

The Excavation of a Late Iron Age Enclosed Settlement at Bicester Fields Farm, Bicester, Oxon

By ANNE MARIE CROMARTY, STUART FOREMAN and PAUL MURRAY

with contributions by L. ALLEN, A. BARCLAY, N. BEAVAN, P. BOOTH, A. BOYLE,
K. BROWN, D. CHAMBERS, B. CHARLES, L. KEYS, H. LAM DIN-WHYMARK,
R. PELLING, F. ROE and I. SCOTT

SUMMARY

A mid to late Iron Age enclosure was excavated by Oxford Archaeological Unit in 1998, in advance of housing development on the southern edge of Bicester. The enclosure proved to have been of at least two phases, and it was surrounded by a number of other boundary ditches, pits, a human burial and an animal burial. The enclosure was greatly enlarged in the second phase of its use, but appeared to have enclosed only a single homestead. The pottery assemblage placed the occupation at the end of the Iron Age, possibly ceasing before the Roman conquest. The economy of the site appears to have been largely pastoral, but evidence for unusually large cattle, and for ironworking, suggests that it may have been of higher status than other known contemporary settlements. Evidence for earlier prehistoric activity was also found during the excavation, which recovered a small assemblage of earlier Mesolithic flintwork.

INTRODUCTION

This report presents the results of an excavation carried out in the summer of 1998 by Oxford Archaeological Unit (OAU), for the developer of the site, Westbury Homes Limited. The main description of the archaeology is preceded by a brief account of prehistoric and Roman archaeology elsewhere in the vicinity, the background of the project, and the excavation methodology. Reports on the artefactual and environmental evidence follow the description, and are followed by a final synthetic and interpretative discussion.

Location, topography, geology and soils (Fig. 1)

The site lies on the floodplain of the Langford Brook around 300 m. to the NE. of the confluence of Langford Brook and Pringle Stream on the SE. periphery of Bicester (SP 592222). The land lies at around 67-9 m. OD. The underlying geology of the site is Oxford Clay, with Cornbrash limestone and great Oolite nearby. The immediate subsoil consists of limestone gravel overlain by brown alluvial clay and silts with few or no inclusions. The topsoil was generally compact grey-brown silty loam. The soil is calcareous, with good preservation of bone, but not of terrestrial snails. The ground conditions were dry with poor preservation of waterlogged materials. Prior to the excavation, the area was under semi-improved grassland divided into small fields by a series of hedgerows. These fields had a long history of agricultural use as pasture, but had evidently been cultivated in the medieval period, as ridge and furrow crossed the whole area. This was known from aerial photographs. The furrows also showed up on the geophysical survey of the area undertaken as part of this project and were identified during excavation (Fig. 2). The ridge and furrow was not always aligned to the existing land boundaries, indicating that these were of more recent origin, though the variety of species observed within the hedgerows was sufficient to suggest that they may have been several hundred years old.

