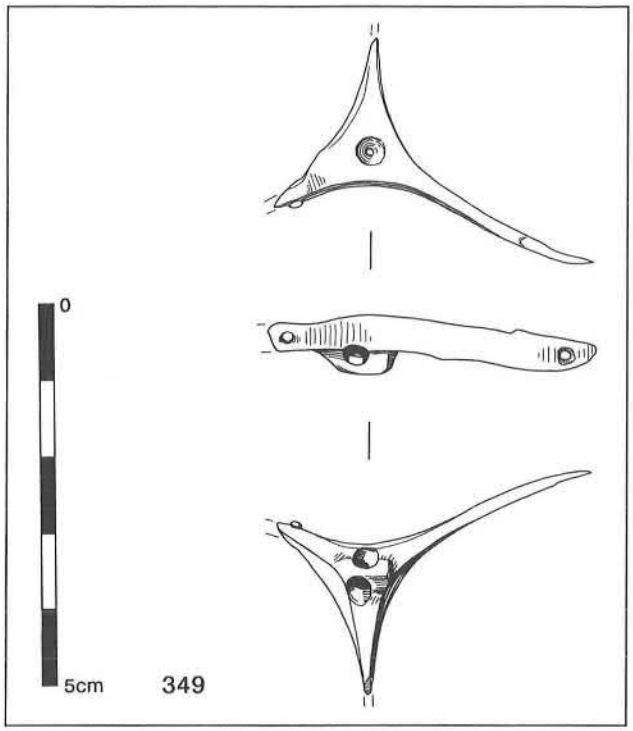


Figure 99: Fishing line attachment, 349 (scale 1:1).

Fishing (Figs 98, 99)

Fishing is a relatively difficult activity to detect archaeologically, though faunal remains can sometimes disclose patterns of consumption. However, relatively few artefacts can be associated with fishing since nets, baskets and lines were all made of perishable materials until recent times, and small fish hooks can be easily missed by excavators. The lead line sinker and fishing weights described below are typical of fishing related finds. Few fishing related artefacts can be expected to be found on sites away from the river bank, where they would be most likely used, lost or discarded. A further category of artefact employed in fishing is the stone weight for fishing baskets and nets, frequently found during dredging operations in the rivers Great Ouse, Ouzel, Nene and Tove, and described and discussed by Mynard (1979).

343 Line sinker, lead. Conical, oval base 11 × 13 mm, pierced by central hole, dia. 3 mm. Height 13 mm, weight 8.2 g.

MK618/10080/7001; topsoil.

344 Fishing weight, globular, with central hole. Dia. 36 mm, weight 207.4 g. Roman.

MK117/-/+; metal detector find.

345 Cast fishing weight. Some damage to base. Flattened conical shape with central hole, dia. 5 mm. Height 26 mm., dia. 17–22 mm, weight 74.3 g. Not illustrated.

MK351/83/+; unstratified.

346 Ovoid pierced weight. Length 20 mm, dia. 18 mm, weight 32.7 g. Not illustrated.

MK351/91/+; unstratified.

347 Ovoid pierced weight. Length 14 mm, dia. 16 mm, weight 22.2 g. Previously published as RMK 206.

MK354/19/+; unstratified.

348 Fishing net weights, thirteen in number. All were formed from cut rectangular lead sheets rolled to form a hollow tube. Some show evidence of wear, as from a cord passing through the tube. These are fully described in the site archive. Weight range 6.4–52.6 g, averaging 19.7 g. Three are illustrated.

MK351/-/+; unstratified.

349 Attachment for fishing lines, copper alloy. Three arms radiate from curved centre, where there is a raised loop on the concave side. A small countersunk circular hole has been pierced through the centre. The arms are of irregular lengths when measured from the central hole. The longest has a small rivet hole at the end. Length of arm 21 mm. The shortest arm seems to link with a separate fragment where an incomplete rivet hole is present at the end of the arm and the fragment. The fragment also has another rivet hole. Length of arm 13 mm. Length of third arm 15 mm. Span 31 mm.

MK618/11451/640; pit fill, Period 2/II.

It has been suggested (Nick Griffiths, pers. comm.) that this object was an attachment for multiple fishing lines. A lead example from London (*ibid.*) has four arms with the remains of wires at their ends. This example has parallels with three further copper-alloy examples, from Guestwick, (Norfolk), Rucklands (Lincs.) and Tipton (West Mids). Of these, the Guestwick object is of similar dimensions to **349**. The Guestwick attachment also has an upper arm for attachment to a single line. The central hole of the Caldecotte example may have contained a rivet or screw fitting which has since been lost. A range of fishing tackle is described and discussed by Steane and Foreman (1991, 88–101), but they do not mention objects like this one being used for multiple fishing lines. This may indicate either the relative rarity of these objects, a previous failure to identify them or that they have some other function, as yet unidentified.

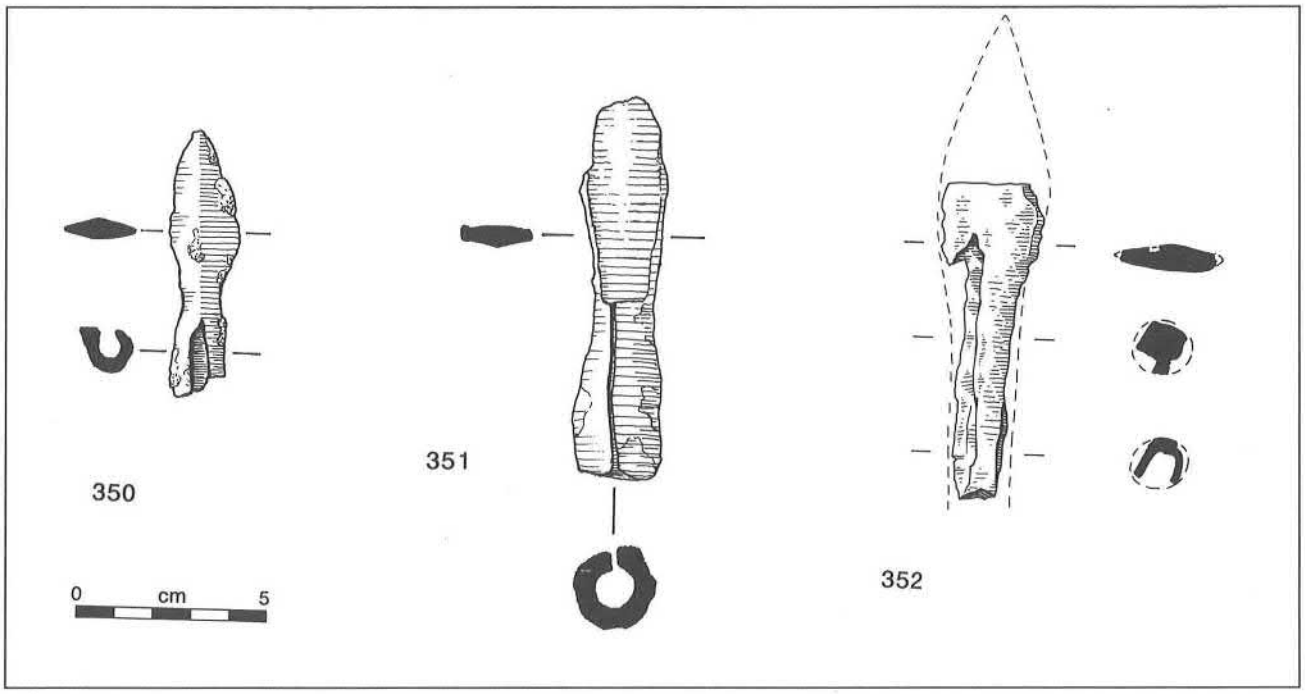


Figure 100: Spearheads, 350–352 (scale 1:2).

CATEGORY 12: WEAPONS

(Fig. 100)

Identified by J. Giorgi

350 Small-bladed iron spearhead. A leaf-shaped blade, with some damage to one side, narrowing the width. The socket is also damaged. Allowing for the damaged blade, the dimensions would place this example within Manning's Hod Hill Group 1 (1985, 162), although there is no reason to suppose that it was used for a military purpose, hunting being a more likely function. Second to early third century. Overall length 72.5 mm, blade length 43 mm, width 18 mm.

MK44/396/F108K.1; ditch fill.

351 Small-bladed spearhead. Iron. Corroded and damaged leaf-shaped blade, otherwise as **350**. Overall length 100 mm, blade length 45 mm, width 21 mm. Roman.

MK44/239/L180; occupation layer, Area 2.

352 Spearhead fragment. A broken blade with sloping shoulders. The socket is partly open. Similar to Manning Group 1A spearheads (Manning 1985, 163). Similar small spearheads also occur during the medieval period. There is no direct evidence to date this object. Surviving length 81 mm, socket length 58 mm.

MK351/26/+; unstratified.

353 Shot, lead. Casting marks visible. Weight 2.7 g. Not illustrated.

MK618/11413/269; occupation layer, Period 3/I.

CATEGORY 13: MISCELLANEOUS OR UNIDENTIFIED OBJECTS

All the objects described below have been included in this category for one of two reasons: either they cannot be comfortably placed in any other category, or their function is unknown. Details of the contexts and quantities of rods, strips, wires, sheets and fragments of waste metal from the sites detailed in this volume are recorded in the site archive.

Fittings (Fig. 101)

354 Tapering octagonal fitting fragment in three pieces, silver. The interior surface is uneven, probably indicating that it was cast. The exterior is divided into panels by ribs at the angles of the octagon. The panels contain a chased design of stylised leaves and circles. The narrow end is finished with a band incised with short lines angled across it. Function unknown. Height 9 mm, width 9 mm approx.

MK618/10004/1; topsoil.

355 Decorative fitting or toy fragment, cast lead alloy. The fragment is pierced by a number of oval holes. Function and original form unknown. Length 33 mm, width 14 mm, th. 2 mm.

MK618/10491/19; unstratified.

356 Flat curved strip, copper alloy, with a widened, rounded end. Decorated with an incised chevron design, and a cross over the round end. Iron corrosion on back, possibly the remains of object to which the strip was applied. Width of strip 6 mm, rounded end dia. 10 mm.

MK44/94/L196; soil layer.

357 Curved decorative beaded strip, cast lead alloy. Underside flat. Length 40 mm, width 5 mm, th. 3 mm approx.

MK354/-/+; unstratified.

Ferrules (Fig. 102)

358 Ferrule with spike, iron. Ferrule has circular cross-section, spike is rectangular in cross-section. Function unknown. Length 175 mm.

MK619/381/L100; medieval soil spread.

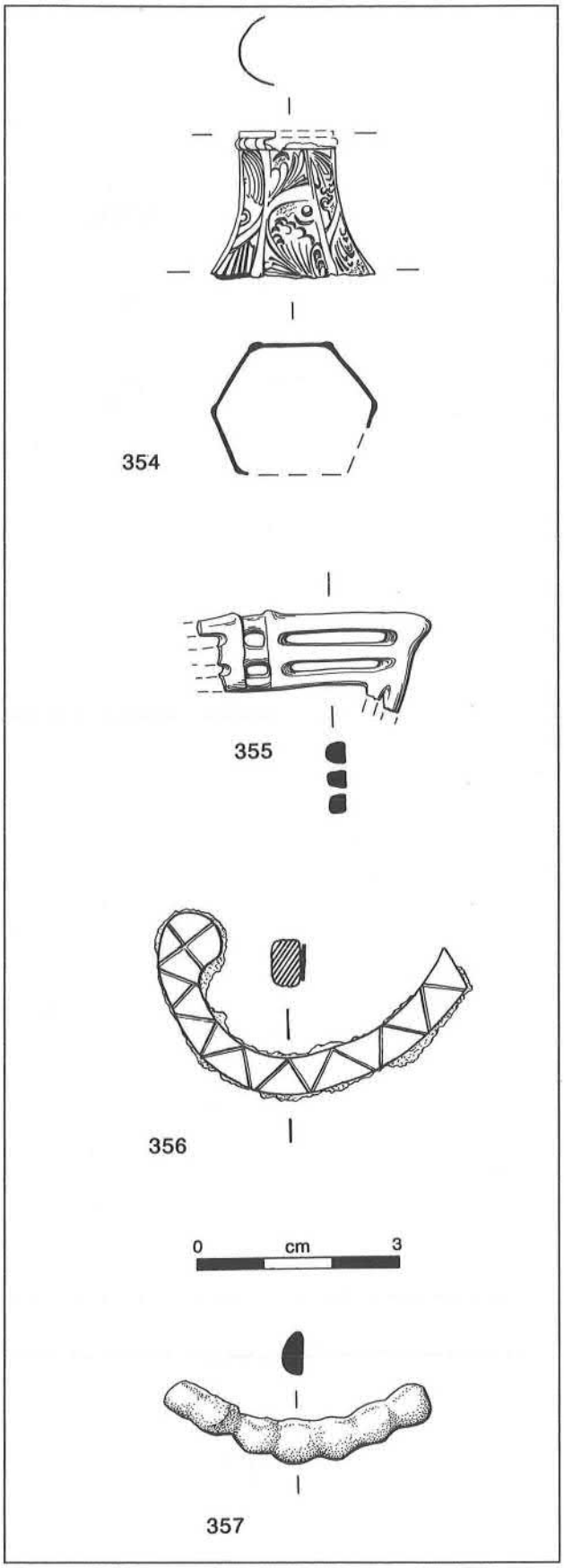


Figure 101: Fittings, 354–357 (scales; 354 2:1, 355–357 1:1).

359 Ferrule, copper alloy. Wooden stump enclosed and remains of iron at one end. Four holes in sheet for fixing pins. Length 19 mm, dia. 14 mm.

MK618/10630/37; unstratified.

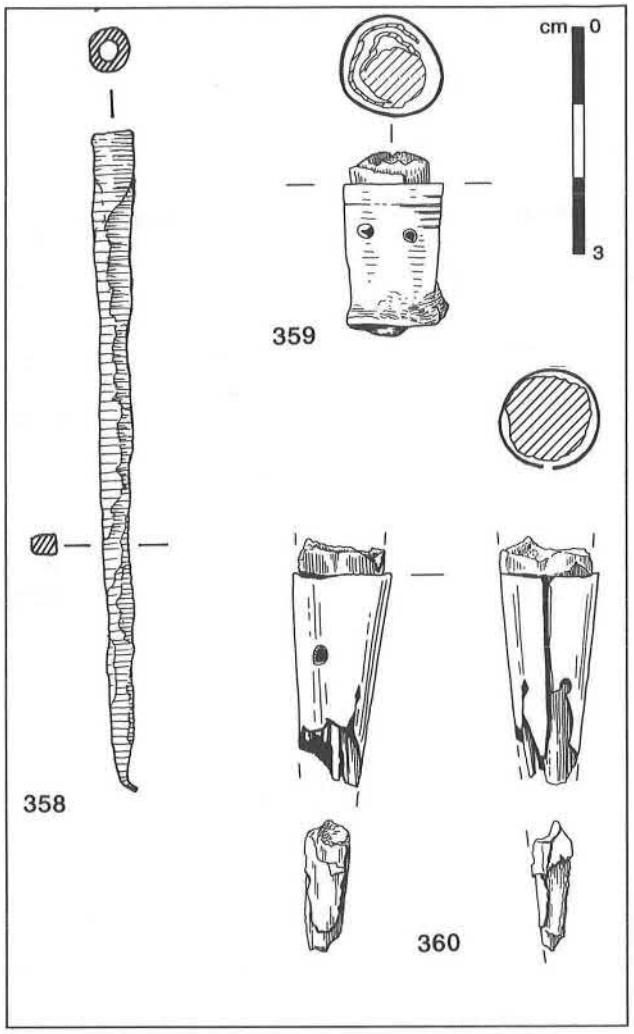


Figure 102: Ferrules, 358–360 (scales; 358, 359 1:1, 360 1:2).

360 Incomplete ferrule, copper alloy. Tapering shape enclosing wood with a fragment of iron present at narrower end. One pin hole in sheet. Length 24 mm, dia. 19 mm max., 8 mm. min.

MK618/10595/8; rubble layer, Period 3/II.

361 Ferrule fragment, iron. Max. ext. projected dia. 32 mm. Not illustrated.

MK351/10/+; unstratified.

Hooks

All examples are iron and none are illustrated.

362 Hook with broken eye. Circular profile bar, dia. 13 mm. Length 105 mm.

MK618/10483/2; topsoil.

363 Hook. Length 185 mm. Width of eye 52 mm, width of metal tapers, 20–12 mm, from eye to base of hook.

MK618/11346/515; levelling layer, Period 3/I.

364 'L'-shaped wallhook. Length of arms 37 mm and 36 mm.

MK44/35/F63.1; unlocated.

365 'L'-shaped wallhook. Length of arms 50 mm and 40 mm.

MK44/-/L170; soil layer.

Rings

None illustrated.

366 Ring and attachment, iron. The broken ring passes through a hole in a plate. The plate is almost rectangular with one rounded end and a ?broken flanged end, and has two holes pierced through it. Ring dia. 40 mm approx.

MK351/46/+; unstratified.

367 Iron attachment plate similar to **366**, but more rounded and lobed. Ring missing. Length 27 mm.

MK351/57/+; unstratified.

368 Ring, cast copper alloy, with a roughly oval profile. Th. 8 mm, dia. 36 mm.

MK354/9/+; unstratified.

369 Ring, copper alloy. Irregular profile. There are two small indentations, one on each outer face, less than 1.0 mm dia. Surface may have traces of tinning. Ext. dia. 26.5 mm, int. dia. 23 mm.

MK618/10048/2; topsoil.

370 Ring, copper alloy. Oval shape. Irregular profile. White metal coating on surface. Ext. dia. 28 mm max., 25 mm min., int. dia. 23 mm max., 20 mm min.

MK618/10094/2; topsoil.

371 Ring, copper alloy. Flattened outer sides, bevelled inner and outer edges, some file marks visible. Ext. dia. 26.5 mm, int. dia. 20 mm.

MK618/10597/47; unstratified.

372 Ring, copper alloy. Tapering flat strip, 'D' shaped profile at one end, flat at the other, the strip overlaps itself by more than half the circumference of the circle. Dia. 18–20 mm, max. width of strip 4.5 mm.

MK44/90/F186.2; ditch fill.

373 Fitting ring fragment, copper alloy. Cast fragment with drilled hole.

MK44/6/F31C.3; gully fill.

374 Ring, copper alloy. Flat, with two short projections on inner edge. ?Modern washer.

MK44/89/L120; post-medieval/modern upcast from moat.

375 Ring, iron. Roughly circular profile, dia. 5–7 mm. Ring dia. 46 mm.

MK618/10657/2; topsoil.

Washers (Fig. 103)

376 Washer. Flat iron ring, dia. 50 mm, th. 6 mm, with central hole dia. 30 mm. Not illustrated.

MK618/10710/2; topsoil.

377 Quadrilateral copper alloy sheet, pierced with circular hole, dia. 5 mm, which flares out on one face. ?Washer for leather working. Width 15 mm, th. 1.0 mm approx.

MK351/65/+; unstratified.

Swivel links (Fig. 103)

378 Swivel link, iron. Length 84 mm, width of ring 38 mm.

MK618/10017/1; topsoil.

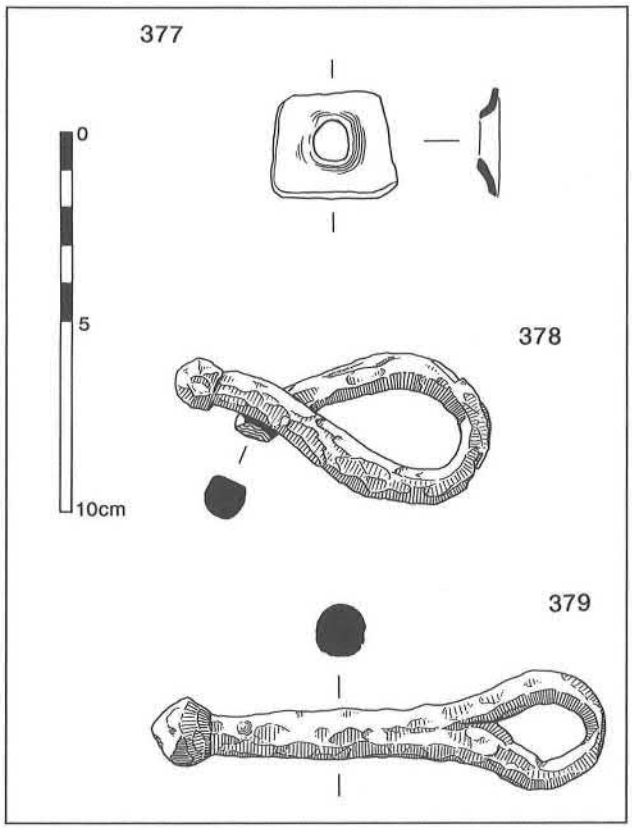


Figure 103: Washer, 377; swivel links, 378, 379 (scale 1:2).

379 Swivel link, iron. Length 120 mm, width of ring 32 mm.

MK618/10102/2; topsoil.

Links

None illustrated.

380 ?Link, copper alloy. Possibly a button loop. Oval, with ends protruding. Width of wire 1.0 mm, length 9 mm, width 5.5 mm.

MK618/11056/347; unstratified.

381 ?Link, iron. Rounded metal ring, rod dia. 8 mm. Overall length 250 mm, width 198 mm.

MK618/10067/2; topsoil.

382 Link fragment, iron. Length 55 mm, width of bar 7 mm.

MK618/10075/2; topsoil.

383 Link, iron. Rounded rectangular shape, of round-section rod, 9 mm dia. Total length 120 mm, width 40 mm.

MK618/10103/2; topsoil.

384 ?Link fragment, iron. Irregular shape. Length 68 mm, width of metal 9 mm.

MK618/10148/2; topsoil.

385 Link fragment, iron. Made from rectangular profile bar 10 × 9 mm. Width of link 42 mm.

MK618/10253/2; topsoil.

386 Link, iron. Flattened ovoid shape, circular section. Length 65 mm, width 32 mm.

MK618/10581/2; topsoil.

387 Broken iron link. Length 96 mm, width approx. 35 mm, th. 11 mm.

MK618/10582/2; topsoil.

388 Link fragment, iron. Rectangular profile 9 × 8 mm, length 70 mm.

MK618/11458/2; topsoil.

389 Elongated link, iron. Length 58 mm, width 21 mm.

MK44/25/+; unstratified.

390 Link fragment, iron. Approx. dia. 35 mm, width 2–5 mm.

MK44/247/F174; gully fill.

391 Split spike loop, iron. Head rather flattened, with tapering arms. Length 100 mm.

MK351/85; unstratified.

392 Split spike loop with tapering arms, iron. Possibly part of a narrow loop hinge fitting from a drop-handle (Manning 1985, 124).

MK351/77; unstratified.

Studs and Rivets

Decorative studs appear in *Category 4* (p.141). Structural nails appear in the *Building Materials* section (p.174). None are illustrated.

393 Stud or rivet, copper alloy. Broken stem, flat head. Dia. 14 mm.

MK117/49/109; upper fill of enclosure ditch.

394 Stud or rivet, copper alloy. Broken stem, rounded oval head. Dia. 13–16 mm.

MK117/9/+; metal detector find.

395 Domed stud, copper alloy. Dia. 17 mm.

MK354–2/8; unstratified.

396 Rivet, lead. Length 10 mm, head width 7 mm.

MK44/5/+; metal detector find.

397 Large stud, iron, with damaged, oval head and tapering rectangular stem. Head max. width 42 mm, stem max. th. 15 mm.

MK117/4/+; metal detector find.

Unidentified Objects (Fig. 104)

Copper Alloy

398 Hexagonal rod. One flared end, dia. 14 mm, the other less flared and damaged. Possibly a spoon handle, the shape and dimensions are comparable with examples from Amsterdam dated to the seventeenth century (Baart *et al.* 1977, ill. 86). Length 113 mm, width 9 mm.

MK618/10192/2; topsoil.

399 Two fragments of narrow, flat strip, each with small terminal.

i. Rounded terminal. Length 17 mm, width 1.75 mm.

ii. Heart-shaped terminal. Length 25 mm, width 1.5 mm.

MK44/152/F92B.2; ditch fill.

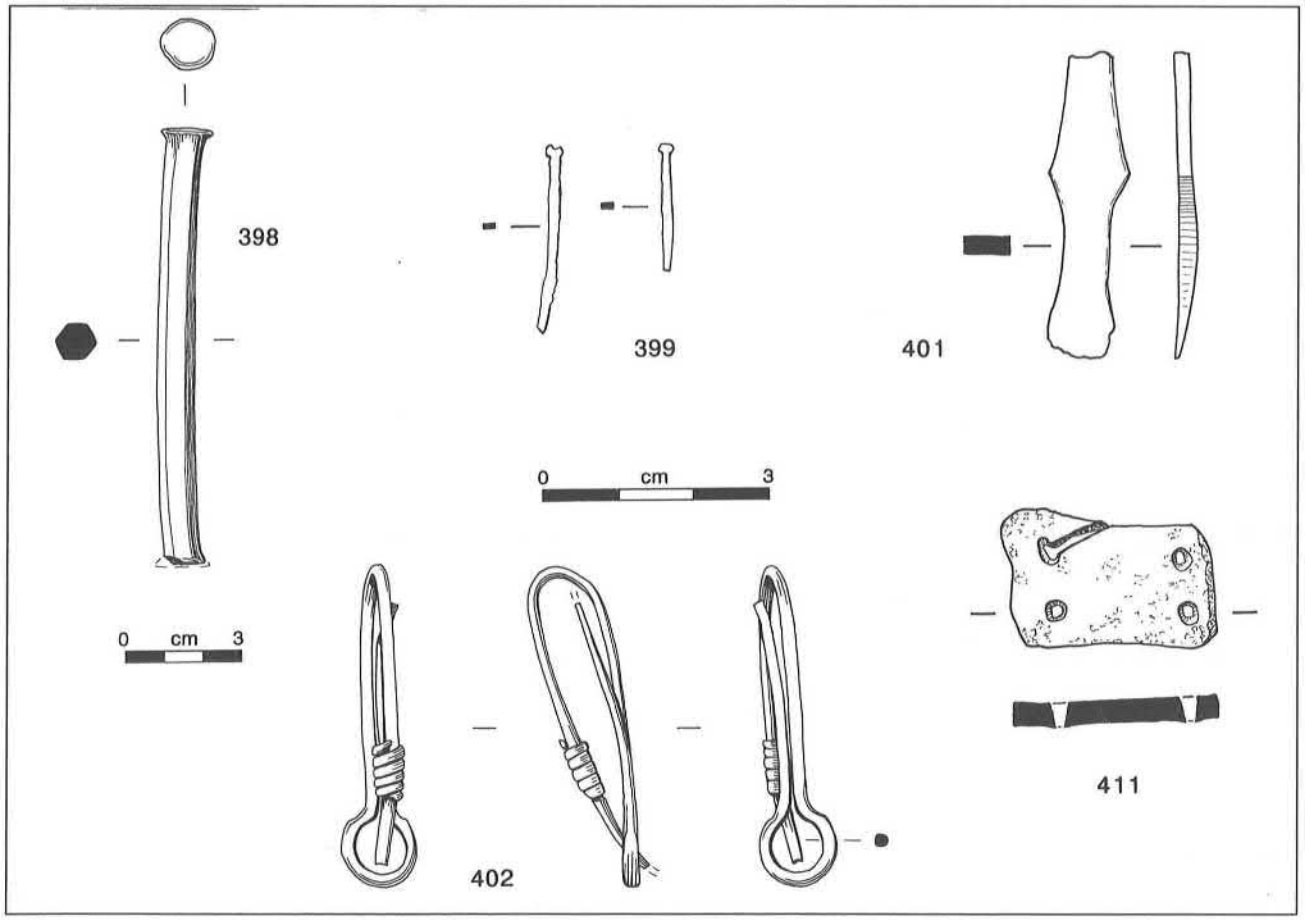


Figure 104: Unidentified objects, 398, 399, 401–402, 411 (scale 1:1, except 411 1:2).

400 Curved pipe. There is a screw fitting at one end containing ceramic material. Function unknown. Length 140 mm , dia. 9.0 mm. Not illustrated.

MK618/10020/1; topsoil.

401 Flat, symmetrical object which is shouldered and waisted in plan with tapering profile. Possibly an unfinished nail cleaner, but probably not a votive axe, as suggested by the excavator. Votive axes tend to include a cast shaft, as examples at Baldock illustrate (Stead and Rigby 1986, fig. 60.378–379). Length 40 mm, max. width 10 mm, th. 2.5 mm.

MK44/110/F165G.1; ditch fill.

402 Link? Formed from a slightly flattened wire which is bent to form a circular looped end and then bent back to form a catch-pin which is passed through the loop. The free end of the loop reaches to the point where the wire is bent for the return of the pin. A single thickness of flattened wire is wound around the catch-pin before it passes through the loop. The function of this object is unknown, although a link for suspending objects from a belt or other fitting is possible. Length 41 mm.

MK44/17/L60; occupation layer.

403 Flat, rectangular plate. One face is scratched and has 'V' shaped chip carving along one edge. Length 42 mm, width 12 mm, th. 1.5 mm. Not illustrated.

MK351/36/+; unstratified.

404 Fragment of cast ?vessel base or foot, dia. 100 mm. approx. Flat base with flange fragment at right angles 5 mm from the edge. Not illustrated.

MK351/-/+; unstratified.

Iron

405 Flat disc with remains of two oval-section tabs projecting from edge of opposing sides. Dia. 23 mm. Not illustrated.

MK351/64/+; unstratified.

406 Fragment of very corroded curved strip, slightly bowed. May be the remains of edged tool. Length 63 mm, width 26 mm. Not illustrated.

MK351/34/+; unstratified.

407 Flat, rectangular-sectioned strip or strap. One end rounded, the other broken. Evidence of at least four rectangular holes along the length. Length 65 mm, width 18 mm, th. 4 mm. Not illustrated.

MK351/22/+; unstratified.

408 Plate. Roughly rectangular, approx. 100 × 90 mm. There is a nailhole in each corner, and three nails are still in position. There is a circular hole in the centre of the plate, dia. 26 mm. Not illustrated.

MK618/11910/1; topsoil.

409 Blue-painted, wedge-shaped plate. Two keyed circular holes visible on x-ray. Max. length 245 mm, width 77 mm. Modern. Not illustrated.

MK618/10686/7028; ditch fill.

Lead

410 Almost triangular pierced object. Central circular hole, dia. 3 mm, appears to have been worked through from both sides. One surface has lines scratched around the hole. Length 16 mm, th. 6 mm, weight 6.5 g. Not illustrated.

MK351/5/+; unstratified.

411 Rectangular cut sheet with four pierced holes, one of which is cut to the edge. Length 26 mm, width 18 mm, th. 2–3 mm, weight 12 g.

MK354/-/+; unstratified.

Stone (Fig. 105)

412 Quartzite river pebble with a groove worn across one angle. The surface of the groove is very smooth. Some surfaces appear to have taken on a polish, although this may have occurred naturally. Function unknown, although use as a weight is possible. Dimensions 140 × 90 × 65 mm.

MK618/10472/8; rubble layer, Period 3/II.

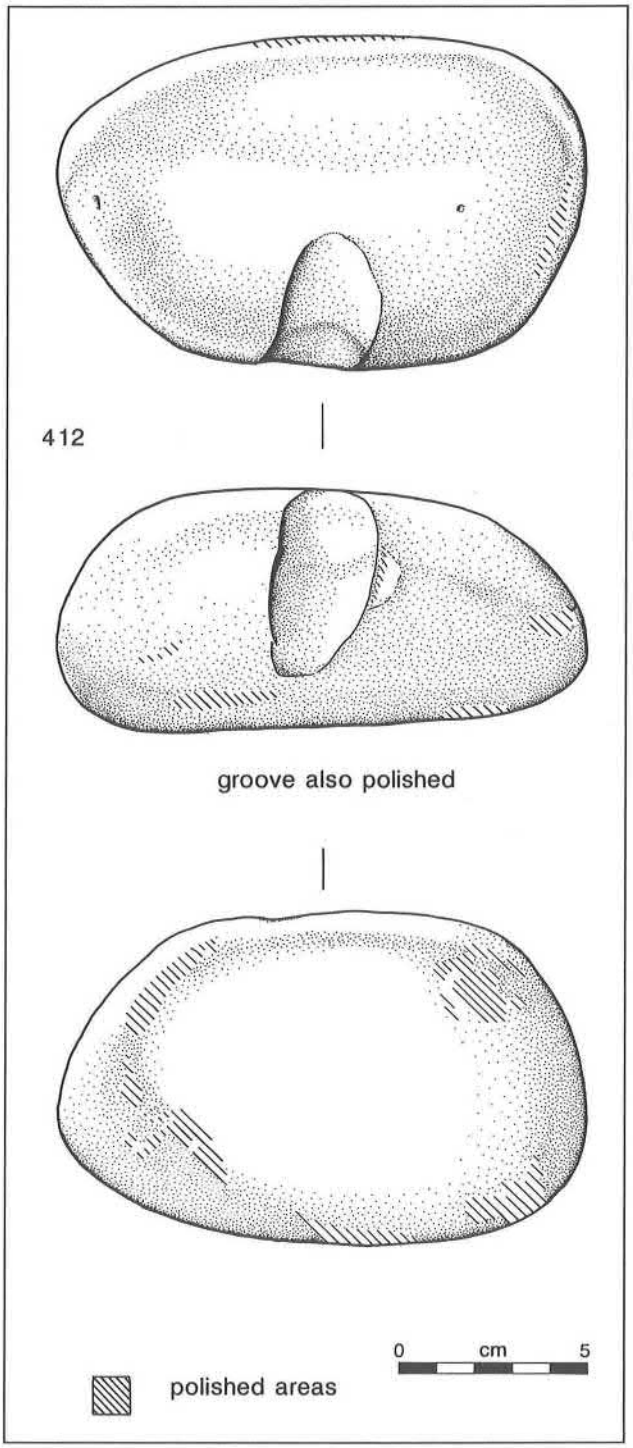


Figure 105: Worked stone, 412 (scale 1:2).

Bone

413 Disc, cut from metaphysis or epiphysis of long bone, probably the metatarsal of a horse. Function unknown. Dia. approx. 35 mm, th. 7.5–9.0 mm. Not illustrated.

MK44/32/F165C; ditch fill.

Miscellaneous Copper-Alloy, Iron and Lead Fragments

The majority of the sixty-seven copper-alloy rods, strips, wires, sheet and waste fragments listed in the site archives were found at MK44. Many of these fragments may be parts of toilet instruments or small objects. It has been suggested by the excavator that, along with the toilet spoons described in *Category 2*, and the evidence of metalworking from the site, they represent the output of a small bronze foundry. Wires range in length from 11–58 mm, and in diameter from 0.8–2.0 mm. Strips range in length from 17–65 mm, and in width from 2.0–8.0 mm. Rods range in length from 10–160 mm, and in diameter from 1.8–6.0 mm.

Fragments of heavily corroded iron were recovered from MK618, MK44 and other sites in the area. The aggressive reaction between the acidic soils and iron at Caldecotte has rendered some objects unidentifiable, even from x-ray plates. A full list of these fragments is retained in the site archives.

CATEGORY 14: WOODEN OBJECTS

The waterlogged pond feature at MK618 produced a number of wooden objects. These include (Fig. 106) household objects, such as a barrel lid fragment, and structural members. Other waterlogged wood recovered from this feature is reported on elsewhere (p.240). Species identification was undertaken by Rowena Gale.

In most instances the woods selected to make these objects were in keeping with traditional methods, and reflected the particular properties of each timber (Edlin 1949). Examples of this include the use of durable oak and elm to make posts and planks, and of strong and resilient willow and ash to make pegs and the turned bung. Contrary to this tendency was the use of ash to make a stake, apparently for use outdoors, an unusual choice considering the perishable nature of ash in such a situation.

414 Two tapering pegs. Wood appears to be *Fraxinus* sp.(ash).

a) length 67 mm, width 20 mm.

b) length 64 mm, width 18 mm.

MK618/11858/1031; pond fill, Period 3/I.

415 Five flat fragments with bevelled edges, possibly stave fragments. Some bark *in situ*. Salicaceae, probably *Salix* sp. (willow). This has been used frequently to make buckets and measures, but it was not used traditionally for barrel staves, so these fragments are probably not derived from the same object as the barrel lid (**418**). Dimensions of largest: length 27 mm, width 32 mm, th. 9 mm.

MK618/11782/1031; pond fill, Period 3/I.

416 Fifteen fragments of an unfinished turned bung. Its profile flares from blunt point to bell-shaped open end. One side of the mouth appears to have split away before burial. A central hole runs approximately two-thirds of the length of the object. Salicaceae, probably *Salix* sp. (willow), roundwood. Examples of a medieval bung and filter, bung and spigot were excavated in Hull (Watkin 1987, fig. 124.354–355). The Caldecotte object is larger than both of these examples in both length and diameter. However, it may represent an unfinished example, in which case the finished length could be expected to be shorter to allow liquid to enter the tube. It may have been abandoned during manufacture because of the wood splitting away at one side. The species of wood is not known for the Hull examples. Overall length 213 mm, dia. 45 mm at open end.

MK618/11794/1031; pond fill, Period 3/I.

417 ?Plank fragment. Split longitudinally and broken transversely. Surface smooth, with rounded end. *Ulmus* sp. (elm). Overall dimensions: length 230 mm, width 78 mm, th. 25 mm.

MK618/11795/1031; pond fill, Period 3/I.

418 Barrel lid fragment. One side is smooth and slightly concave, the other is roughly finished and convex. The outer edges are bevelled. *Quercus* sp. (oak). Oak has long been used for cooperage, since when split or cut radially leaving a barrier of rays intact it becomes virtually impermeable. Length 295 mm, width 132 mm, th. 13 mm.

MK618/11774/1031; pond fill, Period 3/I.

419 ?Plank fragment. Roughly worked surface. *Ulmus* sp. (elm). Length 175 mm, width 135 mm, th. 25 mm.

MK618/11908/1259; pond fill, Period 3/I.

420 Unidentified object. Flat, worked piece, roughly rectangular in plan with part of one side deliberately cut away. Six drilled holes in the central part. One nail in position near the edge. *Ulmus* sp. (elm). Dimensions: Length 405 mm, max. width 285 mm, min. 260 mm, th. 25 mm.

MK618/11810/1363; pond fill, Period 3/I.

421 Post fragment. Tapering post. Top edge appears sawn. *Quercus* sp. (oak). Length 585 mm, max. dia. 115 mm.

MK618/11811/1031; pond fill, Period 3/I.

422 'Y' shaped branch. One arm sawn across the grain, the others splintered. *Quercus* sp. (oak). Length 1.35 m, max. dia. 120 mm. Not illustrated.

MK618/10021/3; pond fill, Period 2/II.

423 Three fragments of post. Square tapering end. Circular profile at broken top. *Fraxinus* sp. (ash). Length 280 mm, max. dia. 45 mm. Not illustrated.

MK618/11909/1254; pond fill, Period 3/I.

424 Stake fragment. Square tapering end. Circular profile at broken top. Some bark *in situ*. *Ulmus* sp. (elm). Length 225 mm, max. dia. 35 mm. Not illustrated.

MK618/12001/1265; pond fill, Period 3/I.

425 Tapering post fragment. Split longitudinally. No bark present. *Ulmus* sp. (elm), roundwood. Length 265 mm, max. width 75 mm, max. th. 35 mm. Not illustrated.

MK618/10687/7028; ditch fill, modern.

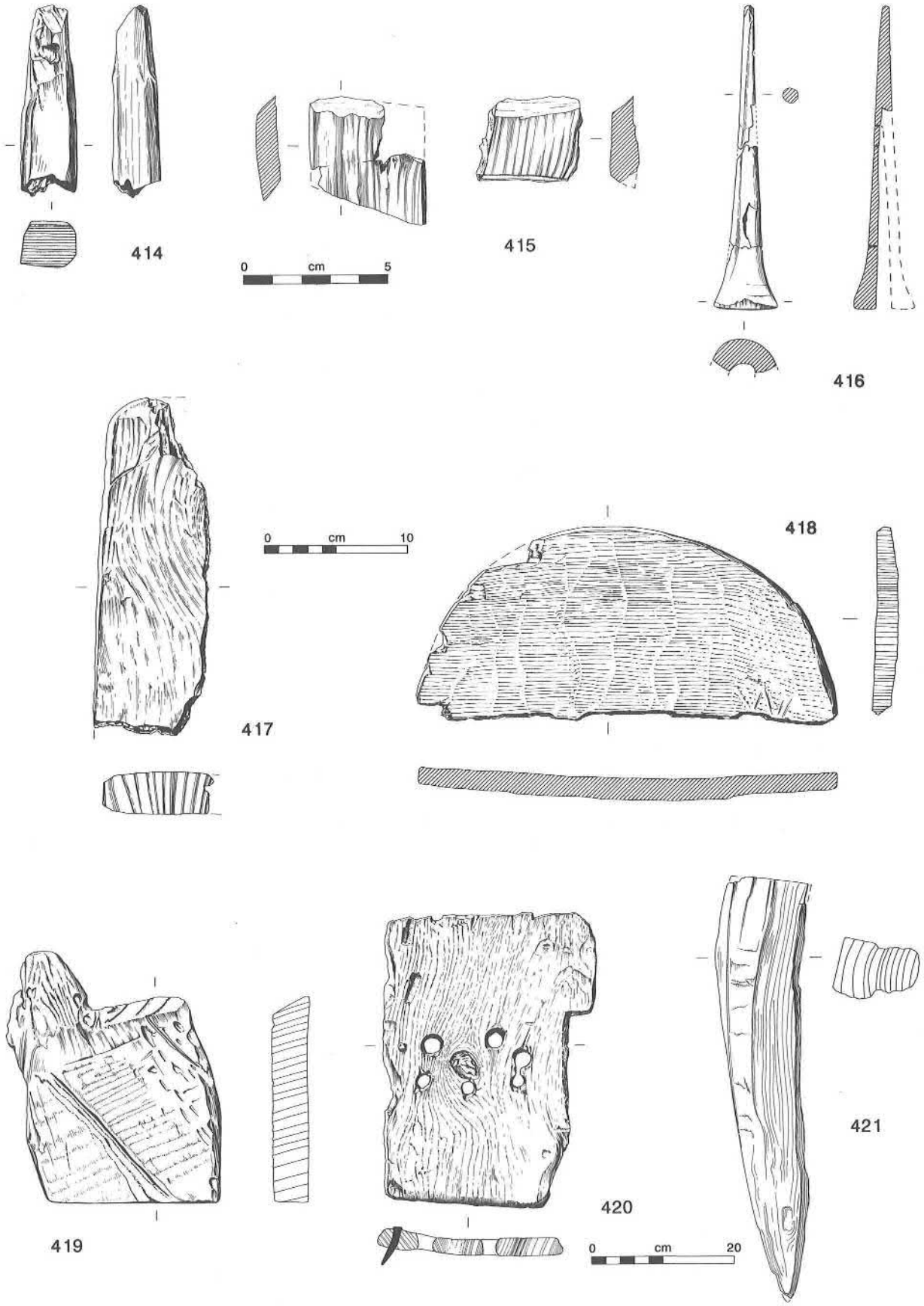


Figure 106: Wooden objects, 414–421 (scales:414, 415 1:2; 416–419 1:4; 420, 421 1:8).

CATEGORY 15: EVIDENCE FOR METALWORKING

R.E. Clough

Introduction

The remains of a Roman metal-working industry from MK44 were extensive and varied, including channel hearths, slag, crucible fragments and many pieces of furnace lining. These can be related to two metallurgical processes on site; that of a small bronze foundry, and a smithy for the forging of iron. The findspots of these materials are listed in Table 9.

Bronze Industry

The remains of at least seventeen crucibles (Fig. 107) were recovered. They are wheel-thrown from fine-grained clay, pear-shaped without a pouring spout. In many respect the vessels are similar to those from Nida-Heddernheim, a Roman settlement near Frankfurt (Bachmann 1976). However, they differ in one major respect in that they have a definite rim, which is unusual in smelting crucibles. In conjunction with a well-defined base, this suggests the possibility that originally they served another function, but the evidence definitely confirms their use as crucibles. The base diameter ranged from 15–30 mm, though the latter was more common, while the internal diameter at the mouth of two reconstructed vessels is approximately 20 mm. A detailed catalogue of the crucibles found is given in this report.

Some of the crucibles had vitrified material adhering to the outside, while many had thick green encrustations on their inner walls and rims. Close examination of the material revealed a composition primarily of copper corrosion products, with numerous small droplets of metal ranging from 1.0–3.0 mm in diameter (Table 8).

Some of these metallic beads were extracted and polished for analysis on the electron microprobe using energy dispersive X-ray analysis, which demonstrated that the metal was a bronze, with the tin content varying from 10–20%. As no moulds have been found at the site, it is difficult to ascertain what this small scale foundry was producing. Bronze with this tin content could have been used for a wide variety of small objects.

Iron Industry

The site produced a considerable quantity of slag and vitrified material which was not related to the bronze-working activities. There are several pieces of sandy furnace lining, vitrified on one surface with the body of the lining either red or red-grey, indicating respectively oxidising and reducing conditions in the furnace. There are several kilograms of iron slag variable in size, including four plano-convex furnace bottoms, slag from smelting, and some corroded iron nails. Associated with this waste is a conglomerate of small pieces of ironstone and quartz in a silty matrix. The ironstone has sharp edges and is possibly the waste from ore dressing.

The slag is typical of the bloomery process, having a grey crystalline structure with charcoal impressions. Micrographs of a polished section of the slag show characteristic phases of large fayalite laths (light grey), wustite dendrites (white) and darker glassy phase.

From analysis, it seems that the majority of slag finds relate to the smithing process. The absence of a definite smelting furnace and the small quantity of smelting slag makes it unlikely that smelting was carried out in the excavated area, but probable that this activity was located in another part of the site, with blooms being brought to the forge for final working up into the numerous iron objects found at the site.

Most of the material related to the metal industries was excavated from a series of six parallel 'channel hearths'. These were large structures, 7.0–8.0 m in length, 1.0 m wide and varying in depth up to 1.0 m. Apart from the above remains, these channels were filled with considerable quantities of charcoal, and were almost certainly used for its production, supplying the fuel needs of the forge and possibly smelting operations.

The overall impression obtained from the remains at MK44 is that of a small bronze foundry, although evidence for moulds is absent, and a forge providing iron for local needs.

Crucible	*1*	*2*	*3*	*4*
% contents:				
Cu	74.7	48.5	62.9	69.4
Sn	8.8	18.9	10.6	10.6
Pb	n.d	3.3	n.d	0.6
Zn	0.8	0.4	0.8	0.6
Si	1.2	1.2	4.4	1.1
Al	0.5	0.2	1.6	0.6

Totals are low as it was difficult to avoid corrosion product, hence some of the elements are present as the oxide

TABLE 8: Analyses of metal droplets from crucibles.

Other Sites

Nicola King

Simpson, MK351

A total of twenty-four lead fragments weighing 761.3 g were recovered from MK351 by metal detectorists. Fifteen were casting-waste drops, weight 610.9 g, while the remainder were cut fragments. On a local level, melting small quantities of lead would not be uncommon in order to repair broken pottery or to manufacture small items. Full details are held in the site archive.

Caldecotte Village, MK618

Small quantities of material were recovered from MK618 which indicate that limited metalworking was undertaken on the site. As might be expected, this includes some smithing slag and cinder. The processes which produced this were probably fuelled with coal, which could have been used for domestic activities as well as industrial. Large fragments of brick with vitrified material found on the site were probably brought there to construct the cobbled area beside the pond. Dr G. McDonnell kindly identified the materials. Table 10 lists the contexts and quantities of different materials recovered.