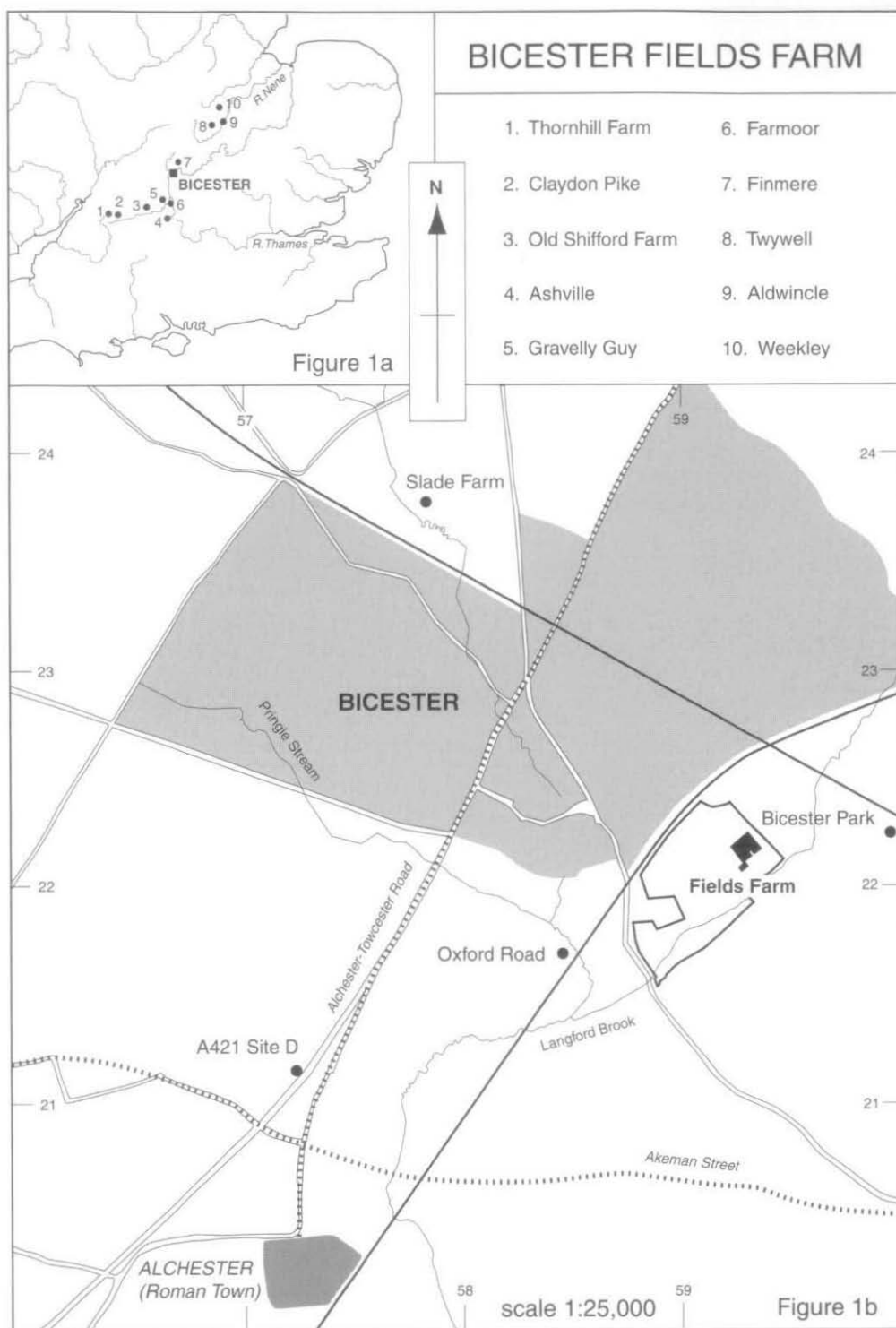


Fig. 1. Development area location plan, with other mid-late Iron Age sites mentioned in the text marked.

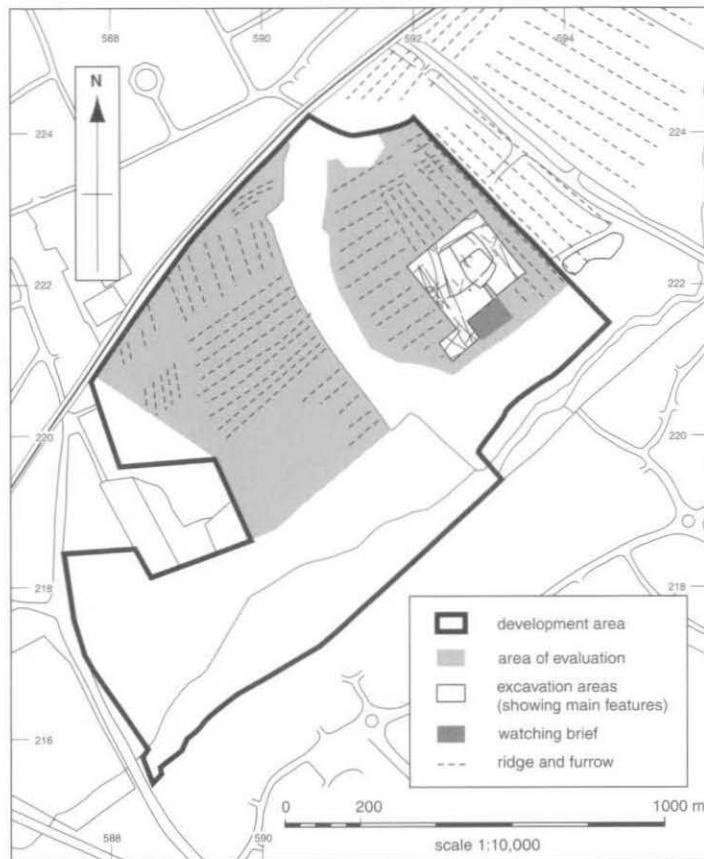


Fig. 2. Trench location plan showing the evaluation, excavation and monitored areas, together with the ridge and furrow known from aerial photographs and the geophysical survey undertaken as part of this project.

Archaeological Background (Figs. 1 and 2)

Little was known of the archaeology of the site prior to the start of the project, other than the ridge and furrow. No part of the site was covered by any entry in the Oxfordshire Sites and Monuments Record (SMR) and it was thought that the site had seen little use before the medieval period. Until relatively recently this was true of the area as a whole, with the exception of Bicester itself and the Roman town of Alchester. However, as more evidence has come to light through excavations associated with recent development around Bicester, it is becoming apparent that the wider area has been occupied since the early prehistoric period.

To date, the only evidence of Neolithic activity remains the single find of a polished stone axe¹ around half a kilometre to the SW. of the present development area. By contrast, substantial evidence of Mesolithic, late Bronze Age and Iron Age occupation was revealed in

¹ Oxon SMR PRN 7505.

excavations by the Birmingham University Field Archaeology Unit (BUFAU) at Slade Farm to the north-west of Bicester.² Excavations at Oxford Road, Bicester, also undertaken by BUFAU, produced evidence of transitional Iron Age/Romano-British settlement.³ The Oxford Road site lies on the floodplain of the Langford Brook around 500 m. west of Bicester Fields Farm, and clearly has a bearing on the findings of the present project, although the two settlements appear to have been of somewhat different character.

There is widespread Roman activity in the area. The Roman walled town of Alchester, 3 km. to the SW. of the site, lies at the junction of Akeman Street (linking Cirencester and St. Albans) and the Towcester to Dorchester-on-Thames Roman roads. Substantial rural settlement, of uncertain character but possibly indicating two villa complexes, is known at Kings End Farm and South Farm, both now beneath housing estates on the west side of Bicester less than 2 km. from the present site.⁴ Around 500 m. to the SE. of Bicester Fields Farm a probable low status Roman settlement dating to the 2nd century AD has been identified by evaluation at Bicester Park.⁵

Project background (Fig. 2)

A 33.1 ha. residential development including associated roads and services and public open space was proposed for this site. As considerable archaeological evidence had been recovered in the vicinity, though none was known from the site, an archaeological evaluation was required before planning permission could be granted. Countryside Planning and Management were commissioned by Calcutt Trustees to compile an archaeological desktop assessment on the site, which was completed in June 1996. Bartlett-Clark Consultancy subsequently carried out a geophysical survey on behalf of the OAU in 1998.⁶ The OAU was commissioned by Westbury Homes Ltd. to undertake the field evaluation and this work took place in spring 1998. The evaluation strategy was developed in consultation with the Oxfordshire County Archaeological Service (OCAS).⁷

The evaluation involved the excavation of 35 two-metre wide trenches that revealed a concentration of features in the SE. part of the development site. These took the form of ditches and gullies forming a rectangular enclosure, and associated features. A possible circular structure was also revealed within the interior of the enclosure. Pottery recovered from these features indicated a date range of the mid-late Iron Age (M-LIA). Two undated ditches were the only features to be found in the western half of the site other than the ridge and furrow cultivation that was evident within the majority of the trenches.