Context	*Crucible*	*Furnace lining*	*Furnace bottom*	*Silting furnace bottom*	*Iron slag*	*Furnace slag*
I+ unstrat.	–	*	–	–	–	–
II+ unstrat.	–	*	–	–	–	–
III+ unstrat.	*	–	–	–	–	–
V+ unstrat.	*	*	–	–	–	–
F30 gully	*	*	–	–	*	–
F41 ditch	*	–	–	–	–	–
F46 gully	*	–	–	–	–	–
F50 gully	–	*	–	–	–	–
F51 pit	–	*	–	–	–	–
F58+ ?pit	–	*	–	–	–	–
L60 layer	*	*	–	–	–	–
L66 layer	*	–	–	–	–	–
F77 cobbles	*	–	–	–	–	–
F78 mound	–	–	–	–	*	–
L79 layer	–	–	–	–	*	–
F90 channel hearth	*	–	–	–	–	–
F91 channel hearth	*	–	*	–	–	*
F92 ditch	–	–	–	*	–	–
F111 channel hearth	–	–	–	*	–	–
F114 gully	*	*	–	–	–	–
F131 channel hearth	–	*	–	–	–	–
F186 ditch	–	–	–	–	*	–
F188 ditch	–	*	–	–	–	–
L216 layer	–	–	–	–	–	*
TOTALS	11	11	1	2	4	2

An asterisk * indicates the presence of a material within a context.

TABLE 9: Location of crucibles and furnace materials, MK44.

Context		*Burnt organic*	*Smithing slag*	*Cinder*	*Vitrified material*
2	topsoil	0.235	–	–	–
177	unstrat. 820/260	–	0.03	–	–
193	unstrat. 830/260	0.045	–	–	–
450	unstrat. 820/260	–	0.02	–	–
451	unstrat. 820/250	–	–	0.005	–
673	ploughsoil	–	–	0.025	–
825	cobble layer, pond	–	–	–	11.0
861	ploughsoil	–	0.015	–	–
1565	construction trench fill	–	–	0.03	–
TOTALS		0.28	0.065	0.06	11.0

TABLE 10: Slag materials and their contexts, MK618. Weights in kg.

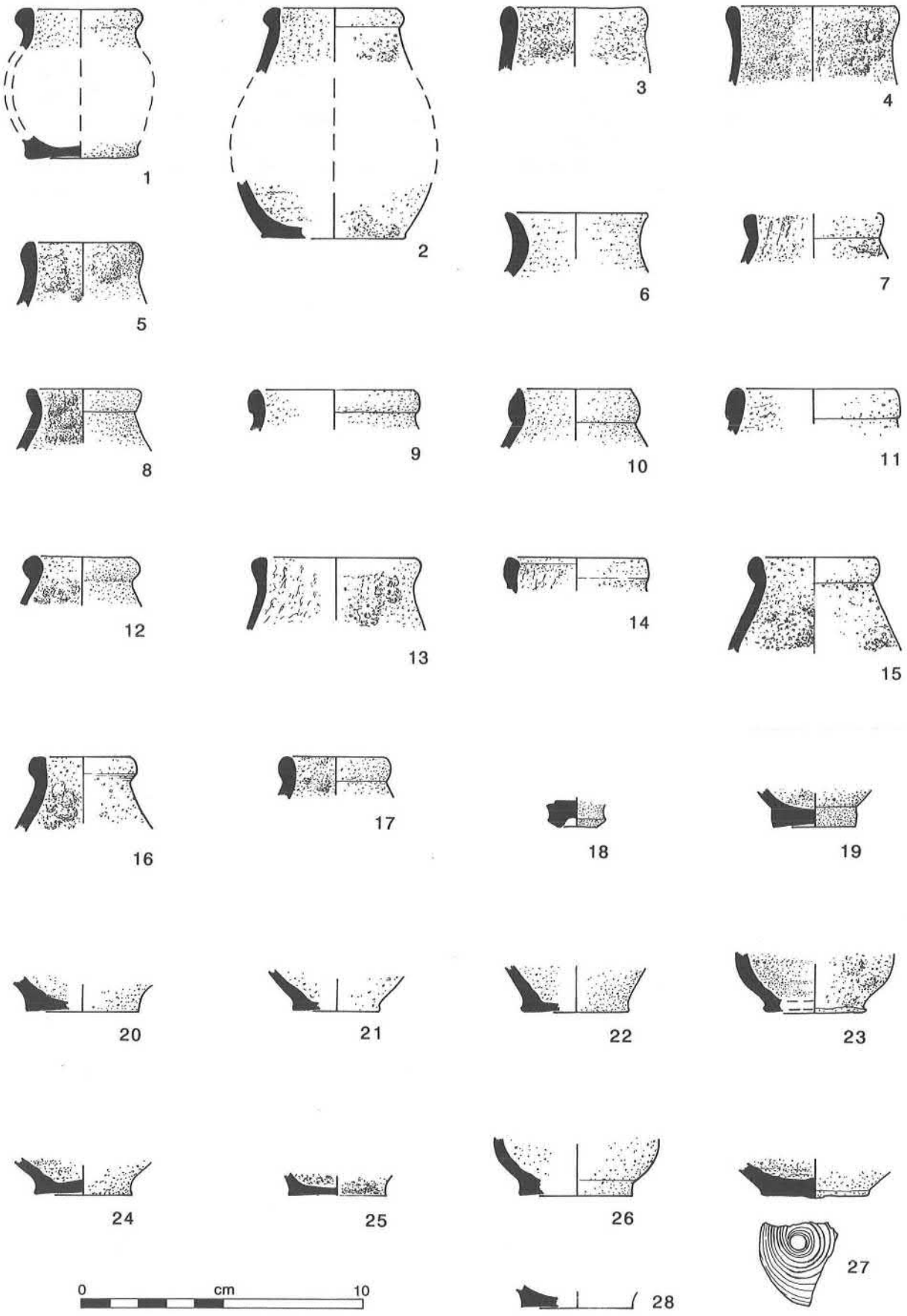


Figure 107: Crucibles: complete, 1, 2; rims, 3–17; bases, 18–28 (scale 1:2).

Crucibles: Catalogue

All crucibles are in the same hard grey sandy fabric. Numbering refers to the illustrations in Fig. 107.

References are given in the form 'Context number: context description.' A fuller reference including the section and small find numbers is retained in the site archive.

Reconstructions of the complete form of the crucibles from the fragments.

1 Short, squat crucible. F90: gully fill.

2 Tall, pear-shaped crucible. F91: gully fill.

Rim types:

(a) Upright rim, with no thickening.

3 III+: unstratified.

4 V+: unstratified.

(b) Everted rim.

5 F41: ditch fill.

6 F77: cobble surface.

7 F77: cobble surface.

8 V+: unstratified.

(c) Thicker and slightly everted rim.

9 F46: gully.

10 L60: soil layer.

11 F114: gully fill.

12 F91: 'channel hearth'.

13 F91: 'channel hearth'.

14 F91: 'channel hearth'.

15 F77: cobble surface.

16 F77: cobble surface.

17 V+: unstratified.

Bases:

18 F30: gully fill.

19 L66: cleaning layer.

20 L60: soil layer.

21 L60: soil layer.

22 F114: gully fill.

23 F90: 'channel hearth'.

24 F77: cobble surface.

25 F77: cobble surface.

26 F77: cobble surface.

27 F90: 'channel hearth'.

28 III+: unstratified.

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BUILDING MATERIALS

ROMAN

R.J. Zeepvat

Brick and Tile (MK44)

Only a small quantity of tile (5.66 kg) was recovered during excavations at MK44. With the exception of a single *tegula* fragment from the topsoil overlying Area III, most was found in Area II, a smaller quantity being recovered from Area I. Only one tile fabric was present on the site, in the form of tegulae, imbrices, brick and box flue. Details of fabric and tile types are given below, while a catalogue of the tile is retained in the site archive. It is evident from the small amount of tile recovered (a single Fabric 1 *tegula* weighs about 5 kg) that it was present on the site as hardcore, rather than for roofing or building.

Fabric

The fabric of the tile was of particular interest. Its external appearance was reddish-brown, soft and friable, with a 'corky' feel and frequent vesicles. Examination of its internal structure showed that the paste contained nodules of ironstone and fragments of crushed fossiliferous limestone, similar to Fabric 1 of the Milton Keynes Roman Tile Fabric Series (RMK, 119). The discrepancy between this fabric's superficial appearance and its actual content were evidently caused by the soil conditions on the site.

A single fragment of box-flue tile in this fabric from the site has been described by the author (RMK, 120) on the basis of its external appearance as the sole known example of Fabric 6. However, examination of the whole assemblage from Caldecotte, which was not available at that time, coupled with the results of a study of the tile from Bancroft, Milton Keynes (Williams and Zeepvat 1993) indicates that the Caldecotte tile fabric is the earlier period Fabric 1, dated at Bancroft to the early second to early third century.

Tegulae

The bulk of the assemblage (75%) consisted of fragments of *tegulae*. Most were roughly made, with no evidence of maker's marks or nail holes. Body thickness was between 20–25 mm.

Imbrices

A single fragment of *imbrex* was noted from Ditch F186, Area II, where it was found in association with mid to late second-century pottery.

Box Flue

Amounting to 225 g, the fragments appeared to form part of a single box-flue tile, the dimensions of which could not be determined. The face of the tile had been decorated with a keying pattern using a three-pronged comb, which had been either coarsely made or was well worn. The fragment was found in Ditch F27, Area I, in association with pottery of mid to late second-century date.

Brick

Included in the MK44 tile assemblage were five fragments of brick or structural tile. These varied in thickness from 30–35 mm; all were too fragmentary to provide other dimensions. One fragment, from Pit F11, Area I, consisted of a corner, with its edges converging at an angle of 45°.

MEDIEVAL AND POST-MEDIEVAL

Nicola King

Brick and Floor Tile (MK618)

During excavation it was decided to retrieve samples of brick and other building material from unstratified and rubble contexts, and to retain either all or a representative amount of brick from stratified contexts. The intention was to show the distribution of different types of material across the site. Statistical analysis by weight was not attempted.

The material was examined using a ×20 binocular microscope. Fifteen fabrics were described using this process, and a variety of paving and building bricks were noted. No floor tiles were discovered *in situ* during excavation, although some fragmentary examples of thin undecorated, unglazed bricks were identified in the process of brick examination. These could be classified as 'tiles', but are included here since they supplement the brick fabric typology.

As at Great Linford (Mynard and Zeepvat 1992, 207) the bricks were all handmade in moulds, and did not have frogs. The sizes ranged from 19 mm thick paving bricks up to 70 mm thick examples of large building bricks. Complete measurements are listed where possible in the fabric type series below. The fabrics were normally sandy, with surfaces ranging from coarse to very smooth. Grog and ironstone were also used for tempering, while some fabrics were probably made from a clay with a calcite content that had burnt or weathered out, leaving a light, vesicular body.

The clay had been prepared to a workable consistency, and then pushed into the moulds, as folds in the body were commonly noticed. Some moulds were dusted with fine sand to prevent sticking, this being particularly noticeable on the surface of many of the bricks. The excess clay had been trimmed from the mould, leaving longitudinal scoring along one face of many of the bricks. Generally the bricks were not over-fired, but a few very hard examples with vitrified surfaces were noted, and two types are listed in the fabric series. It is not known whether the vitrification was accidental or intentional, though some of the bricks found appear to have been wasters.

The distribution of the bricks suggests that both medieval and post-medieval types are present. Only one fragment of Fabric 8 was located in Croft A, this being the only fragment of brick from this area. Fabrics 4 and 5, which seem to have been used for medieval paving bricks, were largely recovered from later medieval layers (1118, occupation layer, Period 2/II), and from features associated with the construction of the dovecote complex (166 posthole fill, Period 2/II; 487, Period 2/III), only one fragment being recovered from the area of the post-medieval farmstead (Fig. 48). No medieval building brick types are indicated by the distribution of brick.

The post-medieval period saw the use of bricks for both building and paving. These brick types were recovered mainly from the post-medieval farmstead, and from associated post-medieval features, pond fills, and hollow-way fills (51, 238, ?940, 473, 475).

It is very likely that most of the post-medieval bricks used at this site were produced locally. The 1791 map of Bow Brickhill (Fig. 8) records the site of the clamp kiln (MK1008) as *Kiln Furlong Ground*, and the field immediately to the south as *Kiln Pits Ground*. Examination of the bricks from the clamp kiln (p.102) shows some as being similar to Fabric 15, and some vitrified bricks as similar to Fabrics 12 and 13. The final phase of Caldecotte Mill (Petchey and Giggins 1983) also used bricks similar to those from the kiln. It is unlikely that MK1008 was the only kiln in the area during the early eighteenth century, and differences in products are to be expected, even from closely related kilns.

Fabrics

Paving Brick

1 Fine pinkish orange sandy fabric with vesicular body and surface, due to the almost total burning out of calcite tempering. Grey-fired core. Smooth upper surface with sanded base for mould release.

Dimensions: 37 × 116 × 216 mm.

2 Uneven soft pinkish fabric with calcite and occasional grog tempering. Black fired core. Smooth upper surface, sanded sides and base.

Dimensions: 36 mm thick.

3 Uneven pink sandy fabric with some grog and flint fragments, and vesicles. Greyish fired core.

Dimensions: 34 mm thick.

4 Crumbly brown, very vesicular fabric with occasional sand tempering. Probably over-fired.

Dimensions: 32 mm thick.

5 Pinkish brown sandy fabric. Upper surface dark brown. Holes stabbed down from the dark surface, some piercing the body.

Dimensions: 26 mm thick.

6 Hard smooth orange fabric with grey core. Very few inclusions. Sanded base.

Dimensions: 23 mm thick.

7 Uneven pink and orange surface with some vesicles, very few inclusions, and grey fired core.

Dimensions: 32 mm thick.

8 Hard, grey sandy tempered fabric.

Dimensions: 19 mm thick.

Building Brick

9 Even, red/orange sandy fabric. Smooth upper surface with sanded sides and base.

Dimensions: 60 × 115 × ? mm.

10 Soft, sand-tempered orange fabric with occasional large ironstone pebbles and grog fragments. Smooth upper surface with sandy base and sides.

Dimensions: 50 × 110 × 232 mm.

11 Over-fired sand tempered pinkish grey fabric with lumps of grog.

Dimensions: 55 × 105 × ? mm.

12 Hard, grey, over-fired sand tempered fabric. Two green vitrified surfaces. Surfaces sanded.

Dimensions: 70 mm thick.

13 Hard, grey, over-fired sand tempered fabric with some vesicles. Complete example is deformed through over-firing.

Dimensions: 55 × 102 × 200 mm.

14 Cream-coloured sand-tempered fabric, with occasional vesicle.

15 Very sandy, friable red/orange fabric with occasional ironstone and flint inclusion.

Dimensions: 57 mm thick.

Illustrated Items (Fig. 108)

1 Incomplete geometric decorative tile, mould made. The design is formed of three square shapes of decreasing sizes, the inner offset at 45°, forming triangles and diamond shapes. The fabric is similar to Fabric 3 in the MK618 brick series. Original dimensions are not known.

MK618/11059/260; cobble layer, Period 3/II.

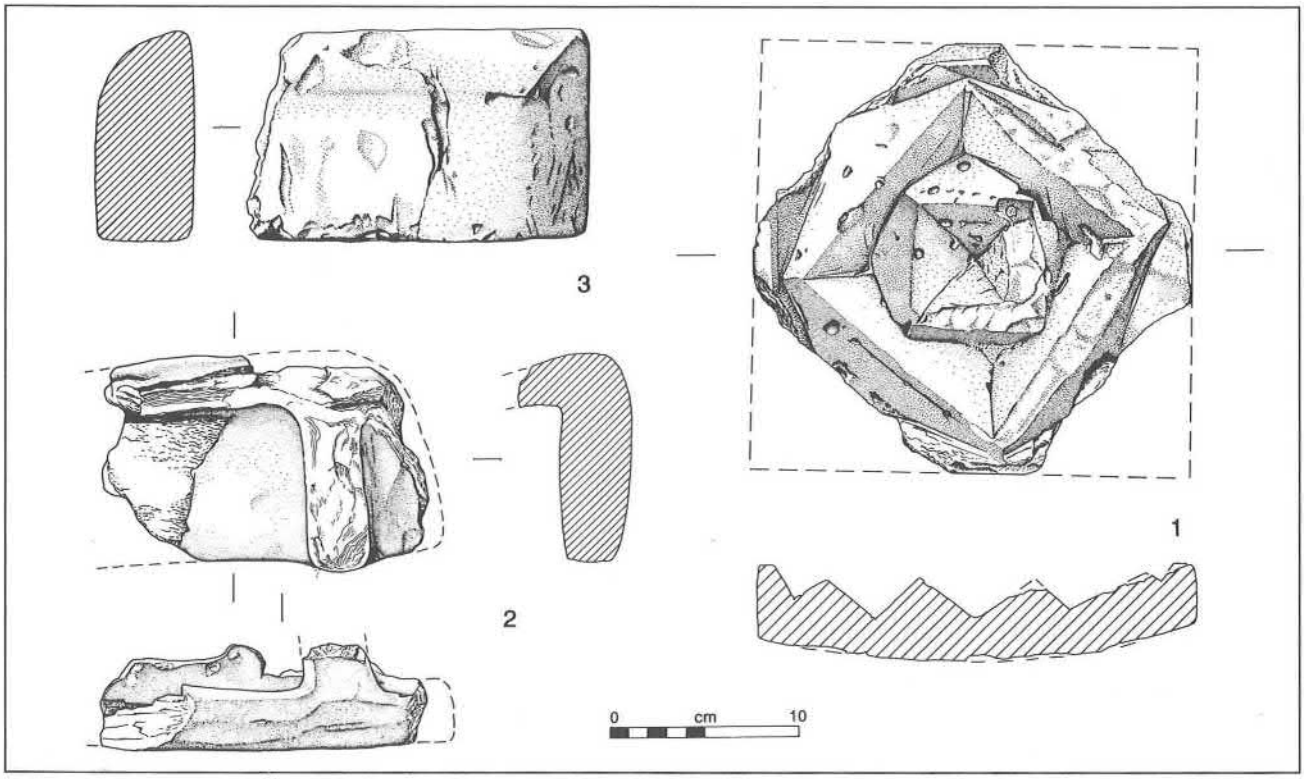

Figure 108: Decorated facing tiles, 1, 2; coping brick, 3 (scale 1:4).

2 Incomplete ?decorative tile, hand made. Flat rectangular piece, with one or more flanges set at right angles to it across the shorter side. Fabric similar to Fabric 9 in the MK618 tile series. Original dimensions not known.

MK618/11579/433; cobble layer, Period 3/I.

3 Fragment of curved ?coping brick, Fabric 9 in brick type series (above). Width 110 mm, th. 45 mm.

MK618/10591/8; rubble layer, Period 3/II.

Roof Tile (MK618)

As with the brick from this site, the material was examined using a 20× binocular microscope and eighteen different fabrics were identified. The majority were sand tempered, with other inclusions such as fragments of quartz, ironstone pieces, and grog. Given the close proximity of the clamp kiln (MK1008) it is likely that much of the tile found at Caldecotte was manufactured locally, either as a seasonal activity or on demand. The availability of suitable tempering in such a process accounts for the variety of similar fabrics.

Tiles were of varying thicknesses, lengths and widths. Typical sizes are listed with the fabrics. Tile sizes were first regulated in a statute of 1477. The 1725 Parliamentary Act which established brick sizes also confirmed tile sizes, the dimensions were 10½" long, $^5/_8$" thick and 6¼" wide (265 × 15 × 158 mm). Therefore it is not possible to suggest whether a tile is medieval or post-medieval on the grounds of size alone (Cox 1979, 15). Peg holes were of varying size, shape and position, and all had been cut while the clay was still plastic. No ridge tiles were noted.

The distribution of tile across the site does not suggest a significant spatial or temporal distribution of tile fabrics. This indicates that tile was probably reused, and that only small quantities of new material were used as necessary. Context 1699 (rubble layer, Period 3/2) incorporates tile in mortar, and may be the remains of a window or door frame. Relatively little material was recovered from Crofts A and B, so buildings in use at this time were probably thatched, the material recovered coming mainly from unstratified or ploughing layers.

Roof Tile (MK619)

Medieval roof tile was recovered from numerous contexts on MK619, probably related to a building or buildings situated within the moat. It is not known if the tile available for examination in 1991 represented all the tile recovered from the site.

The material was examined using a ×20 binocular microscope and ten fabrics were identified. Some fragments of medieval glazed and unglazed ridge tile were found. The glazed material was manufactured at Potterspury, Northants., approximately 15 km from Caldecotte (Mynard, pers. comm.); the unglazed Potterspury material has not been differentiated in the following table.

Fabrics

1 Red and red orange fabrics with sand, grog, and occasional flint fragments. Lower surface sanded or gritted with flint fragments to prevent sticking.

2 Smooth fabric with few inclusions. Grey core and red outer, blackened upper surface. Same as MK618 Fabric 5.

3 Calcite gritted fabric with many vesicles, probably due to the acid soils at Caldecotte. ?RB fabric 1.

4 Orange fabric with grey core. Sand temper. Possibly a floor tile. Similar to MK618 Fabric 9.

5 Pinkish orange fabric, sometimes with grey core. Sand temper with fragments of quartz and red ironstone. ?Medieval.

6 Orange fabric with infrequent sand in temper, some vesicles appear in body, and flint fragments. Similar to MK618 Fabric 2.

7 Soft, powdery orange-pink fabric with sparse sand tempering.

8 Orange brown outer surfaces, grey core. Similar to Fabric 2, perhaps floor tile.

9 Potterspury green-glazed ridge tile.

10 Orange sandy fabric with fragments of quartz and red ironstone and soft surface. Similar to 5.

STONE ROOF TILE

Fragments of stone roof tile were recovered from excavations at MK44, MK618 and MK619. Limestone appears to have been used in both the Roman and medieval periods as a roofing material. Most of the MK44/MK619 material came from contexts associated with the moat. The nearest local source was probably at Collyweston, Northants. Slate, probably Welsh in origin, also occurs in post-medieval contexts. Numerous fragments of burnt and unburnt stones were also found, although their original purpose was unclear. Full details of all stone fragments are held in the site archive.

FIELD DRAIN TILE (MK618)

Horseshoe and footplate tiles were used in drains from 1810 (Burgess 1946–48, 87). During the period 1826 to 1850 land drain tiles were exempt from taxation if they were stamped 'DRAIN' (Harvey 1976, 23). Examples of this type of drain were noted at Caldecotte, implying that the tiles were made during this period. From 1846 government loans were available to drain land. As demand for drainage tiles increased from the 1850s, the horseshoe footplate type of drainage tile was gradually replaced by the cylindrical machine-made pipe tile, (Cox 1979, 36). From MK618 one horseshoe-shaped tile and four complete cylindrical field drain tiles were kept as examples. Two sizes of cylindrical tile were represented in each of two fabrics.

None are illustrated.

Horseshoe Tile

1 Complete horseshoe-shaped drain tile in tile fabric 10 with 'DRAIN' imprinted on side. Length 330 mm.

MK618/10552/11; land drain fill, modern.

Cylindrical Tile

2 Orange fabric, similar to tile fabric 3. Length 305 mm, max. ext. dia. 106 mm.

MK618/307; land drain fill, Period 3/I.

3 Cream fabric similar to tile fabric 10. Length 300 mm, max. ext. dia. 107 mm.

MK618/307; land drain fill, Period 3/I.

4 Orange fabric similar to tile fabric 2. Length 305 mm, max. ext. dia. 70 mm.

MK618/357; land drain fill, modern.

5 Cream fabric similar to tile fabric 3. Length 307 mm, max. ext. dia. 70 mm.

MK618/357; land drain fill, modern.

WINDOWS (MK618)

Window Cames

Eight fragments of 'H'-section lead window cames were recovered from demolition or unstratified contexts at MK618. Evidence from the window glass fragments suggests that diamond-shaped quarries were used.

Contexts producing window cames:

Rubble layers: 8, 38 (both Period 3/2).

Ditch fills: 434 and 475 (Period 3/1).

Topsoil: 2.

Unstratified: 37, 169.

Window Glass

The 786 fragments of glass recovered from MK618 were assigned to one of seven types on the basis of visual assessment of colour and measurement of thickness. Each was individually weighed on a beam balance accurate to 0.1 g. A detailed list of the results is retained in the site archive.

Window glass type-series:

PG1 pale green, up to 1 mm thick.

PG2 pale blue green, all thicknesses.

PG3 olive green 1.5 mm and thicker.

PG4 olive green 1.0 to 1.5 mm.

DG1 dark olive green up to 1.0 mm. thick.

C clear, probably 19th or 20th century

Blue blue, all thicknesses

Various tones of green glass accounted for 98.5% of the assemblage. Approximately 7% of the total was dark olive green up to 1.0 mm thick, 88% olive green in various thicknesses, and 3% being blue green. Blue and clear glass accounted for 1.5%. The distribution of the glass in dumped rubble does not suggest whether windows were of uniform or mixed colour. The glass from Context 70 indicates a mixture of colours.

The glass was very fragmentary, the average fragment weight being 0.8 g. A few of the larger fragments show that the original form was probably of diamond-shaped quarries. However, none were complete enough to assess the dimensions.

Most of the window glass was recovered from topsoil and demolition contexts associated with post-medieval Buildings 10 to 13 (p.91ff). It is not possible to relate the unstratified and topsoil contexts from this area to any particular building. A few stray fragments were found in topsoil or cleaning layers above the medieval crofts and surrounding the dovecote, and also within drain fills. These do not differ from the post-medieval fragments and do not

suggest that the medieval structures were glazed. They are therefore probably intrusive.

The bulk of the stratified material was associated with Building 11. The demolition material was concentrated to the west of the building in Contexts 8 and 261. Since these deposits appear to be of dumped rubble, it is not possible to suggest which walls may have had windows. Layers 117 and 118 were occupation contexts within the building. Significant quantities of glass were found lying above cobble spread 71 (Context 70) to the south of the building, suggesting a window in the south wall.

NAILS AND STAPLES

Berrystead Close (MK44, MK619)

John Giorgi, ed. Nicola King.

Each nail was examined and the following information obtained: the shape of the head; the dimensions of the stem and head. A complete record is retained in the site archive. The limited number of nails recovered did not allow for the spatial distribution of nail types to be assessed. Table 11 lists the distribution of the nail sizes and head widths, and has been compiled from all the available data to illustrate the distribution of nail sizes. Head sizes are maximum widths. All dimensions in mm.

Also from MK44 were some staples and a joiner's dog; these are described below. None are illustrated.

	Length (mm)	*<25*	*<50*	*<75*	*75+*	*Total*
Head size:						
	<5	1	–	–	–	1
	<10	1	24	2	–	27
	<15	1	25	3	1	30
	<20	3	7	1	–	11
	<25	1	1	–	–	2
	25+	–	–	3	–	3
No head		–	2	2	–	4
Total		7	59	11	1	78

TABLE 11: Sizes of iron nails recovered, MK618.

1 Two round-headed staples.
i. length 60 mm, width 30 mm.
ii. length 55 mm, width 41 mm.
MK44/-/L124; soil spread.

2 Joiner's dog. Length 115 mm. Roman.
MK44/-/L163; cobble surface.

3 Joiner's dog. Length 68 mm. Roman.
MK44/-/F22.1; base of plough soil.

Simpson (MK351)

Nicola King

Five nails were recovered by metal detectorists during the survey of MK351. One Manning Type 1 and two Type 2 were identified (Manning 1985, 135), the others being too corroded for further comment. One of the Type 2 nails was probably unused, with a length of 110 mm (MK351/7/+).

Caldecotte Village (MK618)

Nicola King

Nails

A total of 477 iron nails were recovered from excavations at MK618. An attempt was made to classify them into the groups used in the Great Linford excavation report. However, the wet acid soil conditions at Caldecotte made identification of all iron objects difficult due to the degree of corrosion. The nails have therefore been grouped into four types:

A Flared nails, the head formed by a flared shank.

B Nails with a small head (up to twice the maximum shank cross-section).

C As 2, but with a head greater than twice the shank cross-section.

D Nails without head, or with head missing.

It is suspected that some flared nails were mistakenly identified as small headed nails due to corrosion products. The flat, figure-8 shaped head found at Great Linford was either not present at Caldecotte, or went unidentified due to corrosion.

The groups were subdivided further by length in 25 mm increments. The detailed statistics resulting from this exercise are retained in the site archive.

As at Great Linford, by far the most abundant were Group B, those with small heads, which accounted for 57% of the assemblage. 87% of Group B fell into the range of <50 mm, 66% being between 25 mm and 50 mm. The next most frequently occurring were Group D, those without heads, which comprised 28% of the assemblage. Of the whole assemblage 59% were from unstratified deposits, and 12% from demolition contexts.

Staples

At MK618 staples were recovered from rubble layers or unstratified layers. Along with the nails they can be seen to enter the archaeological record largely during the process of demolition of the buildings. All examples are iron.

4 Flat-headed staple. Length 52 mm, width 32 mm.
MK618/10149/2; topsoil.

5 Staple, 'U' shaped. Width 37 mm, length 70 mm.
MK618/10917/64; unstratified.

6 Flat-headed staple fragment. Length 28 mm.
MK618/11288/110; unstratified.

7 Staple, 'U' shaped. Length 45 mm, width 25 mm.
MK618/11498/621; levelling layer, Period 3/1.

8 Staple. Flat-headed, width 42 mm, length 90 mm.
MK618/11735/760; unstratified.

THE COINS

ROMAN

Richard Reece and R.J. Zeepvat

The following report on the seven coins from MK44 was prepared by Dr Reece, while the coins from other sites at Caldecotte have been identified by Bob Zeepvat.

Also included in this section are reports on the coins from MK351 and MK354, as well as on the coin assemblage from MK309. The latter was a site on the west side of the Ouzel valley close to the former sewage works at Simpson, and was the subject of limited trial excavations in 1975 (RMK, 23), which revealed a number of field boundary ditches dated to the first and second centuries. More recently, repeated surveys of the site by metal detectorists have produced further evidence of activity in both Roman and Saxon periods, including the seventy-seven coins described below.

Berrystead Close (MK44)

Although there are only seven coins from this site (Table 12), it is remarkable that they convincingly span the whole period of the Roman occupation, and that the coins of the late third century and the period 330–348 come in pairs. These points accurately reflect the usual distribution of coins on British sites so that, judged against a provincial background, these seven coins are absolutely what is to be expected. The two early coins are most unlikely to have been lost after the end of the second century, and therefore demonstrate early occupation; the coin of the House of Theodosius cannot have been lost before 390, and therefore takes activity on the site to the end of the fourth century.

Mill Close (MK117)

Three coins were recovered from the enclosure in Mill Field, two as a result of metal detecting. These are listed in Table 13.

Simpson (MK309)

Seventy-seven coins were recovered from this site. Of these, fifty-one (66%) were identifiable, twenty-five were bronzes of the late third or fourth centuries, and one was a coin blank. The identifiable coins spanned the period from the early second to the mid or late fourth century, beginning with a denarius of Severus Alexander (228–31), and ending with small bronzes of the House of Valentinian (364–78). The assemblage has been divided in Table 14 into 'issue periods' (Reece 1972); a detailed catalogue is retained in the site archive.

Coin loss at MK309 falls into two distinct periods, 222–75 and 317–78. The percentage of coins belonging to the former is noticeably less than that suggested by Reece (1972, fig. 1), while the rate of coin loss for the latter period is correspondingly higher, particularly in Period XIIIb. This suggests that the main period of occupation on the site falls in the fourth century. This is at variance with the evidence

No.	*Issuer*	*Type*	*Denom.*	*Ref.*	*Date*	*SFno.*	*Cont.*
1.	Titus	Apollo standing, COS VI	Den.	RIC2,195	77–78	193	?
2.	Hadrian	Concordia?	Sest.	RIC2,143	134–38	1053	1
3.	Gallienus	DIANAE CONS AVG, deer	Ant.	RIC5,177	260–68	1064	1
4.	Gallienus	Illegible	Ant.	RIC5,249	260–68	1013	1
5.	Constantius II	GLORIA EXERCITVS, 2 standards	Fol.	HK1,370	330–35	1074	1
6.	Constantius II	GLORIA EXERCITVS, 2 standards	Fol.	HK1,57	330–35	38	?
7.	H. of Theodosius	SALVS REIPVBLICAE	–	HK2,796	388–402	39	?

TABLE 12: Coins from MK44, Berrystead Close.

No.	*Issuer*	*Type*	*Denom.*	*Ref.*	*Date*	*SFno.*	*Cont.*
1.	Domitian	Fortuna	Dup.	-	73–96	47	?
2.	Maximinus I	Illegible	Sest.	-	235–38	MD2	1
3.	Illegible	Illegible	Ant.	-	late 3rd	MD5	1

TABLE 13: Coins from MK117, Mill Close enclosure.

ISSUE	*PERIOD*	*No.*	*%*
IXa	(222–38)	1	2.0
IXb	(238–59)	1	2.0
X	(259–75)	3	5.9
XI	(275–94)	0	-
XII	(294–317)	0	-
XIIIa	(317–30)	5	9.8
XIIIb	(330–48)	23	45.0
XIV	(348–64)	10	19.6
XVa	(364–78)	8	15.7
Total		51	
3rd-4th cent.		25	
Other		1	
TOTAL		77	

TABLE 14: MK309 Simpson; the coin assemblage, by issue period.

from the 1975 trial excavation, which indicated occupation during the first and second centuries. A possible explanation for this discrepancy may be found in the limited size of the excavation, though it is strange that no first or second-century coins were recovered during metal-detecting operations.

Simpson (MK351)

This group of thirteen coins (Table 15) was recovered during a supervised metal detector survey, undertaken as part of the watching brief on this site. Though small, this coin assemblage is of particular interest for two reasons. Firstly, it indicates that MK351 was occupied from the early second to the late fourth century. However, its second point of interest is that the one notable gap in this span of occupation is in the first half of the fourth century, a period which is usually represented by large numbers of small bronze issues, which are here totally absent. Although little statistical evidence can normally be inferred from such a small assemblage, this gap is of particular significance, and can be taken to indicate a period of abandonment.

Mill Close South (MK354)

Four Roman coins (Table 16) were recovered during a metal detector survey, carried out as part of the watching brief on this site. They span the period from the mid third to the mid fourth century.

Caldecotte Village (MK618)

A single denarius of Faustina was found during the excavation of the medieval village, a commemorative issue with a reverse of Aeternitas (RIC 344), dated to 141–61.

Reference works cited in Tables 12–16:

RIC 1–6 Mattingly, H., Sydenham, E. A., Sutherland, C. H. V. and Carson, R. A. G. *Roman Imperial Coinage*, London (1923ff).

HK1,2 Carson, R. A. G., Hill, P. V. and Kent, J. P. C., *Late Roman Bronze Coinage*, AD 324–498, London (1972).

No.	*Issuer*	*Type*	*Denom.*	*Ref.*	*Date*	*Mint*	*Dia.*	*SFNo.*	*Cont.*
1	Trajan?	Illegible	Sest.	–	98–117	–	33	41	1
2	Antoninus Pius	Illegible	Sest.	–	138–61	–	27	17	1
3	Antoninus Pius	Illegible	Sest.	–	138–61	–	28	18	1
4	Faustina I	PIETAS AVG (comm)	Sest.	–	141–61	–	32	73	1
5	Maximinus I?	Illegible, Stg. fig.,l.	Ant.	–	235–38	–	18	14	1
6	Otacilia Severa	CONCORDIA AVG	Ant.	–	244–49	Antioch?	24	31	1
7	Barb.rad:Claudius II	VIRTVS AVG	*irreg.*	–	270–84	–	16	91	1
8	Allectus	PROVIDENTIA AVG	Ant.	–	293–96	–	21	58	1
9	Maximian I	GENIO POPVLI ROMANI	Fol.	–	*c.*310	London	24	48	1
10	H. of Constantine	FEL TEMP REPARATIO (FH)	*irreg.*	–	354–64	–	?	42	1
11	Valentinian I/II	GLORIA ROMANORVM	–	–	364–78	Const'ople	17	51	1
12	Valentinian I/II	GLORIA ROMANORVM	–	–	364–78	Arles	18	55	1
13	H. of Valentinian	GLORIA ROMANORVM	–	–	364–78	– –		11	1

TABLE 15: Coins from MK351, Simpson.

No.	*Issuer*	*Type*	*Denom.*	*Ref.*	*Date*	*Mint*	*Dia.*	*SFNo.*	*Cont.*
1	Gallienus	APPOLONI CONS AVG, pegasus	Ant.	–	253–68	–	frag	8	1
2	H. of Constantine	GLORIA EXERCITVS, 1 standard	Fol.	–	335–41	–	15	1	1
3	H. of Constantine	VICTORIAE DD AVGG Q NN	Fol.	–	341–46	–	16	7	1
4	Illegible	Illegible	–	–	3rd/4th	–	14	4	1

TABLE 16: Coins from MK354, Mill Close South.

MEDIEVAL COINS AND TOKENS

Barrie J. Cook

Two medieval coins from MK619 and four from MK618 are listed below, followed by nine post-medieval coins and four tokens from MK618. The majority of the MK618 coins were unstratified, although most post-medieval coins were found in the area of post-medieval occupation. The references are to North 1980 and 1991, and Seaby 1992.

Silver

1 Cut halfpenny, Short Cross coinage class 4b (1198–1205), moneyer Meinir, mint Canterbury (North 968/2).

MK44/96/F229; pond fill.

Virtually all the Short Cross issues disappeared from currency in 1247. This piece is relatively though not extremely worn, suggesting a deposit date some time in the early years of Henry III. One must stress that for single items, and cut fractions above all, the assessment of deposit dates is a matter of probabilities: a coin could easily be kept out of circulation for a while, which would distort the evidence of wear.

2 Cut halfpenny, Short Cross class 5bi (1205–10), moneyer Adam, mint uncertain (moneyers named Adam worked at London, Winchester and Northampton during class 5) (North 970).

MK618/10765/49; unstratified.

This piece was deposited between 1205 and the end of the Short Cross coinage in 1247. It is not very worn, which might indicate a deposit date in the second or third decades of the thirteenth century.

3 Cut farthing, Short Cross class 5 (1205–10), moneyer uncertain, mint Winchester (North 970).

MK618/11415/594; medieval plough soil, Period 2/1.

As a Short Cross piece, this must have been deposited before 1247. It is difficult to make any more definite statement for a cut farthing, but as it does not seem excessively worn, it probably does not come from the very end of the Short Cross period.

4 Cut farthing, Long Cross class 3 (1248–50), moneyer Henri, mint uncertain (moneyers of this name operated at five mints during class 3) (North 986–988/1).

MK618/10039/2; topsoil.

As a Long Cross coin, this was deposited between 1248 and 1279, when the type was demonetised.

5 Penny, Edward II, class $10cf_5$ (*c.* mid 1309 to late 1310), Canterbury mint (North 1043/1).

MK618/11031/194; unstratified.

Edwardian sterling pennies were never properly demonetised and plenty remained in currency into the late fifteenth century. This specimen is slightly worn and was probably deposited *c.*1320–1340.

6 Halfpenny, Edward III, Third 'florin' coinage (1344–51), London mint, (North 1131).

MK44/65/+; unstratified.

As the silver coinage experienced a weight reduction in 1351, one might expect that issues of the Florin coinage must have been deposited before that year. However, hoard evidence shows otherwise, at least for pennies, and the lesser denominations might have survived in currency even more easily. As the coin is damaged rather than heavily worn, a deposit date of around the middle decades of the fourteenth century can be suggested.

Copper

7 Halfpenny, William III, First issue (1695–98) (Seaby 3554).

MK618/10251/2; topsoil.

8 Farthing, George I, 1720 (Seaby 3662).

MK618/10252/2; topsoil.

9 Halfpenny, George II, Old Bust (1741–54) (Seaby 3718–19).

MK618/10040/2; topsoil.

10 Halfpenny, George II, Old Bust (1741–54) (Seaby 3718–19).

MK618/10090/2; topsoil.

11 Halfpenny, George II, Irish coinage, Old Head type, dated 1760 but only issued in 1762 (Seaby, *Coins of Ireland*, 6610).

MK618/10577/2; topsoil.

12 Farthing, William III, second issue, 1699 (Seaby 3558).

MK618/10594/2; topsoil.

13 Farthing, probably William III.

MK618/11032/37; unstratified.

14 Uncertain, possibly late seventeenth to early eighteenth-century farthing.

MK618/10008/1; topsoil.

15 Uncertain piece.

MK618/10937/64; unstratified.

Tokens

16 Farthing token of the Blue Coat Boy Inn, Basinghall Street, London. This token probably dates from the 1650s or 1660s, and would have been deposited before 1672, when private tokens were prohibited.

MK618/10430/2; topsoil.

17 Mid seventeenth-century farthing token, otherwise illegible. This token was probably deposited between *c.*1650 and 1672.

MK618/10091/2; topsoil.

18 Elizabethan counter. Obv: Crowned Tudor rose between ER, with legend REGINA BEATI. Rev: phoenix, with legend SOLA PHŒNIX MVNDVS. The purpose of these counters is unclear. They may have been reckoning counters like Nuremberg jettons, but officially provided for use by royal servants.

MK618/10001/6001; topsoil, Area 3.

19 Uniforce lead disc with rose design but no legend, probably sixteenth century. Purpose unknown.

MK618/11454/661; field drain fill.

THE POTTERY

POTTERY KILNS I (MK44, F74) and II (MK357)

Nicola King

Details of the excavation of these structures and associated features are dealt with elsewhere in this volume (p.46 and 54). The products of the kilns have been described by Marney (1989, 95). This section contains a description of the kilns, their structure and furniture, and comparisons with those at Wavendon Gate and their products (Williams *et al.*, forthcoming).

KILN I

Structure (Fig. 22)

This was a small up-draught kiln of La Tène III-derived near-surface form, constructed with turves and using portable prefabricated furniture (Type F4/5 Swan 1984; Type IIA Woods 1974). The following section describes the various parts of the kiln in the sequence used by Swan (*ibid.*, 29).

The kiln was aligned roughly north-west to south-east. The stoking area or stoke-pit was a shallow, elongated rectangular scoop 0.8 m long and up to 0.45 m wide. It was approximately 0.1 m deep at the western end and sloped upwards towards the east. In surface-built and sub-surface kilns, stoking would be carried out in this area.

The flue was dug to a depth of 0.3 m, and was approximately 0.75 m long. Burnt clay was visible in the section cut through the fill, but burning was not noted on the floor. Burning of the kiln walls was apparent at the mouth of the flue. In single-chambered kilns this was where the fire burned. The existence of a second flue or exhaust-vent to the west may be indicated by an extension of about 0.1 m from the circular base, but any further trace of this had been destroyed by Ditch F109. Exhaust-vents were used to control the draught through the kiln, and could be opened or closed as necessary.

An oval depression 1.5 × 1.2 m formed the oven-pit (Plate 21), the base of which measured 1.35 × 0.95 m. It was cut to a depth of up to 0.4 m below subsoil level. A 0.55 m dia. raised area formed the base of a pedestal, either prefabricated or created *in situ*, to support the oven floor.

The fragments of fired clay recovered from this kiln were not *in situ*, but intermingled with the fill. Therefore, interpretation of some aspects of the kiln is tentative. Kilns of this type (Swan 1984, 177) usually had a clay lining to the kiln-chamber. Much of this material probably represented the remains of this lining. A few fragments survive which are smoothed on one surface and retain the impression of the material onto which they were placed on the other. These are up to 30 mm thick. The rough rear surfaces bear the impression of straw or grass fragments, indicating that the inside of the turves was also clay-lined. Some fragments are curved and smoothed on both sides. These are up to 80 mm thick, and may be part of a clay capping. A few fragments have two smoothed faces set at right angles to each other, and may come from a continuous applied clay ledge running around the inside of the kiln to support the kiln bars. A few fragments bear the impression of wooden stakes, perhaps used to support the structure before firing. Most of the material is too badly fragmented to allow further comment.

A few fragments of burnt clay were recovered from the fill of Ditch F109. They were too small to show whether or not they derived from the kiln.

Portable Kiln Furniture

"Portable" is used in this context in the sense that kiln furniture was made outside the kiln and could be re-used. Pedestals, kiln bars and other plates, spacers, props and flue furnishings were generally made on site from the same materials used for pottery, often with grass tempering. This practice had its origins in the La Tène III period, and in Britain is found preceding permanent kilns of Roman type which were introduced as a result of the Roman conquest.

Pedestal

The raised area in the centre of the oven pit indicated that a pedestal was used. An integral "waisted" pedestal is a possibility here. No evidence for a prefabricated kiln pedestal was recovered.

Kiln Bars (Fig. 109)

Fragments of four kiln bars were recovered. They were all grass-tempered and of square or rectangular profile, and belong to the class of clay slab bars described by Swan (1984, 64). Assuming the taper on **1** to have been symmetrical, the overall length of the bars was about 350 mm. It is

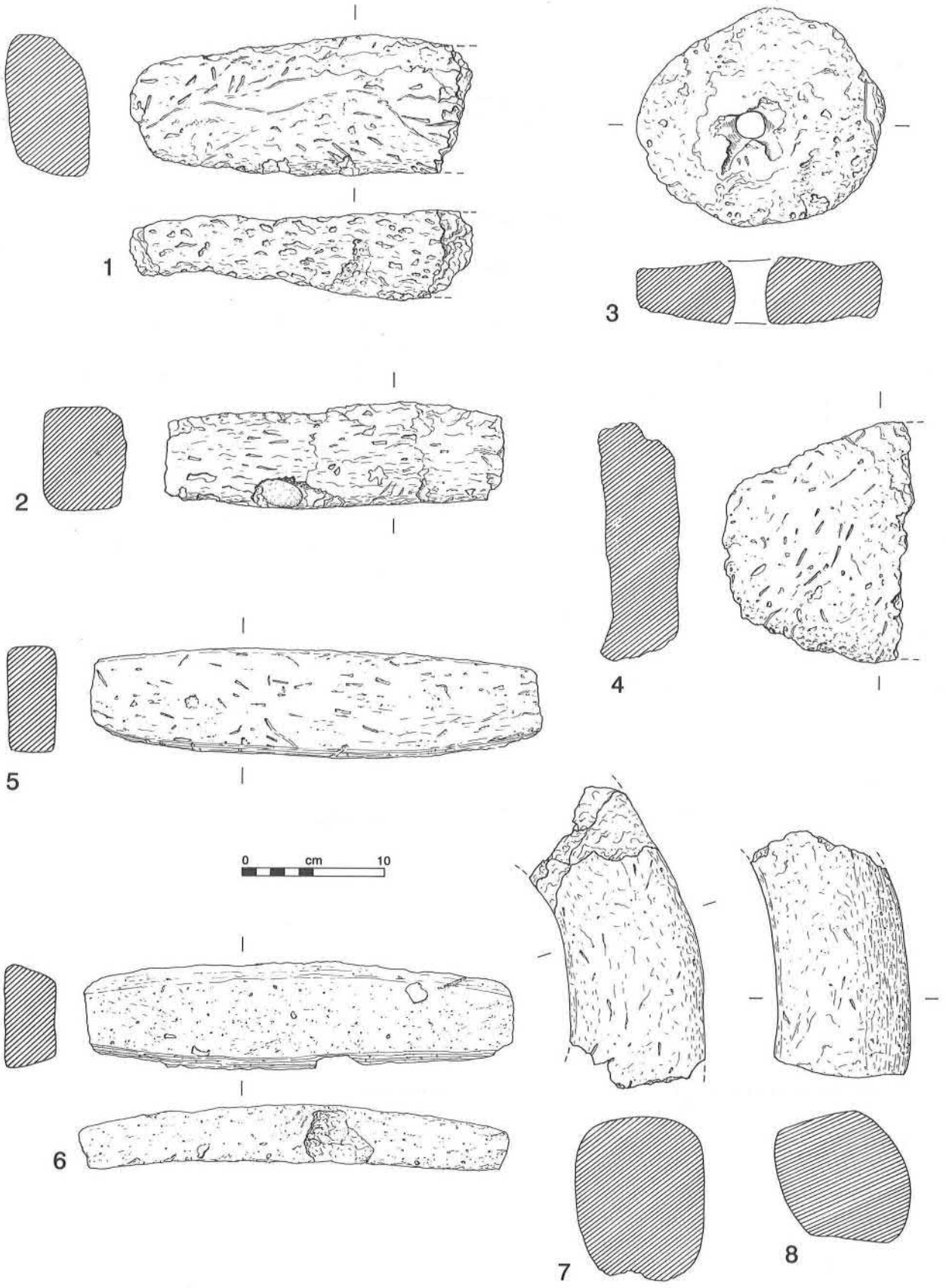

Figure 109: Kiln furniture from Kiln I, 1–4, and Kiln II, 5–8 (scale 1:4).

likely that the bars were arranged radiating from the central pedestal, although other arrangements were possible. Two are illustrated:

1 Rectangular profile. Surviving length 240 mm, tapering from a central width of 96 mm to approximately 70 mm at the end. Thickness 56 mm.

2 Squared profile. Surviving length 245 mm, max. width 70 mm, thickness 58 mm.

Clay Plates (Fig. 109)

The precise use of these plates is unknown (Swan 1984, 64). It is probable that they fulfilled several functions, including spacing the pots, supporting the load to be fired and spanning the gaps between kiln bars. One complete example (**3**) and fragments of five others were identified from this kiln.

3 Complete, roughly circular pierced plate. Oxidised grass-tempered clay. Dia. 150–175 mm, th. 43 mm, central hole 22 mm dia.

One trapezoidal fragment of calcite- and grass-tempered unperforated plate (**4**) was also recovered. It had one smoothed surface and a pottery sherd embedded on the rear. The function of this fragment is unknown. However, it is not overfired as might be expected of portable flue lining material.

4 Fragment of polygonal plate. Fabric very rough with grass tempering. Width 170 mm, tapering to 95 mm. Th. 50 mm.

Other Burnt Material

Four burnt stones, including a large fragment of split quartzite river pebble, two pebbles and a fragment of ironstone were recovered, all locally available materials which may have been used structurally in the kiln. A report on charcoal samples recovered from Kiln I appears elsewhere in this volume (p.222).

KILN II

In the upper part of the block containing the kiln was one complete kiln bar and one fragment, and part of a sub-circular clay ring. Associated with these were several pottery sherds. The disturbance made it impossible to describe the kiln structure. The use of portable kiln furniture suggests that this kiln was of the La Tène III-derived near-surface type.

Portable Kiln Furniture

Examples of kiln bars, pierced clay plates, unpierced clay plates and a substantial sub-circular clay ring were recovered. These were all in the tradition of La Tène III-derived portable kiln materials. The clay ring (**7, 8**) is unusual but does not fall outside the scope of this class of material.

Kiln Bars (Fig. 109)

The kiln bars all appeared to be of a type different from those found in Kiln I. Compared with the latter examples they were thinner, narrower and tapered towards the end. This type is similar to the kiln bars described as "small wedge-shaped" in the Wavenden Gate report. As the width of the Caldecotte bars is generally twice their thickness they can also be classified as "clay slab bars" (Swan 1984, 62).

Only two complete examples (**5, 6**) were found, but it is clear from the many fragments recovered from the kiln and Ditch 6 that a range of sizes was represented. All kiln bar end fragments were tapered. The end widths ranged from 37–80 mm, and thicknesses from 13–37 mm. Body widths ranged between 51–95 mm, and thicknesses from 25–46 mm. Both complete examples were about 300–320 mm in length. All fabrics were similar in appearance, the main divisions being between those that were sand-tempered alone, and those that had additional inclusions. Quite large pebbles of quartz and flint were found in some fragments. It was noted that many bars had cracked at one of these large inclusions, suggesting that the break was caused by the difference in expansion or contraction between the clay and the inclusion. A thin-section analysis was undertaken of one kiln bar from Layer 5 (Marney 1989, 100), verifying that the kiln furniture was made of the same sandy fabric as much of the coarser pottery. Unfortunately, no comparison was made between those from Layer 10 and the pottery.

The arrangement of the kiln bars within the kiln was dependant on the position and type of the pedestal (Swan 1984, 62). Bars of different lengths could be used to span different gaps between the pedestal(s) and the kiln wall. Without evidence for the kiln pedestal no further comment can be made about Kiln II. The bars show no evidence of having been plastered into position.

Clay Plates

Three pierced clay plate fragments were recovered from Layer 11. However, none was complete enough to reconstruct its dimensions. Fragments of unpierced clay plate were found in Layers 3, 8 and 10, and one complete curved plate was present in Layer 10. The function of this is unknown, but it was probably used as blocking material to stabilise the kiln load.

Clay Ring (Fig. 109)

Fragments of a large heavy clay ring segment (**7, 8**) in a reduced fabric were found in Layer 5. As Marney (1989, 100) stated:

"A finished edge . . . suggests that it had never been a complete circle. Due to its fragmentary state its dimensions are difficult to measure, but it would have been approximately 500 mm around the outer circumference, 90 mm high and 110 mm wide. The upper surface and sides are fairly well finished, the under surface is rough. Its use in the kiln can only be guessed at, although the fact that the underside of the segment was poorly made suggests that it rested upon this face and thus had been used horizontally in the kiln."

Fragments of similar material were also found in Layers 8 and 10. These may belong to similar objects, but were too small to make further comment possible. The potential uses of the clay ring as a stacking ring or spacer within the kiln are discussed by Marney (1989, 100).

COMPARISON OF THE CALDECOTTE AND WAVENDON GATE KILNS

The common ancestry of all four kilns in the La Tène tradition is revealed in the use of portable kiln furniture. The evolution of La Tène III-derived kilns and their role in the manufacture of pottery in Britain before and after the Roman conquest is discussed in Swan (1984, 53–58), and will not be repeated here. Similarities and differences between the four kilns were manifest in the kiln furniture, and are summarised in Table 17.

As knowledge of the variety of structures found within essentially similar kilns increases, it is apparent that the distribution of types of kiln and kiln furniture is not localised within small areas. This may indicate a continued intermingling of potters operating outside the major industries and specialisations.

	Caldecotte I	*Caldecotte* II	*Wavendon Gate 400*	*Wavendon Gate 599*
Pedestal	central	?	twin slab	central
Plates	pierced	pierced, with clay ring	pierced	pierced
Bars	squared	slab	squared and wedge	wedge
Ledge	in kiln	?	in kiln	?
Lining	clay	?clay	clay	clay
Walls	turf	?turf	turf	turf

TABLE 17: Comparison of Caldecotte and Wavendon Gate kiln furniture

COMPARISON OF CALDECOTTE AND WAVENDON GATE POTTERY

Marney (1989, 96) suggested that the pottery from Caldecotte Kiln I, dating from a time shortly after the Conquest, was probably produced by potters with affinities to Hertfordshire, and was destined for use by military personnel at *Magiovinium*. It was noted that kiln products did not make a substantial contribution to the pottery assemblage of MK44. However, it should be noted that excavation may have missed the occupation area associated with the industrial features. Therefore, the pottery assemblage may be biased against pottery used and disposed of in entirely domestic contexts. The pottery from the Wavendon Gate kilns has been dated similarly, and on that site, which was more thoroughly excavated than MK44, the major kiln products were found in a relatively high concentration in features associated with occupation. No direct parallels in forms from *Magiovinium* were noted. Parminter (forthcoming) describes the range of products from Wavendon Gate as seeming 'very similar to Caldecotte I products' in both fabrics and forms. She suggests that the similarity in vessel types occurring at both sites may signify 'external influence over production'.

KILN MATERIAL FROM OTHER CALDECOTTE SITES

One fragment of a grass-tempered baked clay plate was recovered from MK351. It was very similar in appearance to those from Kiln II, and was 29 mm thick. No other trace of kiln material was located during this very brief rescue excavation, so it is impossible to say how this find relates to the other material from the Caldecotte area.

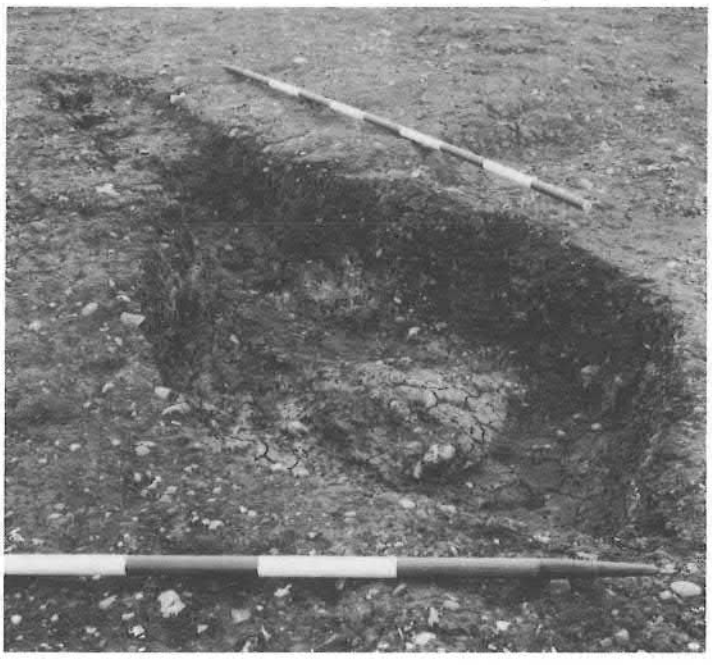

Plate 21: Pottery Kiln I, from the north-west (*MKAU*).

BELGIC AND ROMAN COARSE POTTERY (MK44, MK117, MK618)

Yvonne Parminter

INTRODUCTION

The following report deals principally with material from excavations in Berrystead Close (MK44) and Mill Close (MK117), though a small amount of material from Roman features beneath the medieval village (MK618) was also examined.

A large amount of the ceramic assemblage from Berrystead Close has already been published as part of a wider study of Belgic and Roman pottery in the Milton Keynes area (Marney 1989; abbreviated in this report to 'RBP'), either as specific dated groups or as part of the catalogue of local fabrics and forms. This material is referred to where necessary, with figure and illustration numbers. Consequently, no sherds from this site are illustrated in the report.

The whole pottery assemblage from the above Caldecotte sites was examined for this report. Fabrics were compared and sorted using the Milton Keynes fabric series, and because detailed descriptions of these appear in the above volume, they are not repeated here. Any requiring further description or explanation have been included with details of the vessel. 'Belgic' pottery was compared with vessels in Thompson (1982; abbreviated below to 'IT') and was found to consist of standard forms, particularly those from Zones 7 (Herts. and the Chilterns) and 8 (the Northwest).

Two pottery kilns were located in Berrystead Close. Kiln 1 (MK44, F74) dated from the mid first century and Kiln 2 (MK357) from the later first to mid second. Both produced 'Belgic' forms in fabrics which evolved from coarse to fine grog and eventually to sandy types. Kiln 1 vessels were in the fine grogged red fabric 46m together with the more common 46a, and those from Kiln 2 in later 46 group fabrics (46g, 46j, 46n, 46p, 46qr), the grey sandier group 47 and 3c, 3gj and 3n, with black ware 9xy and the cross-fabric 46x2 and 2b. Possible products of both kilns were present in many features on the site, and some of the pottery and fired clay from the enclosure ditches of MK117 may have originated from Kiln 1. Detailed descriptions of the kilns appear elsewhere in this volume (p.179ff).

BERRYSTEAD CLOSE (MK44)

As much of the material from this site has already been published (RBP), the scope of this report has been limited to describing the ceramic evidence which relates to the feature groups detailed in the excavation report (p.36ff). A full version of the pottery report and a summary of the dating evidence, covering all the site contexts that contained pottery, is retained in the site archive.

The pottery used to date the principal feature groups is listed below primarily by feature. While many features were excavated as a single context, or had only one fill that contained pottery, material from the more productive features is listed by context. To assist the reader in understanding the significance of the context descriptions, the following explanation is offered:

In 1978, major contexts were recorded as 'features' and given a feature number in a continuous sequence from 1 preceded by the letter 'F'. For features with a single fill, this is the only distinguishing number. For features with more than one fill, each successive fill was given a number in a new sequence for each feature. For example, F101/1 is the upper fill of Ditch 101, F135/4 is the fourth fill of Pit 135, and so on. In the case of ditches and gullies, a letter prefix to the fill number (eg. F9 A/1, F10 C/3) indicates the section from which the fill was excavated. Layers such as soil spreads or metalled surfaces were numbered in the same sequence, prefixed 'L'. In 1979 and subsequent seasons a number in a single numerical sequence was given to each separate context, so that a feature would be given one context number, and each fill of it a different context number in the same sequence. Thus, earlier fills will have a higher, but not necessarily consecutive, number than later fills.

One problem encountered in studying this ceramic assemblage was the presence of Saxon and medieval sherds in the upper fills of many of the undoubtedly Roman features. This phenomenon, not encountered on other Milton Keynes sites, could be accounted for in either (or both) of two ways. The first is that the Roman features did not fully silt up until well into the medieval period. The second is that intense agricultural activity over the site disturbed the upper fills of the features, possibly because they were not fully silted up. Whatever the reason, the presence of this post-Roman pottery is consistent across the area and timespan of the excavation, and therefore has been omitted from the following descriptions.

Enclosures

Area 2

Ditch 39; Context 399 contained first-century fabric 46a jars.

Ditch 151; Context 152 was a recut with second-century grey ware sherds and a fabric 9a 'pie' dish. A single fabric 2a sherd could be third century. Fill 163 had a second-century fabric 46p lid-seated jar (RBP, fig. 35.38) and a fabric 41e bowl. Context 266 produced two fabric 46a bases, one with basal holes, a 46p jar and 17b flagon, dated to the second or early third century.

Ditch 218; Contexts 180 and 267 were dated to the second to early third century, with a complete fabric 1a jar, a 9a lid-seated jar, 41h and 2a sherds and second-century samian. Context 267 had late first to early second-century sherds only. Context 333 had a later second-century fabric 1a jar. Contexts 390 and 437 contained mid to later first-century pottery; sherds and bases in fabrics 46d/a, 46a and 46m, a 46a lid-seated and a 1a jar with a slashed rim.

The Gullies

Gully 99; Context 100 dated from the late first to the late second century. Most vessels have been published (RBP Figs 25.24; 29.4.25.31.23; 32.41; 35.38), but fabric 2a jars could date to the third century. Samian from this context was Trajanic.

Gully 129; A fabric 46a base from Context 130 was first-century in date, but Context 288 contained a fabric 1a vessel, and sherds of fabric 46a.

Gully 131; Context 229 contained a fabric 17a pedestal base (RBP, fig. 42.22). Contexts 132 and 161 contained only sherds in fabrics 1a and 9a, both of which could date from the first to the fourth century.

Gully 133; Pottery from Context 134 dated from the mid first century, with fabric 46a and 46m jars.

Gully 167; Sherds from Context 168 were of first-century fabrics 45 and 46a, and second-century fabric 3a, with fabric 1a jars. Context 204 had mid to later first-century sherds in fabrics 46m, 46d/a and 46a.

Gully 178; Context 179 produced Iron Age and fabric 1a sherds.

Gully 193; Context 194 had a single cordoned 47k jar, dated to the later first to second century.

Gully 229; Context 230 had a fabric 1a jar, and sherds of fabrics 9a and 46a, dated from the later first to the late second century onwards.

Gully 257; Pottery from Context 258 was dated to the mid first to late second century, and consisted of a fabric 46m jar, a 46a storage jar and later 1a and 9a sherds. Context 272 contained a later second-century fabric 9a lid-seated jar, and first-century sherds.

Gully 262; Pottery from Context 265 included a fabric 46m jar with 46a and 1a sherds, all of late first-century date. Contexts 274 and 275 were dated to the first century, and included a fabric 46d/a lid and a 46a storage jar with a chip of samian in 274, and Hadrianic/Antonine samian, late first to second-century jars in fabrics 47a and 9xy, the latter lid-seated, a base in fabric 9e/14 and 46qr sherds in Context 275.

Gully 284; Context 285 contained first and second-century sherds, with Antonine samian.

Gully 369; Context 370 contained mid to later first and second-century pottery, including fabric 46d/a and 1a jars, a 3a base and Nene valley grey ware sherds.

Gully 397; Context 398 included pottery from the mid/later first and early second centuries, consisting of a fabric 46a grooved base with basal holes, latticed sherds, and sherds in fabrics 46m and 47a.

Area 3

Ditch F115; the upper layer contained a second-century fabric 1a lid-seated jar and second-century 43f sherds, while the primary fill had a late second to third-century 1a shelly ware jar.

Boundary Ditches

Ditch F9; (1) included 3a 'pie' dish sherds which joined others from Gully F7/A1. F9 (2) contained some second-century pottery, 47j and 47dg base and sherds with a C45 Oxford bowl, *c*.240–400+ (Young 1977, fig. 58) and (3) later first to second-century fabric 9xy and 41h sherds, and a 46a storage jar. In A1 two complete 9xy lids/bowls which could have been products from Kiln 2 (RBP, fig. 39.13), and local black ware 9a sherds, were dated to the late first to second century. There was also a first-century samian counter. From F9/B1 came a second-century 9a latticed deep bowl (RBP, fig. 29.1), and C1 had an Oxford M1 mortaria in fabric 18c, dated *c*.100–150 (Young 1977, fig. 18), and a 46p neckless jar of similar date, with joining sherds in both D1 and E1. D1 pottery was mostly of mid second-century date, including some complete vessels. These were a 47dg neckless jar, two lid-seated bowls in 46p and a 3a shallow bowl, together with first-century 46a and 46m wares, and Trajanic and Flavian samian. E1 contained Iron Age sherds and first-century samian, with mid first to mid second-century sherds and lid-seated jars in 1a, 9xy and 46p. F1 included first and early second-century sherds only, while in G1 were 9xy poppy-head beaker sherds, a complete small 47ab jar, a second-century Verulamium region latticed bowl and one handled flagon. Several vessels from this group have been illustrated (RBP, figs 32.44; 43.3; 44.36). the Samian from F9/G1 was Trajanic/Hadrianic.

Ditch F10; Pottery from (1) and (2) dated from the mid first to the early second century with jars in fabrics 1a, 46 group and 47dg, many of which have been illustrated (RBP, figs 24.2; 25.32; 31.21.32; 34.1.5.2; 36.52–55.61; 50.8) and profiles of a 3c jar, a 1a lid-seated and a first century fabric 45 bowl (RBP, figs 31.9; 35.39.40). F10/B1 pottery dated from the later first to the early second century, with a 46p carinated cup, a narrow necked 47a jar and a 46a lid-seated jar (RBP, fig. 35.28). F10/C1 contained a 3a grey ware ovoid jar and a complete 46qr lid/bowl, dated to the later first to mid second century, and a 46p biconical jar/flask of post-conquest date (RBP, fig. 36.64). F10/C3 had a single miniature 46qr lid-seated jar, dated to the mid second century (RBP, fig. 35.26). F10/D1 pottery was of mid first-century date, with 46m sherds, an 18a flagon, probably from the Verulamium region, jars in 46a, 46p and 9a, and 47a sherds. F10/D2 had one 47a sherd, while D3 contained mostly first-century material, including 46qr and 18a sherds and a 46m platter, possibly from Kiln 1 (RBP, fig. 34.7). F10/E1 pottery consisted of late first to

mid second-century sherds and jars in 1a, 47a and 47dg, with joining sherds of a CAM 113 beaker dated *c.*40–90. F10/F1 had a slightly larger group, much of which has been illustrated (RBP, figs 34.14; 35.29.34.41.46.48.49; 36.62.73; 37.80). The remaining vessels from this context were in fabric group 46 and IT forms B1–6, B3–4, C5–1, G1–1, G1–12 and G4, all of which dated from the mid first century. Early second-century sherds were present also, including a 9f jar, a 4c mortarium rim and a sherd of barbotine-dot beaker which joined with that from F10/G1. The samian was Flavian in date. Pottery from G1 was mixed, consisting of a mid first to early second-century 18a barbotine dot beaker (RBP, fig. 43.12) with second-century fabric 3a jars and bowls and 1a lid-seated jars, with a possible Colchester 23a roughcast beaker rim. The samian was first-century in date. F10/H1 had a larger group of mid first to early second-century vessels in fabric groups 46 and 47 (RBP, figs 24.5; 31.2; 32.50; 34.9; 35.50; 36.60), lid-seated jars in 1a, 47p and 46q, an imported 18h jar and 18g Oxford cream ware sherds dated up to the mid second century. The samian was first century to Hadrianic in date.

Ditch F27; Fill A1 had 1a and 46k sherds, a Nene valley colour-coat beaker base and a 28c jar, mostly of second to early third-century date. F27/B1 was similar, with fabric 6 colour coat and 1a sherds B2 included second-century sherds and late Antonine samian. C1 produced first-century bowls in 46a and 46m, a wide shouldered bowl (RBP, fig. 34.16) and an IT D1–4, together with late second to early third century sherds in Nene valley rouletted colour coats and a 3a jar, while the samian was Antonine.

Ditch F68; Fill A1 had mid/late first-century pottery with possibly later 1a sherds. In F68/C1 two 1a jars, one lid-seated, and a 3n white-slipped bowl were dated to the second or perhaps early third century. D1 pottery was of second-century date, including a 14a bowl and Nene valley fabric 12 grey-ware sherds.

Ditch F72; A1 had a mid first-century 46m jar with a 9a base, and a late second-century 47a 'pie' dish. F27/B1 included a 46a storage jar and 9e/14 and 25/30 second to third-century sherds, while C1 had Hadrianic/Antonine samian and a second-century 14b beaker jar. Fabric 46p and 47c jars from F27/D1 were of mid second-century date, while E1 contained fabric 6 colour-coat sherds and a 1a lid-seated jar, which were of late second-century date.

Ditch F89; Pottery from A1 was dated to the early second century, including a 47a wide mouthed jar (RBP, fig. 32.42) and three other jars, two 47a and a 9b. B1 had 9a second-century latticed sherds and a bowl, while in C1 were sherds in 1a, 9a and 18c, dated from the later first century. The samian was Antonine. F89/D1 had Verulamium-region sherds, a first-century 46a butt beaker, a second-century 1a lid-seated jar and beaker in 17e, while the samian was Hadrianic/Antonine. E1 also had second and third-century pottery, including a Nene Valley grey ware jar, decorated colour-coat sherds, a Rhenish ware beaker, and a 47a dish. F1 was similar in date, with more Nene Valley colour-coated wares, a late second-century 'pie' dish in 3gj, and a third-century 2a storage jar.

Ditch F108; Fill A1 had 46a and 9xy mid/late first to second-century dishes and jars, but the pottery was predominantly of late second or early third-century date, including 3k poppy-head beaker sherds, an indented fabric 6 beaker and a 9a 'pie' dish. B1 also had second-century pottery, including bowls in fabrics 47a, 3c with a white slip and 15a 'London' ware with 1a and 9a lid-seated jars, and a third to fourth-century BB1 flanged bowl. C1 pottery was of second-century date, and included a 14a dish (RBP, fig. 41.14), a Nene valley pinch-necked flagon (RBP, fig. 45.20), 1a lid-seated jars and dishes in 14b and 9a, with an Oxford flanged bowl dated *c.* 240–400+ (Young 1977, fig. 59) and Hadrianic/Antonine samian. D1 had second-century vessels only, a 3c beaker and a 25/30 poppy-head beaker, with first-century and Trajanic samian. F108/E1 vessels dated from a first-century 46a jar to a 3gj second-century bowl, while pottery from F1 was dated to the later second century, with a 3a 'pie' dish and 9a latticed sherds, and the samian was Antonine. G1 had a double-rimmed jar (RBP, fig. 30.1), carinated sherds and lid-seated jars in 3a, 3n and 9a, a 3a late second-century 'pie' dish and a third-century Nene valley indented beaker and sherds. H1 vessels had a wider date range; two dishes have been illustrated (RBP, figs 29.9; 50.17), while the remaining pottery included 9a, 9j and 15a bowls, a Nene Valley Castor Ware box and jars and sherds which dated from the early/late second into the third century, while a grey 36 Hadham jar was dated to the third century onwards. H/K1 had a 47k reeded rim bowl (RBP, fig. 31.8) and J1 had joining sherds of the H1 Hadham jar and third-century vessels, including a 2a storage jar, a 17a indented beaker, Oxford red slipped sherds and 1a jars. The samian was late Antonine. K1 pottery was dated to the late first to late second century, with Verulamium region sherds, fine group 14 grey wares and 47a sherds with an orange finish, a 1a lid-seated jar and Nene valley colour coat sherds. A 47a bowl in K/J was dated to the second century.

Ditch F186; Fill A1 contained a large group of pottery dated from the second to the third century, with late Antonine samian. A bowl, indented beakers and a Castor ware box rim have already been illustrated (RBP, figs 25.30; 29.30; 45.6.12.13). Second-century forms present were 3n and 9a jars, 4a cream Oxford mortaria sherds, an 18a Verulamium region flagon and a 9g/12 platter. Vessels in first century fabrics 46a and 46d/a were present with pale grey ware sherds, possibly *terra nigra*. Fill A2 was mostly second century in date with 12, 14b, 43ae and 47c sherds and a single 1a jar. Pottery from Fill A3 consisted of a large group from which seven second-century vessels have been published (RBP, figs 29.13; 33.25; 35.30; 41.16.20; 46.4) The remaining vessels included 1a and 47 group jars and a base, a fine grey group 14 jar and beaker, a 25/30 bowl, group 3 jars and sherds, 41h and 9b bowls, 19e/14 poppyhead beaker sherds and a Nene Valley beaker rim, base and sherds. The latest pottery consisted of third-century pink grogged wares 2a and 2g. Fill A4 included two published jars in 46dg and 47dg, (RBP, fig. 31.26.31) and no pottery was later than mid second. Other vessels present were a 43ae carinated bowl, 1a lid-seated jars, jars in 46qr, 46k, 47a, 47j and 2g, and the samian was dated *c.* 60–75.

Pottery from Fill B3 was second century in date, and similar to A4 with 1a lid-seated jars, a 43ae lid and jars in 46p, 46a and 47a. The samian was of late Antonine date. Fill B4 included a published jar (RBP, fig. 32.49) and the assemblage was of later first to early second-century date, with 1a and 46a jars and 47c sherds, part of a pot in C3.

In Fill C3 were jars and a reeded-rim bowl in fabrics 1a, 3a ,3gj and group 47, a 14a beaker, a dish and bowl in 9a and 9f, together with Nene Valley colour-coat beaker bases and a Castor ware box rim. This group all dated to the second or early third century. Also present were lid-seated and carinated jars in group 46 fabrics, dated late first to mid second century, while the latest vessel was a third-century Rhenish ware beaker. The samian assemblage was of Antonine date. C3 had Neronian to late Antonine Samian and vessels which joined others in fills A3 and B4, six vessels from

this group were already published (RBP, figs 24.6.7; 35.31–33.45). Other vessels present were mid first-century 46m jars and second-century 46 and 1a jars and sherds, while the latest was a small white-slipped grey ware jar in Hadham fabric 36, dated at the earliest to the third century. C4 contained some first-century sherds but mostly second-century.

Ditch 40; Fill 47 contained a second-century 41k rouletted beaker and 46dg sherds. Fill 239 had 46a, 1a and 47a sherds dated to the first and second centuries.

Ditch 53; Pottery from Fill 54 was of late second to third-century date, with 2a pink grogged ware jars. Lower fill 62 had first and second-century sherds only.

Ditch 58: Primary fill 313 contained a few first-century sherds and second-century grey wares, a 47j bowl (RBP, fig. 31.7) and a fabric 12 jar. The samian was of first-century date.

Ditch 80; Fill 81 included a mid first-century 46a lid-seated jar with a slashed rim, and a single grey ware sherd.

Droveway

Gully F30; Fill A1 had second-century sherds, a 3k jar and a 1a lid-seated jar, and the samian was of Antonine date. Fill B1 had a single 3a black-slipped dish dated to the late second century, with mid first-century fabric 46m and second-century 41h sherds, and Antonine samian. In Fill B2 was a second-century 3a jar. In C1, a 17a globular beaker with 1a and 9a jars was dated to the second to third centuries, and the samian was of Trajanic and second-century date. Pottery from Fill D1 was dated to the late second century with a 1a lid-seated jar and 47j jars, while other sherds were predominantly in second-century fabrics. Pottery from Fill E1 was dated to the second century with a fine grey ware 14c unguent jar, a 28/25 pedestal base, an Oxford 4a white ware mortarium flange and an 18a reeded-rim jar, but a 2a base may have been third century or later. The samian was Flavian, Hadrianic and Antonine. F1 had pottery of similar date, including first-century samian. Dishes in 9f and 25/30 have been published (RBP, figs 29.23; 50.14). The remaining pottery was second century in date, including 1a lid-seated and storage jars, an 18c flanged bowl, a 43f jar and a 17b beaker which may have dated as late as the third century. Fill G1 had previously published 9a bowls, one with latticed decoration (RBP, fig. 29.7; 30.4). Some vessels joined pots in F1 and were mostly of second-century date, or perhaps earlier third century. The samian was Hadrianic and Antonine. Fill H1 had a later second-century 41h jar and 9a dish and sherds, while J1 contained a 1a lid-seated second-century jar.

Gully F219; This was a southward continuation of F30 in Area IV, and contained second-century ceramics, including a 47dg lid-seated jar and sherds in fabrics 41d and 41h.

Gully F31; Sections A and B contained Iron Age sherds, though the assemblage from Fill A1 was of late second to early third-century date, with a 1a lid-seated jar and Nene Valley colour-coat sherds. Fill B2 had 14c second-century sherds with residual Iron Age pottery, while C1 was mixed in date, including a 46m mid first lid-seated jar and second-century 19/29 base and 14/33 bowl. Fill C3 contained a 17e jar of second to early third-century date with 1a sherds, and D1 had a second-century 1a lid-seated jar and 18a flagon sherds. A late second-century 17c indented beaker was found in E1, while a joining sherd in F1 has been published (RBP, fig. 42.13). Other pottery included a 1a lid-seated jar, an 18c Oxford flagon dated *c.*100–240 and jars in 9a, 25/30 and 1a. Fill G1 had second-century pottery including the remains of two beakers, a globular 9a and 25/30 poppyhead with a 14c jar. Fill H1 had 1a and 9a sherds, which could date from the later first to the fourth century. J1 had 1a sherds, and Trajanic/Hadrianic samian.

Gully F47; This was a continuation of F31 in Area IV and contained a few 9a sherds and a 1a second to third-century jar.

Ditch F41; Fill C1 contained second-century pottery, including 18a amphora sherds, probably from the Verulamium region, a globular 3a beaker and bases and sherds in 9a, 14c, 28c and 46qr. Fill D1 had second-century 28a-d and 3n sherds only.

Gully F46; was a continuation of F41 in area IV. In (1) pottery sherds and a single 9a jar dated to the later second century. Pottery from B1 was dated to the later first to second century, and in C1 sherds in 46a and 1a were no later than mid second century.

Occupation Evidence

Depression F187; Pottery was mixed in date. Second-century vessels were a 23b roughcast beaker, a 47a dish and lid-seated jar and a 9a 'pie' dish, with an Oxford red-slipped flagon form C8, dated *c.*240–400+ (Young 1977) and pink grogged jars in 2a and reduced 2g. The samian was dated mid to late Antonine.

Layer L180; This contained pottery from the late first/early second to the third and fourth centuries. Fabric 46a and 46k wares dated first to early second and grey ware sherds in groups 14 and 47, a 9a lid-seated jar and 'pie' dishes in 9a and 14b and Nene valley colour coated beaker and Castor box dated from the second into the early third century. A single colour coat sherd with barbotine decoration, which may have been Rhenish or from central Gaul, and Oxford red slipped sherds, fabric 2a jars and a single BB1 sherd extended the dating from the third to the fourth century. The samian was Trajanic, Antonine and late Antonine.

Gully 113/346/394; This possible hut gully produced mid second century pottery from Fill 114, a 46p jar and 46a, 1a and 47a sherds. Fill 347 had late first to second and possibly early third-century pottery, a 17e beaker, 46a and 9a sherds. Pottery from Fill 395 consisted of fabric 1a sherds and a colour coated beaker, possibly a southern Gaul import in fabric 7a, dated from mid second to mid third century.

Industrial Activity

Hearth F32; Fill 1 pottery was dated to the late second century, with a 1a lid-seated jar and a 41h 'pie' dish. Fill 2 contained a single 1a sherd.

Ditch F62; Fill A1 contained four published vessels (RBP, figs 31.14.17; 43.14; 44.31), a 3a bowl and indented beaker with some second-century sherds and Oxford red-slipped sherds, dated from the late third onwards. The samian was of late first and second-century date. B1 had second-century pottery, a 1a lid-seated jar, a Verulamium region 18g base and sherds and 41d and 17d sherds, with second century samian. C1 had sherds only in fabrics 1a and 3a, dated first to fourth, and in A/B1 was a 37 Hadham ware base, dated to the third/fourth century, while the samian was of second-century date.

Gully F90; A fabric 41d dish was published from Fill A1 (RBP, fig. 51.18). Other pottery from this context included bowls in

various forms and fabrics, an 18c with a flange, a 41m bowl/cup which joins sherds in C1, a 17b carinated type with a rebated rim and a 47dg 'pie' dish, sherds, bases and 1a jars dated to the late second and third centuries. Fill B1 had a few late first and second-century sherds, while in C1 were a 3a latticed 'pie' dish, more sherds of the C1 41m cup/bowl, and bases and sherds in second-century fabrics, while the samian was Antonine. D1 had a late second/early third-century cup/bowl in fabric 17a, an 18a flagon base and a mica-gilded shallow dish and sherds with first-century and Trajanic samian.

Gully F91; Fill A1 had a late second-century 18c reeded-rim bowl (RBP, fig. 43.17), a 1a lid-seated and 9a jars, a 14/33 bowl and Trajanic/Hadrianic samian. Pottery found in B1 was similar in fabric and date, with the addition of Nene Valley colour-coat sherds which may have been later. B2 contained a 3a lid and 1a lid-seated jar dated to the late second century, while the samian was first-century and Trajanic. Pottery from Fill C1 dated from the early to the later second century, with a poppyhead beaker (RBP, fig. 41.11) and a chamfered-base BB1 dish, but a 17a narrow-necked jar may have dated into the early third. The samian was of late first-century and Flavian date. D1 contained a lower Rhineland beaker sherd and a 3a jar with second to third-century sherds. Fill E1 included sherds and a single 3k dish dated to the second century, with first-century and Trajanic samian.

Gully F111; Fill A1 contained second-century wares (RBP, figs 43.4; 51.9) in fabrics 18c and 41d and a 25/30 poppyhead beaker which joined sherds in B1 and Ditch F52/A2. Pottery from B1 was similar in date, with a late second-century 3a 'pie' dish and 1a lid-seated jar, but a 1a storage jar, pink-grogged 2a, Rhenish ware and possible Alice Holt sherds were dated from the mid third century onwards, and the samian was Trajanic. Fill C1 contained second-century sherds only, and part of an open bowl with curved sides in an easily abraded fabric, similar to pink grogged ware but with a gritted or roughcast finish (fabric 2f). Sherds from the same bowl were found in F114/C1 and F119/D1. The samian was Flavian. Pottery from Fill C2 consisted of early second-century sherds. From D1 came a 17b globular beaker, dated to the second to early third centuries, while D2 had second-century sherds only. From E1 a second-century lid was published (RBP, fig. 24.11) and other pottery included 1a lid-seated and 3a jars with a fabric 25/30 fine narrow necked jar and Trajanic samian.

Gully F119; Pottery from Fill A1 was second-century in date, with 46p sherds, grey wares 14/33 and 25/30, a late second-century lid-seated 9a jar and a 23a Colchester beaker. Fill B1 had parts of the same vessels as A1, together with sherds of the 2f bowl found in F111/C1, and sherds of fabrics 31 and 38, which may have indicated a third-century date. The samian was Trajanic and Antonine. C1 contained second to third-century pottery, 46qr and 18 group jars and bases, a 14/33 white-slipped jar, but the latest ware was pink grogged fabric 2a. The Samian was Antonine. A first-century cream ware base from an imported vessel, probably Gallo-Belgic, came from both C1 and D1 fills and D1 contained more sherds of the 2f roughcast bowl from F111/C1 and F119/B1, together with mid second-century sherds and late third to fourth-century fabric 24 Oxford red-slipped sherds.

Gully F131; Fill A1 had bases in several fabrics and forms; an 18g unguent jar, a 3k footrim, and simple 18a and 3a jars and sherds, all second-century in date. B1 sherds were in fabrics 1a, 3a and 3k, dated from the first to the fourth century.

Other Features

Pit F11; Fill (1) contained a second to early third-century Verulamium region flagon, a grey fabric 12 bowl and 9a platter (RBP, figs 29.18; 44.26; 46.1), together with a third-century, or later, 2a pink grogged ware storage jar with stabbed decoration, and a jar in the Kiln 1 fabric 46x2, with 'Belgic' shoulder cordons. The whole layer was considerably mixed, with a number of first-century 46 group 'Belgic' jars, second-century finer grey wares in fabric groups 14, 47a, 3a and 9a, the rim and sherds of a BB1 third/fourth century dish, sherds in 17a and 17b, oxidised Oxford sherds and shelly 1a jars. The samian was Flavian to late Antonine. (2) contained earlier pottery which included two bowls, a BB1 dated *c.*180 onwards, a 14a jar (RBP, fig. 41.1) and 18a flagon sherds. However, later wares were common, including pink grogged ware jars, Oxford red slipped wares and local 9a dishes and jars which dated from the third to fourth century. The Samian was Antonine/late Antonine. (3) contained vessels and fabrics dated from the second century, consisting of a BB1 sherd, 14c fine grey wares, some later 46 group jars and a 17b rouletted beaker sherd with joins in (4), which may have dated as late as the early third century. The pink grogged jar in this group was part of the 46x2 jar in (1). All the pottery in (4) was of second-century date, except the 17b beaker sherd with joins in (3), while the samian was mid to late Antonine.

Ditch F165; Fill A1 contained a large group, much of it dating from mid first to mid/later second century, with bowls and jars in local grey- and black-ware fabric groups 3 and 9 (RBP, figs 28.13.27; 29.15; 30.6; 34.3). First-century 'Belgic' wares included a 46a lid-seated jar and 46m carinated cup, while a 47a carinated cup/bowl, 46p and 46qr jars, a globular 17e beaker and 1a lid-seated jars dated to the later first to late second century. Rims in 46x2 fabric with grooved and cordoned sherds were likely to be later first to second century in date, and the samian was Trajanic. Fill A2 produced a 1a lid-seated jar and groups 46, 3 and 9 sherds, probably dated to the late second century. B1 pottery consisted of a 3gj bowl, a 9a carinated dish, a group 47 pedestal base and jar, a 46qr dish and a 17c roughcast base (RBP, figs 28.11; 29.8; 32.43.54; 34.12; 42.21) and dated from the mid first to mid second century. The remaining pottery included bowls, lid-seated jars and many sherds in fabric groups 3, 9 and 47, and the samian was Flavian and late Antonine. B2 had second-century pottery only: a large latticed fabric 19/29 jar, a 47ab globular beaker (RBP, figs 30.24; 31.27) and a 9g/12 late second-century 'pie' dish, 19/29, 9a, 1a and 3a jars and a considerable number of late first to mid second-century sherds. The samian was of first-century date. B2/3 had a second-century 47ab beaker and a 9a shallow-rimmed jar, and B3 pottery was mostly second-century grey wares in fabric groups 47 and 14, with a first-century 46d/a lid-seated jar. C1 had Flavian samian, and pottery dated to the mid second century, with a 4g Verulamium region mortaria stamped MELUS 1 (*c.*90–140), a 17c flagon, a 46qr jug and a 47k lid-seated bowl (RBP, figs 32.53; 36.63; 42.9). D1 had Antonine samian, a mid second-century 46p bowl and lid-seated jar, a 46qr bowl (RBP, fig. 34.20) and decorated 2a jar sherds. D2 contained an 18c spouted strainer (RBP, fig. 43.25), lid-seated jars in 46p and 1a, with sherds from a 2a jar dated third/fourth century. With this group was a fired clay object, handmade and grey in colour which may have been a piece of kiln furniture. Three vessels in E1 are already illustrated; a 3a 'pie' dish and jar and a 46p lid (RBP, figs 28.10.30; 34.23). There were also a mid second-century 14b lid and bowl, and a 47a jar. Fill E2 had one 46p jar and later first to second-century fabric 46a, 1a and 47c sherds. F1 pottery was mixed in date, with part of the same 2a jar as D1, a fine grey sherd, possibly *terra nigra*, several mid first-century 46a, 46m and 46x2

sherds, and a later second-century 9a lid-seated jar. G1 pottery was second century or later; a 47ab jar (RBP, fig. 32.39), footrims from 2d and 41m jars and bases and sherds in 28a-d. H1 had a second-century 41h dish, and the rim and girth sherds of 46a storage jar.

MILL CLOSE ENCLOSURE (MK117)

(Figs 110, 111)

Most of the pottery from this area was 'Belgic', in group 46 grogged ware fabrics, most of which were red-surfaced. The repertoire was typical of mid-Buckinghamshire sites, Thompson's (1982) zones 7 and 8. The majority of the vessels were wheel-thrown and dated from the mid first century, with fabrics 46a, 46d/a, 46m and 46x2, or later first to mid second, with fabrics 46k, 46p and 46qr. Fabric 46x2 can sometimes be similar to fabric 47a but the forms were first century in date:

Lid-seated jars:	46a, 46d/a, 46m, 46x2, 46k.
Simple jars:	46a, 46d/a, 46m, 46x2.
Lids:	46a, 46d/a, 46m.
Bowls:	46d/a, 46m, 46p.
Barrel butt beakers:	46a, 46d/a, 46m.
Rippled sh. jar:	46qr.
Storage jar:	46a.
Large finer jars:	46a, 46d/a, 46k, 46qr.
Dishes:	46d/a.
Girth beaker:	46a, 46d/a, 46m, 46x2.
Carinated cups:	46a, 46d/a, 46m, 46x2.
Butt beaker:	46a, 46p.
Base drilled holes:	46a, 46m.
Narrow necked jars:	46x2, 46qr.
Cordoned jar:	46a, 46d/a, 46m, 46p, 46qr.
Slashed rim jars:	1a, 46a, 46k.

Enclosure Ditch 4

Most contexts had first-century or 'Belgic' pottery only, with a total sherd count of 2359, including 362 rims and 145 clearly identified vessels. The relationship between Kiln 1 products and MK117 vessels and the similarity of some forms and fabrics cannot be overlooked. However, other forms were not in the Kiln 1 repertoire, although most were of the same date, so that there may have been another kiln undiscovered nearby. However, some vessels did show signs of use, domestic or otherwise, with abraded and worn patches, and some showed signs of heating, with blackening or soot remains.

Section A: Context 60b contained the rim of an Iron Age bowl (**21**). Contexts 7 and 16 contained a sooted 9a lid-seated jar, a 46m lid and sherds dated from the later first to the later second century. Contexts 21 and 22 included a 46x2 jar and the sherds and base of a 46p cordoned bowl, with some later second-century sherds.

Section B: this assemblage included a late second/third-century 2a storage jar.

Section C: Contexts 15 and 23 included first to early second-century fabric group 46 and 1a sherds, with a 46k footrim, and fired clay. In Context 30 there were Iron Age sherds only.

Section F: Contexts 69 and 88, contained 46a sherds. From Context 94 came a Verulamium region sherd, and from 84, a C51 Oxford red-slipped flanged bowl, dated *c.*240–400+ (Young 1977, fig. 59) and 1a shelly storage jar.

Sections D, E, H, G and J: these were close to each other, and joining parts of several vessels came from different cuts, but all forms were of first-century date, suggesting that much of the pottery had been dumped simultaneously as fill along the ditch area.

Section D: Context 65 contained eleven jars in fabric group 46, ranging from the first to the early second century, lid seated jars, a decorated barrel butt beaker, a bead-rim jar form IT C1–2 (**17**) and dish, with a considerable quantity of fired clay. Context 71 had a 46a storage jar rim, base and sherds with an Iron Age bowl rim (**16**), and 74 included first-century sherds. Context 75 had first-century vessels only; a 46a jar (IT B3–2), a storage jar rim and sherds, a 46d/a coiled bowl (IT G2–2; **14**) and a 46m base with drilled drainage holes (**13**). Context 83 had a 46qr IT B3–6jar (**11**) and 46d/a sherds, with a 46a abraded and sooted storage jar and sherds.

Section E: Context 72 contained sherds of fabric group 46, dated first to early second century, pottery in 'Belgic' forms, a carinated cup, a rounded girth beaker, lid-seated jars and bases, with a large decorated latticed girth beaker with hollow cordons (IT G4) and a large jar in 46x2 (**15**), a 1a lid-seated jar, a thick corrugated sherd (possibly tile), and fired clay pieces. Context 80 contained similar 46a sherds and clay. Context 81 had a 46x2 narrow-necked jar with shoulder cordons and jars and sherds in 46m, 46d/a and 46x2, and two jars in Context 87 were in 46a. Context 89 had a 1a lid-seated jar and base and jars in 46x2, 46d/a 46m and fired clay, while Context 90 was first century in date with jars in 46a and 46x2, a carinated cup in 46a and a neckless barrel jar in 46a (**10**).

Section H: Context 109 had much fired clay debris, 46d/a sherds, a 1a lid- seated jar with a slashed rim and 46a cordoned jar rims, a storage and six simple jars. Thompson forms were a G4 46m girth beaker and E1–2 46d/a cup and lid and several vessels which joined others in Context 110, Cut G. Context 111 had a large group of first-century pottery, mostly in fabric group 46, although there was a single 1a coiled lid-seated jar with a slashed rim. Neckless jars, a decorated and a plain barrel butt beaker (**8**), a Thompson E1–2 carinated cup (**2**) and G4 girth beaker were in fabric 46m (**6**), a Thompson B1–5 jar in 46d/a, a B1 46a jar, a tall carinated 46m cup (**24**) and large handmade neckless jar in 46x2 (**27**) and a 46m carinated cup/bowl with constricting grooves, form IT E2–2 (**25**). Twenty-eight simple jars were in fabrics 46m, 46a (**7**), 46x2 and 46d/a (**5**), some with cordoned shoulders, together with lid-seated forms in 46m, 46a, 46x2 and one with a slashed rim in 46k (**1**), a 46a storage jar, and numbers of sherds, pedestal bases and footrims in the group 46 fabrics. A small 46m pedestal base (**4**) and a 46x2 carinated cup, IT E1–1 (**26**) were finely made, with a coiled 46d/a bowl (**3**) and a quantity of fired clay. Context 115 had an Iron Age rim (**29**) and, with Contexts 117 and 118, had sherds in 46a and fired clay. 118 also had a 1a slashed rim jar.