Subsequently, planning permission was granted for the proposed development with the condition that an archaeological recording action be carried out in the area of this previously unknown Iron Age site. The OAU carried out this work during the summer of 1998 in accordance with a strategy developed in agreement with OCAS on behalf of the local Planning Authority.

Excavation methodology (Fig. 2)

Open area excavations were undertaken in two adjoining areas, of approximately 13,200 and 1,500 square metres respectively. The main site was located to investigate the mid to late Iron Age settlement enclosure, known from the earlier evaluation and geophysical survey, and the immediately surrounding area. The second area, adjoining the SW. corner of the main site, was designed to

² 'Archaeological Excavations at Slade Farm, Bicester, Oxfordshire, 1996', *Oxoniensia* (forthcoming).

³ C. Mould, 'An Archaeological Excavation at Oxford Road, Bicester, Oxfordshire', *Oxoniensia*, lxi (1996), 65-108.

⁴ R. Chambers, 'Bicester, Kings End Farm', *CBA Regional Group 9 Newsletter*, ix (1979), 123-5; R. Chambers, 'Bicester: South Farm Development', *S. Midlands Archaeol.* xix (1989), 49-50.

⁵ Oxford Archaeological Unit, 'Bicester Park: Land South of London-Banbury Line, Bicester: Archaeological Evaluation Report' (unpublished client report, 1997).

⁶ A.D.H. Bartlett, 'Bicester Fields Farm, Bicester, Oxfordshire, Report on the Archaeological survey' (Bartlett-Clark Consultancy, 1998).

⁷ Oxfordshire Council Archaeological Service, 98/0075/OUT - Bicester Fields Farm, south east Bicester, Oxon Brief for Archaeological Field Evaluation (1998).

investigate a group of undated features identified in the only other evaluation trench with significant quantities of archaeological features. Where an intermittent hedgerow, with ditch and bank, ran across the main area to be excavated, this was left *in situ*.

Both areas were stripped using a mechanical excavator. Fifty percent of the discrete features and approximately 25% of the linear features were excavated by hand to recover finds and environmental samples. The standard OAU recording system was employed.⁸ An extensive programme of environmental sampling was carried out. In addition, as the evaluation had identified evidence for metalworking on the site, 1 kg. samples were taken to be tested for the presence of hammer scale, slag and other metalworking debris from deposits considered likely to contain such material.

An archaeological watching brief was subsequently maintained during construction in 1999 in a third area within the angle formed by the two fully excavated areas. The whole of this area was stripped using a toothless bucket under archaeological supervision, but no features of significant archaeological interest were observed.

ARCHAEOLOGICAL DESCRIPTION by A.M. CROMARTY

The excavated evidence consisted of cut features, principally ditches, gullies and pits, while postholes were rare (see Fig. 3). Plough furrows crossed the whole area, generally aligned NW. to SE., and modern land drains were also present. These resulted in all earlier features being truncated and a loss of some stratigraphic relationships. Little vertical stratigraphy existed on the site, so finds and horizontal relationships were used, where possible, to aid in the phasing of the site as presented here. However, the datable finds suggested the main period of use of the site was relatively short-lived, making them of limited value in distinguishing individual phases. The limited vertical stratigraphy indicated two main phases of Iron Age occupation, with a few earlier and later gullies.

Most of the gullies away from the main area of settlement, and some other features, lacked datable finds. These features are assumed to be later, with the exception of a few that are demonstrably earlier than the Iron Age enclosure. Some of the gullies have been tentatively linked by their apparent physical relationship to others stratigraphically later than the Iron Age enclosure to form a field system, but this is uncertain. The scheme presented here is thus an interpretation only for most of the smaller features.