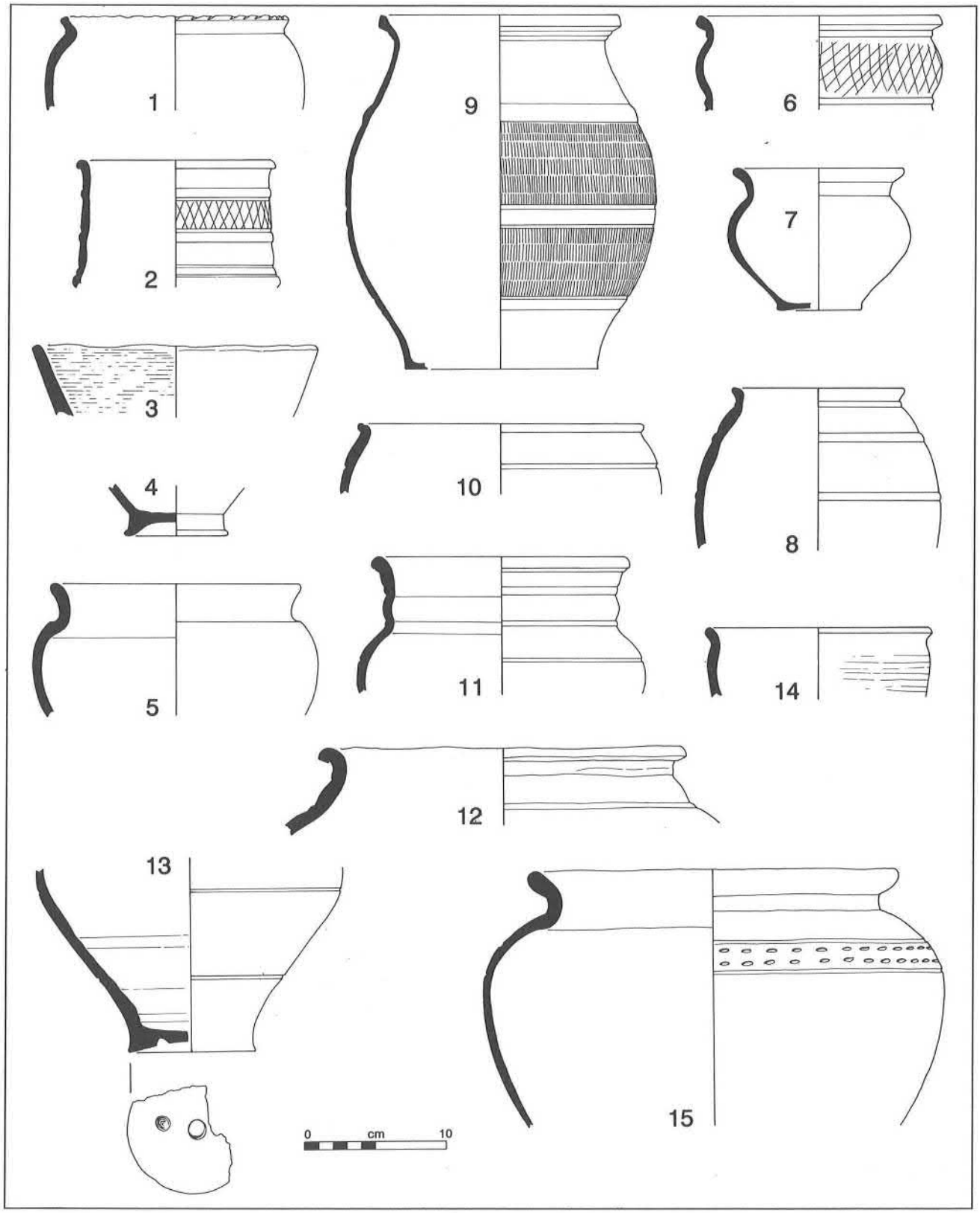

Figure 110: Pottery from Mill Close Enclosure, MK117, 1–15 (scale 1:4).

Section G: Context 86 had large and lid-seated jars in 46a and 46qr, 46a handmade combed sherds, abraded storage jar bases and a pedestal base, with a Thompson B3–10 47a jar (**12**). In Context 96 were a 1a slashed rim and storage jar and base, a 46x2 lid-seated jar, and simple 46d/a jars. Context 106 contained sherds and a butt beaker in 46a. Context 107 included 1a and 46a storage jar sherds, ten jars in 1a, 46a, 46d/a, 46x2, again with fired clay or 'Belgic' brick. Context 110 contained fabrics 46a, 46m and late 46p. Context 113 had a lid and sherds in 46a, with a Samian chip and 3a and 3c sherds.

Section J: Context 112 had 1a and 46a sherds, Context 116a an Oxford W47 flagon, *c.*240–400+, 116b a 46a jar rim and sherds, Contexts 119 and 119b a 46d/a base and 46x2 sherds, and Context 120 a 46g heavy pedestal base from a large vessel, part of which was in Context 124 (**30**), and a 46x2 sherd.

Miscellaneous Features

Feature 9; Context 31 contained 46a and 1c sherds.

Gully 13: contained Iron Age sherds only.

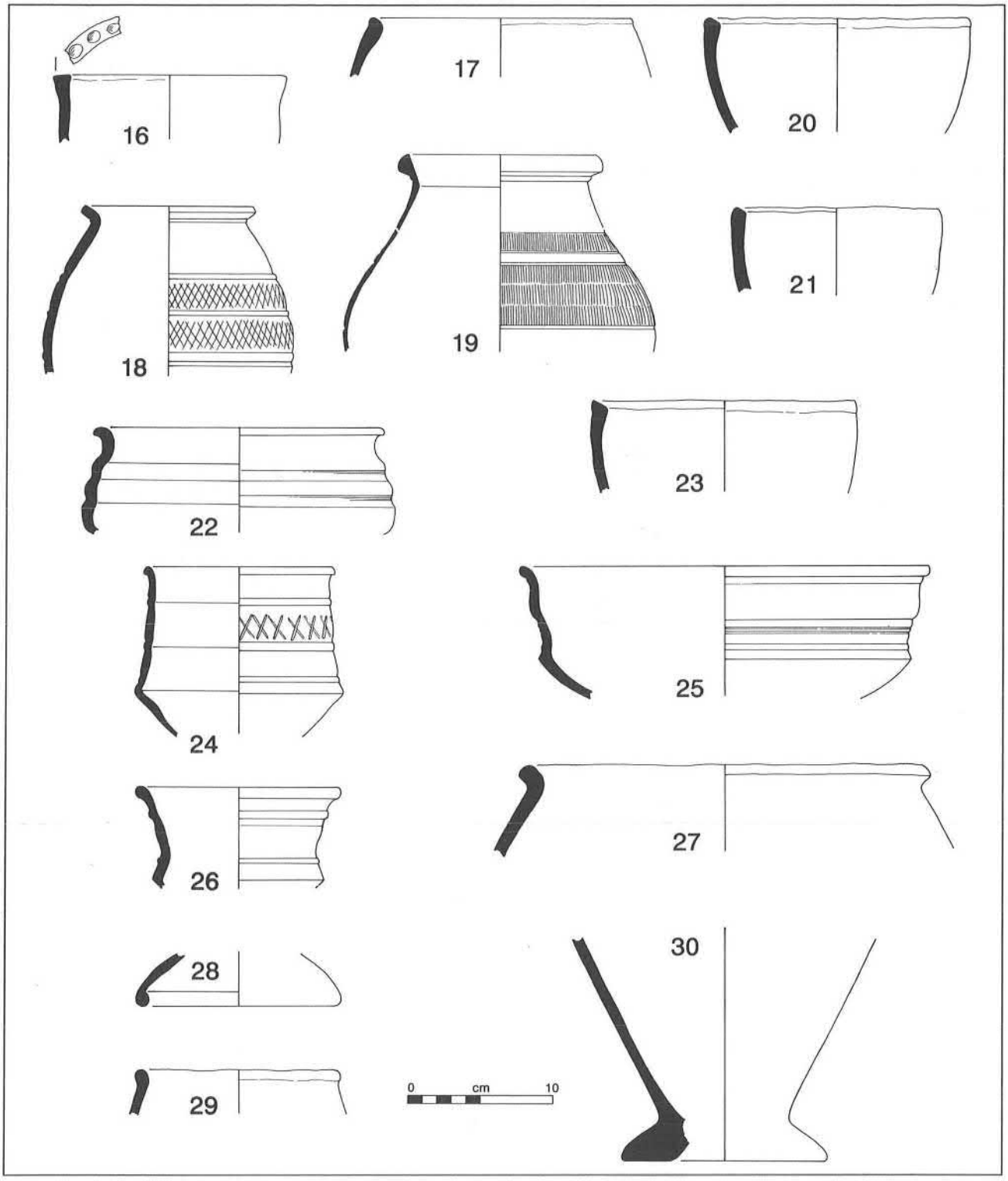

Figure 111: Pottery from Mill Close Enclosure, MK117, 16–30 (scale 1:4).

Pit 28: Context 29 contained Iron Age sherds.

Ditch 43: Context 44 contained a tiny 46a sherd from the rim of a fine thin lidded bowl or barrel, IT D3–4, paralleled at Saffron Gardens (Waugh, Mynard and Cain 1974) and mid first century in date, with 46a sherds and a 1a base. Context 45 had fragmented sherds and jars in 46a, a 1a lid-seated jar, base and bowl (**20**), 46a sherds of two storage jars, and together with Context 54 had remains of the same pots, an Iron Age bowl, latticed 46d/a and 17e sherds, and fired clay. Context 53 had 46d/a sherds, while pottery from Context 54 included a 46d/a lid-seated jar, an 18d imported Cam 113 butt beaker dated *c.*14–54, which was identified and dated by V. Rigby (**19**), a 46a decorated barrel butt beaker (**18**) and lid-seated jar. Context 60a had an unusual bowl in grey grogged fabric 46qr with a rippled body, IT E2–3 (**22**) dated to the later first century, and Context 73 had 46k sherds only.

Ditch 46: Context 25 had Iron Age sherds only.

Gully 56: contained a single fabric 1a sherd.

Ditch 66; Context 67 had 46a, 46p and 18g sherds, while Context 97 contained 46a sherds only.

Ditch 105; Context 104 had a late first-century footrim in fabric 14c.

Cremation 125: Pottery associated with the cremation included the base and girth of a 47a jar and a 9a straight-sided dish with black slip, dated to the second century.

Catalogue (Figs 110, 111)

No.	*Cont.*	*Description*
1	111	Fabric 46k? IT C5 wide-mouthed jar or bowl, neckless with shallowed rim and slashed edge with sooted exterior, wheel turned.
2	111	Fabric 46m. Straight-sided carinated cup E1–2, with lattice decoration between double body cordons, and cordon on carination parallelled at Saffron Gardens (Waugh *et al.* 1974).
3	111	Fabric 46d/a or 919 (very early Belgic). Coiled bowl, very crude with an uneven rim.
4	111	Fabric 46m. Thin IT A6 stunted pedestal base with internal thumbing, but wheel-turned.
5	111	Fabric 46d/a. Simple hand-coiled jar with an upstanding rim with girth. IT B1–5 post-conquest form, paralleled at Saffron Gardens (Waugh *et al.* 1974).
6	111	Fabric 46m. IT G4 decorated girth beaker with cordon around girth and below rim and lattice, above waist constriction.
7	111	Fabric 46a. Simple jar with traces of sooting on exterior, wheel-turned.
8	111	Fabric 46m. IT G5 plain barrel butt beaker with multiple body cordons.
9	110	Fabric 46p. Large decorated butt beaker with decorative panels of vertical lines below a wide shoulder cordon and above a girth groove.
10	90	Fabric 46a. Lid-seated neckless barrel jar with a very abraded interior and a groove above the girth, possibly an IT B5–5 of first-century date.
11	83	Fabric 46qr. IT B3–6 jar (Thompson 1982, 165 no.26) with long neck and thin constricting neck cordons forming a wide hollow cordon and fine shoulder groove. Parallelled at Moulton Park, Northampton.
12	86	Fabric 47a. Wide-mouthed IT B3–10 jar with angled shoulder, with grooves and cordon below rim and on the shoulder. The rim is distorted. Possibly later first century.
13	75	Fabric 46m. A drilled A6 base with a hollowed underside from a large vessel with a groove on the lower base wall.
14	75	Fabric 46d/a. A hand-coiled IT G2–2 bowl with a partially burnished and wiped finish. Paralleled at Saffron Gardens (Waugh *et al.* 1974).
15	72	Fabric 46x2. Everted-rimmed large jar/small storage jar with stabbed decoration around a shoulder panel.
16	71	Iron Age bowl with flattened rim.
17	65	Fabric 46a. Bead-rim IT C1–2 jar with thickened internal face. Rather crude and hand-coiled. There was a similar vessel in fabric 1a in Context 15.
18	54	Fabric 46a. Decorated barrel butt beaker with latticing between multiple body cordons and small sharply everted rim.
19	54	Fabric 18d. A Cam 113 butt beaker with rouletting between body grooves. An import, Tiberio/Claudian in date.
20	45	Fabric 1a. Hand-coiled bowl, very abraded, with thickened internal rim.
21	60b	Iron Age bowl with internally bevelled rim.
22	60a	Fabric 46qr. Rippled bodied wide-mouthed IT E2–3 cup/bowl with an everted rim. First-century in date.
23	110	Iron Age bowl with a flattened slightly internally bevelled rim.
24	111	Fabric 46m. Tall thin carinated cup with multiple body cordons and a single panel of diamond lattice.
25	111	Fabric 46m. Carinated cup/bowl with a wide mouth and grooves constricting the waist. Possibly an IT E2–2 copy of a samian form Drag. 27.
26	111	Fabric 46x2. Carinated IT E1–1 cup with faint body groove and cordon.
27	111	Fabric 46x2. Large coiled neckless jar with an everted rim and incipient lid-seating.
28	124	Fabric 9a. Lid with a rounded hooked rim and burnished exterior.
29	115	Iron Age jar with a rounded upright rim.
30	120/	Fabric 46dg. A crude heavy pedestal base from a large vessel.
	124	The fabric is friable and loose, and may have been a product of Kiln 2.

Fired Clay

Fired clay was found in Contexts 15, 45, 65, 72, 80, 89, 101, 107, 109 and 111, and in many cases the associated pottery sherds had lost their finished surface, but the fabric of both was generally similar. Averaging 16–24 mm in thickness on a finished edge, the crude but hard fabric showed in section a laminated mix with visible fold lines and inclusions of sparse quartz, some shell and black inclusions which could have been burnt organic matter, and sometimes elongated red inclusions and with smoothed or finished surfaces which were either flat or partially rounded to indicate that the whole may have been a cover, with imprints of grass or straw and often deep thumbing. Contexts 15 and 72 had pieces of a very hard possible tile, with a corrugated or combed surface and pieces of the laminated cruder fired clay. Contexts 109 and 111 contained a larger quantity of the material, most fractured but still hard and some with the smoothed surface. Context 111 also had the remains of a loom weight.

CALDECOTTE VILLAGE (MK618)

Pottery from the village area was essentially very mixed with few closely dateable sherds and was much contaminated with medieval material. The earliest pottery, from Contexts 172, 187, 283, 1617 and 1087, was in first-century 46a and 46d/a grogged fabrics. Second-century wares were sparse, consisting of a few 47 group fabrics in contexts from 1032 to 1651, some 1a shelly wares and an occasional local group grey ware 3 or black ware 9. Remains of later wares were more prevalent, with sherds of fabrics 41e and 41g and Oxford red slipped bowl and sherds, a mortaria of form C100, dated to c.300/400 (Young 1977, Fig. 67), Nene Valley colour coats and 2a pink grogged jars. Most of the assemblage consisted of small sherds only; none is illustrated.

THE SAMIAN (MK44)

G.B. Dannell and Brenda Dickenson

About 240 samian sherds were recovered from excavations in Berrystead Close (MK44), principally from Areas 1 and 3, and the southern part of Area 2. A detailed inventory (retained in the Level III site archive) was compiled by Geoff Dannell, who also reported on the decorated sherds illustrated below. A report on the stamped vessels was provided by Brenda Dickenson.

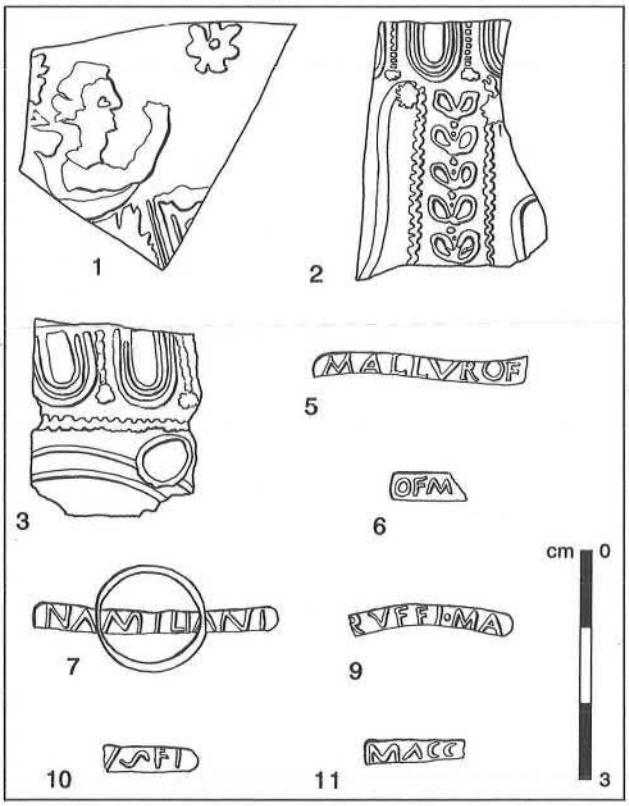

Figure 112: Decorated and stamped samian, MK44 (scale 1:1).

Decorated Sherds (Fig. 112)

1 37 CG. This piece is badly eroded. The figure appears to be D 519, with a rosette in the background, similar to that of the QVINTILIANVS style, cf. Stanfield and Simpson 1990, Pl. 69.9. *c.*125–140?

MK44/F73C1: fill of Gully F73, Area 1.

2 30 SG. GERMANVS style; he used all of the detail, cf. Hermet 1934, pl. 99.7 for the bifid, and 38 for the ovolo. *c.*65–80.

MK44/F186A4: fill of boundary Ditch F186, Area 2.

3 37 CG. The ovolo is probably, but not certainly, Rogers (1974) B 53, used by SERVVS ii. If so it is later Antonine.

MK44/180.1: fill of enclosure Ditch 151, Area 2.

Stamped Sherds (Fig. 112)

4 A·L·BI·N·I·M· on form 33 (burnt): Albinus iii of Lezoux, Die 6b (a). This stamp appears to have been used only on forms 31 and 33; one example comes from Castlecary. Other dies were used to stamp forms 18/31, 27 and 81. His wares are relatively common in the Rhineland, which received virtually no Central Gaulish samian after *c.* 150, and he is also represented by three stamps at Haltonchesters, which will almost certainly be Hadrianic, *c.*130–150.

(*Not illustrated, as the sherd could not be found, and the rubbing is too poor to trace from accurately*)

MK44/-/+; topsoil, Area 1.

5 MALLVROF on form 18/31: Malluro i of Lezoux, Die 3a (a). Malluro's stamps have been recorded from Chesters and Haltonchesters and 3a is known from Bar Hill. His range of forms includes 18/31, 18/31R, 27 and 42, but also a few dishes of forms 79 and Ludowici Tg. This means that his career will have extended beyond *c.*160, but the form of the Caldecotte vessel suggests a date of *c.*140–160.

MK44/-/F9.G1: fill of boundary Ditch F9, Area 1.

6 OFM[ONT·CR] (Ulbert 1959, no. 39) on form 18(?): Mont__ Cres__ of La Graufesenque, Die 3a (a). This is known from a few early Flavian foundations, such as Castleford, Chester and the Nijmegen fortress, but the stamp appears occasionally on decorated bowls of form 29 with decoration that is stylistically pre-Flavian. A likely range is therefore *c.*65–80.

MK44/-/+; topsoil, Area 2.

7 NAMILIANI on form 79: Namilianus of Lezoux, Die 3c (b). There is no site dating from this stamp, but it was used on form 31R and 79R, and so will have been current in the later Antonine period. Other stamps of Namilianus occur on Hadrian's Wall and at forts in its system reoccupied *c.*160. There are also several examples in the group of late-Antonine samian recovered off Pudding Pan Rock, Kent. *c.*160–200.

MK44/-/F186.A1; fill of boundary ditch F186, Area 2.

8 RVFFI.MA (Curle 1911, no. 83) on form 18/31 (2): Ruffus ii of Lezoux, Die 1a (b). A stamp noted in Antonine Scotland and in a group of burnt samian from Castleford dating to the 140s (publication forthcoming). The die was used to stamp forms 18/31R and 27. *c.*140–160. Not illustrated, but see **9** for an identical example.

MK44/-/F91.1; fill of 'channel hearth' F91, Area 3.

9 As **8**.

MK44/-/F111.B1; fill of 'channel hearth' F111, Area 3.

10]/SFI on form 18/31, Central Gaulish. Hadrianic or early Antonine.

MK44/-/L196; soil spread, Area 2.

11 MΛCC] on form 33. Not seen, but the lettering suggests Hadrianic or Antonine Lezoux ware.

MK44/-/+; unstratified.

Note:

(a) A stamp attested at the pottery in question.

(b) Not attested at the pottery in question, although the potter is known to have worked there.

References

Hermet, F., 1934. *La Graufesenque (Condotomago),* tome **ii** (Paris).

Rogers, G. B., 1974.'Poteries sigilléede la Gaule centrale, tome **i.** Les motifs non figurés', *Gallia*, Supplement 28 (Paris).

Stanfield, J. A. and Simpson, G., 1990 *Les potiers dela Gaule centrale*. Revue Arch. Sites (Paris).

SAXON POTTERY

Paul Blinkhorn

BERRYSTEAD CLOSE (MK44/619)

Introduction

The pottery assemblage from Berrystead Close, whilst small in size, represents an important group, as the few decorated sherds present suggest that the settlement is fifth-century in date, making it one of the earliest in the Milton Keynes area. The pottery is quite fragmented and scattered, but it was possible to reconstruct several vessels with joining sherds found in different features.

Fabrics

The range and types of fabrics present are basically the same as the other groups of pottery of the period in the area, minor local geological variations notwithstanding. The fabric codes used are the same as those for the Pennyland site (Blinkhorn 1993), the fabrics present at this site being as follows:

F2: Sand tempered. Moderate to heavy temper of rounded to sub-rounded white and pink quartzite up to 1.0 mm, with sparse to common grains of limestone and ironstone up to 1.0 mm.

F3: Ill-sorted, sparse to moderate temper of angular limestone up to 2.0 mm. Occasional speckling of very fine mica. Rare grains of quartzite and/or sandstone.

F5: Moderate to heavy temper of finely crushed angular to subangular quartzite up to 0.5 mm, with rare grains up to 2.0 mm. Very rare pieces of limestone up to 2.0 mm.

F6: As F2, but with predominately black iron-rich quartz up to 2.0 mm.

F7: Chaff-tempered.

F9: Very sparse temper, a very few small fragments of quartz and/or limestone/shell.

F10: Moderate to heavy temper of quartzite with subangular lumps of granite up to 4.0 mm.

F11: Moderate to heavy temper of sandstone and/or crushed metaquartzite up to 3.0 mm.

F14: Chaff-tempered with moderate common amounts of rounded quartzite up to 2.0 mm.

Fabric Analysis

The total number (by fabric) of Saxon sherds from the entire site was as follows:

Fabric:	2	3	5	6	7	9	10	11	14
No:	208	10	29	6	53	7	7	53	18

If these sherds are then amalgamated by fabric class, the results are as follows:

Class A (Crushed mineral temper) Fabrics 3, 5, 10, 11 = 99 sherds (25.3%).

Class B (Sand temper) Fabrics 2, 6, 9 = 221 sherds (56.5%).

Class C (Chaff temper) Fabrics 7, 14 = 71 sherds (18.2%).

These results are quite different from those from the early Saxon phase of Pennyland. There, the Class A fabrics formed 52.1% of the assemblage, with the figures from Caldecotte further strengthening the assertion that the variation in the proportion of pottery fabrics over time, when classified according to the physical treatment of the inclusions, does not seem to be significant in chronological terms (Blinkhorn 1993, 247).

The decorated pottery occurred in both of the fabric classes, as was the case with the pottery from North Raunds, Northants. (Blinkhorn, forthcoming b), further suggesting that the analytical technique was not relevant except in the case of the plain 'domestic' wares.

Major Pottery Groups (Fig. 113)

Area 1

Ditch F83: A single large sherd (**6**) in gritty fabric 5 was the only Saxon pottery from this feature. It is decorated with combed pendant triangles, but there is no sign whatsoever of any stamped decoration. Myres (1977, 52–3) suggests that vessels such as this are probably mid fifth-century in date, although there are examples known which continue in use into the sixth century.

Ditch F89: This feature contained two sherds worthy of note. The first is a combed sherd that is almost certainly from the same vessel as **6**, whilst the other is a basal sherd from a rusticated vessel (**1**). This method of decoration is very difficult to date, as the technique appears to have been in use throughout the early and into the middle Saxon period, for example at West Stow, Suffolk (West 1985). A sherd of this type was found in a sixth-century context at Pennyland (Blinkhorn 1993, fig. 101.15).

Layer L100: This context, a layer covering much of the interior of the moat, contained medieval sherds (p.205), and clearly overlay many of the Roman features. However, it also contained a large residual ceramic assemblage of Roman date, consisting mainly of small sherds from many different vessels. However, there were several large body sherds from a sand-tempered vessel (Fabric 2), which was highly burnished on both surfaces and was decorated with finger grooving on the upper shoulder (**3**). A rim sherd of this vessel was recovered from Ditch F108. The vessel appears to be almost certainly biconical in form, which combined with the

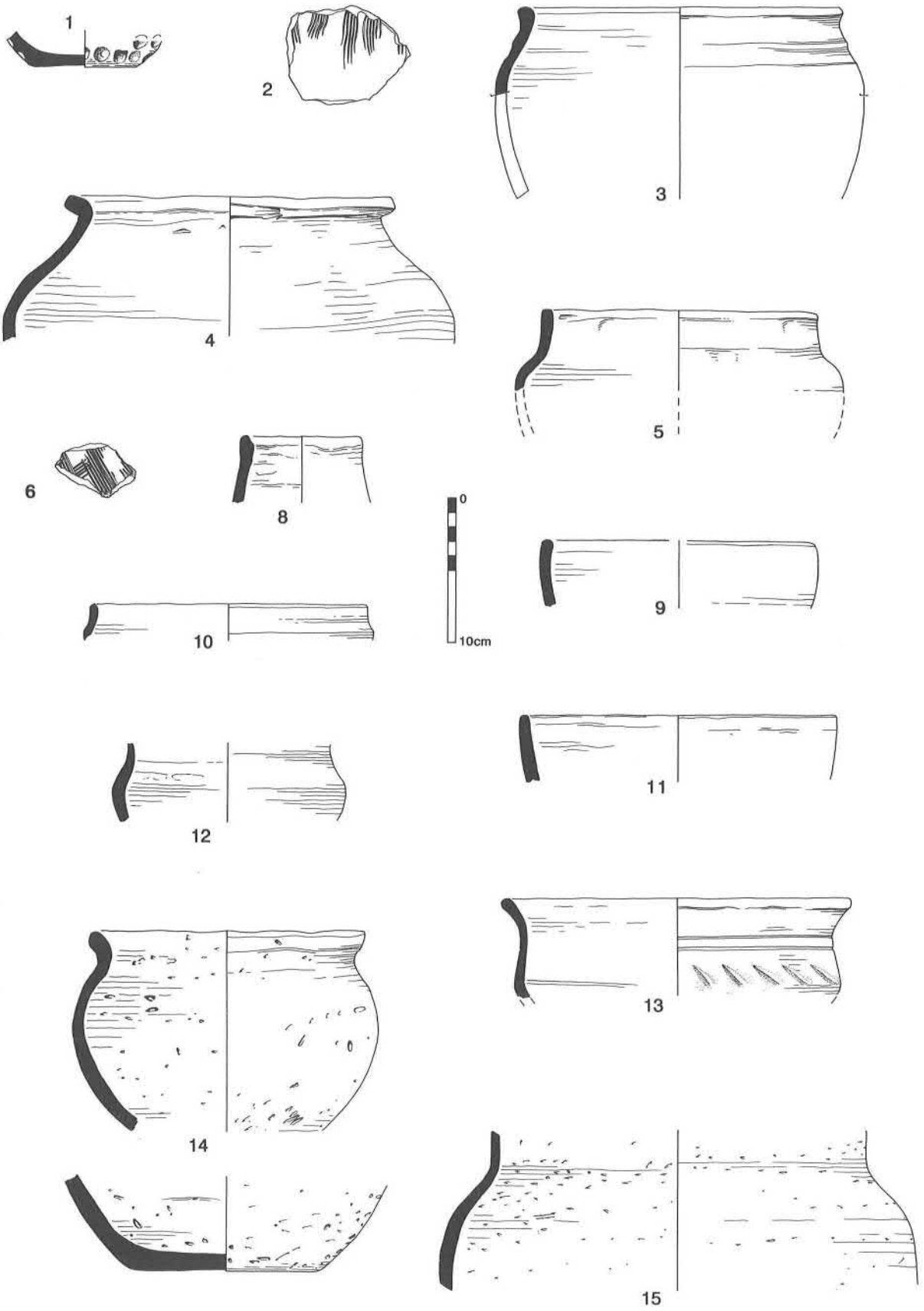

Figure 113: Saxon pottery, 1–15 (scale 1:4). Fabric 2 – 1, 3, 4, 8, 9, 12; Fabric5 – 2, 6, 10, 11; Fabric 7 – 14; Fabric11 – 5, 13; Fabric 14 – 15.

decoration would suggest that it is probably fifth-century in date (Myres 1977, 17). There is also a sherd from this feature which joins with **14**.

Ditch F108: Pottery from this feature formed a large primary assemblage (average sherd weight 19.9 g), with several reconstructable vessels. It seems likely that it represents a dump of rubbish from Pit F148, which contained several sherds which joined to the reconstructed vessels. The most complete of these was an oxidised, grass-tempered globular jar, sherds from which were found in L100, F109 and F148 (**14**). There was also a sherd of the grooved vessel **3**, one from the slashed carinated bowl **13** (see F148), and five originating from **15**.

Pit F148: This feature appears to be the archaeological focus of the early Saxon pottery from the excavated area. Without doubt, the most important vessel is slashed carinated bowl **13**, sherds of which were also found in F108 and F111. The vessel is virtually identical to that from SFB 4 at Mucking (Hamerow 1989, fig. 11.7), this form being given a generally fifth-century date (*ibid.*, 252). Myres (1986, 66) has identified this type of vessel as being both Jutish and fifth-century in origin, and whilst the majority of examples in this country are from Kent, related vessels are known from Harrold, Beds., and from the Cambridge area (*ibid.*, 68, map 5). There is an example from Orpington in Kent that is very similar in form and decoration to the Caldecotte vessel (*ibid.*, 67, fig. 4d).

Several sherds from this feature join with those from other features, for example **15**, a sandy sherd which joins with another from F188G/1, and a granite-tempered sherd which is from the same vessel as one found in L100. Twenty-seven sherds from a large storage jar in a sandy fabric (F2) were also found in this feature.

Other Features: Few of the other features which produced Saxon pottery from the site contained anything of note, except for F176, which produced eight sherds from **5**, a burnished ?carinated bowl.

Area 2

Most of the Saxon pottery from this area of the excavation consisted of small undiagnostic sherds, although there are a few worthy of mention:

8. F21. Rim sherd from a jar, fabric 2.

9. F141. Rim sherd from a bowl, sandy fabric 2.

10. F186. Rim sherd with incised cordons at the neck. Probably from a carinated bowl similar to that from F148. Gritty fabric 5.

11. F187. Large rim sherd from a bowl in gritty fabric 5.

Area 3

Only one feature in this area, Ditch F111, produced Saxon pottery. Thirteen sherds were recovered from it, three of which were from the slashed carinated bowl found in F148, and three from the large storage jar from the same feature. F111 is well over 100 m from F148, and it seems somewhat surprising that these relatively large, unabraded sherds were found so far away from the rest of the vessels. It appears therefore that either the pottery was carried down in a dump of refuse deliberately used to backfill one short stretch of the feature, or that there was an error in the numbering of some of the pottery found in the area of F148. As no other pottery of this period was found anywhere else in Area 3, and no other joining sherds were discovered more than 20 m from F148, the latter scenario appears the more likely.

Area 4

Two body sherds with few visible inclusions were found in F92 in this area, and it is difficult to be certain if they are Anglo-Saxon or Iron Age in origin.

Summary

There seems little doubt that the Anglo-Saxon settlement at Caldecotte was both short-lived and early in date. There was no stamped pottery found anywhere on the site, the decorated pottery and the plain carinated bowl all appearing to date stylistically to the fifth century. Most of the pottery found in Area 1 appears to have originated from the possible sunken-featured building F148, as many cross-joins were found with sherds from that feature, and it appears that the domestic refuse emanating from the structure was simply strewn around an area within 20 m of the building.

There is no pottery from Areas 3 and 4 which can be said with certainty to be Saxon in date. The few possible sherds from the trenches all have queries attached to them, the group from F111 (Area 3) possibly being misnumbered and the two sherds from Area 4 as likely to be Iron Age as Saxon.

Nevertheless the site is important, for it is by far the earliest domestic early Saxon settlement excavated in the Milton Keynes region, the sites at Pennyland, Hartigans and Wavendon Gate (Blinkhorn 1993; forthcoming c) all appearing to be at least a century later.

BERRYSTEAD CLOSE (MK504)

This assemblage was recovered during excavations in 1972 of a possible small post-built structure in what later became the north end of Area 2 (MK44). This was re-excavated in 1979, but no more pottery was recovered from it.

Seventeen sherds of early to mid Saxon pottery (fab. 2, 15 sherds; fabs 5 and 11, 1 sherd each) were recovered from Trench 1 (CM1). Two small rim sherds were among the group, but they are too small to be worthy of illustration. They are typical of the pottery of this period in the area, and are generally unremarkable.

Seven sherds were found in Trench 2 (C70), (fab. 2, 5 sherds; fab. 11, 2 sherds) all of which were found in the same context and were plain body sherds, except for a large rim sherd from a large jar.

SIMPSON (MK351)

The only early to middle Saxon pottery from this site consisted of four plain body sherds in fabric 5, from Context 1.

MILL CLOSE SOUTH (MK354)

This excavation yielded two early to middle Saxon sherds, both of which were plain body sherds in fabric 5.

MEDIEVAL AND POST-MEDIEVAL POTTERY

Nicola King

CALDECOTTE VILLAGE (MK618)

Introduction

The pottery recovered from excavations at Caldecotte village consists of a relatively small assemblage of medieval and later material. It has provided useful comparisons with the pottery from Great Linford, a site with a longer, more continuous lifespan, situated closer to the production centres in Northants. (Mynard and Zeepvat 1992), and with a number of other minor sites in Milton Keynes (Mynard, forthcoming).

In total, sherds representing at least 4045 vessels were examined. As at Great Linford the analysis was simple. On site, all sherds were washed, dried and marked with the site code and the number of the context from which they were recovered. The sherds from each context were then sorted into fabrics, and the total number of sherds and the minimum number of individual vessels represented was recorded. At the same time rim form, handle type, decoration and other details were recorded according to the Milton Keynes post-Roman type series. It was not possible to have the pottery drawn before undertaking this identification. However, it was not thought necessary to draw all of the rim forms, because it seemed unlikely that they would be used in the final report. All information was entered manually on recording sheets which are held in the site archive. The totals for each context were then carried forward for the analysis of the pottery from groups of features.

Medieval village house sites are unlikely to produce many complex deposits providing evidence for the relative and absolute dating of pottery. The relatively limited size of the excavations at Caldecotte, which focused on two medieval platforms and a group of post-medieval buildings on the periphery of the village, produced an assemblage which can be used to date the phases of occupation of the excavated area within broad ranges, and can also be compared with other similar sites in the Milton Keynes area.

Form and Decoration Type-Series

A type series of all the medieval and post-medieval fabrics, forms and types of decoration found in Milton Keynes is held in the Unit's archive. The type series is based on fabric, vessel type, body form, rim form and decoration. The main vessel types are identified alphabetically. Only the forms and decoration found at Caldecotte are listed here.

Forms

A Cookpot/jar
B Bowl/dish/pan
C Jug
D Cup/mug/tyg
E Flask
F Chamber pot
J Plate
R Tea pot
W Cruet/salt

A. Cookpots and Jars

These are further sub-divided by rim forms as follows:

A Fragmentary rims which cannot be assigned to other classes because, for example, they are missing their necks.
A1 Curved neck
A2 Angular neck
A3 Upright neck
A4 With little or no neck

Although several rim types could be subdivided according to variations in the rim profile these have not been tabulated, owing to the relatively small number of identifiable rims. They are held in the archive.

B. Bowls and Dishes

Three types of bowl were identified and an 'unidentified' class created for vessels which were definitely bowls, but were otherwise unclassifiable. It is notable that the earlier forms B6 and B5 identified at Great Linford were not present at Caldecotte.

B Fragmentary rims which cannot be assigned to other classes.
B1 Bowls with simple upright rims and a carinated body profile.
B2 Bowls with slightly thickened rims.
B3 Bowls with flanged rims.

C. Jugs

No complete profiles were found, but body fragments indicated that both baluster and plain jugs were present. Two types of jug neck were identified for classification purposes; many jugs were identifiable only by their narrow diameter rims or from their handles.

C Jug, neck not present.

C1 Bevelled neck

C2 Plain neck

Jug handles and those of other vessels were of the following types:

CH1 Plain strap

CH2 Strap with single groove

CH3 Strap with double groove

CH4 Rod

Some handles exhibited pre-firing treatment (or decoration) of the following types:

(a) Stabbing with a pointed instrument

(b) Thumb or fingertip impressions

(c) Stabbing and/or slashing with a knife

(d) Incised lines, possibly circles

Thus a strap handle with double groove and stabbed decoration is referred to as CH3a.

Decoration

Body decoration was rare, and decorated vessels are indicated in the discussions. Variations on four methods of application were found and are listed according to the Milton Keynes type series.

1 Finger or thumb impressions

2 Around top edge of rim

3 On an applied strip

2 Incised

4 Wavy horizontal lines

6 Slashes around outer face of rim and on upper surface

3 Applied

3 See above

9 Strips

10 Pellets with grid stamp

13 Plain pellets

4 Stamped

10 Grid stamp – see above

Fabrics

The pottery was classified according to the Milton Keynes post-Roman pottery type series and a x20 binocular microscope was used where necessary to examine the inclusions. Full descriptions of the fabrics appear in the Great Linford report (Mynard and Zeepvat 1992, 245ff). The fabric type codes for all the fabrics found at Caldecotte are listed below, together with the minimum number of vessels and percentage of the total assemblage. It was not thought necessary to reproduce the fabric descriptions here, except for those fabrics not appearing at Great Linford. The fabric descriptions below come from thin-section analysis undertaken by Anne Woods of Leicester University, unless referenced otherwise. A copy of Ms Woods' report is retained in the Unit archive. The date ranges listed for the fabrics are those of the production of the fabric.

It was found that the wet acidic soil at Caldecotte created problems with identifying some sherds. A large proportion of the calcitic material had been leached out of the sherds, giving a 'corky' appearance to the surfaces. Consequently it was difficult to assign sherds to the correct fabric on the basis of surface alone. Also, the soil had altered the structure of the fabric, as appeared when a sherd was freshly broken, because the calcitic materials had been removed from most of the sherd. The surface of some sand-tempered sherds was also altered by the soil processes. In some cases the inner and outer surfaces had been totally removed, leaving the core and margins.

Medieval Wares

MC1 Medieval shelly ware – eleventh to late thirteenth century – 298 vessels – 7%

MC3 Olney Hyde 'A' ware – thirteenth to fourteenth century – 412 vessels – 10%

MSC1 Sandy and shelly ware – twelfth to thirteenth century – 38 vessels – 1%

MSC2 No common name – thirteenth to fourteenth century – 4 vessels – <1%

MSC4 Lyveden ware -thirteenth to fourteenth century – 1 vessel – <1%

MSC6 Olney Hyde 'B' ware – fourteenth to fifteenth century – 10 vessels – <1%

MS2 Medieval coarse sandy ware – thirteenth century – 46 vessels – 1%

MS3 Medieval grey sandy ware – thirteenth to fourteenth century – 1398 vessels – 35%

MS4 Medieval sandy ware – thirteenth century – 8 vessels – <1%

MS6 Potterspury ware – thirteenth to fifteenth century – 295 vessels – 7%

MS9 Brill/Boarstall wares – fourteenth to fifteenth century – 181 vessels – 4%

MS29 Flint tempered ware – fourteenth to fifteenth century – 1 vessel – <1%

TLMS3 Late medieval reduced ware – fifteenth to sixteenth century – 15 vessels – <1%

TLMS6 Late medieval Potterspury ware – fifteenth to sixteenth century – 10 vessels – <1%

TLMS7 Late medieval Brill/Boarstall ware – fifteenth to sixteenth century – 23 vessels – 1%

TLMS9 Late medieval Brill/Boarstall ware – fifteenth to sixteenth century – 6 vessels – <1%

TLMS10 Red earthenware – sixteenth to seventeenth century – 6 vessels – <1%

TLMS13 Fine late medieval reduced ware – sixteenth century – 1 vessel – <1%

TLMS14 No common name – fifteenth to sixteenth century – 1 vessel – <1%

TLMS17 Tudor green type – fifteenth to early seventeenth century – 1 vessel – <1%

Post-Medieval Wares

Local Wares

PM8 Lead-glazed earthenwares; includes PM8, 9a, 9b, 10, 11 and 71 – seventeenth century – 553 vessels – 14%

PM5 Trailed slip-wares – seventeenth century – 42 vessels – 1%

PM37 Marbled slip-ware – seventeenth century – 44 vessels – 1%

PM20 White-slipped ware – seventeenth century – 14 vessels – <1%

PM41 Mottled brown-glazed ware – seventeenth century – 6 vessels – <1%

PM13 Black glazed, slip decorated fineware – seventeenth century – 4 vessels – <1%

PM15 Cistercian-type wares – late fifteenth to seventeenth century – 13 vessels – <1%

PM16 Black glazed coarse wares – seventeenth century – 154 vessels – 4%

PM17 Fine red earthenware – seventeenth century – 11 vessels – <1%

Source: South Northants. The composition of the matrix is similar to that of PM8 but a greater proportion of the fabric consists of larger (0.2-0.7 mm), subrounded and rounded quartz, polycrystalline quartz etc. The firing temperature was also higher than PM8.

PM38 Yellow glazed white ware – seventeenth century – 9 vessels – <1%

PM39 Brown glazed ware – seventeenth century – 2 vessels – <1%

Staffordshire Coarse Wares

PM1 Black-glazed ware – seventeenth century – 37 vessels – 1%

PM2 Buff-bodied slipware – late seventeenth to eighteenth century – 63 vessels – 2%

PM3 White-bodied slipware – late seventeenth to eighteenth century – 77 vessels – 2%

A fine, non-ferruginous fabric with well-sorted quartz, fired at a lower temperature than PM4.

PM4 Buff-bodied slipware – late seventeenth to eighteenth century – 19 vessels – <1%

A non-ferruginous fabric with abundant, poorly-sorted quartz and quartz grains. Some clay pellets also present in matrix.

PM6 Black-glazed ware – seventeenth century – 12 vessels – <1%

Fabric similar to PM1, but with less small quartz and higher iron content. Clay pellets are common.

PM14 Midland purple – seventeenth century – 12 vessels – <1%

Similar to PM1 and PM6, but also containing some sandstone.

Other English Wares

PM21 English tin-glazed earthenware – seventeenth to eighteenth century – 47 vessels – 1%

PM22 White salt-glazed stoneware – eighteenth century – 59 vessels – 1%

PM62 White-dipped salt-glazed stoneware – eighteenth century – 17 vessels – <1%

Grey stoneware body dipped into a white slip before salt glaze. A band of brown iron oxide was usually added to the rim and sometimes also to the top of the handle. Sometimes the vessels were moulded and lathe-turned (Mellor 1985, M II D8).

PM30 Scratch blue – eighteenth century – 4 vessels – <1%

PM23 Creamware – eighteenth to nineteenth century – 5 vessels – <1%

PM24 Pearlware – late eighteenth to nineteenth century – 2 vessels – <1%

PM25 White earthenware – late eighteenth to nineteenth century – 18 vessels – <1%

PM27 English porcelains – eighteenth to nineteenth century – 2 vessels – <1%

PM28 English brown salt-glazed stonewares – late seventeenth to eighteenth century – 22 vessels – 1%

PM59 Whielden-type ware – mid to late eighteenth century – 2 vessels – <1%

Imported Wares

PM29 Miscellaneous Rhenish stonewares – seventeenth century – 24 vessels – 1%

PM32 Westerwald stoneware – seventeenth century – 6 vessels – <1%

PM44 Martincamp flasks – seventeenth century – 1 vessel – <1%

Dated Groups *(Fig. 114)*

It was considered to be most useful to examine the pottery from the phases as a whole and from separate subdivisions of the phases as they occur in separate areas of the site. The site phasing is described and discussed elsewhere (p.59). A general overview is presented, then separate areas are examined.

Period 1

Minimum number of vessels: 41

Vessel types:

Cookpot: 1
Bowl: 1
Jug: 1

Fabrics in the group:

	Crofts A	B	C	D	Total
Roman	86%	33%	24%	50%	37%
MC1	-	-	14%	-	10%
MC3	14%	-	7%	-	7%
MS3	-	67%	55%	50%	44%
No. vessels	7	3	29	2	41

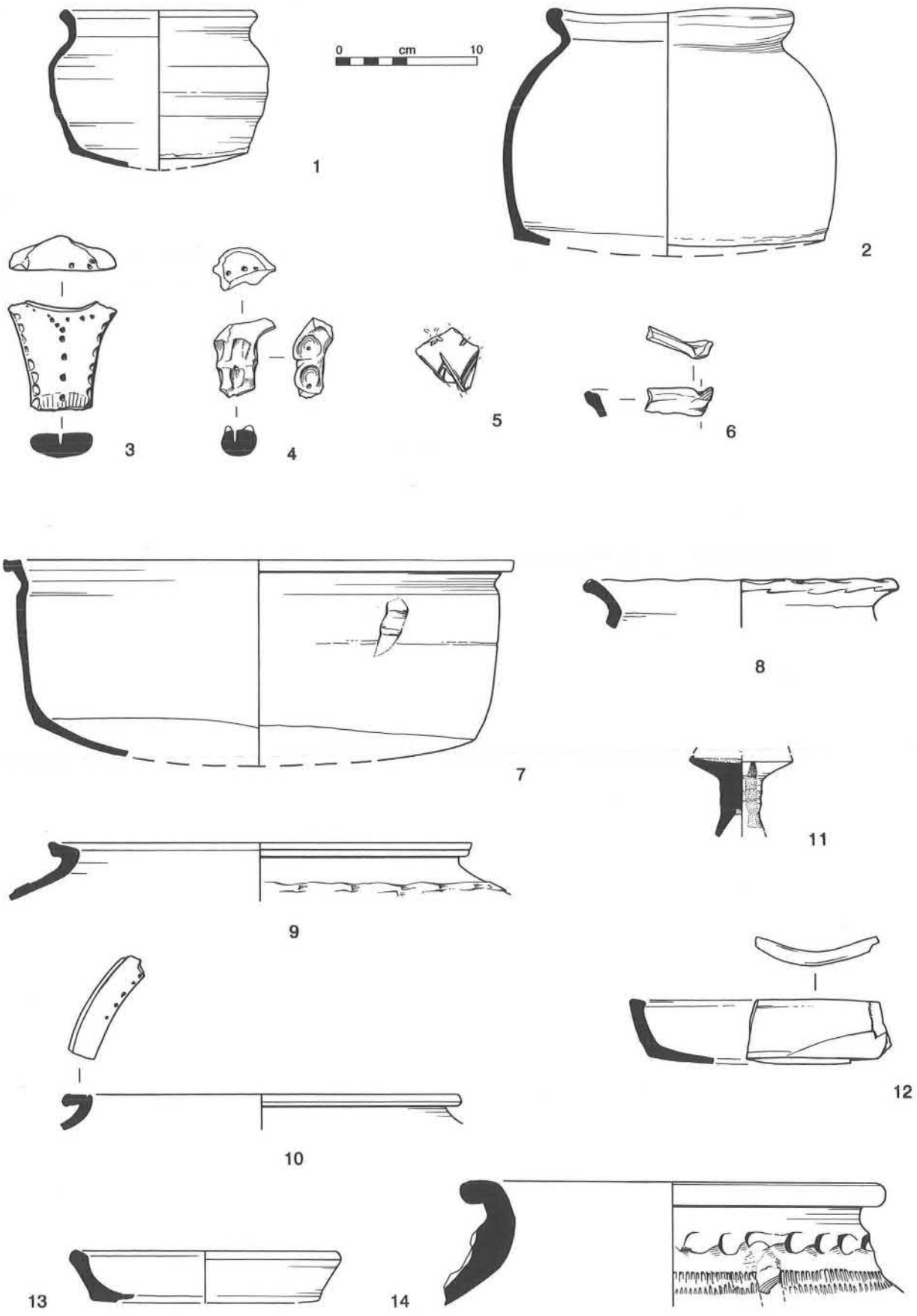

Figure 114: Medieval pottery, 1–14 (scale 1:4).

The features representing this phase were located on Crofts A, B and C. The fills of these features contained very few sherds, the majority of which were of Roman origin. On Croft D were a number of layers that were interpreted as weathered natural. This contained a mixture of Roman and medieval sherds, the latter probably all dating from the thirteenth century. This may date the reoccupation of the site. All the material was very fragmented, making identification of forms very difficult.

The illustrated handle (**4**) is MS3 with an oxidised surface. It is a rod handle with very pronounced finger and thumb marks pinched on either side of the rod. Three circular stab holes were pierced on the interior of the vessel, also two on the top and one on each side of the handle, before firing.

Period 2, Phase Ia

Minimum number of vessels: 308 medieval and 5 residual Roman sherds.

Vessel types:

Cookpots: 18 (82%)
Bowls: 3 (14%)
Jugs: 1 (4%)

Fabrics in the group:

	Crofts A	B	D	Total
MC1	45%	26%	-	43%
MC3	12%	35%	50%	15%
MSC1	11%	3%	-	10%
MSC2	1%	-	-	1%
MS2	<1%	-	-	1%
MS3	29%	32%	50%	29%
MS4	1%	-	-	1%
MS9	-	3%	-	1%
No. vessels	272	34	2	308

A mid to late thirteenth-century date is indicated by this range of material. The introduction of MS9 occurred towards the mid thirteenth century, perhaps indicating that the latest ploughing took place at this time. The pottery was very fragmented, probably as a result of ploughing. The range of vessels is typical of this period, there being a majority of cookpots present. Two MS3 rims had incised decoration, an A2 with slashing on the outer edge, and an A3 with stabbing on the upper surface.

Two vessels are illustrated, a MC1 A1 cookpot profile, (**1**), and a MSC2 A2 cookpot profile (**2**).

Period 2, Phase Ib

Minimum number of vessels: 193 medieval and 2 residual Roman sherds.

Vessel types:

Cookpots: 11 (69%)
Bowls: 3 (19%)
Jugs: 2 (13%)

Fabrics in the group:

	Crofts A	B	C	D	Total
MC1	26%	-	5%	-	13%
MC3	19%	25%	20%	-	20%
MSC1	1%	-	-	-	1%
MS2	1%	-	5%	-	3%
MS3	45%	60%	41%	100%	45%
MS6	5%	10%	1%	-	4%
MS9	2%	5%	29%	-	14%
PM9	-	-	1%	-	1%
No. vessels	84	20	88	1	193

The date range of this pottery is probably within the late thirteenth to fourteenth century. It is certainly later than that of Phase II, as the sandy fabric MS3 is now in the majority (45%) with a significant proportion of MS6 and MS9 present (total 18%). Again the pottery was fragmented, and only sixteen vessel forms could be identified, these being weighted towards the early cookpots. Decoration was noted on three MS9 vessels, two with applied red stripes and one with a grey stripe and green glaze.

Two vessels are illustrated; a MS3 A4 cookpot rim with stab holes on upper surface (**10**) and a MS3 B3 bowl profile (**7**).

Period 2, Phase II

Minimum number of vessels: 415 and 2 residual Roman sherds.

Vessel types:

Cookpots: 28 (72%)
Bowls: 9 (23%)
Jugs: 2 (5%)

Fabrics in the group:

	Crofts A	B	C	D	Post-med. F'mstead	Total
MC1	32%	4%	12%	-	-	10%
MC3	25%	10%	25%	11%	6%	14%
MSC1	1%	<1%	-	-	-	<1%
MSC4	-	-	-	-	6%	<1%
MS2	3%	3%	-	1%	12%	3%
MS3	38%	68%	38%	52%	35%	55%
MS6	-	11%	6%	18%	35%	10%
MS9	1%	4%	12%	16%	6%	6%
MS29	-	-	6%	-	-	<1%
?MED	-	-	-	1%	-	<1%
PM3	-	<1%	-	-	-	<1%
PM8	-	-	-	1%	-	<1%
PM15	-	<1%	-	-	-	<1%
PM23	-	-	-	1%	-	<1%
PM25	-	<1%	-	-	-	<1%
PM37	-	<1%	-	-	-	<1%
PM51	-	<1%	-	-	-	<1%
No. vessels	97	222	16	80	17	432

A date in the fourteenth century is indicated by this material. There does not appear to be a significant difference in the distribution of the fabrics when compared with Phase II, although it could be argued that the decline in the percentage of shelly fabrics indicates a later date. The only sherds of MSC4 were found in this phase. The post-medieval material comes mainly from the fills of the platform ditches, supporting the idea that the ditches were kept clean until they were allowed to fill, or were purposely backfilled during the seventeenth century.

The rim forms may indicate a later date than Phase II, the majority being A3, with a significant number of A4 forms. One jug spout in MS3 was noted. More decoration was noted on vessels in this phase. An A3 rim of MS3 fabric had an applied thumbed strip. Two other body sherds of MS3 also had applied thumbed strips. One MS3 base sherd had sharply cut incisions criss-crossed on its underside. One MS6 sherd was found with an incised wavy line. Six decorated MS9 sherds were found, including one with a red stripe and applied plain scales under green glaze, and another with a stamped red stripe, the others were plain or red stripes.

Four sherds are illustrated: An MS3 handle with circular stab holes on the handle and inside of the vessel and thumb impressions along the edges of the handle (**3**); the MS3 incised base (**5**); an MS3 A3 rim with applied strip running horizontally below (**9**); the MS3 jug spout (**6**).

Period 2, Phase IIIa

Minimum number of vessels: 64

Vessel types:

Cookpots: 4 (67%)
Bowls: 2 (33%)

Fabrics in the group:

	Crofts A	C	Total
MC1	8%	16%	5%
MC3	13%	8%	11%
MS2	5%	-	3%
MS3	51%	60%	55%
MS6	10%	-	6%
MS9	5%	16%	9%
PM9	3%	-	2%
PM22	3%	-	2%
PM28	3%	-	2%
No. vessels	39	25	64

As with Phase II, most of the pottery comes from the fourteenth century, with some post-medieval fabrics from the ditch fills. One MS3 sherd was decorated with an applied pellet.

Period 2, Phase IIIb

Minimum number of vessels: 19

Vessel types:

Bowls: 2

Fabrics in the group:

	Croft C
MC3	26%
MS3	26%
MS6	21%
MS9	21%
MC1	5%
No. vessels	19

This material should represent the final phase of use of these buildings. The date is probably within the fourteenth century, but the sample is too small to say anything else about the distribution. Two decorated sherds of MS9 were noted, both with applied red stripes and green glaze. One MS9 B3 bowl profile is illustrated (**12**).

Pond Area

The pond seems to have had both a medieval and a post-medieval phase of use. Very little pottery was recovered from the pond area, so it is all tabulated here.

Minimum number of vessels: 29

Vessel types:

Cookpots: 1
Bowls: 2
Jugs: 1

Fabrics in the group:

	unstrat.	Med.	P-med.	Total
MC3	41%	-	-	31%
MS3	27%	33%	-	24%
MS6	5%	33%	-	7%
MS9	9%	33%	-	10%
PM5	5%	-	-	3%
PM9	14%	-	-	10%
PM11	-	-	67%	7%
PM29	-	-	33%	3%
No. vessels	23	3	3	29

The small quantity of pottery probably indicates that the pond was not used for drinking water, and that it was kept clear of rubbish from the surrounding area during its use.

Period 3, Phase I

Minimum number of vessels: 429

Vessel types:

Cookpots/jars: 16
Bowls: 44
Others: 20
Jugs etc: 3
Mugs etc: 13
Chamberpots: 2
Plates: 2

Fabrics in the group:

	Croft D	Post-med. farmstead	Total
MC3	-	1%	1%
MSC6	7%	-	1%
MS3	7%	13%	13%
MS6	21%	5%	5%
MS9	7%	1%	1%
TLMS6	-	1%	1%
TLMS7	-	2%	2%
TLMS9	-	<1%	<1%
TLMS10	-	<1%	<1%
PM1	-	2%	2%
PM2	7%	3%	3%
PM3	-	4%	3%
PM4	-	<1%	<1%
PM5	-	2%	2%
PM6	-	<1%	<1%
PM8	21%	38%	38%
PM13	-	<1%	<1%
PM14	-	1%	1%
PM15	-	<1%	<1%
PM16	14%	5%	5%
PM17	-	1%	1%
PM20	-	<1%	<1%
PM21	-	1%	1%
PM22	7%	2%	2%
PM25	-	<1%	<1%
PM28	-	1%	1%
PM29	-	1%	1%
PM30	7%	-	<1%
PM32	-	<1%	<1%
PM37	-	4%	3%
PM38	-	<1%	<1%
PM62	-	<1%	<1%
No. vessels	14	415	429

The small sample of pottery from Ditch 565 includes medieval and post-medieval fabrics in roughly equal quantities. The events in this area probably occurred during the late seventeenth century.

A significant proportion of the pottery from Building 2 (Fig. 49) was medieval. It is probable that this material was present within layers that were reused when the building was constructed. No medieval features were visible as such, and the pottery is regarded as residual.

The area of Building 2 produced a wide range of household vessels in a range of local and imported post-medieval fabrics. This pottery probably dates to the early to mid eighteenth century. There are several key groups which provide this date.

The Staffordshire wares include a brown-glazed tankard fragment with an 'AR and a crown' ale-measure mark. This indicates a date of production in the early years of the reign of Queen Anne (Bimson 1971, 165). The press-moulded dishes with feathered and combed slip decoration and a pie-crust rim have been dated *c.*1680–1750 (Pearson 1979, 203). The white salt-glazed stonewares probably also have a Staffordshire origin. All the bowls in this group were thrown and of slightly varying diameters, rather than cast or moulded, indicating they were probably of early eighteenth-century date. The block moulded plate fragments first occur in mid eighteenth-century contexts at Oxford (Mellor 1985, microfiche II, E1). The Staffordshire wares have a range of production dates, but all fall probably within the early eighteenth century.

The local wares were probably produced in the late seventeenth or early eighteenth century, although they seem to have been deposited in the mid eighteenth century (Mayes 1968, 59; Hurst 1969, 202; Hall 1974, 28). They demonstrate a broad range of fabrics and vessel types including kitchen wares and finer table wares in black-glazed fabrics. The fabric and form of one sherd was of particular interest. The J9 'dog bowl' was of an orange earthenware which contained a high proportion of mica. Some PM8 fabrics contain mica, and this sherd was classified with them. However, it appeared to have a greater quantity of mica than most examples, and its identification remains provisional. The shallow form is also unusual in PM8 fabrics. This vessel is illustrated (**13**).

Period 3, Phase II

Minimum number of vessels: 203

Vessel types:

Jars: 6
Bowls: 29
Others: 19
Mugs/cups: 14
Chamberpots: 3
Plates: 2

Fabrics in the group:

	Post-med. farmstead
MC3	<1%
MS3	1%
MS6	2%
PM1	3%
PM2	8%
PM3	5%
PM4	2%
PM5	7%
PM8	35%
PM14	<1%
PM16	4%
PM17	1%
PM20	2%
PM21	8%
PM22	9%
PM28	3%
PM29	1%
PM30	<1%
PM32	<1%
PM37	2%
PM41	<1%
PM62	2%

The small percentages of MC3, MS3 and MS6 are probably residual. The rest of the material relates to the demolition and clearance of Building 2, when reusable building materials would have been salvaged. The majority of the pottery

.comes from Context 8, a rubble dump. No complete vessels were retrieved, which might indicate that only broken vessels were discarded. The vessel forms include both kitchen wares and tablewares, as well as chamberpots, and is very similar to Period 3/1. However, one sherd of PM30 scratch blue, which was produced between 1740 and 1780, indicates a mid eighteenth-century date for the production of the latest fabrics, the absence of PM23 creamware may indicate a date before 1760. Sherds of creamware and PM24 pearlware were recovered from unstratified levels, perhaps indicating that there was some activity on the site after 1780, and that perhaps the building was demolished some time after its final occupation.

Pottery from Unstratified Contexts

Considerable quantities of pottery were recovered from the topsoil covering the excavated area, and some also was retained from areas as they were being cleaned before features and layers were identified. As might be expected the topsoil from the western half of the site contained mostly medieval fragments, and that from the eastern was mostly post-medieval. Full quantification and identification was undertaken and details are held in the site archive. Only remarkable forms and fabrics are commented upon below.

Medieval

Thumbed applied strip decoration was noted on two sherds of MS3 and one MSC3. One MS3 handle was type 1A with indentations on the upper surface. Another handle in MS9 was a 4A type with stabbing. A fragment of a large TLMS14 jug had two large thumb marks where the handle joined the body. The handle also had at least three, probably four, incised grooves running down the length and circular stab marks on the top surface. A green lead glaze was present on the outer surfaces of the jug. A strainer fragment in MS6 was noted. One MS6 A2a cookpot had finger nail impressions decorating the upper surface of the rim: this is an unusual decorative scheme for MS6 forms. One MS3 rim with thumb impressions on the upper surface is illustrated (**8**).

Perhaps most interesting in this group was a pedestal salt in MS9, wheel-thrown with an even green glaze on the upper surface and some splashes on the stem. While the fabric appears to be MS9, fourteenth to fifteenth century in date, it shares its form with some seventeenth-century examples. First, a yellow-glazed example from the Inns of Court (Mathews and Green 1969, fig. 3.49) and also the yellow-glazed wares of Birmingham (Woodfield 1966, fig. 1, types Ca, Cb). The object shares some superficial similarities (such as a deep green glaze and pale fabric) with the products of the Surrey whiteware industries, which are datable to between the early to mid thirteenth-century and probably the sixteenth century (Pearce and Vince 1988, 13–18), but the form differs from the condiments of these industries which tend to be in the form of shallow trays with basket handles (*ibid.*, figs 99.372 and 119.524). The salt (**11**) was discovered during the cleaning of Path 71, and the associated pottery was mostly post-medieval, seventeenth century or later. If it is an MS9 fabric, then it can probably be regarded as an heirloom which was dumped when the house was demolished. However, closer examination of the fabric may place it within another fabric group perhaps of the seventeenth century.

Post-Medieval

A strainer in PM8 was noted among the kitchen wares. One jewelled fragment of a Staffordshire plate was identified, probably a letter 'W'. Another brown-glazed PM4 Staffordshire vessel possessed an 'AR with a crown' ale-measure mark. A tapering octagonal teapot spout in PM22 was found. Another PM22 vessel had a blue applied floral decoration, although the form could not be identified. PM24 pearlware and PM30 scratch blue were present in Context 2 (topsoil), dating after 1780 and 1740–1780. One neck sherd of PM44, a Martincamp flask from France, was found. Fifteen of these vessels were found at Great Linford and only four in Oxfordshire (Mellor 1985, microfiche III, E1). Finds in Milton Keynes suggest that they are not as rare on inland sites as Mellor believed, and another explanation for their distribution pattern must be sought.

Discussion

The bulk of the medieval pottery came from the area Crofts A, B and C. Many of the sherds were very small and abraded, probably indicating that they had been in soils which were being frequently moved before final deposition in features or layers. Very few complete profiles were reconstructable and no complete vessels were found. The medieval pottery has a date range between the thirteenth and fourteenth centuries. Historians have suggested that the rural population of England was under stress during the later thirteenth and fourteenth centuries, leading to depopulation (Dyer 1989, 267). The pottery from Caldecotte appears to suggest the contraction of the village during the fourteenth century.

Most of the post-medieval pottery came from the area of the post-medieval buildings and from topsoil. It appears that there was a break in occupation on the site between the medieval and post-medieval periods, perhaps between the fourteenth century and the seventeenth century. There was very little pottery which could be assigned to the fifteenth and sixteenth centuries. There are similarities between some of the local wares produced between the fifteenth and seventeenth centuries, because production continued throughout this period. However, as the bulk of the post-medieval material relates directly to the post-medieval house and its demolition, it is unlikely that the pottery is masking a fifteenth and sixteenth-century phase.

CALDECOTTE MOAT (MK619)

(Fig. 114)

A small quantity of medieval pottery, representing 1135 vessels, was recovered from these excavations. The on-site and post-excavation processing was the same as for MK618. When one compares .the material from

MK618 it is apparent that the soils had a different effect on the pottery in each area. The majority of the shell-tempered pottery from the moat area does not have a 'corky' appearance due to the leaching of the shell from the fabric. The fragments were also larger than those from MK618, suggesting that they were deposited soon after breakage. No complete profiles were noted in this assemblage. The material from Context L100, Features F173 and F229, and Context L124 are treated separately.

Context Assemblages

Context L100

Medieval pottery was recovered from L100, a spread of soil overlying much of the southern part of the moated area and other features. This layer contained a large amount of residual Roman pottery.

Minimum number of vessels: 283

Forms in the group:

Cookpots: 15
Bowls: 2
Jugs: 4

Fabrics in the group:

MC1 <1%
MC3 4%
MS2 6%
MS3 80%
MS6 5%
MS9 5%

This group of pottery dates the last phase of occupation in the moat area. It is assumed that this pottery and the associated tile represent the demolition or clearance of a structure within the moat. A date in the first part of the fourteenth century is indicated for this assemblage.

Pond F173/F229

This large, keyhole-shaped, feature was cut by the moat, and has been interpreted as a pond.

Minimum number of vessels: 139

Fabrics in the group:

MC1 5%
MC3 25%
MS2 3%
MS3 55%
MS6 4%
MS9 9%

The higher percentage of shelly fabrics in this assemblage suggests that the pottery is probably of an earlier date than the other groups, despite the presence of MS6 and MS9, which were present only in the upper fills. Therefore, a thirteenth-century date is suggested for this material, a date also arrived at from numismatic evidence (p.178). This suggests that the area was in use before the construction of the moat.

Other Features

Minimum number of vessels: 562

Forms in the group:

Cookpots: 25
Bowls: 7
Jugs: 3

Fabrics in the group:

MC1 6%
MC3 17%
MS2 1%
MS3 71%
MS6 2%
MS8 <1%
MS9 3%
MS15 <1%
PM3 1 vessel
PM16 1 vessel

Most of this material derived from layers which overlay Saxon and Roman features, and from the upper fills of these features. It is therefore difficult to identify medieval features and structures from the pottery distributions. The date of this material is similar to that of Context L100, probably within the late thirteenth or early fourteenth century. The post-medieval material derived from a moat fill.

Area 2, MK44

Sherds of medieval pottery were recovered from several features in this area, north of the moat.

Minimum number of vessels: 83

Forms in the group:

Cookpots: 10
Bowls: 6

Fabrics in the group:

MC1 23%
MC3 34%
MS3 36%
MS6 1%
MS9 4%
PM39 1%

This material was derived from features outside the moat area. The features include several pits and ditches, and the upper fills of probable Roman ditches. Relatively little MS6 and MS9 were found, and the proportions of shelly and sandy fabrics may indicate a late thirteenth-century date, perhaps slightly predating the moat area material. B6 bowls probably predate other bowl forms, and also indicate an earlier date for this material than that from the moat area.

Layer L124

This soil spread in Area 2 contained a large quantity of medieval pottery.

Minimum number of vessels: 68

Fabrics in the group:

MC1 6%
MC3 15%
MSC1 1%
MS3 74%
MS6 1%
MS9 1%
Unidentified 1%

A thirteenth-century date is suggested for this material, which is in keeping with the other groups. The unidentified vessel (**14**) consists of three sherds from the rim of a large storage vessel, approximately 300 mm in diameter. There is a horizontal applied and thumbed strip around the neck of the vessel, below which is a band of rouletting. The rouletting is partly covered by a vertical thumbed strip. The fabric has a grey core and a buff surface with white and grey quartz tempering. Whilst it appears superficially to be a MS3 fabric, the form is unknown in MS3.

COMPARISON OF MK618 AND MK619 ASSEMBLAGES

There is little difference in the compositions of the assemblages from MK618 and MK619/MK44, both of which contain standard kitchen domestic wares with some tablewares. The bunghole pitcher fragment from the moat is the only one identified from Caldecotte. The MK619/MK44 assemblage contained B6 bowls, which were not identified at MK618. This may indicate that the former MK44 assemblage slightly predates the latter, as it is assumed that B6 bowls were earlier than other bowl forms. The latest material from the moat area is probably no later than the latest phase of medieval occupation from MK618, Period 2/III, which may indicate that the moat and the outlying village crofts were abandoned at roughly the same time.

ENVIRONMENTAL EVIDENCE

ANIMAL BONE (MK44, MK117, MK618, MK619)

J. M. Holmes and K. Dobney.

Author's note: Detailed reports on the animal bone from the Berrystead Close and Mill Close excavations were undertaken by Jonathan Holmes, whose work forms the basis of this report. The small and very fragmented bone assemblage from the village excavations was examined by Keith Dobney, who has also summarised the reports mentioned above.

Introduction

The bulk of the animal bones excavated at Caldecotte were from the period of Roman occupation, and finds from all Roman contexts are grouped together. A second major assemblage relates to excavations carried out on the site of the medieval village. Very small quantities of bone were recovered from earlier Iron Age contexts and later post-medieval deposits. Unfortunately the broad and very general dating of the archaeological deposits renders any detailed conclusions of little interpretative value, particularly in view of the small size and poor preservation of the animal bone assemblage. In addition, all material was hand collected; no quantitative recovery was undertaken during any of the excavations. As a result the remains of small mammals, birds and fish are likely to be seriously underepresented, and comparisons of the relative frequency of the major domestic species may be biased in favour of larger species.

A total of 10,918 fragments weighing 142.35 kg were examined. Of these, 421 (4%) were of Iron Age date, 7702 (71%) were Roman, 2034 (18.6%) were medieval and 640 (6%) post-medieval, with a further 121 fragments from undated contexts (Table 18).

Preservation

All bones were very badly fragmented, and not surprisingly loose teeth, which better survive adverse conditions, were one of the most common elements recovered. In consequence, a large proportion of the bones examined were merely small unidentifiable fragments. This can be again seen from Table 18, where only 28% of the Roman assemblage and even fewer (18.6%) of the medieval assemblage were identifiable.

Evidence of new breakage was extensive because of the fragility of the bones. Table 18 shows the proportion of long bones of the major species from the two important periods that showed signs of recent breakage.

A small proportion of the bones from both Roman and medieval periods were badly weathered or gnawed, but

Species	*IRON AGE* *No. frags*	*ROMAN* *No. frags*	*MEDIEVAL* *No. frags*	*POST–MEDIEVAL* *No. frags*	*UNDATED* *No. frags*
Ox	58	1157	198	96	14
Sheep/goat	8	506	65	65	11
Horse	18	248	55	63	7
Pig	4	183	43	13	5
Dog	4	56	3	11	–
Cat	–	2	2	–	–
Red deer	–	2	–	–	1
Roe deer	–	2	2	–	–
Fallow deer	–	1	–	–	–
Rabbit	–	–	1	–	6
Hare	–	2	–	–	–
Human	–	–	3	–	–
Avian spp.	–	21	6	–	–
Shells: oyster	–	–	36	–	–
Unidentified	329	5522	1656	392	77
TOTAL	**421**	**7702**	**2034**	**640**	**121**

TABLE 18: Bone fragment frequency.

there is little evidence that animal remains were left for long exposed to the elements at Caldecotte in any period.

Methodology

Every effort was made to fit fragmented bones together, but inevitably with so few entirely intact bones final element totals may be distorted. Parts of a single element were counted as single fragments. Fragment counts include loose teeth, separate epiphyses, skull fragments, and proximal ribs (but not shafts).

Species Fragment Frequency

In most periods the most commonly identified fragments were from the common domestic species, with few identified from wild species (Table 18). Bones and antlers from all three British deer species were identified in medieval deposits only.

Three human bones (parts of a fibula and a pelvis and an intact metatarsal) were found together in medieval Context F100. Fragments of oyster shell were found in two medieval contexts.

The relatively high proportion of cattle bones in the Roman period, with substantial finds of sheep, pig and horse is not unusual for Roman sites in the east Midlands (Robinson and Wilson 1987). The modest proportion of pig bones and the relative lack of deer render the collection typical of a small Roman farmstead rather than a villa.

Bone Weight

The weight of bone recovered from each species gives a better idea of the proportion of meat available, on the assumption that all the animals could be used for food. Table 19 shows the weight of identified bone of each species recovered from all major periods of occupation at Caldecotte.

From the figures, beef was clearly potentially the major meat element in the diet at Caldecotte in all periods. There is no direct evidence of butchery on any horse bones from the site and the majority of elements were certainly less fragmented than cattle (for the Roman period the average fragment of identified horse bone weighed 74.6 g, compared with 51.1 g for cattle, and the equivalent ratios in the medieval period were: horse, 81.5 g/fragment and ox, 49.5 g/fragment). If horse and dog remains are not included in the total, pig and sheep bones account for only about 10 12% of identified bone by weight in both periods, so pig and sheep meat probably formed a relatively minor part of the diet if recovery bias is thought to be constant.

Minimum Number of Individuals

With such fragmented bone and so many loose teeth, figures for the minimum number of individuals were difficult to calculate. Laborious comparison of mandibles and loose teeth in particular were necessary to arrive at a figure for each of the major species in the two periods. The figures, together with calculations of the number of fragments per 'individual' are recorded in Table 20.

Species	*IRON AGE*		*ROMAN*		*MEDIEVAL*		*POST-MED*	
	Weight	*%*	*Weight*	*%*	*Weight*	*%*	*Weight*	*%*
Ox	2.74	55.8	58.58	69.1	13.54	67.2	2.22	47.3
Sheep/goat	0.04	0.8	4.69	5.5	0.84	4.2	0.33	7.0
Horse	2.08	42.4	17.92	21.1	4.89	24.3	1.78	37.9
Pig	0.01	0.2	2.81	3.3	0.43	2.1	0.24	5.1
Dog	0.04	0.8	0.49	0.58	0.05	0.2	0.12	2.5
Other	–	–	0.26	0.31	0.40	2.0	–	–
Unidentified	1.58	–	32.31	–	8.04	–	–	–
Total	6.48	–	117.06	–	28.19	–	4.69	–

TABLE 19: Weight/percentage of bone recovered per species (kg).

Species	*ROMAN*		*MEDIEVAL*	
	no.of indiv.	*frags per indiv.*	*no.of indiv.*	*frags per indiv.*
Ox	30	31.7	9	22.0
Sheep	37	12.7	6	10.8
Horse	8	25.4	3	18.3
Pig	8	20.8	2	21.5
Dog	4	13.0	1	3.0

TABLE 20: Minimum number of individuals.

As was noted at Pennyland (Williams 1993), the figure for the minimum number of sheep in the Roman period was greatly boosted by the finding of numerous mandibles (the figure calculated for the minimum number of individuals from these and loose teeth, thirty-seven, was considerably greater than that calculated from any other skeletal element, eg. thirteen from humeri and tibiae). Smaller bones are, of course, consistently overlooked during excavations where systematic recovery procedures are not employed, and the wide disparity in fragments per 'individual' between cattle on the one hand and sheep on the other is almost certainly a factor of recovery. MNI figures reverse the preponderance of cattle over sheep in the Roman period at least, but remain relatively constant during the medieval period, although numbers of fragments are relatively small.

Cattle

Anatomical Analysis

An anatomical analysis is shown in Table 21. It shows that a large proportion of the identified fragments from both periods consisted of loose teeth. Teeth often survive more readily than bone, and large numbers may distort the overall figures. If teeth are not counted, non-food elements (head and lower limb bones) account for 56% Roman and 42% medieval cattle bones. Non-food bone figures are swelled not only by large numbers of fragments of mandible, but also by the finding of numerous metapodials, both intact and fragmented. These are strong bones which often survive relatively intact, but the finding of so many lower limb bones (most noticeable in the Roman period) suggests that the remains are from commercial butchers waste.

Bone	*IRON AGE*	*ROMAN*	*MEDIEVAL*	*POST-MED*
Scapula	2	44	14	3
Humerus	1	48	33	3
Radius/Ulna	–	77	40	18
Pelvis	2	40	20	–
Femur/Patella	3	23	8	2
Tibia	2	49	14	–
Carpal/Tarsal	2	54	38	6
Metacarpal	3	131	45	3
Phalanges	1	77	25	2
Vertebrae	5	92	52	13
Rib/Stern	1	8	33	28
Skull	8	89	6	28
Mandible	4	130	29	30
Teeth	23	295	64	1

Table 21: Anatomical analysis of ox bone fragments.

Age Estimation

Table 22 shows the data on epiphyseal fusion of the ox bones according to Noddle's (1984) maturation stages. The 'early' group of epiphyses are those fusing at less than 2 years of age (modern fusion times), the 'intermediate' group in early maturity (3–4 years), and the 'very late' group at about 5 years of age. This last group consists in practice of vertebral centra and rib capitula only, especially when bones are badly fragmented. Since vertebrae possess two central epiphyses, a group of vertebrae from a single animal can distort the figures. The number of fragments for each period is however very small, so conclusions can only be tentative.

From the evidence of identified epiphyses few juvenile cattle appear to have been slaughtered in any period. The majority of animals were living to sexual maturity and beyond. If cattle were kept for meat alone, one would expect a large decrease in the percentage of fused epiphyses from the intermediate to the late stage since it ceases to be economic to keep cattle for meat alone after sexual maturity (1½–2½ years of age in modern parlance). Many more of the Roman cattle were kept beyond the ideal age for beef slaughter. Probably about half the Caldecotte animals, from this period, were living well into full maturity. The figures for medieval Caldecotte are too small for any real conclusions to be drawn, although it is possible that more cattle were slaughtered prior to full maturity than in the Roman period.

Twenty-eight cattle mandibles from Roman contexts and ten of medieval date were available for estimation of tooth wear (Table 23) using the method outlined by Grant (1975). A higher proportion of juvenile cattle are represented in the Roman period than is represented by epiphyseal fusion data. This no doubt reflects possible taphonomic factors such as recovery and preservation and the difficulty of identifying and recovering fragments of immature ox bones without epiphyses. Nevertheless the figures imply that at least one third of the animals that lived beyond calfhood survived beyond the age of sexual maturity, and that less than a quarter of the recovered mandibles were from aged cattle. There is evidence, however, for the slaughter of some cattle at the optimum age for beef. Of the few mandibles of medieval date, the majority were from mature animals, conflicting somewhat with the rather slender evidence from epiphyseal fusion.

Biometry

Measurements of a number of bones were taken although few long bones, other than metapodials, were intact for estimates of length to be made. A summary of the measurements is shown in Table 24.

A wide diversity of sizes is indicated, particularly in the Roman collection, including a small number of particularly massive ox

Stages	*IRON AGE*			*ROMAN*			*MEDIEVAL*			*POST-MEDIEVAL*		
	Fused	*Unfused*	*%fused*	*Fused*	*Unfused*	*%fused*	*Fused*	*Unfused*	*%fused*	*Fused*	*Unfused*	*%fused*
Early	5	0	100	154	7	96	26	3	90	4	0	100
Intermediate	3	0	100	64	15	81	12	2	86	3	1	75
Late	1	0	100	30	7	81	8	5	62	2	0	100
Very late	0	2	0	19	24	56	1	10	9	0	0	0

TABLE 22: Fusion of epiphyses of ox bones.

Stage	*Tooth eruption*	*Age (Silver, 1969 19th Century Breed)*	*Number of mandibles*	
			ROMAN	*MEDIEVAL*
0–7	M_1 erupting	6–9 months	7	0
8–11	M_1 in wear	(9–30 months)	2	2
12–17	M_2 erupting	30 months	2	0
18–24	M_2 in wear	(30–48 months)	7	0
25–30	M_3 erupting	2–4 years	2	1
31–40	M_3 in wear	(4–5 years)	2	4
41+	M_3 heavily in wear	Aged	6	3

TABLE 23: Tooth wear stages of the ox mandibles (method of Grant, 1975).

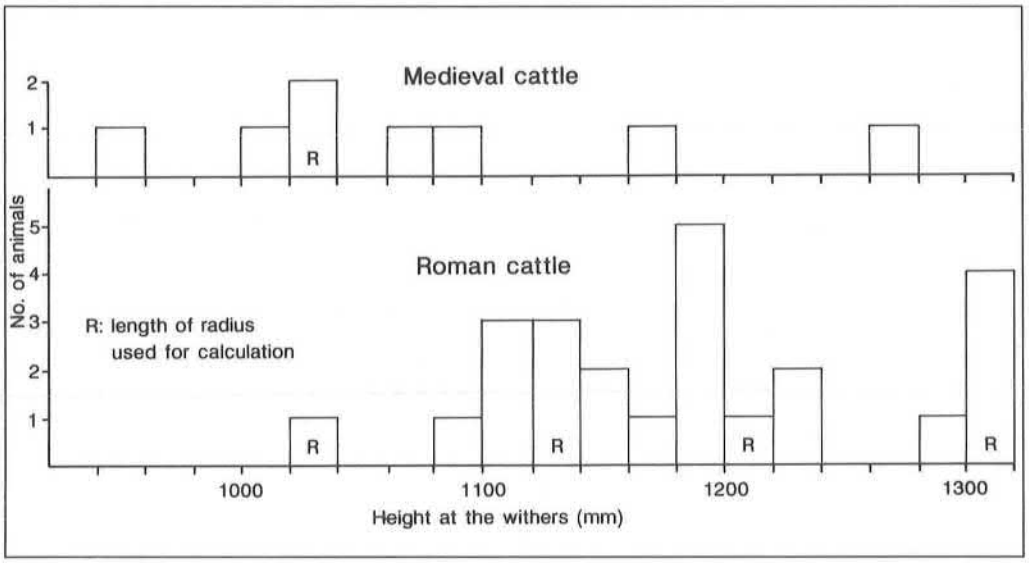

Figure 115: Histogram showing relative estimated heights at the withers of Roman and medieval cattle from Caldecotte, after Fock (1966) and Matolcsi (1970).

Bone	*Measurement*	*ROMAN*			*MEDIEVAL*		
		n	*range*	*mean*	*n*	*range*	*mean*
Radius	length	5	239–262	275.8 ± 28.6	0	–	–
Radius	proximal width	16	53–88	75.7 ± 10.2	3	76–80	77.6 ± 2.1
Humerus	distal width	11	72–87	81.2 ± 6.1	2	79–81	80.3 ± 1.1
Tibia	distal width	10	50–70	58.7 ± 5.9	0	–	–
Metacarpal	length	10	167–200	185.7 ± 10.3	1	–	175
Metatarsal	length	9	201–241	221.0 ± 15.0	5	187–234	208.6 ± 17.3
Fib.tarsal	length	6	121–145	128.7 ± 9.2	2	125–127	126.0 ± 1.4
Tib.tarsal	length	14	56–67	61.7 ± 3.6	4	56–64	58.7 ± 3.9

TABLE 24: Measurements of ox bones (in millimetres).

bones. These included two proximal radii, a distal humerus, a fibular tarsal bone, a first phalanx, and a proximal metacarpus. This diversity tentatively suggests that the bones are possibly not from a uniform collection of a single breed, or that bulls, cows and steers are all represented in the assemblage.

The Roman bone measurements fall well within the figures given by Wilson (1978) and Maltby (1981) for Roman sites, and by Grant (1977, 1975) for Roman excavations at Corbridge and Portchester. A single intact metacarpal was shorter than any recorded from Areas 1–3, but the few other measurements, particularly of width, fell within the range from these areas. The average sizes of the Roman bones were considerably greater than those from Iron Age Pennyland.

Calculation of Withers Height

From the measurements of greatest lengths of a number of bones it was possible to calculate the withers height of some of the Roman and medieval cattle represented. The factors of Fock (1966) were used for calculation of height from metapodial lengths and those of Matolcsi (1970) for calculation from the radii. The results are shown in Fig. 115 (those calculated from radii are marked R). The range of sizes is marked for both periods, but is most noticeable from medieval deposits. Some animals were as much as 300 mm taller than others, suggesting that perhaps several distinct breeds are represented in either period.

Comparing Caldecotte measurements with modern comparative data from Chillingham and Red Danish cattle (Armitage 1977) showed the mean height calculated from metacarpal length (using the factors of Fock) to be 1102 mm and 1316 mm. The Caldecotte cattle were mostly a little smaller than those from the Chillingham herd, which are generally considered to be descended from medieval stock. Most of the medieval animals are also slightly smaller than those recorded by Armitage (*op.cit.*) at Baynard's Castle. The beasts at medieval Caldecotte appear to have been mainly smaller than their Roman predecessors. Many authors have discussed the size of cattle in medieval times, and it is generally agreed that they were of small stature (Jewell 1963).

Butchery

The high incidence of modern breakage and the fragmented nature of the bones make conclusions about butchery difficult. However, evidence of ancient breakage and chopping and knife marks were present for both periods. In particular, it would seem that most long bones had been chopped or broken, either in jointing of the meat or in gaining access to the bone marrow.

Most mandibles, particularly of the Roman period, were broken caudal to the last molar tooth, so that the horizontal and vertical rami of the mandible were separated. Skull fragments were mostly fairly small. There was no evidence for the removal of horn cores in any way. Many of the vertebrae had missing processes, but no obvious butchery practice was noted. Although there is much evidence for butchery of long bones in the Roman period and 'jointing' of the meat, there is little evidence for any consistency or particular method in the blows or cuts. Few breakage or chop marks were recorded from medieval long bones.

Sheep and Goat

Anatomical Analysis

An anatomical analysis of sheep bones recovered is shown in Table 25. A careful check of the long bones using Boessneck's (1969) criteria for distinguishing sheep and goats revealed no definite evidence of the presence of the latter. However, two horn cores from medieval deposits were definitely identified as goat, and a horn core and deciduous fourth premolar (Payne 1984) from the Roman period were probably from goat. However, because of the fragmented nature of the bones, the presence of other goat remains cannot be entirely ruled out.

Bone	*IRON AGE*	*ROMAN*	*MEDIEVAL*	*POST–MED*
Scapula	–	14	–	6
Humerus	–	22	7	3
Radius/Ulna	–	33	7	5
Pelvis	–	17	3	4
Femur/Patella	–	2	1	1
Tibia	–	24	6	13
Carpal/Tarsal	–	6	–	1
Metap	–	32	5	2
Phalanges	–	12	1	–
Vertebrae	–	18	1	9
Rib/Sternum	–	4	6	18
Skull	–	13	4	–
Mandible	–	92	25	9
Teeth	–	182	28	16

TABLE 25: Anatomical analysis of sheep bone fragments.

Skull, mandibles and teeth constituted over 60% of fragments from both periods, but, as was the case for cattle, large numbers of loose teeth tend to distort the results. If loose teeth are excluded, then fragments from the head and lower limbs accounted for 33% of Roman fragments and 37% of medieval.

Age Estimation

Table 26 shows the proportion of fused epiphyses found for the Roman period only (since numbers of epiphyseal fragments from medieval contexts were small), again using Noddle's classification of fusion stages. The data from the Roman period show limited mortality among juveniles, followed by little evidence of further death until the animals were fully mature, well past the optimum age for slaughtering for mutton. From the epiphyseal fusion record 60% animals were fully mature at death, which may imply the importance of secondary products such as wool.

	ROMAN			*MEDIEVAL*		
Stages	*Fused*	*Unfused*	*% fused*	*Fused*	*Unfused*	*% fused*
Early	49	4	92	11	0	100
Intermediate	27	3	90	4	0	100
Late	13	1	93	6	0	100
Very late	11	7	61	2	0	100

TABLE 26: Fusion of epiphyses of sheep bones.

More numerous were mandibles, the majority of which derived from Roman contexts. Many were lacking individual teeth, so that they could not be allocated with certainty to one of Payne's stages (1973). Where this uncertainty could not be resolved between two stages, the mandibles for each stage including those allocated to more than one stage are shown in Table 27. These figures tend to contradict the epiphysial fusion data with about

Stage	Suggested age	ROMAN		MEDIEVAL	
		No.	%	No.	%
A	0–2 months	-	0.0	0	0.0
B	2–6 months	0.5	1.3	0.5	3.3
C	6–12 months	10.5	26.3	3.5	23.3
D	1–2 years	6.5	16.3	1	6.7
E	2–3 years	5	12.5	2.5	16.7
F	3–4 years	7	17.5	2	13.3
G	4–5 years	9.5	23.8	3.5	23.3
H	6–8 years	1	2.5	1	6.7
I	8–10 years	0	0.0	1	6.7
TOTAL		**40**		**15**	

TABLE 27: Tooth wear stages of the mandibles (method of Payne, 1973)

75% of Roman animals killed by the age of skeletal maturity, and only about 25% surviving to a fully mature age.

Only nine mandibles excavated were of medieval date, but there is evidence for the killing both of relatively young animals and older beasts. More credence can perhaps be placed on the figures for tooth wear than on epiphysial fusion data, partly because of the greater numbers and partly because of taphonomic and recovery bias as well as uncertainty over the factors involved in epiphysial fusion rates (Noddle 1984). Recent evidence from Soay sheep suggests that the epiphyses of sheep fuse earlier than the times suggested by Getty (1975; Payne, Legge and Holmes, in preparation). Slaughter for mutton and lamb is certainly suggested by the tooth wear figures, yet it is clear that large numbers of sheep were kept into full maturity as a breeding flock, and perhaps for a wool crop as well.

Biometry

Measurements of Roman sheep bones are shown in Table 28, and again numbers are very small. There appears to be a broad range of size, and comparison with figures from several sites given by Wilson (1978) suggests that among the Caldecotte bones are some of typical Iron Age size and others of typical Romano-British size. As with cattle, a mixed population is perhaps implied, consisting of both Roman and local indigenous Celtic stock. Maltby (1981) has collated data showing the mean distal width of sheep tibiae found at a large number of sites and the Caldecotte mean falls within the range found at many other Roman sites.

Bone	Measurement	n	Range	Mean
Metacarpal	length	3	111–136	121.7 ± 12.9
Metatarsal	length	4	118–135	129.3 ± 7.6
Fibular tarsal	length	3	48–55	51.0 ± 3.6
Tibial tarsal	length	3	24–27	25.3 ± 1.5
Metatarsal	distal width	3	19–21	20.0 ± 1.0
Humerus	distal width	6	23–30	26.6 ± 2.3
Tibia	distal width	7	22–28	24.2 ± 2.4

TABLE 28: Measurement of sheep bones from the Roman period.

Calculation of Withers Height

The factors of Teichert (1975) were used to calculate the withers height from the total lengths of eleven bones, all of the Roman period, and these are shown in Table 29. The wide variation in sheep size is again confirmed, ranging from almost as low as the smallest Iron Age sheep found by Wilson at Ashville to almost as high as his largest Romano-British animal from Farmoor.

Bone measured	Withers height (mm)
Metatarsal	536
Metacarpal	543
Fibular tarsal	570
Metacarpal	577
Tibia	587
Metatarsal	599
Metatarsal	599
Tibial tarsal	612
Metatarsal	613
Fibular tarsal	627
Metacarpal	665

TABLE 29: Withers height of Roman sheep.

Butchery

Few observations can be made because of the highly fragmented nature of the finds. Horn cores from both periods appeared broken from the skull and not chopped. Few long bones were intact except a small number of metapodials from the Roman period. Most of the finds of long bone from the medieval period were of shafts only. A few knife or chop marks were noted: oblique knife marks across the crest of a Roman tibia, knife marks on the cranio-medial aspect of the shaft of a Roman humerus, notches nicked out of the medial side of the shaft of a radius from the medieval period, and scratch marks on the distal end of a medieval humerus.

Horse

Anatomical Analysis

An anatomical analysis of horse bones found at Caldecotte is shown in Table 30. Examination of the shape of articular facets of a cervical vertebra from the Roman period suggested the presence of donkey or mule bones among the equine remains. Eleven of the fifteen vertebrae recovered from the medieval bones were found together in one context, otherwise horse bones were scattered in small numbers throughout the site. Loose teeth again comprise a large proportion of the finds, particularly from the Roman period, where they make up nearly 40% of the total.

Age Estimation

Epiphysial fusion data for the horse bones (again using Noddle's rough groupings) are shown in Table 31. As is to be expected, very few immature animals are represented. However, the shaft of a humerus from the Roman period was attributed to a young foal.

Bone	*IRON AGE*	*ROMAN*	*MEDIEVAL*	*POST–MED*
Scapula	1	8	2	–
Humerus	–	9	13	1
Radius/Ulna	1	15	9	–
Pelvis	–	7	2	–
Femur/Patella	4	11	1	6
Tibia	4	7	3	–
Carpal/Tarsal	–	20	6	–
Metapodial	–	18	6	–
Phalanges	2	17	13	–
Vertebrae	–	25	15	–
Rib/Sternum	–	3	–	–
Skull	–	12*	–	27
Mandible	–	5	1	6
Teeth	6	101	14	8

* including one virtually complete skull in many fragments.

TABLE 30: Anatomical analysis of horse bones.

Stages	*ROMAN*			*MEDIEVAL*		
	Fused	*Unfused*	*% fused*	*Fused*	*Unfused*	*% fused*
Early	131	7	95	25	3	89
Intermediate	51	15	77	12	2	86
Late	27	7	79	7	4	64
Very late	19	24	44	1	10	9

TABLE 31: Fusion of epiphyses of horse bones.

Age	*ROMAN*		*MEDIEVAL*	
	No. teeth	*Prob. no. indivs*	*No. teeth*	*Prob no. indivs*
Less than 4 years	0	0	0	0
4–6 years	5	3	3	1
7–10 years	5	3	0	0
11–15 years	1	1	1	1
15+ years	3	1	1	1

TABLE 32: Age and probable number of individual horses, estimated from teeth found.

Several incisor teeth were found, and these could be aged with some accuracy. Table 32 shows the ages estimated from the teeth discovered in terms of the probable number of individuals. Teeth of the same age discovered in the same context are assumed to come from a single animal. It would appear that a small number of animals in each period died or were killed relatively young, although most reached skeletal maturity and beyond.

Calculation of Shoulder Height

Eight Roman and three medieval horse bones were sufficiently complete for calculations of shoulder height to be calculated using Kiesewalter's factors (1888, *in* Boessneck and von den Driesch 1974). This data is shown in Table 33. Some variety of size was found for both periods. The horses were, in modern terms, large ponies (the modern maximum for a pony is 14.2 hands). Some of the horse bones found at Romano-British sites by Wilson (1978) were from horses much smaller than those found at Caldecotte, though some found at Ashville and Farmoor were up to 1410 mm (13.3 hands) in height.

Bone	*Length (mm)*	*Calculation of shoulder height (mm)*	*(hands)*
Roman:			
Metatarsus	246	1311	13.0
Radius	313	1355	13.1
Metacarpus	213	1365	13.2
Metatarsus*	265	1413	14.0
Metacarpus	223	1429	14.0
Metacarpus*	224	1436	14.1
Metatarsal	272	1450	14.1
Radius*	347	1503	14.3
Medieval:			
Metacarpus	217	1391	13.3
Radius	339	1468	14.2
Metacarpus	229	1468	14.2

* Found in the same context

TABLE 33: Shoulder height of horses, using Keisewalter's factors.

Butchery

There is little evidence for butchery of horse bones in either period, and a larger proportion of the long bones were more or less intact. However, knife marks were observed on a metacarpus from the Roman period, on the cranial aspect of the distal end. Similarly, knife marks were noted on two medieval metacarpi, one of them on the caudal side. More positive evidence for butchery in the medieval period took the form of chop marks noted around the acetabulum of a horse pelvis. The consumption of horse meat, perhaps from casualty animals, was therefore probable at medieval Caldecotte and possible at Roman Caldecotte.

Part Skeleton, Horse Skull (Roman)

A very fragmented skull with an atlas, axis, cervical 3, and cervical 4 vertebrae was found in Context 322, MK44. The find included most of the cranial cavity in many fragments including the bases cranii, squamosal, tympanic, and petrosal bones and the foramen magnum, as well as fragments of maxilla with the upper cheek teeth and both mandibles with all the lower cheek teeth. Three incisors were present, giving an age of 9–10 years. Large cavities in several of the upper cheek teeth are of unknown aetiology, perhaps pathological in origin. The lengths of the mandibular cheek tooth rows were 157 and 153 mm, and the aboral height of the vertical ramus was 231 mm in both cases. These measurements fall within the range of Romano-British horses, rather than mules or donkeys, found by Armitage (1979). The vertebrae articulate with each other, and the atlas with the foramen magnum. No evidence of chopping or butchery was noted.