Dating of the site relies almost entirely upon the pottery evidence, supplemented by one radiocarbon determination (see below). The pottery is assigned to two principal (overlapping) groups, respectively of middle-late Iron Age (M-LIA) and late Iron Age-early Roman (LIR) date. It is important to note that these are ceramic phases, both of which are interpreted more fully in the pottery report (below). Use of the label LIR, in particular, refers to a ceramic style and does not necessarily imply that contexts so defined should be dated after AD 43. This issue is examined more fully in the discussion below.

The natural

Some variation in the composition of the Oxford Clay occurred across the excavated area. This included very tenacious green grey clay, friable green yellow or mid orange silty clay, and brown silty gravel.

The evidence for earlier prehistoric activity (Fig. 4)

The earliest anthropogenic evidence from this site comes from feature 5642 in the SW. part of the excavated area, an elongated pit approximately 3 m. long, 0.6 m. wide and 0.28 m. deep, filled by redeposited natural (5641). This context yielded 50 pieces of worked flint of earlier Mesolithic date which included a broken microlith and a backed bladelet. The only other find was a piece of slag that is thought to be intrusive. It is possible that the feature is an early tree-throw hole of Mesolithic date, given that the flints form a coherent group (see Struck Flint report, below).

Another feature in the western corner of the site may also be of an early date. This was a shallow oval steep-sided pit (5063), 0.96 m. x 1.58 m. in area, and 0.48 m. deep. The lower fills showed evidence of natural silting, though the primary fill (5082) yielded some animal bone. The top fill (5062) could

⁸ D. Wilkinson, Oxford Archaeological Unit Field Manual (unpublished OAU internal report, 1992).