Pig

Anatomical Analysis

A limited number of pig bones were recovered from Caldecotte (Table 34). The majority of the identified pig remains derive again from the skull and dentition, including large numbers of loose teeth. An articulating radius and ulna, recovered from Roman deposits, were substantially larger than others from the period, and may well indicate the presence of wild pig.

Bone	*IRON AGE*	*ROMAN*	*MEDIEVAL*	*POST-MED*
Scapula	–	1	–	7
Humerus	–	11	3	1
Radius/Ulna	–	13	5	–
Pelvis	–	7	1	–
Femur/Patella	–	4	2	–
Tibia	–	6	2	–
Carpal/Tarsal	–	2	3	–
Metapodial	–	6	2	–
Phalanges	–	–	–	–
Vertebrae	–	3	–	–
Teeth	–	54	26	4

TABLE 34: Anatomical analysis of pig bone fragments.

Age Estimation

Limited information on epiphysial fusion of pig bones from the Roman period is shown in Table 35, since the number of bones was very small. Some adults were present, and mortality amongst juveniles seems to have been low, though immature bones present problems of preservation and recovery. Too few fragments were recovered from medieval deposits for any conclusions to be drawn.

Stages	*Fused*	*Unfused*	*% fused*
Early	12	1	92
Intermediate	5	4	56
Late	1	5	17
Very late	0	1	0

TABLE 35: Fusion of epiphyses of pig bones from the Roman period.

A small number of mandibles could be aged from tooth wear according to the method of Grant (1975). Six Roman mandibles were attributed to wear stages 6, 22, 22, 24, 30 and 33. One was therefore from a young animal (M_2 not emerged), three from animals approaching maturity (M_3 emerging), and two from young adults (M_3 in wear). Two medieval mandibles were attributed to stage 9 and 27, one young, one young adult (Nickel, Schummer and Seiferle (1979) give 4–6 months as the age of eruption of M_1, and 17–22 months for M_3). This data is consistent with the epiphyseal findings that most of the remains are from young adults.

Biometry

For comparison with other sites the lengths of mandibular third molars and distal widths of humeri were measured. Values for the mean length of five Roman third molars was 29.6–1.8 mm (range 27 32), and a single medieval example measured 32.0 mm. Three Roman distal humeri were measured, the mean width being 40.7–0.6 mm. Measurements of third molar length are again consistent with those recorded from Romano-British sites by Wilson.

Dog

An anatomical analysis of the canid remains recovered from Caldecotte is shown in Table 36.

Bone	*IRON AGE*	*ROMAN*	*MEDIEVAL*	*POST-MED*
Scapula	–	2	–	–
Humerus	–	5	–	1
Radius/Ulna	–	8	1	3
Pelvis	–	–	–	–
Femur/Patella	–	4	–	2
Tibia	–	3	–	2
Carpal/Tarsal	–	–	–	–
Metapodial	–	2	1	1
Phalanges	–	–	–	–
Vertebrae	–	2	–	–
Rib/Sternum	–	4	–	–
Skull	–	5	–	–
Mandible	–	10	1	2
Teeth	–	7	–	–

TABLE 36: Anatomical analysis of dog bone fragments.

All epiphyses were fused, indicating that the animals were fully adult. Estimates of shoulder height were possible, using Harcourt's factors (1974), from three intact long bones from the Roman period. The calculated height from a single femur was 573 mm, and from two tibiae 549 and 237 mm. Harcourt has discussed the great variability in size of dogs in the Romano-British period. He records the appearance of small 'lap-dogs', and the 237 mm animal from Roman Caldecotte certainly falls toward the lower end of that spectrum.

Part Skeleton (Roman)

A separate group of dog bones were recovered from Context 186A, MK44. All were from a small adult animal, and included the intact tibia mentioned above. The finds were carefully examined to eliminate the possibility that they came from a small fox. The bones also included two mandibles, a piece of jugal bone, the distal end of a humerus, proximal ulna, and piece of radius shaft, two proximal femora, and the distal end of a second tibia. The three teeth in one of the mandibles were well worn and the second premolars on both sides had been lost ante-mortem with the sockets showing evidence of extensive remodelling. The radius shaft and tibiae were rather bowed, suggesting a small, bow-legged animal, perhaps a favoured pet.

Cat

Fragments of femur head and of the proximal end and shaft of a tibia were recovered from Roman deposits. Medieval cat bones included a humerus and an ilium. All were relatively small, and almost certainly derive from domestic rather than wild individuals.

Wild Mammals

Elements of the wild fauna were present in very small numbers and included, from the Roman assemblage, red deer (represented by an antler tip and a single metapodial) a single roe deer

mandible fragment (a younger animal with M3 just visible in its crypt) and a scapula and humerus identified as hare. The medieval assemblage included the first phalanx of a rabbit and two fallow deer metatarsals, a complete metacarpal and a mandible of a relatively mature individual.

Bird

Most of the avian bones recovered from the Roman period were from domestic fowl (Table 19). Of the remainder, an ulna and a fragment of synsacrum are from a goose. Only one distal femur can be attributed to a wild species.

Of the five avian bones found in medieval contexts, two (a broken carpo-metacarpus and a distal tibio-tarsus) are from geese, one (an intact carpo metacarpus) from a duck (possibly mallard), and two (a much weathered coracoid and a fragment of tibio-tarsus) probably from domestic fowl.

It is probable, therefore, that most of the avian bone fragments recovered at Caldecotte were from domestic birds, but since the assemblage is so small and moreover represents material from hand collection, it is unlikely that they do not accurately reflect the range or proportion of species consumed at Caldecotte.

SUMMARY AND DISCUSSION

Roman

The finds of bone from the Roman period appear to fit well into the general pattern for the region with the relative importance of cattle husbandry suggested. Although few bones from Caldecotte derive from Iron Age deposits, it has been suggested that cattle rearing in this particular area was always important (Holmes 1981). Wilson (1978) has compared several Iron Age sites in the upper Thames valley, and argues that farms on the low-lying river-side sites and on the first terrace (eg. Farmoor) tended to have higher ratios of cattle to sheep than slightly higher farms. He cites the tendency of sheep to foot-rot in wet and badly-drained area, and the fondness of cattle for lusher pasture. Woodland would also limit sheep flock size, though evidence for such local terrain at Caldecotte is rather sparse. If there was substantial woodland locally in Roman times one would perhaps expect more deer bones, as well as a higher ratio of pigs. It is perhaps unwise, therefore, to suggest that Caldecotte is a typical Roman site on the grounds of species representation alone.

The size of animals at Caldecotte, however, are indeed typical of the Roman period, and in many cases differ from those found at local Iron Age sites. There is a marked variation in size of all the major species, implying either the development of breeds for different purposes, marked sexual dimorphism or a very heterogenous mix of animals during the period. Such cattle bones as were measurable revealed a very wide range of withers heights, and the presence of several relatively massive bones suggests that draught oxen were in use. The scatter of sizes could imply the mixing of two or more disparate strains, producing a range of hybrids. It has already been suggested that as some of the sheep at Caldecotte were of the same, typically Iron Age, size and others much larger, there were both native Celtic and introduced stock present. This could also be true of the cattle population. The presence of larger horses and small lap-dogs, both noted elsewhere as indicative of the process of 'romanisation', was also noted.

Few of the animals were killed as juveniles. It could be argued that identification of bones from young animals would be very difficult, given the fragmented nature of the finds, but evidence both from epiphysial fusion and from tooth wear data indicates the keeping of a proportion of animals well beyond their prime usefulness as meat producers; this suggests a range of uses, for example cattle for draught and sheep for wool. The animals were, of course, eaten, the butchery evidence attests that, but clearly meat production was not the primary aim of the husbandmen. There is evidence from other Roman sites in the region, for example Barton Court Farm (Hamilton 1978), Farmoor (Wilson 1978) and Shakenoak (Cram 1978) that Roman cattle tended to be killed at later ages than at Iron Age sites, and perhaps a greater emphasis on milk or hides or draught animals rather than beef is implied. It has been observed that the growth of towns, and therefore the possibility of moving animals for slaughter to market in the towns, could distort the figures.

There is some evidence for the occasional consumption of horse meat, probably from animals no longer of use for other purposes. Even the pig remains are from surprisingly mature beasts. Pigs have few other important uses apart from meat, lard and skin production, so the slaughter of older pigs suggests a preference for large, fatty animals of the sort that nowadays are used for ham and lard rather than pork or bacon. It is tempting to speculate whether lard rather than meat was the more important product at Caldecotte.

Where there is a decrease in the use of the larger animals for meat coupled with pressure on land as a result of increased cereal production, smaller animals, particularly domestic fowl and geese, are often found. The remains of such birds were positively identified at Caldecotte though in very small numbers and are almost certainly under- represented due to recovery procedures. Supplementation of the diet from wild animals is also attested, though finds were few and it is unlikely that hunting or trapping provided any substantial element of the diet. Red and roe deer, as well as hare and possibly wild boar were nevertheless identified. There is also some evidence for the working of antler.

The remains of cats as well as dogs were found at Caldecotte. The recovery of part of the skeleton of a lap-dog is early evidence of the use of dogs as pure companion as well as working animals. It may also suggests that the occupants of Caldecotte were moderately well-to-do.

Most of the remains are almost certainly from animals which died or were slaughtered on site. The finding of large quantities of primary butchery waste implies slaughtering and butchering on site.

Little of importance can be said about butchery, except to note that there is no observable difference from the practi–

ces of other periods and places. It is probable that butchery remained much the same for centuries, perhaps until the sagittal splitting of the carcase became common. At Roman Caldecotte it seems that the limbs of cattle were removed from the body, the forelimb by cutting through the muscular omothoracic junction, the hind by chopping through the innominate bone rather than by dislocation of the hip, and then probably jointed for easier cooking. At any rate almost all the long bones were crudely broken, perhaps for access to marrow, although much fresh breakage tends to distort the picture.

Medieval

The relatively low number of finds from this period make any conclusions tentative. The similarity of the two bone collections is to be noted, and there must be a question mark over the dating of the medieval sample, although the smaller stature of most of the cattle provides some evidence that the medieval assemblage is truly a separate collection. On the assumption that the bones are wholly medieval, a pattern similar to the Roman one of cattle with some sheep and pigs kept past the optimum age of slaughter for meat is evident. Dogs and cats were present at this time, as well as domestic poultry. The horses were of a large pony size, up to 14.5 hands. The scantiness of the remains of wild animals, two fallow deer bones and one from a rabbit, seems rather low for a rural community, suggesting that it may have been a place of low status. According to Robinson and Wilson (1987) marine molluscs, especially oysters, are commonly found on sites of this period, more particularly urban ones. All the oyster shells were found in two contexts, which suggests they are the remains of only two meals.

A cattle-based economy would be contrary to the general trend in medieval England of increasing dependence on sheep, especially for wool production, and to some extent of an increasing pig population. However, it is to be expected that some areas would continue with specialist farming practices, and it is possible that this part of Buckinghamshire retained its traditional emphasis on cattle. A predominance of cattle bone over sheep has been noted in the middle Iron Age at Pennyland, from the late Iron Age at Mill Close, from the Roman period in Berrystead Close, and from the Saxon period at Pennyland, all within the same general area. There is then some evidence that cattle-rearing has always been the predominant animal husbandry system in the Milton Keynes area, and the rather scanty material from medieval Caldecotte may lend some weight to this view.

NOTES ON PATHOLOGY

Roman

1 Ox proximal radius (Plate 22). The marrow cavity is obliterated with new bone and there is large extra bone formation around the whole shaft, especially laterally around the ulna shaft where a bony foramen has been formed, presumably for the ulnar nerve and attendant vessels or alternatively the tendon of Ulnaris lateralis. The cranial surface of the bone is wide and smoothed flat, probably by movement of the extensor tendons and tight skin over them. This is a very severe case of osteomyelitis of long standing.

2 Ox proximal metacarpal (Plate 23). There is osteophyte formation all around the proximal articular surface, with particularly heavy deposits on the caudal side. The articular surface itself does not seem to be affected, but the animal must have suffered a severe impairment of movement at the carpal joint. The origin of this osteitis is not clear, but a large abscess tracking round the joint is a strong possibility.

3 Ox first phalanx. There is extra bone formation especially around the distal end. The joints are not affected. A tracking infection from the foot would be a possible cause of the osteitic lesion noted.

4 Pig scapula (Plate 24). A large deposit of new bone around the medial side of the neck of the scapula whose epiphysis is fused. The articular surface is severely affected with pitting and osteophytes along the lip. This lesion is probably caused by an abscess, perhaps tubercular, spreading to involve the joint to cause an infected chronic osteoarthritis. From its position, the supposed abscess is very unlikely to have had a traumatic origin, and the adjacent axillary lymph node is therefore the most likely source of infection.

5 Horse metacarpal. There is some slight osteophyte formation around the point where a vestigial metacarpal or split bone has fused to the main metacarpal. This is typical of the condition of horses known as 'splint', which is common and not serious.

6 Horse first phalanx. Small exostoses on both lateral and medial sides were found on the caudal aspect. The lesions were probably caused by some damage to the sesamoidean ligaments, and would not have been serious in the long term.

7 Ox lower premolar tooth (Plate 25). The tooth shows very swollen roots with no sign of pitting. This deformation could possibly be linked with a chronic infection or a fault in tooth development.

8 Dog mandibles. The loss of premolar and molar teeth and filling of the gaps with new bone has already been described from the remains of a small dog.

9 Sheep mandible. A mandible was found with a distinct gap between Premolar 4 and Molar 1. This gap was filled with extra bone.

10 Ox coccygeal vertebra. This tail vertebra was distorted by the displacement of the neural arch to the right so that the neural canal was not symmetrical. This deformation is unlikely to have had any major effect on the animal.

11 Ox mandibles. A matching pair of ox mandibles were deformed, bent so that Molars 2 and 3 were at an angle of about 45° to the rest of the tooth row. Despite the unusual angle, all surviving teeth were well worn and staged (method of Grant) at 48, so they were from an elderly animal. The mandibles were also rather wide dorso-ventrally at the cranial end. The effect is to make the jaws rather more massive and shorter, so the animal could have been badly undershot. However, it seems to have lived quite happily with this deformation.

12 Horse teeth. Large cavities were present in three of the cheek teeth of the skull in Context 392, with loss of central cement. Fire damage is a possible cause, as are soil conditions. If, on the other hand, the cause is pathological, the aetiology is uncertain.

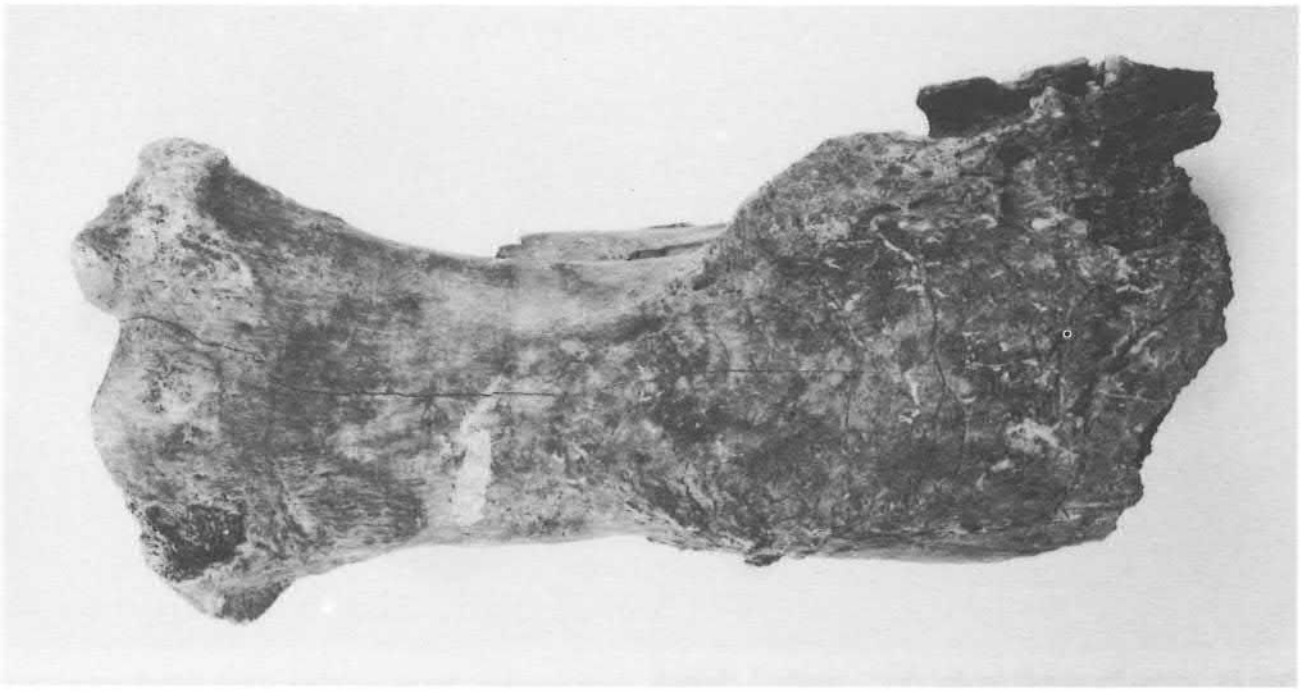

Plate 22: Ox primal radius (cranial view) – osteomyelitis (*J. Holmes*).

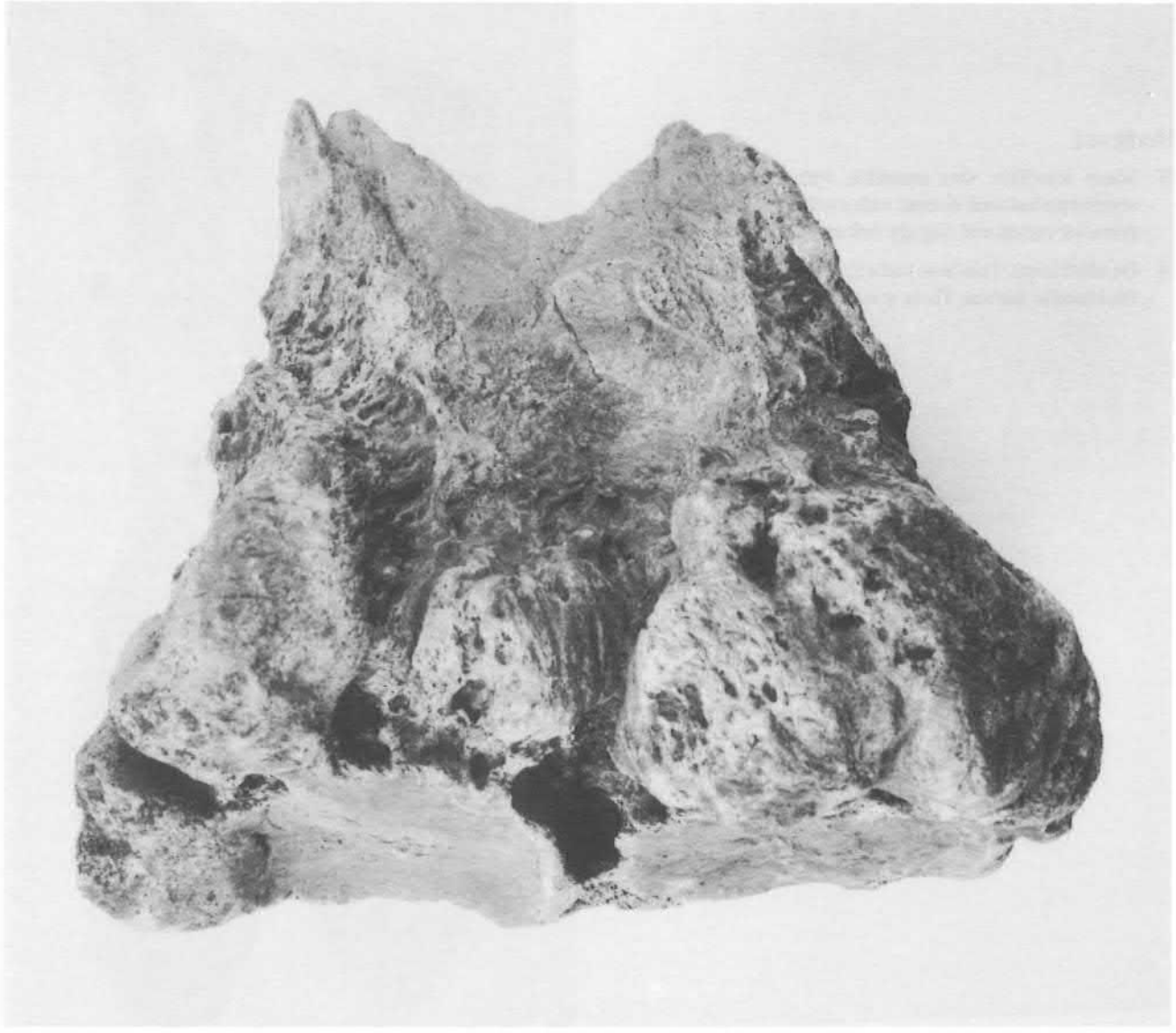

Plate 23: Ox primal metacarpal (caudal view) – osteophyte formation (*J. Holmes*).

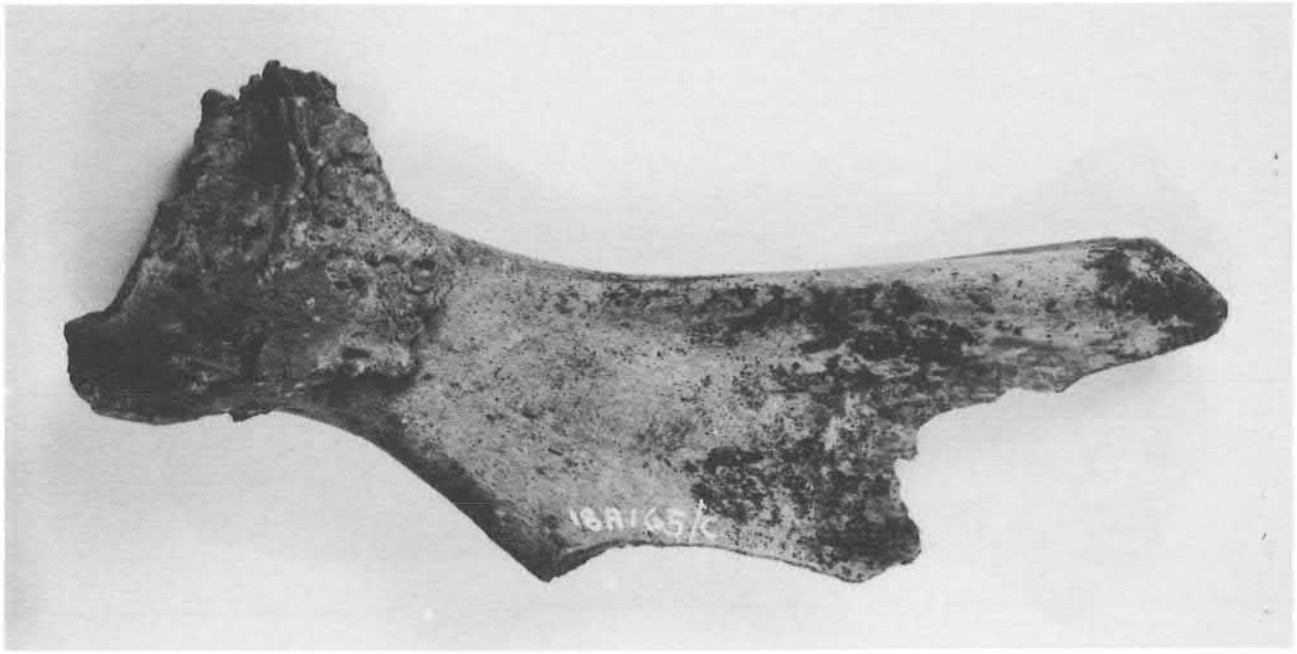

Plate 24: (above) Pig scapula (medial view) – osteitis (*J. Holmes*).

Medieval

13 Sheep mandible. One mandible with evidence of fairly severed periodontal disease with swelling of the bone in the premolar region and slightly deformed teeth was observed.

14 Ox tibial tarsal. This bone had a small crescent-shaped pit on the articular surface. There was no other sign of pathology.

Plate 25: (right) Ox premolar tooth with swollen roots (*J. Holmes*).

ANIMAL BONE (MK1016)

P.L. Armitage

Introduction

A total of twenty-one bone elements, all from domestic animals, were submitted for examination. No wild mammalian species were represented in the sample, nor were there any bird or fish bones.

Identification of the faunal material was carried out using the modern comparative osteological collections at the Booth Museum of Natural History, Brighton. Reference was also made to Schmid (1972) and Getty (1975).

Measurements (in mm) were taken using both dial and vernier callipers, the points of measurement following those described by von den Driesch (1976). When measuring the basal circumference of the cattle horn cores, a flexible tape measure was employed. Measurements of long bones and vertebrae were taken only from elements with fused epiphyses; none of the immature specimens was measured as they were incomplete, with epiphyses detached and lost in antiquity. Tables of the measurements taken are retained in the Level III site archive.

Estimates of the age of the animals were based on the tables of epiphysial fusion given in Silver (1971, 285 286).

During the study of the material, the following general observations of the bone were noted:

Condition

Preservation of the bones is good and none of them show the degree of abrasion and wear normally indicative of bone elements that have been derived from the reworked detritus of a riverbed. It is highly unlikely, therefore, that the bones from either Context 7 or 11 represent accumulated river-borne debris. Furthermore, the absence of any signs of weathering and the lack of any evidence of dog chewing or gnawing strongly suggests that the material entered the river when still in a relatively 'fresh' state; it had not been left for any length of time lying exposed on the ground before finally being collected for disposal.

Staining

All the bone elements exhibit the dark brown staining commonly encountered in skeletal material recovered from waterlogged sites. Immersion in water is also denoted by reddish/orange (iron) staining and mottled black patches (organic staining) on several of the specimens.

In addition, a number of elements, most noticeably the horse metatarsus III from Context 7, and the cow innominate bone from Context 11, are coated in patches of deep blue *vivianite* (= hydrated iron phosphate: $Fe_3(PO_4)_2.8H_2O$). The crystals of this naturally occurring mineral are often observed upon fossil and sub-fossil bones from organic, silt and clay deposits.

Catalogue

For the purpose of this report, the bones are described separately in systematic order under species, as follows:

Horse

Ten elements were identified from an indeterminate minimum number of individuals, as listed below:

Context	*Description*
7	1 metatarsal bone III, left, adult; complete.
7	1 metacarpus bone III, may be foetal or neonate (proximal epiphysis appears very little developed); some slight damage to distal end of shaft (anciently broken).
7	1 axis vertebra, adult; spinous process anciently broken, otherwise complete.
7	1 rib, left; complete.
11	1 thoracic vertebra, adult; complete.
11	1 lumbar vertebra, immature; anciently broken.
11	1 sacrum, adult; complete.
11	1 rib, right; anciently broken.
11	1 innominate bone, left, adult; slightly damaged (anciently broken).
11	1 metatarsal bone (?=II), ?adult; distal end of shaft broken off in antiquity.

From the length of the complete metatarsal bone III, the height at the withers of one of the (adult) horses is estimated at 1307 mm, after the method of Kiesewalter (1888).

On the basis of the robust appearance of the body of the ilium and the form of the pubic branch, the innominate bone is identified as a male. The specimen compares with the stallion pelvis illustrated in Getty (1975, 303, fig. 15.75).

In the Caldecotte innominate bone it appears that the region of the tubera ischiadica has been chopped off, possibly evidence of cutting up the carcase.

Cattle

Three elements were identified:

Context	*Description*
7	1 horn core, left; incomplete (tip broken off in antiquity).
11	1 horn core, left; incomplete (tip broken off in antiquity).
11	1 innominate bone, right, adult; ischial arch anciently broken.

In the innominate bone from Context 11, the relatively low depth of the median rim of the acetabulum, together with the presence of a sharp ilio-pubic eminence, identifies this specimen as female (Grigson 1982, fig. 1.8).

Under the classification system devised by Armitage and Clutton-Brock (1976) for cattle horn cores from Iron Age to early Tudor sites, both of the Caldecotte horn cores may be ascribed to the medium horn group, as the extrapolated (complete) length of outer curve in each specimen is estimated to lie between 150–200 mm. On the basis of the texture of the bone, it is possible to age the two specimens, using the system of Armitage (1982) as follows: one adult (Context 7) 7–10 years, and one old adult, over 10 years (Context 11).

Unfortunately the sex of the cores cannot be readily ascertained, but it may be suggested that both specimens, with their rounded, 'cylindrical' appearance, are from female or castrate animals rather than from males, whose cores would have been expected to be more conical and to exhibit a greater degree of posterior (almost 'oval') flattening at the base (Armitage and Clutton-Brock 1976, 332). Both horn core specimens show evidence of having been hacked off the skull by means of a blow from a large cleaver or axe directed across the back of the head, at the base of the horn.

Sheep/Goat

Sheep (and ?goat) are represented by the following five elements:

Context	*Description*
7	2 metacarpal bones, both right, immature (dist. epiphysis unfused and detached).
7	1 metatarsal bone, left, immature (dist. epiphysis unfused and detached).
11	1 scapula, right, adult; complete.
11	1 innominate bone, left, acetabulum and pubis fully fused.

Although the scapula and innominate bone are both identified as certainly sheep, using the criteria of Boessneck (1971) it is not possible to say whether the metapodial bones are from sheep or goats, as they are immature and lack the diagnostic distal condyles.

The innominate bone, identified as female after the method of Armitage (1977, 78–81) has been chopped twice across the wing of the ilium. Further evidence of 'butchery' in the sample is provided by a superficial knife mark across the shaft of the immature metatarsal bone, probably evidence of skinning.

From the 'length' (= height, as designated by von den Driesch, 1976) of the innominate bone, the height at the withers of this animal is estimated at 503 mm, after the method of Teichert.

Dog

Three bone elements, which probably come from three different animals, are identified as follows:

Context	*Description*
7	1 scapula, left, adult; incomplete, anterior part of blade anciently broken.
7	1 humerus, right, prox. and distal epiphyses fused; complete.
7	1 tibia, left, immature (proximal epiphysis unfused and detached), under 1½ years of age; distal end of shaft anciently broken.

The complete humerus comes from a large dog whose height at the shoulders is estimated after the method of Harcourt (1974) at 697 mm. The size of this animal would have compared closely with the stature of modern hound dogs, like the Irish wolfhound in the collections of the Booth Museum of Natural History.

INTERPRETATION AND DISCUSSION

Though it would clearly be unwise to attempt to draw too many conclusions from such a small sample of bones, when considered as a whole, the faunal material from Contexts 7 and 11 can yield important clues as to the date of the bone deposits, as well as provide an insight into their possible source(s).

Date of the Deposit

From our knowledge of domestic livestock from British medieval and later sites it is reasonable to suggest that the Caldecotte bones all date from later medieval/early Tudor times (fifteenth to sixteenth centuries) rather than the later post-medieval/early modern period. This conclusion is best illustrated with reference to the sheep bone elements, all of which derive from small-sized, slender-built animals, reminiscent of modern Soay sheep. Such sheep were common throughout the medieval and early Tudor period, and it is not until the seventeenth century onwards that one encounters much longer legged and more sturdily built sheep (Armitage 1983, 92–93). Indeed, the estimated withers height of 503 mm calculated for the Caldecotte scapula falls within the lower end of the range in stature established for the sixteenth-century sheep from Coventry (496.3 mm; Holmes 1981, 135) which may, in turn, be compared with the withers heights of between 710 and 810 mm recorded in the unimproved Leicester and Lincolnshire longwool sheep from the late seventeenth to early eighteenth-century contexts at Aldgate, City of London (Armitage 1984, 138).

Both of the cattle horn cores from Caldecotte resemble specimens of cattle previously published from British later medieval and early Tudor sites. The absence of cores of the larger sized post-medieval cattle which are characteristic of many seventeenth and eighteenth-century sites (Armitage 1982) substantiates the dating evidence that the Caldecotte material is probably no later than the sixteenth century.

Source(s) of the Bones

It would be easy to view the animal bone material from Caldecotte simply as a mixed deposit of discarded domestic food refuse and the primary waste products or residue derived from industrial processes such as horn-working and/or the tanning of hides. The latter processes are indicated by the presence of the two cattle horn cores showing

evidence of having been severed from the rest of the skull by means of a cleaver or axe (Armitage 1984, 133–135).

Taking this form of interpretation a stage further, it might be suggested that the three dogs identified among the Caldecotte faunal remains had either been kept as pets or as working animals employed in guarding the home and/or hunting game, and that after death their bodies were dumped into the river along with the other unwanted household refuse.

The picture presented above is not entirely satisfactory, as it fails to explain why so many horse bones should occur in company with those of sheep/goats, cattle and dogs. However, it is this *very* combination of species which may hold the key to the solution to this question, for it is known from documentary sources that in later medieval and early Tudor times the division of leatherworkers known as *whittawers* were responsible for processing the skins of *sheep, goats, deer, horse* and '*hounds*,' while the tanner was restricted to handling cattle hides (Thomson 1981, 171: Hodgson 1980, 44). Furthermore, the presence in the Caldecotte deposits of bone elements from the neck, rib-cage, back and feet of horses may be explained by the fact that while the tanner obtained fresh hides from cattle slaughtered for food, the whittawer's most common source of raw material was causality carcasses, that is animals which had died naturally (*ibid.*, 171). Under such circumstances, it is to be expected that the archaeological record would reflect this disparity in the types of raw material handled by these two very different divisions of the leather industry: tanyard waste would comprise the 'non-meat' bone elements (*ie.* those from the head and feet only), while the residue from the whittawer's workshop would include a much wider variety of skeletal elements from all parts of the body, as exemplified by the horse remains at Caldecotte.

To summarise, apart from the cattle horn cores which probably originate from a horner's or tanner's workshop, the bulk of the Caldecotte material, including the dog bones, may derive from the processing of animal skins by a whittawer. Indeed, even the food bones (*ie.* cow innominate, sheep innominate and sheep scapula) found at this site may also be from the same source, representing the debris from cuts of meat eaten by the leatherworkers, though if this is a true inference, their diet seems to be rather frugal and lacking in variety. From our knowledge of the later medieval and early Tudor diet (based on archaeological and documentary evidence) one would at least have expected them to have eaten pork, chicken, rabbits and cod with their beef and mutton. It would, however, be extremely foolhardy to reconstruct their diet from such a small bone sample, which in all probability is unrepresentative.

HUMAN BONE (MK117)

J.M. Holmes and E.H.R. Ford

Three human bones were found in Context 100. They are in a good state of preservation, undamaged by fire or weathering.

The bones were part of the left acetabulum and ischium of an os coxae, a left second metatarsal, and the base and part of the shaft of a left fifth metatarsal. The almost intact second metatarsal is 77 mm long.

The size and strength are consistent with their coming from a single individual, quite probably a man.

CHARCOAL (MK44, MK117)

Caroline Cartwright

This report is in two parts. The first deals with material from the late Iron Age enclosure in Mill Close (MK117), the second with charcoal from various activities of Roman date in Berrystead Close (MK44).

Mill Close Enclosure (MK117)

Quercus sp. (oak) contributes the greatest quantity of charcoal from the contexts submitted for analysis from this site, particularly from Context 96 (obj. no. 59). It is followed in frequency (measured in terms of weight in grammes) by *Corylus* sp. (hazel), which also has its highest concentration in the above-mentioned context. Small amounts of *Salix/Populus* charcoal occur in Context 16 (obj. no. 8) and Context 86 (obj. no. 58), in the form of twig material. Branch material from *Quercus* sp. and *Corylus* sp. occurs in Context 109 (obj. no. 62). Small amounts of *Quercus* sp. twig material charcoal occur in Context 7 (obj. no. 3) and Context 86 (obj. no. 58).

It is interesting to note that the *Quercus* sp. charcoal from Context 96 represents mature timber, and the *Corylus* sp. fragments from the same context derive from branch material. The former might represent some structural or artefactual remains, whereas the smaller branch or twig material is usually more indicative of fuel residues or hearth areas. However, hazel, willow (and poplar) are frequently used in their twig or light branch form in fencing, hedging and artisanal activities. Oak is a multi-purpose timber and has many uses, frequently exploited in the past. It provides strong wood for construction and durable material for artefacts and utilitarian articles, besides being a ready source of fuel.

With regard to the possible character of the environment in the vicinity of the site, if one can justifiably assume that the charcoal present in these contexts is representative of the area, a mixed oak woodland appears to predominate. The presence of *Salix/Populus* (willow/poplar) implies a fairly accessible water supply, but together with the hazel and oak they form a characteristic woodland group.

Details of the charcoal from this site are summarised in Table 37.

Context	*Obj.no.*	*Identification*	*Weight (g)*
7	3	*Quercus* sp.: twig	1.2
16	8	*Salix/Populus*: twig	1.5
86	58	*Salix/Populus*: twig	3
		Quercus sp.: twig	2
96	59	*Quercus* sp.: mature wood	105
		Corylus sp.: branch	23
109	62	*Quercus* sp.: branch	16
		Corylus sp.: branch	4

TABLE 37: Charcoal identifications, Mill Close enclosure (MK117).

Berrystead Close (MK44/619)

Pottery Kiln I

Unfortunately, little identifiable charcoal was recovered from the samples taken from this context (F74), which were found to contain much ashy and unidentifiable root material. This is not altogether surprising in a kiln, where ultimately the charcoal used for fuel would be totally reduced in time to an ashy powder. Of the surviving charcoal fragments (total weight = 7.0 g), hazel (*Corylus* sp.) and oak (*Quercus* sp.) were represented, both common choices of fuel for kiln firings and presumably readily available in the vicinity.

The Channel Hearths

These contexts (F90, F91, F111, F119, F131) represent channel hearths associated with metal working (probably copper), dating from *c.*100–175. The charcoal fragments (total weight = 672 g) show a high towards use of oak with smaller representations of ash (*Fraxinus* sp.) and hazel. There was also a negligible amount of plum-type (*Prunus* sp.) and beech (*Fagus* sp.). The last four could have formed part of a general collection of available brushwood and need not represent a special selection bias at all.

Metal-Working

These contexts (F50, F60, F112, F114) were associated with second-century metal working. The charcoal fragments (total weight = 129 g) consisted mainly of oak (96.9% of the sample by weight) and ash (3.1%). The general conclusions reached about fuel selection at Caldecotte (see below) seem particularly applicable to this group of contexts.

Details of the charcoal recovered from MK44 are summarised in Table 38.

CONCLUSION

Combining all the results from this series of charcoal samples, despite their varying date ranges and associated activities, it is apparent that the use of oak as a fuel is paramount.

Context	*Identification*	*Approx. weight (g)*
Context 50:		
676	*Quercus* sp. (oak)	3
B/1 621	*Quercus* sp. (oak)	5
Context 60:		
C/1 626	*Quercus* sp. (oak)	22
Context 74:		
1 589	*Corylus* sp. (hazel)	4
	unident. root material	18
1 630	*Quercus* sp. (oak)	3
1 726	unident. ashy material	?
Context 90:		
1 649	*Quercus* sp. (oak)	3
A/1 583	*Quercus* sp. (oak)	6
B/1 570	*Quercus* sp. (oak)	51
C/1 577	*Quercus* sp. (oak)	16
D/1 616	*Quercus* sp. (oak)	8
D/1 673	*Quercus* sp. (oak)	18
Context 91:		
A/1 553	*Quercus* sp. (oak)	14
B/1 569	*Quercus* sp. (oak)	4
B/1 558	*Quercus* sp. (oak)	22 (large frags)
	Quercus sp. (oak)	8 (small frags)
	Corylus sp. (hazel)	6 (small frags)
B/2 595	*Quercus* sp. (oak)	4
D/1 559	*Quercus* sp. (oak)	3
D/1 566	*Quercus* sp. (oak)	10 (root material)
E/1 599	*Quercus* sp. (oak)	3
Context 111:		
B/1 643	*Quercus* sp. (oak)	28 (large frags)
	Fraxinus sp. (ash)	14 (large frags)
B/1 568	*Quercus* sp. (oak)	38
C/1 598	*Quercus* sp. (oak)	26
C/1 632	*Quercus* sp. (oak)	33
	Fraxinus sp. (ash)	7
D/1	*Quercus* sp. (oak)	42
E/1 567	*Quercus* sp. (oak)	25
	Fraxinus sp. (ash)	9
	Fagus sp. (beech)	2
Context 112:		
1 580	*Quercus* sp. (oak)	30 (very powdery)
Context 114:		
1 573	*Quercus* sp. (oak)	15
A/1 572	*Quercus* sp. (oak)	7
A/1 544	*Quercus* sp. (oak)	22
	Fraxinus sp. (ash)	4
B/1 658	*Quercus* sp. (oak)	13
	(small frag. of large timber)	
C/1 662	*Quercus* sp. (oak)	8
Context 119:		
A/1 604	*Quercus* sp. (oak)	4
	Corylus sp. (hazel)	1
A/1 624	*Quercus* sp. (oak)	2
B/1 605	*Quercus* sp. (oak)	8
	Fraxinus sp. (ash)	4
	Corylus sp. (hazel)	3
C/1 645	*Quercus* sp. (oak)	14
C/1 622	*Quercus* sp. (oak)	30
	Fraxinus sp. (ash)	11
D/1 652	*Quercus* sp. (oak)	18
Context 131:		
A/1 677	No charcoal in sample	
A/1 615	Mixed range of fragments from twigs, larger branches, larger timbers, root and bark material	
	Quercus sp. (oak)	128
	Prunus sp. (plum etc)	8
	Fraxinus sp. (ash)	5
	Corylus sp. (hazel)	4
B 642	*Quercus* sp. (oak)	6
D 666	*Quercus* sp. (oak)	26

TABLE 38: Charcoal identifications, Berrystead Close (MK44).

This represents either a deliberate selection for its properties of combustion and temperature control, or its being the most readily available timber for fuel in the vicinity. However, the differential survivals of different species of trees and shrubs as charcoal/wood on archaeological sites should also be borne in mind.

SEED REMAINS (MK117)

Amanda Chadburn

Introduction

Waterlogged samples from the late Iron Age enclosure ditch were investigated. A variety of organic remains, including insects, seeds, leaf fragments and ostracods, were recovered from three contexts. The seeds were identified and the results tabulated. 2393 seeds were identified, representing sixty-four taxa. The information gained from the data is fully discussed below.

Method

Samples were taken by the excavator and sealed in polythene bags. A description of each sample follows: the sample numbers are those of their archaeological context.

Context 100: Primary silt of the enclosure ditch. Humic dark-grey clay loam. Sample partially oxidized due to a non-airtight seal of bag. Care was taken to select non-oxidized material where there would be less decay. 250 g analyzed.

Context 95: Layer immediately above Context 100. Radiocarbon date of 1940 ± 100bp (HAR-5614) obtained on wood from this context. Grey clay with little obvious organic material. 250 g analyzed.

Context 4: Primary silt of the enclosure ditch. Humic dark-grey clay loam. Sample showed similar deterioration to Sample 100, and similar precautions were taken. 250 g analyzed.

All the analyses, including the extraction of organic material, was carried out in the laboratory using a standard procedure for waterlogged material, as described in detail by Lambrick and Robinson (1979, 79 81). Briefly, this consisted of breaking up the sample by hand, washing it through a series of six sieves down to an aperture size of 0.2 mm and, with the aid of a binocular microscope, sorting the residue under water. The seeds were stored in 70% alcohol to await identification. This was done by direct comparison with specimens in the reference collection of M. Robinson in the University Museum, Oxford. All identifications were checked by him.

Results

The waterlogged seed identifications are given in Table 39. Nomenclature and taxonomic order follows Clapham *et al.* (1962). The numbers given in the table are for the minimum numbers possible from the intact and fragmentary seed remains. Habitat information is from Clapham (*op. cit.*), Fitter *et al.* (1978) and Godwin (1975). Many plants live in a variety of habitats, in which case all appropriate habitats have been noted. 'Varia' describes those seeds which could not be identified but were unlikely to belong to any of the listed categories. An asterisk beside the number of a species means that the figure was derived from a tenth sub-sample.

Discussion

There was no evidence of contamination of the samples, and it is likely that all the seeds were derived from the surrounding environment of the ditches contemporaneously with their silting. However, it must be noted that Context 95 contained far fewer seeds than the other two samples, and the preservation of organic material was much worse. This differential preservation makes it difficult to draw conclusions about the environment during the period of deposition of that context.

The following interpretation of the site's past environments must be regarded as probability statements only. They are likely to be broadly correct, but cannot be regarded as reflecting totally the plants which existed in an environment. Most of the seeds will have been derived from plants growing relatively close to the ditches, although it is possible that water transport occurred along the ditches. However, the samples can be taken to reflect a wider area because the presence of a very different environment a little further away would still have given some indication of its presence.

The overall picture of the environment as suggested by the three samples is of an open landscape. No tree seeds and only a very few shrub seeds were present in any of the contexts, while many of the herbaceous species identified require a high level of illumination.

The seeds from Context 100 included *Ranunculus arvensis* and *Anthemis cotula*. Both of these species appear on present evidence to be Roman introductions. *A. cotula*, represented by forty-nine seeds, is very frequently encountered in archaeological assemblages from the first century AD onwards where suitable habitats existed for the plant, but no pre-Roman record from a reliably sealed context is known (Godwin 1975, 344; Jones 1981, 111; Robinson 1981, 275). *R. arvensis* is an unusual find. Godwin (1975) does not give a Flandrian record for this, although it has since been found in Roman contexts (Lambrick and Robinson 1979, 83; V. Straker, pers. comm.). From the

SEEDS	Common name	No. Seeds by context 4	95	100	Habitat
RANUNCULACEAE					
Ranunculus cf. *repens* L.	Buttercup	–	–	1	Twd, W
R. arvensis L.	Corn buttercup	–	–	1	T, Td
R. parviflorus L.	Buttercup	–	–	1	T, Td
R. S. Batrachium sp.	Water crowfoot	53	–	–	A
PAPAVERACEAE					
Papaver rhoeas L., *dubium* L., *lecoqii* Lamotte or *hybridum* L.	Poppy	1	–	–	T, Td
CRUCIFERAE					
Cardamine sp.	Bitter–cress	6	–	–	Tw
gen. et sp. indet.	–	1	–	–	–
VIOLACEAE					
Viola spp.	Violet	–	–	2	Twd, W
HYPERICACEAE					
Hypericum sp.	St John's wort	–	–	10*	T, Tw, W
CARYOPHYLLACEAE					
Cerastium holosteoides Fr.	Common mouse–ear chickweed	1	–	2	T, Td
Stellaria media gp.	Chickweed	16	–	8	Td
S. neglecta Weihe	Greater chickweed	1	–	–	Tw, W
S. graminea L.	Stitchwort	1	–	22	T, W
Stellaria sp.	–	–	–	1	–
Arenaria sp.	–	1	–	–	–
gen. et sp. indet.	–	3	–	–	–
PORTULACEAE					
Montia fontana L.	Blinks	4	1	4	Twd, W (esp. acid soils)
CHENOPODIACEAE					
Chenopodium polyspermum L.	All–seed	4	–	–	Td esp.
C. album L.	Fat Hen	4	–	–	Td nitrogen–
C. ficifolium Sm.	Fig–leaved goosefoot	4	–	–	Td rich
C. cf. *rubrum* L.	Red goosefoot	2	–	–	Td soils
Chenopodium sp.	–	2	–	–	Td
Atriplex sp.	Orache	4	–	–	Td
gen. et sp. indet.	–	3	–	–	Td
MALVACEAE					
Malva sylvestris L.	Common mallow	1	–	–	Td
ROSACEAE					
Rubus fruticosus Agg.	Blackberry	–	2	–	W, T, Td
Fragaria sp. or *Potentilla reptans* L.	–	–	–	1	T, Td
Alpanes arvensis Agg.	Parsley piert	4	–	4	T, Td (esp. on dry soils, rare on clay)
UMBELLIFERAE					
Anthriscus caucalis Bieb.	Bur chervil	2	–	–	Td
Apium nodiflorum (L.) Lagg	Fool's watercress	–	–	2	A, Tw
Aethusa cynapium L.	Fool's parsley	1	–	–	Td
Pastinaca sativa L.	(Wild) parsnip	1	–	–	Td and C
Daucus carota L.	(Wild) carrot	1	–	3	T(d) and C
POLYGONACEAE					
Polygonum aviculare agg.	Knotgrass	–	–	2	Td
Rumex acetosella agg.	Sheep's sorrel	1	–	–	T, Td
R. crispus L.	Curled dock	2	–	2	T, Td
R. conglomeratus Murr.	Sharp dock	3	–	3	Tw, W
Rumex spp.	–	5	–	16	–
URTICACEAE					
Urtica urens L.	Small nettle	8	–	3	Td (dry)
U. dioica L.	Stinging nettle	121	23	7	Twd and W (esp. nitrogen–rich soils)

(Table continues next page)

SEEDS	Common name	No. Seeds by context 4	95	H 100	abitat
PRIMULACEAE					
cf. *Anagallis arvensis* L.	Scarlet pimpernel	–	–	1	Td
BORAGINACEAE					
Myosotis sp.	Forget–me–not	5	–	–	T, Tw, W
LABIATAE					
Ballota nigra L.	Black horehound	1	–	–	Td (esp. roads and hedges)
Lamium sp.	Deadnettle	1	–	–	Td
PLANTAGINACEAE					
Plantago major L.	Plantain	1	–	1	T, Td
CAPRIFOLIACEAE					
Sambucus nigra L.	Elder	6	–	1	T, Td, W
COMPOSITAE					
Senecio sp.	Groundsel or ragwort	–	–	17	Twd
Anthemis cotula L.	Stinking mayweed	–	–	49	Td
Arctium sp.	Burdock	1	–	–	T, Td
Carduus sp.	Thistle	1	–	–	Twd
Carduus or *Cursium* sp.	Thistle	5	–	4	Twd
Centaurea sp.	Knapweed	–	–	1	T, Td
Leontodon sp.	Hawkbit	–	–	6	T
Sonchus oleraceus L.	Sow–thistle	4	–	–	Td
S. asper (L.) Hill	Sow–thistle	20	–	91	Td
Crepis capillaris (L.) Wallr.	Smooth hawk's beard	–	–	2	Td
ZANICHELLIACEAE					
Zanichellia palustris L.	Horned pondweed	142	–	–	A
JUNCACEAE					
Juncus effusus L. gp.	Hard/soft rush	–	–	90*	Tw
Juncus spp. including *bufonius* L. and *articulatus* L.	Rush	–	–	730*	Tw
Juncus sp.	Rush	–	35	–	Tw
LEMNACEAE					
Lemna sp.	Duckweed	–	–	9	A
CYPERACEAE					
Carex sp.	Sedge	1	–	4	Tw
GRAMINEAE					
Triticium sp. (carbonised)	Wheat	–	–	1	C
gen. et sp. indet.	Grass	2	3	780*	T
Varia	–	1	–	11	–
TOTAL		**452**	**64**	**1889**	

Key to habitats:

A – Aquatic
C – Cultivated
T – Terrestrial, inc. grasslands
Td – Terrestrial, esp. disturbed places, inc. arable } usually
Tw – Terrestrial, esp. wet or damp places } open
Twd – Terrestrial, inc. wet and disturbed places } landscapes
W – Woodland

Also present:

	Contexts 4	95	100
Moss indet.	+	–	+
Decid. leaf frags indet.	–	+	+
Twig frags indet.	–	+	–
Bud scales indet.	+	+	–
Insects	+	+	+
Ostracods	+	+	+

TABLE 39: Results of seed analysis (MK117).

botanical evidence, therefore, it is possible that the primary silt of the enclosure ditch was Roman, and by extension, that the enclosure ditch belonged to this period too.

The seeds of *Lemna* sp. in Context 100 suggest that the ditch held stagnant water. Several other species identified were probably living in the wet or damp ditch environment, but the majority of the species given in Table 39 probably grew on the drier soil around the ditch. Disturbed ground and grassland are the habitats best represented by their seeds in Context 100. The grassland plants include *Stellaria graminea* and *Leontodon* sp., while it is possible that some of the numerous *Juncus* seeds were from plants growing in grassland as well as on the ditch sides. Most of the plants of disturbed ground identified are annuals, such as *Anthemis cotula* and *Sonchus asper*, which commonly occur as weeds amongst arable crops, but they are just as likely to have grown on soil disturbed by the construction of the enclosure. *Ranunculus arvensis*, however, is more closely associated with cereal cultivation. The single carbonized wheat grain was presumably derived from agricultural or domestic activity in the area.

There were too few seeds in Context 95 for any firm conclusions to be drawn about the environment, but there is no evidence for substantial change.

The results from Context 4 generally parallel those from Context 100, with plants of grassland, disturbed or waste ground, and shallow water being represented. Change can be seen in the aquatic plant community, which appears to have flourished and matured. This is only to be expected, because it would take time for a full range of aquatic plants to reach a freshly dug ditch. Thus, large quantities of *Zannichellia palustris* and *Ranunculus s. batrachium* seeds were present. The ditch probably contained no more than shallow, interrupted lengths of stagnant water for most of the year. Species characteristic of deep or flowing water are absent. There were rather fewer seeds of grassland plants in this sample than from the earlier context, but again, many plants found as weeds of cultivation were represented. However, it is unlikely that *Pastinaca sativa* and *Daucus carota* were being grown as crops. In addition to annual weeds, Context 4 contained seeds from another type of disturbed ground community, with species such as *Urtica dioica*, *Sambucus nigra* and *Arctium* sp. This community grows on waste ground, in hedgerows, at roadsides etc., and their presence probably represents the establishment of a mature weed flora along the boundary created by the ditch.

The open environment of the site appears to be typical of river terraces in England at this period, and is paralleled by sites on the Upper Thames terraces (Robinson 1981), the Welland gravels (Simpson 1966, 15–25) and the Tame Valley (Greig *in* Smith 1979). The range of species is similar to that from Farmoor (Lambrick and Robinson 1979, 83–86) and is likewise characteristic of a neutral soil, with few species requiring extremes of acidity or alkalinity.

Summary

Several waterlogged contexts of the enclosure ditch were sampled with an aim to recovering environmental data from them. Seeds were recovered from three samples, and the results tabulated. The floral evidence suggests the earliest context could be Roman, and the possible past environments at Caldecotte are discussed. The general landscape was open, and included grassland, and arable and disturbed areas. The ditch contained aquatic plants of shallow water, and may have been dried up for part of the year. No evidence for changes in the environment was found.

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INSECT REMAINS (MK117)

Mark Robinson

Introduction

Insect remains, mostly Coleoptera, were present in two of the contexts of the enclosure ditch investigated for seeds (see above). Aquatic ostracods and cladoceran ephippia were also abundant in these two samples. A diverse range of insects was identified and their implications are discussed below.

The Samples

Context 4: 250 g analyzed. Insect remains were absent from a second 250 g sample of this context, but seven shells of the slum aquatic mollusc *Anisus leucostoma* survived in a fragmentary condition.

Context 100: 6 kg analyzed.

Method and Results

The samples were washed over a 0.2 mm-aperture sieve, and then subjected to paraffin flotation. The insect remains so extracted were identified with reference to the entomological collections of the University Museum, Oxford. The minimum number of individuals for each taxon are given in Tables 40 and 41. The nomenclature of the Coleoptera follows Kloet and Hincks (1977). The habitat information used for the interpretation (summarised in Table 42) is largely from that given in Lambrick and Robinson (1979, 89, 100) and Robinson (1983).

Interpretation

The range of species from Context 100 is broadly similar to that which has been discovered from Iron Age and Roman sites on the gravels of the upper Thames Valley (eg. Lambrick and Robinson 1979). The only species of particular interest was a single individual of *Meloe violaceus*, a beetle which has not previously been recorded from archaeological contexts. It has a most curious life cycle (Buck 1954; Evans 1975, 81–3), the larva waiting on a flower until it can cling onto a visiting solitary bee. On reaching the bee's nest it feeds on the store of honey and pollen. Solitary bees of the appropriate host genera nest in sandy grassland.

By far the most abundant Coleoptera in Context 100 were small water beetles from the *brevipalpis* group of *Helophorus*. They readily colonize small, stagnant bodies of water. The other water beetles all occur in similar habitats. The summary habitat grouping of the Coleoptera shows a high percentage of species which feed on marsh and aquatic plants (Table 42, **5**). These consisted entirely of the weevil *Tanysphyrus lemnae*, which feeds on *Lemma* spp. Seeds of *Lemma* sp. were also present, suggesting the stagnant waters of the ditch to have been covered with duckweed.

Most of the remaining Coleoptera were from the terrestrial environment around the site. Like the plant remains, they suggest an open landscape. Excluding Coleoptera that can occur in structural timbers, there was only a single beetle from Context 100 which is associated with shrubs, trees or wood, an individual *Hylastinus obscurus*. Its larvae occur in dead or dying *Ulex, Sarothamnus* and *Ononis*, but the adults also attack *Trifolium* and other Papilionaceae.

Species with larvae which feed on roots in grassland, including *Agrypnus murinus*, *Agriotes* spp. and chafers, were relatively well represented (Table 42, **11**) suggesting grassland to have been an important aspect of the landscape around the enclosure. Dung beetles from the genus *Aphodius* comprised 5% of the terrestrial Coleoptera (Table 42, **2**) but compared with some other grassland sites this is a relatively low percentage for dung beetles (Robinson 1983, 39). If domestic animals had been concentrated in or around the enclosure, a higher proportion of dung beetles would be expected. In contrast, the representation of clover and vetch-feeding weevils from the genera *Sitona* and *Apion*, which tend to favour meadowland (Table 42, **3**), was similar to that from a deposit which accumulated under meadowland conditions (Lambrick and Robinson 1988). As the seeds (p.224) do not provide any supporting evidence for the presence of haymeadow plants, it is more likely that this result was due to lightly grazed pasture than meadowland. Further evidence for the presence of grassland comes from the weevil *Gymnetron labile*, which feeds on *Plantago lanceolata*.

Those species of carabid beetles which tend to be at their most numerous in arable fields, on bare ground or weedy disturbed ground were not well represented (Table 42, **6**). It is not possible to infer the occurrence of this habitat from the beetles alone. Some of the phytophagous Coleoptera from Context 100 can feed on weeds of disturbed ground, for example *Chaetocnema concinna* on *Polygonum aviculare*, but the seeds provide much better evidence for such plants. Likewise, it is the seed of the cornfield weed *Ranunculus arvensis* which provides the only evidence for cultivation.

Coleoptera	*Context* **100**	*Context* **4**
CARABIDAE		
Carabus monilis F.	1	–
Carabus sp.	1	–
Leistus ferrugineus (L.)	1	–
Notiophilus sp.	2	–
Trechus obtusus Er. or *quadristriatus* (Schr.)	1	1
Bembidion guttula (F.)	–	2
Bembidion sp.	3	–
Pterostichus melanarius (Ill.)	1	1
P. vernalis (Pz.)	–	1
P. cupreus (L.) or *versicolor* (Strm.)	2	–
Calathus fuscipes (Gz.)	2	1
C. melanocephalus (L.)	3	–
Synuchus nivalis (Pz.)	1	1
Agonum dorsale (Pont.)	–	1
A. muelleri (Hbst.)	1	–
Amara apricaria (Pk.)	1	–
Amara sp. (not *apricaria* (Pk.))	2	–
Harpalus rufipes (Deg.)	2	–
H. S. Ophonus sp.	1	1
H. affinis (Schr.)	–	2
Dromius linearis (Ol.)	2	–
HALIPLIDAE		
Haliplus sp.	2	–
DYTISCIDAE		
Hydroporus sp.	1	1
Agabus bipustulatus (L.)	1	1
Agabus sp. (not *bipustulatus*)	2	1
HYDROPHILIDAE		
Helophorus aquaticus (L.)	3	–
H. grandis (Ill.)	4	–
H. aquaticus (L.) or *grandis* (Ill.)	–	1
H. nubilus (F.)	2	–
Helphorus spp. (*brevipalpis* size)	141	16
Coelostoma orbiculare (F.)	1	–
Sphaeridium lunatum F. or *scarabaeoides* (L.)	1	–
Cercyon spp.	7	–
Megasternum obscurum (Marsh.)	8	2
Hydrobius fuscipes (L.)	6	1
Anacaena bipustulata (Marsh.) or *globulus* (Pk.)	1	–
A. limbata (F.)	1	–
HYDRAENIDAE		
Ochthebius minimus (F.)	6	–
Ochthebius spp.	14	2
Hydraena testacea Curt.	2	–
Hydraena sp. (not *testacea*)	2	–
Limnebius papposus Muls.	1	1
PTILIIDAE		
Ptenidium sp.	3	–
Ptiliidae gen. et sp. indet. (not *Ptenidium*)	4	–
LEIODIDAE		
Leiodes cf. *dubia* (Kug.)	–	1
Choleva or *Catops* sp.	–	1
STAPHYLINIDAE		
Lesteva sp.	6	1
Carpelimus bilineatus (Step.)	4	–
C. cf. *rivularis* (Mot.)	5	–
Platystethus arenarius (Fouc.)	1	–
P. cornutus gp.	–	1
Anotylus nitidulus (Grav.)	–	1

Table continues next column

Coleoptera (continued)	*Context* **100**	*Context* **4**
A. rugosus (F.)	5	–*A.*
sculpturatus (Grav.)	1	–
Stenus spp.	4	–
Lathrobium sp.	1	–
Rugilus sp.	1	–
Xantholinus linearis (Ol.)	8	2
Philonthus sp.	1	1
Tachyporus sp.	3	–
Tachinus sp.	1	1
Aleocharinae gen. et sp. indet.	6	–
SCARABAEIDAE		
Aphodius cf. *granarius* (L.)	3	–
A. contaminatus (Hbst.)	1	–
A. fimetarius (L.)	2	–
A. rufipes (L.)	4	–
A. cf. *sphacelatus* (Pz.)	1	1
Aphodius sp.	1	–
Oxyomus sylvestris (Scop.)	2	–
Onthophagus ovatus (L.)	–	1
Hoplia philanthus (Fues)	1	–
Phyllopertha horticola (L.)	1	–
DRYOPIDAE		
Dryops sp.	1	1
ELATERIDAE		
Agrypnus murinus (L.)	3	–
Agriotes lineatus (L.)	2	–
A. sputator (L.)	2	–
Agriotes sp.	3	1
CANTHARIDAE		
Cantharis rustica (Fall.)	1	–
Cantharis sp. (not *rustica*)	1	1
ANOBIIDAE		
Anobium punctatum (Deg.)	1	–
PTINIDAE		
Ptinus fur (L.)	–	1
MELYRIDAE		
Malachius aeneus (L.)	1	–
NITDULIDAE		
Brachypterus sp.	1	1
Meligethes sp.	2	1
CRYPTOPHAGIDAE		
Atomaria sp.	10	–
Cryptophagidae (not *Atomaria*)	1	–
PHALACRIDAE		
Olibrus sp.	1	1
CORYLOPHIDAE		
Orthoperus sp.	1	–
COCCINELLIDAE		
Coccidula rufa (Hbst.)	1	–
Coccinella septempunctata (L.)	1	–
LATHRIDIIDAE		
Lathridius minutus gp.	5	–
Enicmus transversus (Ol.)	4	1
Corticariinae gen. et sp. indet.	9	1

Table continues next page

Coleoptera (continued)	*Context* **100**	*Context* **4**
MYCETOPHAGIDAE		
Typhaea stercorea (L.)	1	–
OEDEMERIDAE		
Oedemera lurida (Marsh.)	1	–
MELOIDAE		
Meloe violaceus Marsh.	1	–
ANTHICIDAE		
Anthicus floralis (L.) or *formicarius* (Gz.)	1	–
CHRYSOMELIDAE		
Sermylassa halensis (L.)	1	–
Phyllotreta atra (F.)	–	1
P. nigripes (F.)	1	–
P. vittula (Redt.)	1	–
Longitarsus spp.	7	3
Podagrica fuscicornis (L.)	–	1
Chaetocnema concinna (Marsh.)	5	1
Psylliodes sp.	–	1
APIONIDAE		
Apion radiolus (Marsh.)	2	–
A. carduorum (Kirb.) or *onopordi* (Kirb.)	1	–
Apion spp. (not above)	9	–
CURCULIONIDAE		
Sitona hispidulus (F.)	2	–
S. cf. *humeralis* Step.	1	–
S. cf. *lineellus* (Bons.)	1	–
S. sulcifrons (Thun.)	5	–
Sitona sp.	1	1
Hypera punctata (F.)	1	–
Hypera sp. (not *punctata*)	1	–
Alophus triguttatus (F.)	1	–
Tanysphyrus lemnae (Pk.)	19	–
Ceuthorhynchinae gen. et sp. indet.	4	–
Anthonomus cf. *rubi* (Hbst.)	2	–
Tychius sp.	1	–
Mecinus pyraster (Hbst.)	1	–
Gymnetron pascuorum (Gyl.)	4	–
SCOLYTIDAE		
Hylastinus obscurus (Marsh.)	1	–
TOTAL	**435**	**65**

TABLE 40: List of Coleoptera present (MK117).

INSECTS	*Context* **100**	*Context* **4**
Forficula auricularia (L.)	5	2
Drymus sylvaticus (F.)	1	–
Gerridae gen. et. sp. indet.	1	–
Philaenus or *Neophilaenus* sp.	–	1
Aphrodes bicinctus (Schr.)	–	1
Aphidoidea gen. et. sp. indet.	10	–
Homoptera gen. et. sp. indet. (not above)	–	2
Myrmica laevinodis Nyl. or *ruginodis* Nyl. worker	–	1
Myrmica sp. worker	1	–
Myrmica sp. male	–	3
Lasius niger gp. worker	6	–
Lasius sp. male	1	–
Apis mellifera L. worker	–	2
Hymenoptera gen. et sp. indet. (not above)	18	2
Chironomidae gen. et sp. indet. larva	+	+
Bibionidae gen. et sp. indet. adult	–	1
Diptera adult	9	10
Diptera puparium	5	1

TABLE 41: Other insects present (MK117).

	Species grouping	*Context 100*
(1.	Aquatic	75.0)
2.	Pasture/dung	5.0
3.	?Meadowland	8.0
4.	Wood and trees	0.4
5.	Marsh/aquatic plants	8.0
6.	Bare ground/arable	1.2
7.	Dung/foul organic material	9.0
8.	Lathridiidae	7.0
9.	Synanthropic	0.4
10.	Esp. structural timbers	0.4
11.	Roots in grassland	5.0
Total number of terrestrial individuals		**248**

Species in groupings:
1–10: see Robinson 1981, 280–281, with the addition of *Harpalus rupifes* to **6**.
11: see Robinson 1983, 34–35.
Aquatic Coleoptera have been excluded from the coleopteran sum. Many of the Coleoptera in the sum do not fall into any of the particular species groupings.

TABLE 42: Percentages of terrestrial Coleoptera (MK117).

Species groups 7 to 10 in Table 42 tend to be associated with human settlement, occurring in compost heaps, stored products, thatch and the structure of timber buildings. However, all the species from this context can occur in other habitats, and none was sufficiently abundant to make it certain that their presence was not due to natural reasons. Those beetles most closely linked to indoor habitats, the woodworm beetles of 10 and the synanthropic beetles of 9, were respectively represented by single individuals of *Anobium punctatum* and *Typhaea stercorea*. The Lathridiidae, which tend to feed on moulds on dead plant material, and the smaller Hydrophilidae-Sphaeridiinae and Stapylinidae-Oxytelinae, which occur in dung and foul decaying organic material, were better represented. The percentages for these groups are comparable with those for Roman occupation sites in the upper Thames Valley (Robinson 1981, 280–1).

The sample from Context 4 did not contain sufficient Coleoptera for a detailed interpretation of the environment. Small water beetles from the *brevipalpis* group of *Helophorus* were again the most numerous beetles in the sample, suggesting that the aquatic conditions in the ditch were unchanged after recutting. The terrestrial Coleoptera show that the environment remained open. Interestingly, Context 4 contained the heads of two worker honey bees (*Apis mellifera*). There is only one other Iron Age example of honey bee from Britain (Robinson 1984).

Summary

Insect evidence from two contexts of the enclosure ditch suggests that an open landscape in which grassland was important prevailed on the gravels of the Ouzel at Caldecotte during the late Iron Age. Conditions were generally similar to those on the gravels of the upper Thames Valley in this period. The enclosure ditch held stagnant water. The results of the entomological investigation agree well with those from the seed analyses by Amanda Chadburn (p.224).

WATERLOGGED PLANT REMAINS (MK618)

J. B. Letts

Introduction

Seven bulk samples obtained from the pond on Croft C (MK618) were submitted for analysis to the Environmental Archaeology Laboratory at The University Museum, Oxford.

A random 100 g sub-sample of each sample was desegregated in warm water and washed over a nest of geological sieves with a minimum mesh diameter of 0.22 mm. Two samples were excluded from further analysis as they replicated adjoining samples in their species make-up, and provided little extra archaeological data. Additional sub-samples from Contexts 28, 1259, 1264 and 1388 were processed and sorted for identifiable plant remains, and the smaller size fractions of each sub-sample were in turn sub-sampled in order to minimize sorting time. Residues from the washover procedure were also examined in order to recover non-floating seed and plant tissues.

Seed specimens were identified by direct comparison with reference material held in the Elton-Robinson collection at The University Museum, and plant nomenclature follows Clapham, Tutin and Moore (1989). A catalogue of the plant remains recovered appears in Table 43.

Archaeological Background

The upper 1.0 m of naturally silted fill from the feature was removed by machine prior to sampling. A subsequent section revealed layers of moderately well-preserved organic material, interlaid with bands of naturally silted clay and sand of varying thickness.

Samples are listed in stratigraphic order:

Context	*Volume*	*Description*
1264	200	Compressed leaf-peat and clay with wood fragments
1259	500	Sandy black organic clay with pebbles
1388	500	Sandy and silty clay with stones and pebbles
28	500	Red-yellow sand with stones and pebbles
03	100	Compressed leaf-litter, fine silt matrix

Ponds are a very common feature of the prehistoric landscape (Rackham 1986). Artificially dug ponds represent a considerable investment of labour, and the creation of even a relatively small pond such as this feature would not have been undertaken without serious consideration.

Ponds were dug for a variety of reasons, but most commonly as water holes for animals, for fish-farming, as water storage facilities for garden-scale irrigation and for more specialised uses like flax retting. An early Saxon sump/pond revealed during recent excavations at Westbury-by-Shenley (Letts forthcoming) demonstrated a change in use from a watering hole for animals to a flax retting feature. Wattle sections were placed over the muddy base of the sump in order to support the rotting flax "beets" and to provide a solid foundation for retting.

The Caldecotte pond was recut at least once after its creation, although redigging is notoriously difficult to detect in such features. It then appears to have silted up naturally, and although evidence of worked wood and some charcoal was recovered in the earliest sampled layers, there was no direct artefactual evidence of specialised activities occurring in its vicinity. The section drawing (Fig. 44) suggests that erosional infilling may have occurred primarily from the eastern edge of the pond, and that stones and possibly wood brash were dumped on the muddy edge of the feature at various times in order to improve access for livestock. The working hypothesis of this analysis is, therefore, that the pond was dug primarily for use as a watering hole for animals, and that its subsequent history is dominated by natural processes of senescence and habitat succession.

Natural mechanisms of dispersal will have ensured that the seeds and tissues of plants growing in the vicinity of the pond were deposited in accumulating sediments under anaerobic conditions, where the normal process of decay was suspended. These remains thus provide a snapshot of the environmental conditions that prevailed in the vicinity of the feature at the time of deposition, while more specialized human activities involving the manipulation of plants and of local habitats (*ie.* arable cultivation, cereal processing, maintenance of grassland, etc.) may also be detected by the presence of characteristic species and plant associations.

Results

The samples examined contained a mixed flora which can be classified into four main ecological groupings as follows:

TAXA	COMMON NAME	CONTEXTS PRODUCING SAMPLES				
		1264[1]	1259	1388	28	03[1]
PTERIDOPHYTA	moss	x	x	x	x	x
FILICALES						
cf. *Pteridium aqulinum* (L.) Kuhn	bracken	–	x	x	x	–
RANUNCULACEAE						
Ranunculus sf. *acris* L.	meadow buttercup	–	2	–	–	–
R. cf. *repens* L.	creeping buttercup	–	–	1	–	–
R. acris/repens/bulbosus L.	buttercup	5	8	6	26	–
R. sardous Crantz	hairy buttercup	–	–	1	1	–
R. flammula L.	lesser spearwort	–	–	–	1	–
R. lingua L.	greater spearwort	–	–	–	1	–
R. sceleratus L.	celery leaved crowfoot	–	–	2	210	145
R. sbgn. *batrachium* (DC) A. Gray	water crowfoot	25	81	141	15	–
CARYOPHYLLACEAE						
Stellaria media (L.) Vill.	chickweed	3	–	1	8	–
Atriplex sp.	orache	–	–	2	4	5
LINACEAE						
Linum catharticum L.	purging flax	–	–	–	8	–
GERANIACEAE						
Geranium robertianum L.	herb robert	3	–	–	–	–
ACERACEAE						
Acer campestre L.	field maple	–	1	2	–	–
ROSACEAE						
Rubus sp.	bramble	10	4	9	5	5
Rosa sp.	rose	–	1	–	–	5
Prunus sp.	sloe/plum	3	–	–	–	–
P. spinosa L.	sloe	–	–	–	–	
	5					
Crataegus monogyna Jacq.	hawthorn	6	7	11	1	–
Rubus/Rosa sp. (thorn)	branble/rose	18	16	12	15	293
Prunus/Crataegus sp. (thorn)	sloe/hawthorn	–	1	3	–	5
cf. *Prunus* sp. (epidermis)	sloe	5	–	–	–	–
CALLITRICHACEAE						
Callitriche sp.	starwort	8	66	153	101	–
CORNACEAE						
Cornus sanguinea L.	dogwood	–	1	1	–	–
UMBELLIFERAE						
cf. *Daucus carota* L.	wild carrot	–	–	–	2	–
Anthriscus sp.	–	–	–	–	–	5
Scandix pecten–veneris L.	shepherd's needle	–	–	1	–	–
Torilis cf. *japonica* (Houtt.) DC.	hedge parsley	–	–	–	1	–
POLYGONACEAE						
Polygonum hydropiper L.	water pepper	–	–	1	–	–
Polygonum indet.	–	–	–	–	8	5
Rumex cf. *sanguineus* L.	red–veined dock	1	3	4	1	–
Rumex sp.	dock	7	10	31	22	40
URTICACEAE						
Urtica dioica L.	nettle	–	8	–	9	10
FAGACEAE						
Quercus sp. (cup)	oak	3	1	–	–	–
SALICACEAE						
Salix sp. (capsule frag.)	willow/sallow	x	–	–	x	–
Salix sp. (bud)	willow/sallow	–	x	–	–	x
Salix sp. (leaf frag.)	willow/sallow	–	x	–	–	x
Salix cf. *viminalis* L. (leaf frag.)	osier	–	x	–	–	–

Table continues next page.

TAXA	*COMMON NAME*	*CONTEXTS PRODUCING SAMPLES*				
		1264[1]	*1259*	*1388*	*28*	*03*[1]
OLEACEAE						
Fraxinus excelsior L.	ash	–	1	–	–	–
BORAGINACEAE						
Myoscotis sp.	forget–me–not	–	–	–	1	–
SOLANACEAE						
Solanum dulcamara L.	bittersweet	13	11	19	5	10
SCROPHULARIACEAE						
Veronica arvensis L.	wall speedwell	–	1	–	–	–
Veronica sp.	–	7	–	–	1	–
LABIATAE						
Stachys arvensis (L.) L.	field woundwort	3	1	–	–	–
S. sylvatica L.	hedge woundwort	–	–	–	–	5
Stachys sp.	–	5	–	–	–	–
Prunella vulgaris L.	selfheal	–	–	2	5	–
PLANTAGINACEAE						
Plantago major L.	plantain	8	–	8	–	–
RUBIACEAE						
Galium sp.	cleavers	–	–	–	1	–
COMPOSITAE						
Anthemis cotula L.	stinking mayweed	–	2	4	–	–
Carduus/Cirsium sp.	thistle	15	1	2	–	10
Lapsana communis L.	nipplewort	–	–	1	1	–
Sonchus asper (L.) Hill	spiny sow–thistle	2	13	–	–	–
Sonchus sp.	–	3	–	–	–	–
Taraxacum sp.	dandelion	–	2	13	1	5
Leontodon hispidus L.	hawbit	3	1	–	–	–
Centaurea cf. *nigra* L.	knapweed	–	1	–	–	–
Senecio sp.	ragwort	–	7	4	–	–
indet.	–	7	–	–	–	–
ALISMATACEAE						
Alisma sp.	water plantain	18	46	143	147	135
POTAMOGETONACEAE						
Potamogeton sp.	pondweed	1	–	–	–	20
JUNCACEAE						
Juncus effusus gp.	soft rush	10	4	962	–	2050
J. bufonius gp.	rush	–	–	8	–	–
LEMNACEAE						
Lemna sp.	duckweed	40	5	–	–	1655
SPARGANIACEA						
Sparganium sp.	bur reed	–	1	–	–	–
CYPERALES						
Carex sp.	sedge	8	6	10	10	–
GRAMINEAE						
Glyceria sp.	sweet grass	178	27	53	68	1140
indet.	grass	–	3	59	23	790
TOTAL SEEDS [2]		386	326	1647	686	6045

[1] Contexts 03 (100g) and 1264 (200g) corrected to 500g.
[2] All samples corrected for sub–sampling of small size fractions.

TABLE 43: Catalogue of waterlogged plant remains from pond, MK618.

1 Perennial aquatic and marginal macrophytes, many of which are monocots, and which include submerged, emergent and floating-leaved species characteristic of shallow (*ie.* below 1.5 m), slow-moving (*ie.* stagnant) and nutrient-rich (*ie.* eutrophic) ponds, ditches and drainage canals (*R. flammula, R. lingua, R. sceleratus*, R. sbgn. *Batrachium, Callitriche* sp., *Salix* sp., *Polygonum hydropiper, Alisma* sp., *Potamogeton* sp., *Juncus effusus* gp., *Lemna* sp., *Sparganium* sp., *Carex* sp. and *Glyceria* sp.).

2 Primarily perennial species of open grassland and waste ground (*R. acris, R. repens, Daucus carota, Rumex sanguineus, Urtica dioica, Prunella vulgaris, Anthriscus* sp., *Plantago major, Taraxacum* sp., *Leontedon hispidus, Centaurea nigra, Senecio* sp., *Juncus effusus* gp., *Carex* sp., *Linum catharticum*, Gramineae).

3 Perennial species of forest, scrub and field-edges/hedgerows (*Acer campestre, Rubus* sp., *Rosa* sp., *Prunus spinosa, Crataegus monogyna, Cornus sanguinea, Geranium robertianum, Anthriscus* sp., *Torilis japonica, Fraxinus excelsior, Rumex sanguineus, Urtica dioica, Quercus* sp., *Solanum dulcamara, Dipsacus fullonum, Stachys sylvatica, Salix* sp. and *Filicales* (cf. *Pteridium aquilinum*)).

4 Primarily annual segetal and ruderal "weeds" of disturbed open habitat, including arable fields (*R. repens, R. sardous, Stellaria media, Atriplex* sp., *Polygonum aviculare, Rumex* sp., *Veronica arvensis, Stachys arvensis, Plantago major, Anthemis cotula, Carduus/Cirsium* sp., *Lapsana communis, Sonchus asper, Senecio* sp., *Dipsacus fullonum, Scandix pecten-veneris*, Gramineae).

All the samples contained comminuted bark, twig and stem tissue, buds and bud scales, deciduous leaf abscission pads, unidentifiable leaf fragments and moss (Pteridophyte). Insect fragments were also plentiful, most being derived from detritus feeders common in shallow stagnant water (Robinson pers. comm.). Small fragments of charcoal were detected in the early Contexts 1259 and 1264.

Context 1264

The earliest sampled layer from the feature contained a rich assortment of aquatic macrophytes including water plantain *Alisma* sp., sweet grass *Glyceria* sp., sedge *Carax* sp., pondweed *Potamogeton* sp., water crowfoot *Ranunculus* sbgn. *Batrachium*, and starwort *Callitriche* sp. All of these species are most common in water less than 1.5 m deep, and particularly in stagnant and eutrophic ponds, rivers and ditches with muddy substrates. Sweet and sedge are prolific rhizomatous perennials, and form thick mono-specific stands in suitable locations.

Seeds of the free-floating duckweed *Lemna* sp. were relatively common. Duckweed can quickly carpet stagnant ponds and ditches in warm weather by vegetative means, but it flowers and produces viable seed only when exposed to direct sunlight. Thus, although bramble *Rubus* sp., willow *Salix* sp. and sloe *Prunus spinosa* grew in the immediate vicinity of the pond, they probably did not shade its surface. A segment of a sixteen year-old branch of oak *Quercus* sp., and several acorn cupules were also recovered from this sample. This suggests that oak probably grew in the vicinity of the pond, although oak wood brush and stones could have been deliberately placed at the edge of the pond in order to facilitate access by animals. Bittersweet *Solanum dulcamara* and herb robert *Geranium robertianum* also prefer damp, shady conditions and probably grew with shrubby vegetation on the pond margins.

Members of the soft rush group *Juncus effusus* (gp.) and plantain *Plantago major* are usually common in trampled/puddled pasture, while buttercups *Ranunculus acris/repens/bulbosus*, sedges *Carex* sp., thistles *Carduus/Cirsium* sp., hawkbit *Leontedon hispidus* and small grasses Gramineae are usually abundant in grassland.

Most of the other species identified frequent a wide range of habitants. The majority of unidentified grasses were very similar to sweet grass but lacked the characteristic bifurcated pistil.

Context 1259

The shallow-aquatic/marginal flora identified in Context 1264 is joined by bur reed *Sparganium* sp. Shallow-water conditions thus persist, and further infilling occurs through natural silting and the accumulation of semi-decayed plant tissue. The very small quantity of duckweed seed recovered indicates increased shading of the pond surface. This is supported by seed of field maple *Acer campestre*, oak *Quercus* sp., dogwood *Cornus sanguinea* and ash *Fraxinus excelsior*, leaf fragments of willow *Salix* sp. and osier *S. viminalis*, thorns and seeds of bramble, dog rose and sloe/hawthorn, and seeds of various herbaceous species which tolerate limited shading including nettle, bittersweet *Solanum dulcamara* and field woundwort *Stachys arvensis*.

A grassland component is also clearly represented by Meadow buttercup *R. acris*, red-veined dock *Rumex sanguineus*, wall speedwell *Veronica arvensis*, knapweed *Centaurea nigra*, ragwort *Senecio* sp., nettle, dandelion and sedges. Several of these species are also common in disturbed open soil conditions, while wall speedwell, stinking mayweed *Anthemis cotula*, thistle, dandelion, ragwort, buttercups and dock suggest the proximity of arable fields.

Context 1388

This shows a reduction in shallow-water macrophytes and a continued presence of shrubby pond-edge and grassland habitat. A clear arable component is also visible; buttercups, including the hairy buttercup *R. sardous*, chickweed *Stellaria media*, orache *Atriplex* sp., dock *Rumex* sp., plantain *Plantago major*, stinking mayweed *Anthemis cotula*, thistle *Carduus/Cirsium* sp., ragwort *Senecio* sp., nipplewort *Lapsana communis*, shepherd's needle *Scandix pecten-veneris* are all common ruderal/segetal species of arable fields.

Context 28

This contained most of the species present in previous samples, with the addition of the spearwort *Ranunculus flammula* and *R. lingua*. Duckweed is entirely absent, suggesting an increased shading of the pond surface by overhanging pond-edge vegetation composed of willow *Salix* sp., bramble, dog rose, nettle, hedge parsley *Torilis japonica* and several other facultatively shade-tolerant herbaceous species.

This sample is unique in that rushes *Juncus* sp. were absent; a reduction in trampling of the pond edges due to a less intensive use of the feature as a watering hole could thus be represented. Dry grassland taxa such as the purging flax *Linum catharticum*, selfheal *Prunella vulgaris* and numerous other less characteristic taxa, confirm the continued prevalence of grassland in the vicinity. Frond fragments of bracken (cf. *Pteridium aquilinum*) were also recovered, possibly reflecting the presence of overgrazed grassland on slightly acid soil.

Most of the open habitat species identified frequently indicate a variety of disturbed open conditions including arable fields; hairy buttercup *Ranunculus sardous*, nipplewort *Lapsana communis*, dock *Rumex* sp. and chickweed *Stellaria media* are all common weeds of arable fields.

Context 03

This sample, the best-preserved, was composed primarily of deciduous leaf litter in a matrix of fine black organic silt.

Although emergent, floating leaved and marginal macrophytes were well represented, submerged species such as starwort *Callitriche* sp. and the water crowfoots are conspicuously absent. Sweet grass greatly increases its presentation, possibly at the expense of sedge, while duckweed is also exceedingly common. As previously mentioned, duckweed produces seed only in direct sunshine and particularly in warm weather. The very high values for duckweed in this sample reflect increased insolation at the pond surface, and suggest that shrubby/woody vegetation was cleared from the edges of the pond after an earlier period of less intensive use (*ie*. Context 28). Scrubby bramble and dog rose may have subsequently grown with greater vigour in the open conditions, while willow and sloe grew in the near vicinity. The reduced shadiness would also have led to a rapid spread of rhizomatous species such as sweet grass, which is well represented in the sample, and to a blooms of duckweed and algae. As a result, light penetration drops drastically and water quality decreases when the plant tissues begin to decay. Submerged macrophytes such as starwort and the water crowfoots may thus have been killed off gradually as the pond became shallower.

The peak in seeds of the rush group *Juncus effusus* (gp.) in this sample would be consistent with a re-use of the pond as a shallow watering hole for animals. However, this could not have been maintained for long owing to the rapid accumulation of decaying plant debris and the encroachment of increasingly terrestrial species.

Discussion

The floral remains preserved in the Caldecotte pond reflect fluctuation in the intensity of its use as a watering hole. The earliest samples (1259, 1264) suggest an open pond no deeper than about 1.5 m, and with some scrubby or hedgy vegetation in the vicinity. The muddy substrate and eutrophic waters supported a classic shallow fresh-water plant community. The pond undoubtedly served as a watering hole for animals, and trampled pasture/grassland habitat prevailed in the vicinity.

Aquatic conditions persisted in spite of substantial silting and infilling, and pond-edge vegetation gradually shaded much of the pond surface (1388, 28). The trampled pond-edge flora of earlier samples is much less prevalent, although this could be related to deposition of stone and wood brash at the edge of the pond to consolidate the surface for easier access. Grassland taxa are common, however, and the pond probably continued in use as a watering hole, although less intensively.

Species characteristic of the open disturbed conditions of arable fields are most common in Context 1388, and arable activity almost certainly occurred in the vicinity of the pond.

Context 03 differs considerably from earlier samples, and may represent an important terminal phase in the hydrosphere succession; pond-edge vegetation appears to have been cleared away, thereby increasing insolation at the pond surface. Duckweed, and probably algae as well, flourished in the eutrophic, shallow-water conditions and were able to flower and set seed in the open sunlight. Such blooms would have greatly decreased light penetration, and water quality would have decreased subsequentially when the bloom decayed. Submerged aquatic macrophytes such as starwort and the water crowfoots could not have tolerated these conditions and were killed off, while emergent and marginal species survived into further stages of the pond senescence. Further infilling would have occurred rapidly until damp terrestrial conditions were achieved.

In phytosociological terms, the aquatic plant community of the early pond can be attributed to the Callitricho-batrachion alliance of the class Potametea, *ie*. perennial, rooted, aquatic vegetation composed primarily of species of pondweed *Potamogeton* sp., crowfoots/buttercups *Ranunculus* sp., and starwort *Callitriche* sp. Emergent/marginal tall sedge, grass and herbaceous vegetation is typical of the alliance Glycerio-sparganium of the class Phragmitetea. In its final stages of senescence the pond vegetation was dominated by free-floating mats of duckweed *Lemna* sp. of the phytosociological class Lemnetea (Haslam, Sinker and Wolseley 1975).

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POLLEN ANALYSIS (MK618)

Duncan Hale

Introduction

Three sediment samples from a section of the pond on Croft C were submitted for pollen analysis with a view to providing some information on the earlier vegetation of the area. The samples may record the development of an adjacent field boundary over approximately 100 to 150 years spanning the late medieval/early post-medieval periods.

Laboratory Methods

Two millilitres of sediment were taken from each bulk sample and processed using a heavy liquid separation procedure described in Hale and Noel (1991). The method involves dissolution in hydrochloric acid, potassium hydroxide digestion, micropore sieving and centrifugation in zinc chloride. A known number of *Lycopodium* 'marker' spores was added at the start of each preparation to enable calculated estimates to be made of the total numbers of grains present. The final residues were stained with safranine and mounted on microscope slides.

The original intent was to identify approximately 250 pollen grains for each sample, but for Contexts 1265 and, more especially, 03, the counts were extended in order to allow the identification of more pollen types and so provide more information. In the case of Context 1265 about 65% of the pollen count was accounted for by only two pollen types, and so the count was continued. To an even greater extent the count for Context 03 was dominated (about 80%) by grasses, hence further counting was undertaken to determine which other plants were growing in the area.

The pollen counts are shown in Table 44. '%TPS' represents the percentage of total pollen and spores.

Description of the Pollen Record

Context 1263

This was the earliest context in the sequence. The sample was dominated by *Ligustrum* (privet) at 30% and Gramineae (grasses) at 12%. Eight tree species were recorded, notably *Ulmus* (elm), *Fraxinus* (ash), *Quercus* (oak) and *Pinus* (pine), and to a lesser extent *Castanea* (sweet chestnut), *Acer* (sycamore), *Betula* (birch) and *Fagus* (beech). As well as privet, three other shrubs were present; *Corylus* (hazel), *Crataegus* (hawthorn) and *Hedera* (ivy). Many grassland herbs were noted, amounting to 24%TPS, not including grasses. There was one occurrence of cereal pollen. Three aquatic plants were recorded; *Typha latifolia* (bulrush) 5%, *Potamogeton* (pondweed) and *Myriophyllum verticillatum* (whorled water milfoil). A few ferns were present.

Context 1265

This sample was dominated by grasses (44%) and ash (20%). The tree and shrub content of the record is broadly similar to Context 1263, though with less privet and much more ash. No pollen of aquatic plants was present, and there were fewer fern spores.

Context 03

This was the most recent context sampled. Gramineae (grasses) pollen accounted for 82% of the pollen present. A similar range of tree and shrub pollen was noted, with a greater abundance of pine, though the relative percentages of these types was significantly reduced owing to the overwhelming presence of grasses. Bulrush and whorled water milfoil reappeared here in low numbers. No ferns were recorded in this sample.

Discussion

The pollen evidence from the earliest context here indicates a broad range of trees and shrubs accounting for 57%TPS, roughly half of this being *Ligustrum* (privet). Privet is a native shrub, often found forming scrubland or in hedges, and it could be that the pollen here originated from a nearby hedge. There are considerable amounts of grass and herbs of open land, which could represent either scrub or grassland with a hedge. There was some standing water nearby, with bulrushes, pondweed and whorled water milfoil. The presence of *Acer* (sycamore) in the record is important for dating the sediments. Sycamore is not native to Britain, but was introduced in the fifteenth or sixteenth century, hence the pollen evidence provides an approximate *terminus post quem* for this sediment sequence.

There were several distinct differences between the pollen assemblages from Contexts 1263 and 1265. Most notable was the considerable drop in *Ligustrum* (privet) pollen and the dramatic increase in *Fraxinus* (ash). Most of the other tree species had declined by this time and grassland had become much more abundant. This seems most likely to represent the clearing of earlier scrubland and the establishment of a predominantly ash hedge, since if the privet was already in the form of a hedge, it is not likely to have been removed and replaced by ash, given the proposed timescale. The absence of any pollen from aquatic plants suggests either considerable drainage of the area or simply removal of the plants. If the feature was a watering hole for cattle, as has been suggested by the excavator, then one might expect that the plants had either been cleared or had not survived the constant trampling of hooves. The less varied herb types and the increased grassland also suggest the presence of grazing land.

Pollen types	*Cont. 1263*		*Cont. 1265*		*Cont. 03*
	counts	*%TPS*	*counts*	*%TPS*	*counts*
TREES:					
Betula	2	1	3	1	2
Pinus	6	2	1	1	16
Ulmus	12	5	3	1	4
Quercus	8	3	11	3	2
Fraxinus	9	4	64	20	6
Fagus	1	1	2	1	–
Acer	2	1	–	–	–
Castanea	3	1	–	–	–
SHRUBS:					
Corylus	10	4	7	2	5
Crateagus type	9	4	8	3	1
Ligustrum	76	30	19	6	5
Hedera	1	1	1	1	–
HERBS:					
Gramineae	32	12	139	44	385
Cereal	1	1	–	–	3
Sinapis type	3	1	–	–	–
Fallopia convolvulus type	7	3	–	–	–
Chenopodiaceae	6	2	–	–	6
Umbelliferae	5	2	1	1	1
Centaurea nigra	16	6	12	4	4
Polygonum bistorta type	4	2	–	–	–
Plantago lanceolata	1	1	11	3	8
Serratula type	1	1	–	–	–
Anthemis type	8	3	12	4	4
Polygonum persicaria type	1	1	–	–	–
Oxyria type	–	–	4	1	–
Compositae Liguliflorae	–	–	10	3	7
Rumex obustifolius type	–	–	3	1	1
Caryophyllaceae	–	–	–	–	2
Succisa pratensis	3	1	–	–	–
AQUATICS:					
Typha latfolia	14	5	–	–	2
Potamogeton	6	2	–	–	–
Myriophyllum verticillatum	1	1	–	–	3
SPORES:					
Filicales (undiff.)	5	2	4	1	–
Polypodium vulgare	3	1	–	–	–
Pteridium aquilinum	–	–	1	1	–
TOTALS	257		316		471
Lycopodium markers	130		123		197

TABLE 44: Pollen catalogue, Well Close (MK618).

The pollen record from the latest context (03) was again quite different from the other assemblages. Gramineae (grasses) pollen accounted for 82% of the pollen present, and so percentages were not calculated for other individual pollen types. The arboreal pollen was only 6%TPS, and shrubs only 2%. These percentages can be misleading taken on their own, owing to the overabundance of grass pollen and compensatory decreases in the relative percentages of other types. However, by calculating absolute frequencies of pollen types from the recovered *Lycopodium* spores, these decreases are found to be real rather than apparent. Several tree and shrub species are represented here, but the pollen is in numbers too low to suggest the presence of a hedge at this time, and is more likely to have originated from trees growing some distance away. Aquatic plants reappeared in this sample, suggesting either a lack of management or trampling at the water's edge. Three cereal pollen grains are recorded for this level and indicate the proximity of a cereal processing area. The vast majority of cereal pollen grains are released during threshing and are not blown far, owing to their mass.

Conclusion

The large differences between the three pollen assemblages could be only properly explained by analysing more samples from closer stratigraphic intervals. However, from the evidence here it can be suggested that the sediments in the pond started to accumulate during or after the sixteenth century, and that the area was probably 'waste' or scrubland dominated by privet, but with numerous other trees and shrubs. By the time Context 1265 was deposited there appears to have been considerably more management of the land, with some scrub clearance, and there may well have been a hedge dominated by ash. Around this was an area of grassland, perhaps grazed and confirming the use of the pond as a cattle watering hole. The vegetation represented by the pollen towards the top of the section is grassland. It seems that there were no trees in the vicinity of the feature, nor any evidence to suggest a hedge. There may still have been a hedge, as suggested by the on-site trimmings/brash, but it must have been trimmed fairly regularly, preventing flowering and thus pollen production.