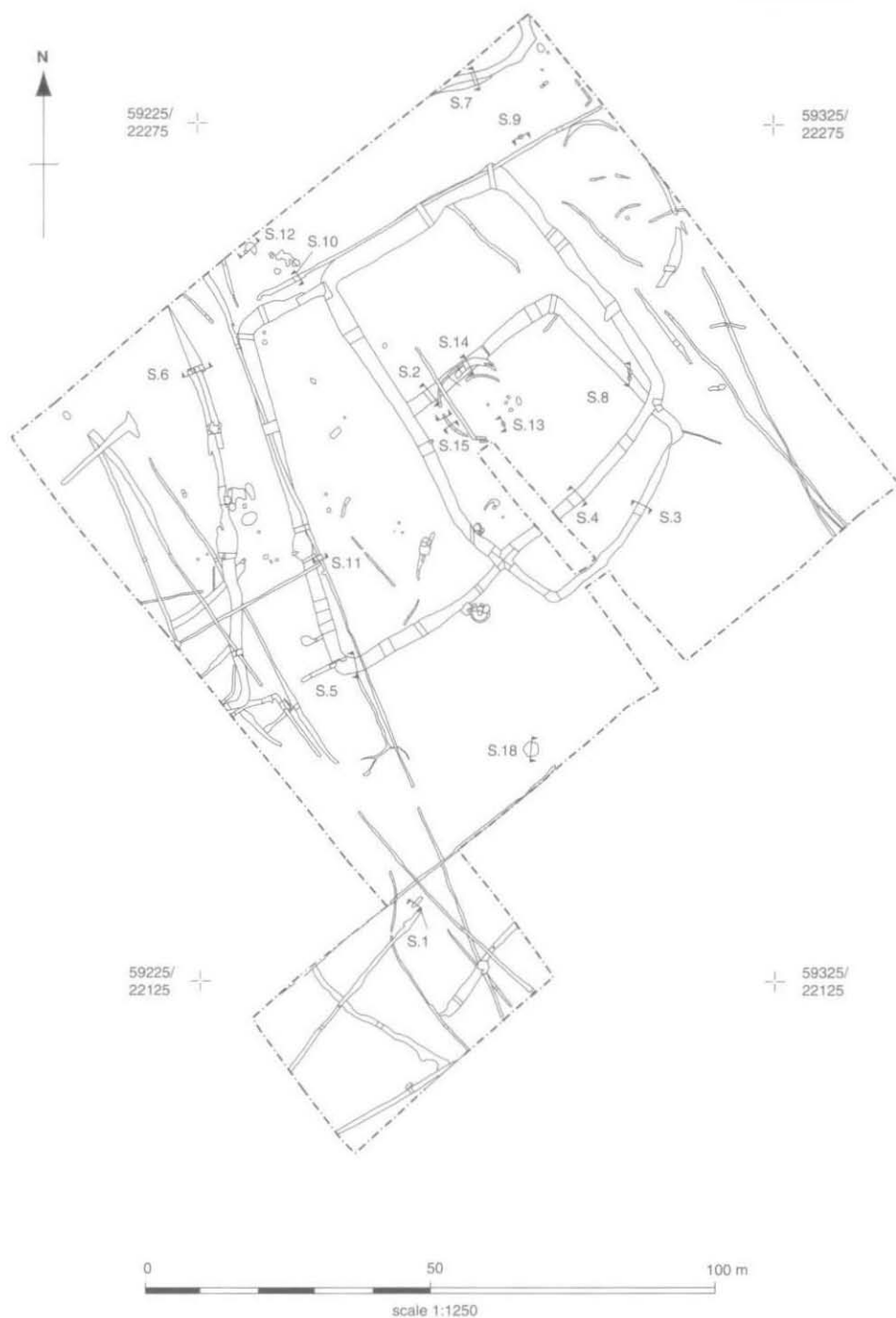


Fig. 3. Trench plan showing all features except the plough furrows and modern field drains.

have represented deliberate infill or further silting. This consisted of friable, mid grey-brown clay silt. A single flint blade of Neolithic to early Bronze Age date was recovered from this fill. No other datable material was retrieved from this feature, which bore no stratigraphic relationship to any other and lay beyond the area of the Iron Age enclosure.

A further 27 flints of Mesolithic to Neolithic/early Bronze Age date were found scattered across the site residually in later deposits. A single quartzite pebble-hammer of Mesolithic to Bronze Age date was recovered from the later ditch 5552 (see Worked Stone report, below). These finds are sufficient to show there was some limited activity in the area during this period. The low number of recovered finds suggests that the level of activity was small-scale.

Gullies predating the mid to late Iron Age enclosure (Fig. 4)

A number of gullies and linear features can be shown, on stratigraphic grounds, to predate the main mid to late Iron Age enclosure. However, the very few finds recovered from these features provide no further information regarding their date or function. The principal group was located in the SW. part of the trench, and comprised a long, NNE.-SSW. orientated gully (5680), two gullies approximately at right-angles to it (5688 and 5676) and a third short linear feature (5677). Gully 5680 extended for 62 m. across the site before becoming lost at its southern end; three sections were cut, and showed it to be 0.35 m. deep, with a width narrowing from 0.8 m. to 0.35 m. towards its northern terminus. Gully 5680 cut gully 5676, but its relationship with gully 5688 was obscured by truncation from the later Iron Age boundary feature 5148. Gullies 5688 and 5677 were not excavated.

Three further short lengths of linear feature were recorded that were cut by elements of the mid to late Iron Age enclosure, and are therefore demonstrably earlier. Features 5720 and 5714 were cut by the first enclosure ditch, while shallow gully 5292 appeared to be cut by the ditch of the later enclosure annexe. A single flint flake was recovered from gully 5292, but this may well be residual and is not necessarily an indicator of the date of the feature.

Full descriptions of these features are available in the project archive.

The mid to late Iron Age settlement

The principal occupation of the site is datable to the mid to late Iron Age and took the form of a small rectangular enclosure, which was later enlarged to the N., with an additional contemporary annexe enclosure added to the west. The main enclosure was found to contain several features that could be related to its occupation, including a single roundhouse structure overlying the infilled earlier enclosure ditch, and a cattle burial. Around this enclosure to the NE. and W. were contemporary, long-lived boundaries that had been recut several times. Outside the southern side of the enlarged phase 2 enclosure was a single stack-ring feature and a group of associated pits. Further south, away from the enclosure, was an isolated pit containing a single human burial, which may be related to the occupation.

The enclosure: phase 1 (Fig. 5)

The first phase of the settlement consisted of a large, roughly rectangular ditched enclosure measuring approximately 38 m. by 35 m. This ditch (5403 and 5708) was roughly V-shaped in profile with an average width of about 2.2 m. and depth of 1 m. (see Fig. 7, sections 2 and 3), though the dimensions varied between dug sections. The ditch was generally wider and deeper towards the northern corner. This may have been the result of less severe truncation by later ploughing or machining in this area.

No evidence for an entrance was seen. It may be that the entrance lay on the western side and was destroyed by the construction of the phase 2 enclosure (see Fig. 6). The slight kink in the SW. side of ditch 5240 may be an indication of where the phase 1 entrance lay. Alternatively, access may have been by means of a causeway formed by dumps of material in the ditch as suggested for the phase 2 enclosure (see below). Such a dump would not have been recognised without excavation.

It would appear from analysis of the ditch fills that different parts of the enclosure had different infill histories. The part (5708) of the phase 1 ditch inside the later enclosure was apparently infilled first. This was fully infilled by the time of construction of the overlying phase 2 roundhouse structure (see below). During excavation of the individual sections of this ditch it was thought that ditch 5708 may have silted up naturally, but when taken together the evidence points to deliberate infill. Several of the fills are clearly derived from tipping from a particular side of the ditch. For example 5157 appeared to have been deposited from the NW. side as it was thicker to this side, and the silt lenses within it were aligned down the slope rather than lying across the bottom, as would be expected with natural silting (see Fig. 7, section 2). The fills of the different