WOOD IDENTIFICATION (MK618)

Rowena Gale

Introduction

During the excavation of the pond numerous pieces of waterlogged wood were encountered. These included several artefacts, samples of worked wood and a quantity of woody fragments, some of which had survived as large branches. One further sample was found in Area 4. The material was submitted for species identification.

Materials and Methods

Thin-sections were removed from the samples to show the anatomical structure in the transverse, tangential longitudinal and radial longitudinal orientations. These were mounted in 50% glycerol on microscope slides and examined at magnifications up to ×400 using a light microscope. The anatomical structure was compared to authenticated reference material.

Results

Period 2/III

The primary silting of the pond was dated to the late fourteenth to fifteenth century. Wood fragments were not found in this context. Much of the worked wood related to later silting during this phase. Many of the artefacts (Fig. 106), although fragmentary, appeared to have been associated with structural work and involved several types of wood including ash, oak, elm and willow.

Fragments from two objects which may have been planks (**417, 419**) and a further, perforated, plank-like item with a nail at one side (**420**) were identified as elm (*Ulmus*). Elm wood is characteristically tough and strong, although difficult to work.

The tapered bases of two stakes or posts were made from oak (*Quercus*) (**421**) and elm (**424**). Fragments of bark were still *in situ* on the elm post but absent from the oak post; the bark may have been stripped away from the latter during manufacture or have become worn and detached through use. Both elm and oak are very durable when in contact with the ground and would have provided strong and long-lasting materials.

The two small worked items (**414**), possibly pegs, were made from ash, and this strong and resilient wood would have been the ideal material for such articles.

A barrel lid (**418**), about a two-thirds complete, was made from a single piece of oak wood. This was cut with the longitudinal axis of the wood running parallel to the width (longest axis) of the lid and had one surface smoothed and slightly concave, while the other was rough and convex. When oak wood is cut or split radially leaving a barrier of rays intact it becomes virtually impermeable, and has been used for cooperage (particularly for containing alcohol) for many centuries (Edlin 1949).

Fragments from five flat pieces (**415**) with bevelled edges were identified as Salicaceae. This family includes willow (*Salix*) and poplar (*Populus*) which are anatomically very similar, and it is often impossible to identify to genus. However, these particular fragments were almost certainly willow. It was thought that they may have been pieces from barrel staves. Willow has always had a traditional place in cooperage, although it was generally used to form the outer bands supporting oak staves and would have been an unusual choice, as in this instance, for the staves themselves. It has, however, frequently been used to make other types of containers such as measures and buckets (Edlin 1949).

Period 3

During the late seventeenth or early eighteenth century the pond appears to have been recut as a wider, shallower feature. A quantity of wood was present in the silting belonging to this phase. Some of these pieces (3/11790 and 3/11791) from the leaf litter were large, and probably derived from natural debris. The samples included lengths of roundwood of various diameters (max. 60 mm), many with lateral side shoots and branch scars present. Tool marks were absent. Most of the wood was elm but some oak, maple/sycamore (*Acer*) and willow/poplar was also present. A Y-shaped oak branch (**422**) with one arm sawn and the others splintered was also found in the leaf litter. One further sample from this context (513/11760) included some knarled pieces of elm bark and wood.

A number of other samples (11781, 11796, 11797, 11812, 11911 and 12000) assigned to the unstratified Context 1031 from within the fill of the pond consisted mainly of fragments of roundwood, some with tool marks present, and a few wood chips or slivers. A wide range of species was represented including willow/poplar, elm, oak, ash, hazel (*Corylus*), blackthorn and members of the Pomoideae group such as hawthorn, apple, pear, rowan, whitebeam and wild service tree.

The base of a stake (**423**) made from ash with a square tapering end was also associated with this phase. Ash wood is far more vulnerable to degradation by soil micro-organisms than either oak or elm (identified from posts in Period 2/III) and is therefore less durable when used for outdoor items such as stakes.

Area 4

A fragment from the base of a post (**425**) made from elm roundwood was the only piece of wood found in this area.

Discussion

The genera identified from wood fragments from the pond represented both artefactual material and woody debris.

The artefacts were mainly associated with Period 2/III and consisted of posts, planks, a barrel lid, ?barrel staves, pegs and a turned handle. The woods from which these items were made (oak, willow, ash and elm) are all common British timbers and identification of the plant remains from this site (see above) has indicated that oak, ash and willow were certainly growing in the vicinity. The abundance of elm twigs and branches present in the pond suggests that this genus was also growing locally. The posts and planks may well have been made from local timber, perhaps even from Caldecotte, but it is more likely that portable objects such as the barrel lid, ?staves and the turned handle were made in a workshop which have been some distance away.

In most instances the woods selected to make these objects were in keeping with traditional methods, and reflected the particular properties of each timber (Edlin 1949). Examples of this include the durability of oak and elm to make posts and planks, and the strength and resilience of willow and ash to make pegs and the turned handle. The use of ash to make a stake, if this was for use outdoors, was unusual considering the perishable nature of ash in this situation.

The woody debris associated with Period 3 would almost certainly have derived from the immediate vicinity of the site. It may have been deposited either by human activity in or around the pond or have gradually accumulated from natural sources. Tool marks present on some pieces suggest that some fragments at least arrived in the pond through human intervention.

The woody debris included oak, ash, maple/sycamore, blackthorn, member(s) of the Pomoideae (hawthorn, apple, pear, whitebeam, rowan and wild service tree), hazel and elm. The examination of the non-woody remains of plants has confirmed that most of these species (oak, ash, maple/sycamore, blackthorn and hawthorn) were growing at Caldecotte at this time. Woody debris of elm was extremely abundant, but hazel was represented by only one sample, suggesting that although this genus was evidently present in the area it may have been relatively scarce or, perhaps, growing at some distance from the pond.

BIBLIOGRAPHY

Historical sources

BAS	Buckinghamshire Archaeology Society
BedsCRO	Bedfordshire County Records Office
BuCRO	Buckinghamshire County Records Office
New College Ms.	New College Manuscript (Oxford)

Publications

Adkins, L. and Adkins, R. A., 1983. *The handbook of archaeology* (London).

Allan, J. P., 1984. *Medieval and post-medieval finds from Exeter*. Exeter Archaeol. Rep. **3** (Exeter).

Allason-Jones, L. and Miket, R., 1984. *The catalogue of small finds from South Shields Roman fort*. Soc. Antiq. Newcastle upon Tyne Monog. **2** (Newcastle upon Tyne).

Angus, N. S., Brown, G. T. and Cleere, H. F., 1962. 'The iron nails from the Roman legionary fortress at Inchtuthil, Perth', *J. Iron Steel Inst.* **200**, 956 ff.

Anon., 1963. 'Archaeological notes from the Buckinghamshire County Museum', *Rec. Buckinghamshire* **17. 3**, 202–206.

Anon., 1964. 'Archaeological notes from the Buckinghamshire County Museum', *Rec. Buckinghamshire* **17. 4**, 301–307.

Anon., 1965. 'Archaeological notes from the Buckinghamshire County Museum', *Rec. Buckinghamshire* **17. 5**, 409–413.

Anon., 1967. 'Archaeological notes finds 1967; North Bucks. and South Northants. ', *J. Wolverton Dist. Archaeol. Soc.* **1**, 7–11.

Anon., 1971. 'Archaeological notes from the Buckinghamshire County Museum'. *Rec. Buckinghamshire* **19. 1**, 92–95.

Apted, M. R. *et al.*, 1977. *Ancient monuments and their interpretation* (Chichester).

Armitage, P., 1974. 'The faunal remains' *in* Thompson *et al.* 1984, 138ff.

Armitage, P., 1977. *The mammalian remains from the Tudor site of Baynard's Castle, London: a biometrical and historical analysis*. Unpublished Ph. D. thesis, University of London.

Armitage, P., 1979. 'The jawbone of a mule from the Roman levels, Billingsgate Buildings (TR74), City of London', *London Archaeologist* **3**, 340–345.

Armitage, P., 1982. 'A system for ageing and sexing the horn cores of cattle from British post-medieval sites (17th to early 18th century) with special reference to unimproved British long horn cattle' *in* Wilson *et al.* 1982, 37–54.

Armitage, P., 1983. 'The early history of English longwool sheep', *The Ark* **10. 3**, 90–97.

Armitage, P. and Clutton-Brock, J., 1976. 'A system for classification and description of the horn-cores of cattle from archaeological sites', *J. Archaeol. Science* **3**, 329–346.

Armstrong, P. and Ayers, B., 1987. 'Excavations in High Street and Blackfriargate', *East Riding Archaeol.* **8**. Hull Old Town Rep. Ser. **5**.

Aston, M., Austin, D. and Dyer, C. (eds), 1989. *The rural settlements of medieval England* (Oxford).

Atkinson, D., 1942. *Report on excavations at Wroxeter (The Roman city of Viroconium) in the county of Salop, 1923–1927* (Oxford).

Ault, A. O., 1972. *Open field farming in medieval England* (London).

Baart, J. *et al.*, 1977. *Opgravingen in Amsterdam* (Amsterdam).

Bachmann, H. G., 1976. 'Crucibles from a Roman settlement in Germany', *J. Hist. Met. Soc.* **10**, 1ff.

Baker, D., Baker, E., Hassall, J. and Simco, A., 1979. 'Excavations in Bedford 1967–1977', *Bedfordshire Archaeol. J.* **13**.

Barley, M. W., 1972. *The English farmhouse and cottage* (London).

Bartlett, A., 1977. *Caldecotte, Milton Keynes*. unpublished report by Ancient Monuments Laboratory, Geophysics section, No. G34/77 (London).

Bateson, J. D., 1981. *Enamel-working in Iron Age, Roman and sub-Roman Britain*. Brit. Archaeol. Rep. **93** (Oxford).

Beresford, G., 1975. *The medieval clay-land village; excavations at Goltho and Barton Blount*. Medieval Archaeol. Monog. **6** (London).

Beresford, M. 1969. *The lost villages of England* (London).

Beresford, M. and Hurst, J. G. (eds), 1973. *Deserted medieval villages* (London).

Biddle, M., 1990. *Object and economy in medieval Winchester 2*. Winchester Studies **7. ii** (Oxford).

Biddle, M. and Barclay, K., 1990. 'Sewing pins and wire' *in* Biddle 1990, 560–571.

Biddle, M. and Smith, D., 1990a. 'The Querns' *in* Biddle 1990, 881–890.

Biddle, M. and Smith, D., 1990b. 'Mortars' *in* Biddle 1990, 890–908.

Bidwell, P. T., 1985. *The Roman fort of Vindolanda*. Hist. Buildings Monuments Comm. England **1** (London).

Bimson, M., 1971. 'The significance of "ale-measure" marks', *Post-Medieval Archaeol.* **4**, 165–166.

Blinkhorn, P. W., 1993. 'Early and middle Saxon pottery from Pennyland and Hartigans' *in* Williams 1993, 246–264.

Blinkhorn, P. W., (forthcoming a). 'Early/middle Saxon pottery' *in* Williams *et al.*

Blinkhorn, P. W., (forthcoming b). 'Saxon pottery from North Raunds'.

Blockley, K., 1985. *Marshfield, Ironmongers Piece, Excavations 1982–3, an Iron Age and Romano-British settlement in the south Cotswolds*. Brit. Archaeol. Rep. **141** (Oxford).

Boessneck, J., 1969. 'Osteological differences between sheep (*Ovis aries linné*) and goat (*Capra hircus linné*) *in* Brothwell and Higgs 1969, 331–358.

Boessneck, J. and von den Dreisch, A., 1974. 'Kritische anmerkungen zur widderristhöhenberechnung aus Längenmassen vor und fruhgeschichtlicher tierknochen', *Saugetierkdl Mitt* **22 (4)**, 325–48.

Bohme, A. 1972. *Die fibeln der Kastelle Saalburg und Zugmantel.* Bericht des Saalburg Museums **29** (Saalburg).
Boon, G. C., 1972–3. 'Roman glassware from Caerwent, 1855–1925', *Monmouthshire Antiq.* **3. 2**, 111–123.
Boon, G. C., 1974. *Calleva: the Roman town of Silchester* (Newton Abbott).
Bowen, H. C., 1961. *Ancient fields* (London).
Bradbrook, W., 1903. 'Bletchley Register', *Rec. Buckinghamshire* **8**, 234–249.
Brailsford, J. W., 1958. *Guide to the antiquities of Roman Britain* (2nd edition) (London).
Brewster, T. C. M. and Hayfield, C., 1988. 'Cowlam deserted village: a case study of post-medieval village desertion', *Post-Medieval Archaeol.* **22**, 21–110.
Brodribb, A. C. C., Hands, A. R. and Walker, D. R., 1968–73. *Excavations at Shakenoak, I–IV* (privately printed)
Brodribb, A. C. C., Hands, A. R. and Walker, D. R., 1978. *Excavations at Shakenoak, V.* Brit. Archaeol. Rep. (Oxford).
Brothwell, D. R. and Higgs, E. (eds), 1969. *Science in archaeology* (London).
Bryant, S., Morris, M. and Walker, F. S. F., 1986. *Roman Manchester, a frontier settlement.* Archaeol. Greater Manchester **3** (Manchester).
Buck, F. D., 1954. *Coleoptera: Lagriidae to Meloidae.* Royal Entomological Society handbook for the identification of British insects **5. 9** (London).
Burgess, C. R. H., 1946–48. 'Land drainage and irrigation', *Trans. Woolhope Nat. Field Club* **41**, 85–94.
Bushe-Fox, J. P., 1926. *First report on the excavation of the Roman fort at Richborough, Kent.* Report of the Research Committee of the Society of Antiquaries of London **6** (Oxford).
Bushe-Fox, J. P., 1949. *Fourth report on the excavation of the Roman fort at Richborough, Kent.* Report of the Research Committee of the Society of Antiquaries of London **16** (Oxford).
Butcher, S. A., 1977. 'Enamels in Roman Britain' *in* Apted *et al.* 1977, 41–70.
Chapelot, J. and Fossier, R., 1985. *The village and house in the Middle Ages* (London).
Charleston, R. J., 1975. 'The glass' *in* Platt *et al.*, 204–226.
Charleston, R. J., 1984. 'The glass' *in* Allan *et al.*, 258–278.
Charlesworth, D., 1971. 'A group of vessels from the commandant's house, Housesteads', *J. Glass Studies* **13**, 34–37.
Charlesworth, D., 1972. 'The glass' *in* Frere 1972, 196–215.
Charlesworth, D., 1974. 'The glass' *in* Neal 1974, 203–207.
Charlesworth, D., 1975. 'The commandant's house, Housesteads', *Archaeol. Aeliana* **3** (5th ser.), 17–42.
Charlesworth, D., 1976a. 'The glass bowl' *in* Neal 1976, 117.
Charlesworth, D., 1976b. 'The glass' *in* Neal 1976, 31–33.
Charlesworth, D., 1984. 'The glass' *in* Frere 1984, 152–155.
Cherry, J., 1991a. 'Seal matrices' *in* Saunders P. and E. (eds) 1991, 29–39.
Cherry, J., 1991b. 'Rings' *in* Saunders, P. and E. (eds) 1991, 40–46.
Clapham, A. R., Tutin, T. G. and Warburg, E. F., 1962. *Flora of the British Isles* (Cambridge).
Clarke, G., 1979. *The Roman cemetery at Lankhills.* Winchester Studies **3**, pre-Roman and Roman Winchester, Part II (Oxford).
Clason, A. T. (ed.), 1975. *Archaezoological studies* (Amsterdam).
Cleere, H. F., 1958. 'Roman domestic ironwork, as illustrated by the Bradley, Isle of Wight, villa', *Bull. Inst. Archaeol.* **158**, 55–74.
Cleere, H. F., 1982. 'Industry in the Romano-British countryside' *in* Miles 1982, 123–135.
Collingwood, R. G. and Richmond, I. A., 1969. *The archaeology of Roman Britain* (London).
Cool, H. E. M., 1990. 'Roman metal hair pins from southern Britain', *Archaeol. J.* **147**, 148–182.
Cornwall, J., 1959. 'An Elizabethan census', *Rec. Buckinghamshire* **16. 4**, 258–73.
Cox, A., 1979. *Survey of Bedfordshire. Brickmaking; a history and gazetteer* (Bedford).
Cram, L. L., 1978. 'The animal bone' *in* Brodribb *et al.* 1978, 117–160.
Crummy, N., 1983. *The Roman small finds from excavations in Colchester 1971–9.* Colchester Archaeol. Rep. **2** (Colchester).
Crummy, N., 1985. 'The brooches' *in* Pryor *et al.* 1985, 164–6.
Crummy, N., 1988. *The post-Roman small finds from excavations in Colchester 1971–85.* Colchester Archaeol. Rep. **5** (Colchester).
Cunliffe, B., 1971. *Excavations at Fishbourne, 1961–1969, volume II, the finds.* Report of the Research Committee of the Society of Antiquaries of London **27** (Leeds).
Cunliffe, B., 1975. *Excavations at Portchester Castle, volume I: Roman.* Report of the Research Committee of the Society of Antiquaries of London **32** (London).
Cunliffe, B., 1984. *Danebury: an Iron Age hillfort in Hampshire. Volume 2. The excavations, 1969–1978: the finds.* Counc. Brit. Archaeol. Res. Rep. **52** (London).
Cunliffe, B. W. and Miles, D., 1984. *Aspects of the Iron Age in central southern Britain* (Oxford).
Curle, L. O., 1911. *A Roman frontier post and its people: the fort of Newstead in the parish of Melrose.*
Drummond, J. C. and Wilbraham, A., 1957. *The Englishman's food.*
Dumbrell, R., 1983. *Understanding antique wine bottles.* Antiques Collectors Club (Suffolk).
Duval, A., 1974. 'Un type particulier de fibule gallo-romaine précoçe: la fibule "Alésia"', *Antiquités Nationales* **6**, 67–76.
Dyer, C., 1989. *Standards of living in the later Middle Ages* (Cambridge).
Edlin, H. L., 1949. *Woodland crafts in Britain* (London).
Egan, G., 1983. 'Post-medieval Britain in 1982', *Post-Medieval Archaeol.* **17**, 203.
Egan, G., 1990. 'Post-medieval Britain and Ireland in 1989', *Post-Medieval Archaeol.* **24**, 159–212.
Egan, G. and Pritchard, F., 1991. *Dress accessories c. 1150-c. 1450.* Medieval finds from excavations in London **3** (London).
Ekstrandt, G. 1980. 'A French hunting costume for Crown Prince Gustav', *Livrustkammaren* **15** (1979), 81–105.
Ekwall, E., 1960. *Oxford dictionary of English place-names* (4th edition) (Oxford).
Ellis, S. E. and Moore, D. T., 1990. 'The hones' *in* Biddle 1990, 279–287.
Evans, G., 1975. *The life of beetles* (London).
Fingerlin, G., 1972. 'Dangstetten, ein augustliches Legionslager am Hochrehein (Vorbericht über die Grabungen 1967–1969)', *Bericht des Römisch-Germanischen Kommission* **51–52** (1970–1971), 212–232.
Fitter, R., Fitter, A. and Blamey, M., 1978. *The wild flowers of Britain and northern Europe* (London).
Fock, J., 1966. *Metrische untersuchungen an metapodien einiger europaischer rinderrassen.* Unpub. dissertation, University of Munich.
Frere, S. S., 1972. *Verulamium excavations I.* Reports of the Research Committee of the Society of Antiquaries of London **28** (London).

Frere, S. S., 1984a. *Verulamium excavations III*. Oxford Univ. Comm. Archaeol. Monog. **1** (Oxford).

Frere, S. S., 1984b. 'Excavations at Dorchester on Thames, 1963', *Archaeol. J.* **141**, 91–174.

Getty, R. (ed.), 1975. *Sisson and Grossman's The anatomy of the domestic animals* (London).

Gillam, J. P., 1977. 'The Roman fort at Corbridge', *Archaeol. Aeliana* **5** (5th ser.), 47–74.

Godwin, H., 1975. *History of the British flora* (Cambridge).

Going, C. J., 1987. *The Mansio and other sites in the south-eastern sector of Caesaromagus: The Roman pottery*. Chelmsford Archaeol. Trust **3. 2**. Counc. Brit. Archaeol. Res. Rep. **62**. (London).

Goodall, A. R., 1985. 'Objects of copper alloy and silver' *in* Williams *et al.* 1985, 66.

Goodall, I. H., 1990. 'Locks and keys' *in* Biddle 1990, 1001–1036.

Goodall, I. H., Ellis, B. and Oakley, G. E., 1979. 'The iron objects' *in* Williams 1979, 268–278.

Grant, A., 1975a. 'The use of tooth wear as a guide to the age of domestic animals' *in* Cunliffe 1975, 437–450.

Grant, A., 1975b. 'Animal bone' *in* Cunliffe 1975, 378–408.

Grant, A., 1984. 'Animal husbandry' *in* Cunliffe 1984, 494–548.

Gray, P., 1980. *Villages of the Ouse* (Newton Abbot).

Griffiths, N., 1989. 'Shield-shaped mounts', *Finds Res. Gp 700–1700 Datasheet* **12**.

Grigson, C., 1982. 'Sex and age determination of some bones and teeth of domestic cattle: a review of the literature' *in* Wilson *et al.* 1982, 7–233.

Hale, D. N. and Noel, M., 1991. 'Some quantitative pollen extraction tests leading to a modified technique for cave sediments' *in* Budd, P., Chapman, B., Jackson, C., Janaway, R. C. and Ottoway, B. S. (eds) 1991. *Archaeological sciences 1989, Proceedings of a conference on the applications of scientific techniques to archaeology* (Oxford).

Hall, D. N., 1974. 'Post-medieval kiln site, Paulerspury, Northants., 1973', *Milton Keynes J. Archaeol. Hist.* **3**, 28–30.

Hall, D. N., 1982. 'The countryside of the south-east Midlands and Cambridgeshire' *in* Miles (ed.) 1982, 337–50.

Hamerow, H., 1989. 'Anglo-Saxon pottery and spatial development at Mucking, Essex', *Berichten van de Rijhsdienst voorhet Oudheidhundig Bodemondsersoek* **37** (1987), 245–273.

Hamilton, J., 1978. 'A comparison of the age structure at mortality of some Iron Age and Romano-British sheep and cattle populations' *in* Parrington 1978, 126–33.

Hamilton Thompson, A. (ed.), 1940. *Visitations of the diocese of Lincoln 1517–31*. Lincolnshire Rec. Soc. **33**.

Harcourt, R. A., 1974. 'The dog in prehistoric and early historic Britian', *J. Archaeol. Science* **1**, 151–175.

Harden, D. B., 1962. 'Glass in Roman York' *in* RCHM, 1962. *An inventory of the historical monuments in the city of York. 1: Eboracum, Roman York*, 136–142 (London).

Harden, D. B., 1967. 'The glass jug' *in* Biddle, M., 1967. 'Two Flavian burials from Grange Road, Winchester', *Antiq. J.* **47**, 224–250.

Harden, D. B., 1973. 'Glass' *in* Brodribb *et al.* 1973, 98–106.

Harden, D. B., 1975. 'The glass' *in* Cunliffe 1975, 368–374.

Harden, D. B., 1978. 'Roman glass' *in* Rahtz and Greenfield 1978, 287–290.

Harden, D. B., 1979. 'Glass vessels' *in* Clarke 1979, 209–220.

Harden, D. B. and Price, J., 1971. 'The glass' *in* Cunliffe 1971, 317–368.

Harvey, N., 1970. *A history of farm buildings in England and Wales* (Newton Abbot).

Harvey, N., 1976. *Fields, hedges and ditches* (Princes Risborough).

Haslam, S., Sinker, C. and Wolseley, P., 1975. 'British water plants', *Field Studies* **4**, 243–351.

Hattatt, R., 1982. *Ancient and Romano-British brooches* (Milborne Port).

Hattatt, R., 1985. *Iron Age and Roman brooches, a second selection of brooches from the author's collection* (Oxford).

Hattatt, R., 1987. *Brooches of antiquity, a third selection of brooches from the author's collection* (Oxford).

Hattatt, R., 1989. *Ancient brooches and other artefacts* (Oxford).

Hinchcliffe, J. and Green, C. S., 1985. *Excavations at Brancaster, 1974 and 1977*. East Anglian Archaeol. **23** (Gressenhall).

Hinton, D. A., 1982. *Medieval jewellery* (Princes Risborough).

Hirst, S. M., 1985. *An Anglo-Saxon inhumation cemetery at Sewerby, East Yorkshire*. York Univ. Archaeol. Pub. **4** (York).

Hodgson, G. W. I. (unpub.). *Report on the animal remains excavated during 1975–76 from the medieval levels at the High Street site, Perth*. Unpublished report, Duncan of Jordanstone College of Art, Dundee.

Holmes, J., 1981. 'Report on the animal bones from the resonance chambers of the Whitefriars Church, Coventry' *in* Woodfield, C. 1981. 'Finds from the Free Grammar School at the Whitefriars, Coventry, *Post-Medieval Archaeol.* **15**, 126–153

Holmes, J. M., 1993. 'Animal bones' *in* Williams 1993, 133–153.

Hooke, D. (ed.), 1985. *Medieval villages* (Oxford).

Hornsby, P. R. G., Weinstein, R. and Homer, R. F., 1989. *Pewter. A celebration of the craft 1200–1700* (London).

Horton, A., Shephard-Thorn, E. R. and Thurrell, R. G., 1974. *The geology of the new town of Milton Keynes*. Rep. Inst. Geological Sciences **74/16**, HMSO (London).

Howard, M. M., 1963. 'The metrical determination of the metapodials and skulls of cattle', *Royal Anthropol. Inst. Occ. Paper* **8**, 91 (London).

Hurst, D. G., 1969. 'Post-medieval Britain in 1968', *Post-Medieval Archaeol.* **3**, 193–212.

Isings, C., 1957. *Roman glass from dated finds* (Groningen).

Jackson, D. A. and Ambrose, T., 1978. 'Excavations at Wakerley, Northants, 1972–75', *Britannia* **9**, 115–242.

Jackson, D. A. and Dix, B., 1988. 'Late Iron Age and Roman settlement at Weekley, Northants', *Northamptonshire Archaeol.* **21** (1986–1987), 41–93.

Jewell, P. A., 1963. 'Cattle from British archaeological sites' *in* Mourant, A. E. and Zeuner, F. E. (eds), 1963. *Man and cattle*, 80–91. Royal Anthrop. Inst. (London).

Jones, M., 1981. 'The development of crop husbandry' *in* Jones and Dimbleby 1981, 95–127.

Jones, M. (ed.), 1983. *Integrating the subsistence economy*. Brit. Archaeol. Rep. **S181** (Oxford).

Jones M. and Dimbleby, G. (eds), 1981. *The environment of man: The Iron Age to the Anglo-Saxon period*. Brit. Archaeol. Rep. **87** (Oxford).

Jope, E. M., 1956. 'The tinning of iron spurs: a continuous practice from the tenth to the seventeenth century', *Oxoniensia* **21**, 35–42.

King, D., 1987. 'Petrology, dating and distribution of querns and millstones. The results of research in Bedfordshire, Buckinghamshire, Hertfordshire and Middlesex', *Univ. London Inst. Archaeol. Bull.* **23**, 1986 (London).

Kloet, G. S. and Hinks, W. D., 1977. *A check-list of British insects - Part three: Coleoptera and Strepsiptera* (London).

Lambrick, G. and Robinson, M., 1979. *Iron Age and Roman riverside settlements at Farmoor, Oxfordshire*. Counc. Brit. Archaeol. Res. Rep. **32** (London).

Lambrick, G. and Robinson, M., 1988. 'The development of floodplain grassland in the Upper Thames Valley' *in* Jones, M. (ed.) 1988, *Archaeology and the flora of the British Isles*, 55–75 (Oxford).

Leeds, E. T., 1945. 'The distribution of Angles and Saxons archaeologically considered', *Archaeologia* **91**, 1–106.

Limbrey, S., 1975. *Soil science and archaeology* (London).

Lipscombe, G., 1847. *The history and antiquities of the county of Buckingham* (London).

Liversidge, J., 1969. *Britain in the Roman Empire* (London).

Loveday, R., and Petchey, M. R., 1982. 'Oblong ditches: a discussion and some new evidence', *Aerial Archaeol.* **8**, 17–24.

McKee, E., 1983. *Working boats of Britain.*

Mackreth, D. F., 1981. 'The brooches' *in* Partridge 1981, 130–151.

Mackreth, D. F., 1985a. 'The brooches' *in* Blockley 1985, 136–150.

Mackreth, D. F., 1985b. 'The Roman brooches' *in* Taylor 1985, 13–29.

Maltby, M., 1981. 'Iron Age, Romano-British and Anglo-Saxon animal husbandry - a review of the faunal evidence' *in* Jones and Dimbleby 1981, 155–203.

Manning, W. H., 1972. 'The iron objects' *in* Frere 1972, 163–195.

Manning, W. H., 1974. 'Objects of iron' *in* Neal 1974, 157–187.

Manning, W. H., 1976. *Catalogue of Romano-British ironwork in the Museum of Antiquities, Newcastle-upon-Tyne* (Newcastle).

Manning, W. H., 1985. *Catalogue of the Romano-British iron tools, fittings and weapons in the British Museum* (London).

Markham, Sir F., 1973. *History of Milton Keynes and District, Vol. 1* (Luton).

Marney, P. T., 1989. *Roman and Belgic pottery from excavations in Milton Keynes, 1972–82.* Buckinghamshire Archaeol. Soc. Monog. Ser. **2** (Aylesbury).

Mathews, L. G. and Green, H. J. M., 1969. 'Post-medieval pottery of the Inns of Court', *Post-Medieval Archaeol.* **3**, 1–17.

Matolcsi, J. 1970. 'Historische erforschung der korpergrosse des rindes auf Grund von ungrischem knochenmaterial, *Zeitschrift fur tierzuchtung und zuchtungsbiologie* **87(2)**, 89–137.

Mayes, P., 1968. 'A 17th-century kiln site at Potterspury, Northamptonshire', *Post-Medieval Archaeol.* **2**, 55–82.

Meates, G. W., 1979. *The Roman villa at Lullingstone, Kent. Vol. I: the site* (London).

Meates, G. W., 1987. *The Roman villa at Lullingstone, Kent. Vol. II: The wall paintings and finds* (Maidstone).

Mellor, M., 1985. 'Pottery' *in* Hassall, T. G., Halpin, C. E., Mellor, M. *et al.* 1985. 'Excavations in St. Ebbe's, Oxford, 1967–1976: Part II: post-medieval domestic tenements and the post-Dissolution site of the Greyfriars', *Oxoniensia* **49**, 221–219 and M I G5 ff.

Miles, D., 1982. *The Romano-British countryside: studies in rural settlement and economy.* Brit. Archaeol. Rep. **103** (Oxford).

MKAU, 1982. *A policy for ancient monuments.* Milton Keynes Development Corporation, Executive Management Committee Paper EMC. 895. 82 (internal document).

MKAU, 1992. *Windows on the past: archaeology in Milton Keynes* (Milton Keynes).

Muldoon, S. and Brownsword, R., nd. *Pewter spoons and other related material of the 14th–17th centuries in the collection of the Herbert Art Gallery and Museum, Coventry.* City of Coventry Leisure Services (Coventry).

Musty, J., Algar, D. J. and Ewence, P. F., 1969. 'The medieval pottery kilns at Laverstock, near Salisbury, Wiltshire', *Archaeologia* **102.**

Mynard, D. C., 1975. 'The Little Brickhill tile kilns and their products', *J. Brit. Archaeol. Assoc.* **38**, 55–80.

Mynard, D. C., 1979. 'Stone weights from the rivers Great Ouse, Ouzel, Nene and Tove', *Rec. Buckinghamshire* **21**, 11–28.

Mynard, D. C. (ed.), 1986. *Roman Milton Keynes.* Buckinghamshire Archaeol. Soc. Monog. Ser. **1** (Aylesbury).

Mynard, D. C., forthcoming. *Medieval village excavations in Milton Keynes.* Buckinghamshire Archaeol. Soc. Monog. Ser. **6.**

Mynard, D. C. and Zeepvat, R. J., 1992. *Great Linford.* Buckinghamshire Archaeol. Soc. Monog. Ser. **3** (Aylesbury).

Myres, J. N. L., 1977. *A corpus of Anglo-Saxon pottery of the pagan period* (Cambridge).

Myres, J. N. L., 1986. *The English settlements* (Oxford).

Nash-Williams, V. E., 1930. 'Further excavations at Caerwent, Monmouthshire, 1923–5', *Archaeologia* **80**, 229–288.

Neal, D. S., 1974. *The excavation of the Roman villa in Gadebridge Park, Hemel Hempstead, 1963–68.* Report of the Research Committee of the Society of Antiquaries of London **31** (London).

Neal, D. S., 1976. 'Northchurch, Boxmoor, and Hemel Hempstead station: the excavation of three Roman buildings in the Bulbourne valley', *Hertfordshire Archaeol.* **4**, 1–135.

Neal, D. S., 1987. 'Excavations at Magiovinium, Buckinghamshire, 1978–80', *Rec. Buckinghamshire* **29**, 1–124.

Neal, D. S., Wardle, A., and Hunn, J., 1990. *Excavation of the Iron Age, Roman and medieval settlement at Gorhambury, St Albans.* English Heritage Archaeol. Rep. **14** (London).

Nickel, R, Schummer, A. and Seiferle, E., 1979. *The viscera of the domestic mammals* (2nd edition) (Berlin and Hamburg).

Noddle, B. A., 1975. 'A comparison of the animal bones from eight medieval sites in Southern Britain' *in* Clason 1975, 248–60.

Noddle, B. A., 1984. 'Exact chronology of epiphyseal closure in domestic mammals of the past: an impossible proposition', *Circaea* **2. 1**, 21–27.

Noel-Hume, I., 1969. *Glass in colonial Williamsburg's archaeological collections.* Colonial Williamsburg Archaeol. Ser. **1** (Williamsburg, Virginia, USA).

North, J. J., 1980. *English hammered coinage.* Vol. **1** (London).

North, J. J., 1991. *English hammered coinage.* Vol. **2** (London).

Oakley, G. E., and Harman, M., 1979. 'The glass' *in* Williams *et al.* 1979, 296–302.

Olivier, A., 1988. 'The brooches' *in* Potter and Trow 1988, 35–53.

Oswald, A. 1975. *Clay pipes for the archaeologist.* Brit. Archaeol. Rep. **14** (Oxford).

Parminter, Y., forthcoming. 'Belgic and Roman pottery' *in* Williams *et al.* forthcoming.

Parrington, M. (ed.), 1978. *The excavation of an Iron Age settlement, Bronze Age ring ditches and Roman features at Ashville Trading Estate, Abingdon (Oxfordshire) 1974–76.* Counc. Brit. Archaeol. Res. Rep. **28** (London).

Partridge, C., 1981. *Skeleton Green, a late Iron Age and Romano-British site.* Britannia Monog. Ser. **2** (London)

Payne, S., 1973. 'Kill-off patterns in sheep and goats: the mandibles from Asvan Kale', *J. Anatolian Stud.* **23**, 281–303.

Payne, S., 1984. 'Morphological distinctions between the mandibular teeth of young sheep, *Ovis*, and goats, *Capra*', *J. Archaeol. Sci.* **12**, 139–147.

Pearce, J. and Vince, A., 1988. *A dated type-series of London medieval pottery. Part 4: Surrey whitewares.* London Middlesex Archaeol. Soc. (London).

Petchey, M. R. and Giggins, B., 1983. 'The excavation of a late seventeenth-century water-mill at Caldecotte, Bow Brickhill, Bucks', *Post-Medieval Archaeol.* **17**, 65–94.

Platt, C. and Coleman-Smith, R., 1975. *Excavations in medieval Southampton, 1953–67; Volume 2, the finds* (Leicester).
Poole, C. 1984. 'Objects of baked clay' *in* Cunliffe 1984, 398–406.
Potter, T. W. and Trow, S. D., 1988. 'Puckeridge-Braughing, Herts: The Ermine Street excavations, 1971–1972, The late Iron Age and Roman settlement', *Hertfordshire Archaeol.* **10**.
Powicke, M., 1953 '*The thirteenth century*'. Oxford Hist. England **4** (Oxford).
Price, J., 1977. 'The Roman glass' *in* Gentry, A., Ivens, J. and McClean, H., 1977. 'Excavations at Lincoln Road, London Borough of Enfield, Novenber 1974 to March 1976', *Trans London Middlesex Archaeol. Soc.* **28**, 101–189.
Price, J., 1979. 'The glass' *in* Gracie, H. S. and Price, E. G. 1979. 'Frocester Court Roman villa: second report', *Trans Bristol Gloucestershire Archaeol. Soc.* **97**, 9–64.
Price, J., 1980. 'The Roman glass' *in* Lambrick, G. 1980. 'Excavations in Park Street, Towcester', *Northamptonshire Archaeol.* **15**, 35–118.
Price, J., 1982. 'The glass' *in* Webster, G. and Smith, L. 1982, 'The excavation of a Romano-British rural establishment at Barnsley Park, Gloucs., 1961–1979. Part two: *c.* AD. 360-AD400+', *Trans Bristol Gloucestershire Archaeol. Soc.* **100**, 65–189.
Price, J., 1987. 'The glass vessels from Felmongers, Harlow', *Annales de dixième congrès de l'Association Internationale pour l'histoire du verre* (1985), 185–206.
Price, J., forthcoming. 'The Roman glass vessels, objects and window glass from Blackfriars, Carlisle' *in* McCarthy, M., forthcoming. *Excavations at Blackfriars, Carlisle.*
Price, J. and Cool, H. E. M., forthcoming (a). 'The Roman glass' *in* Darling, M. J. (ed.), forthcoming. *Caistor-by-Yarmouth.*
Price, J. and Cool, H. E. M., forthcoming (b). 'The Roman glass' *in* Hartley, K. F., forthcoming. *Excavations at Mancetter.*
Pryor, F., French, C., Crowther, D., Gurney, D., Simpson, G. and Taylor, M., 1985. *Archaeology and environment in the Lower Welland Valley.* The Fenland Project **1**: East Anglian Archaeol. **27** (Gressenhall).
Rackham, O., 1986. *The history of the countryside* (London).
Rahtz, P. A. and Greenfield, E., 1977. *Excavations at Chew Valley Lake.* Dept Environment Archaeol. Rep. **8** (London).
Rawes, B., 1981. 'The Romano-British site at Brockworth, Glos.', *Britannia* **12**, 45–77.
RCHM, 1914. *An inventory of the historical monuments in Buckinghamshire, volume 2* (London).
Reed, R., 1979. *The Buckinghamshire landscape* (London)
Riha, E., 1979. *Die römischen fibeln aus Augst und Kaiseraugst.* Forschungen in Augst, Band **3**. (Augst).
Robinson, M., 1981. 'The Iron Age to early Saxon environment of the Upper Thames terraces' *in* Jones and Dimbleby 1981, 251–286.
Robinson, M., 1983. 'Arable/pastoral ratios from insects?' *in* Jones 1983, 16–55.
Robinson, M., 1984. 'The honey bee in the Iron Age' *in* Cunliffe and Miles 1984, 119ff.
Robinson, M. A. and Wilson, R., 1987. 'A survey of environmental archaeology in the south Midlands' *in* Keeley, H. C. M. (ed.) 1987. *Environmental archaeology: A regional review.* Hist. Buildings Monuments Comm. England, Occ. Paper **1**, 51–54.
Rodwell W., 1975. 'Trinovantian towns and their setting: a case study' *in* Rodwell W. and Rowley, T. (eds) 1975. *Small towns of Roman Britain.* Brit. Archaeol. Rep. **15**, 85–102 (Oxford)
Rowley, T. (ed.), 1981. *The origins of open field agriculture* (London).
Rygh, O., 1885. *Norske Oldsayer* (Christiani).
Saunders, P. and Saunders, E. (eds), 1991. *Salisbury Museum medieval catalogue, part 1* (Salisbury).
Sawyer., P. H. (ed.), 1976. *Medieval settlement* (Norwich).
Schmid, E., 1972. *Atlas of animal bones* (Amsterdam).
Seaby 1992. *Standard catalogue of British coins: coins of England* (London).
Seagrave, C., 1988. *Aquatic weed control* (Farnham).
Sellwood, L., 1984. 'Objects of iron' *in* Cunliffe 1984, 346–70.
Sennequier, G., 1985. *Verrerie d'epoque Romaine* (Rouen).
Silver, I. A., 1971. 'The ageing of domestic animals' *in* Brothwell and Higgs 1971, 283–302.
Simco, A., 1984. *Survey of Bedfordshire: The Roman period* (Bedford and London).
Simpson, W. G., 1966. 'Romano-British settlement on the Welland gravels' *in* Thomas, A. C., 1966. *Rural settlement in Roman Britain.* Counc. Brit. Archaeol. Res. Rep. **7**, 15–25.
Smith, C., 1979. *Fisherwick: the reconstruction of an Iron Age landscape.* Brit. Archaeol. Rep. **61** (Oxford).
Sparkes, I. G., 1976. *Old horseshoes* (Princes Risborough).
Stead, I. M. and Rigby, V., 1986. *Baldock, The excavation of a Roman and pre-Roman settlement 1968–72.* Britannia Monog. Ser. **7** (London).
Stead, I. M. and Rigby, V., 1989. *Verulamium: the King Harry Lane site.* English Heritage Archaeol. Rep. **12** (London).
Steane, J. M. and Foreman, M., 1991. 'The archaeology of medieval fishing tackle' *in* Good, G. L., Jones, R. H. and Ponsford, M. W. 1991, *Waterfront archaeology. Proceedings of the third international conference, Bristol 1988.* Counc. Brit. Archaeol. Res. Rep. **74**, 88–101. (London).
Stern, E. M., 1977. *Ancient glass in the Fondation Custodia* (Gröningen).
Summers, W. H., 1899. 'Population returns for Buckinghamshire, 1676', *Rec. Buckinghamshire* **8**, 146–52.
Swan, V. G., 1984. *The pottery kilns of Roman Britain.* RCHM Supp. Ser. **5**: HMSO (London).
Taylor, A., 1985. 'Prehistoric, Roman, Saxon and medieval artefacts from the Southern Fen edge, Cambridgeshire', *Proc. Cambridge Antiquarian Soc.* **74**, 1–52.
Teichert, M., 1975. 'Osteometrische unter-suchungen zur berechnung der widerristhohe bei schafen' *in* Clason 1975, 51–69.
Thompson, A., Grew, F. and Schofield, J., 1984. 'Excavations at Aldgate, 1974', *Post-Medieval Archaeol.* **18**, 131–143.
Thompson, I., 1982. *Grog-tempered 'Belgic' pottery of south-eastern England.* Brit. Archaeol. Rep. **108** (Oxford).
Thomson, R., 1981. 'Leather manufacture in the post-medieval period with special reference to Northamptonshire', *Post-Medieval Archaeol.* **15**, 161–175.
Thorpe, W. A., 1935. *English glass* (London).
van Es, W. A., and Verlinde, A. D., 1977. 'Overijssel in Roman and early medieval times', *Berichten van de Rijksdienst voor het Oudheidkundig Bodemonderzoek* **27**, 7–89.
van den Hurk, L. J. A. M., 1977. 'The tumuli from the Roman period of Esch, province of North Brabant, III', *Berichten van de Rijksdienst voor het Oudheidkundig Bodemonderzoek* **27**, 91–138.
VCH, 1927. *The Victoria History of the county of Buckingham* (London).
von den Dreisch, A., 1976. 'A guide to the measurement of animal bones from archaeological sites', *Peabody Mus. Bull.* **1** (Harvard).
Wacher, J. S. and McWhirr, A. D., 1982. *Early Roman occupation at Cirencester.* Cirencester Excavations **1** (Cirencester).
Walker, I. C., 1967. 'Statistical methods for dating clay pipe fragments', *Post-Medieval Archaeol.* **1**, 90–101.

Ward Perkins, J. B., 1967. *London Museum; Medieval catalogue.* HMSO (London).

Watkin, J., 1987. 'Objects of wood' *in* Armstrong and Ayers 1987, 209–216.

Waugh, H., Mynard, D. C. and Cain, R., 1974. 'Some Iron Age pottery from mid- and north Bucks, with a gazeteer of associated sites and finds', *Rec. Buckinghamshire* **19. 4**, 373–421.

Webster, J., 1975. 'The iron objects' *in* Cunliffe 1975, 233–246.

Wedlake, W. J., 1958. *Excavations at Camerton, Somerset* (Privately printed).

Wedlake, W. J., 1982. *The Excavation of the shrine of Apollo at Nettleton, Wiltshire, 1956–1971.* Reports of the Research Committee of the Society of Antiquaries of London **40**. (Dorking).

Weinstein, R. 1984. 'Pipeclay figurines' *in* Thompson *et al.* 1984, 122–123.

West, S., 1985. *West Stow, the Anglo-Saxon village. Volume 2: figures and plates.* East Anglian Archaeol. **24** (Ipswich).

Wheeler, R. E. M. and T. V., 1928. 'The Roman amphitheatre at Caerleon, Monmouthshire', *Archaeologia* **78**, 111–218.

Whiting, W., 1931. *Report on the excavation of the Roman cemetery at Ospringe, Kent* (London).

Williams, J. H., 1979. *St Peter's Street, Northampton: excavations 1973–6* (Northampton).

Williams, J. H., Shaw, M. and Denham, V., 1985. *Middle Saxon palaces at Northampton* (Northampton).

Williams, R. J., 1993. *Pennyland and Hartigans.* Buckinghamshire Archaeol. Soc. Monog. Ser. **4** (Aylesbury).

Williams, R. J., Hart, P. J. and Williams, A. T. L., forthcoming. *Wavendon Gate.* Buckinghamshire Archaeol. Soc. Monog. Ser. **10**.

Williams, R. J. and Zeepvat, R. J., 1994. *Bancroft: a late Bronze Age/Iron Age settlement, Roman villa and temple-mausoleum.* Buckinghamshire Archaeol. Soc. Monog. Ser. **7** (Aylesbury).

Wilson, B., Grigson, C. and Payne, S. (eds), 1982. *Ageing and sexing animal bones from archaeological sites.* Brit. Archaeol. Rep. **109** (Oxford).

Wilson, D. M. and Hurst, J. G., 1970. 'Medieval Britain in 1969', *Medieval Archaeol* **14**, 155ff.

Wilson, R., 1978. 'The animal bones - methods and results of bone analysis/general conclusions and discussions of the bone sample' *in* Parrington 1978, 110–126, 133–39.

Wood, M., 1965. *The English medieval house* (London).

Woodfield, P., 1966. 'Yellow glazed wares of the seventeenth century', *Trans Birmingham Archaeol. Soc.* **81**, 78–87.

Woodfield, P., 1986. *A guide to the historic buildings of Milton Keynes.* Milton Keynes Development Corporation (Milton Keynes).

Woodland, M., 1990. 'Spindle whorls' *in* Biddle 1990, 216–225.

Woods, P. J., 1974. 'Types of late Belgic and early Romano-British pottery kilns in the Nene Valley', *Britannia* **5**, 262–281.

Young, C., 1977. *Oxfordshire Roman pottery.* Brit. Archaeol. Rep. **43** (Oxford).

Zeepvat, R. J., 1989. *Caldecotte: an assessment of the medieval village earthworks.* MKAU internal document: unpublished.

Zeepvat, R. J., 1990. 'Another Roman building at Wymbush, Milton Keynes', *Rec. Buckinghamshire* **32**, 111–116.

Zeepvat, R. J., 1991a. *Roman Milton Keynes.* Milton Keynes Archaeology Unit (Milton Keynes).

Zeepvat, R. J., 1991b. 'Walton Hall', *South Midlands Archaeol.* **21**, 43.

Zeepvat, R. J., 1993. 'Hartigans: the 1989 evaluation (MK318 & MK330)' *in* Williams 1993, 188–189.

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