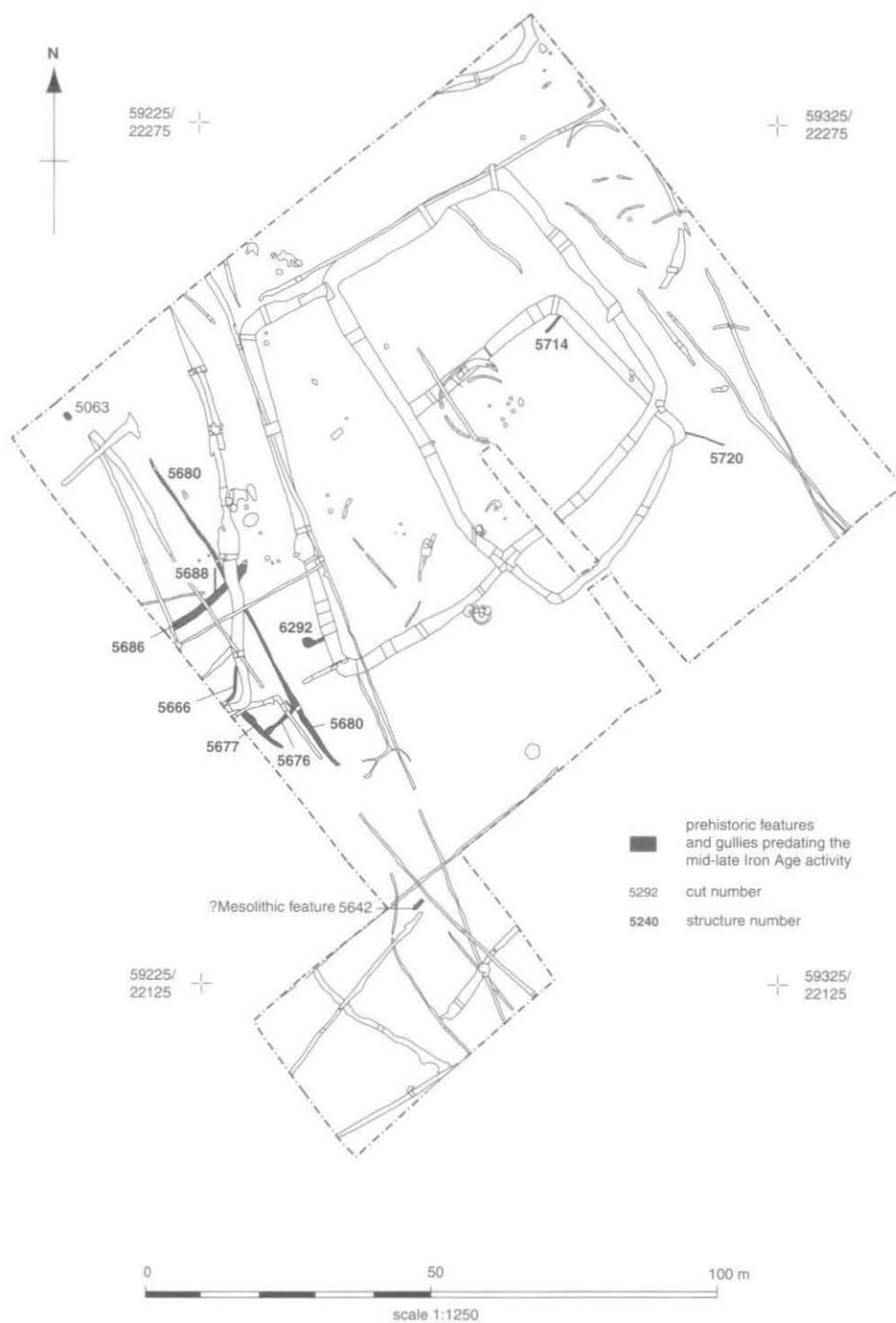


Fig. 4. Plan showing early prehistoric features and gullies predating the mid-late Iron Age activity, with all structures and cuts mentioned in the text numbered.

sections dug through this ditch were generally fairly clean, and reflected all the variations of the Oxford Clay natural observed on this site, suggesting slightly different sources for the different dumps of material rather than natural silting from the sides. This deliberate dumping seems to have occurred relatively soon after the initial excavation of the ditch as there was little evidence of weathering of the sides or natural silting in the bottom.

Finds of pottery, flint, fired clay and burnt stone were restricted to the lowest and uppermost fills. This can be explained if this portion of the original enclosure ditch was infilled at the same time as the phase 2 enclosure ditch was being excavated. The first material from the phase 2 ditch to be dumped into the earlier ditch would have derived from the ground surface, possibly including archaeological material, while later deposits would have comprised clean natural as excavation of the new ditch progressed. The latest fills are likely to have accumulated in shallow depressions along the line of the infilled ditch during the use of the phase 2 enclosure. This is especially true of the organic-rich accumulations in the tops of the ditch sections at the N. corner of the enclosure close to the phase 2 roundhouse structure. The pottery from these uppermost fills included sherds of late Iron Age/early Roman (LIR) date in addition to M-LIA material, whereas the lower layers contained exclusively M-LIA pottery. This supports the suggestion that the upper fills accumulated significantly later than the main infill of the ditch. The LIR pottery from the latest fills of this ditch is contemporary with that found in the drip gully of the nearby roundhouse indicating that the latest fills of ditch 5708 accumulated during the occupation of the house during phase 2.

In contrast, where the ditch lay outside the phase 2 enclosure (here numbered 5403), the lower fills were characterised by an accumulation of natural silts and weathering deposits. These included only occasional finds, and indicate that this part of the ditch was open for a long period during which some occupation activity was taking place nearby, but only isolated finds were accumulating in the open ditch. The ditch was later infilled with a mix of clean deposits and dumps of smithing and domestic waste. For example, three natural silting deposits filled cut 5412 with only limited archaeological material in the uppermost of these (5414). This was composed of some animal bone and burnt stone, which is likely to have been fairly common around a settlement site of this date. This was followed by further weathering of the NW. side of the ditch (5415) and then a dump of much more sandy silt with domestic debris (see Fig. 7, section 3). This deposit (5413) included pottery of M-LIA and LIR date. The inclusion of LIR sherds in this fill suggests that it was likely to have been dumped during the occupation of the phase 2 enclosure.

In the southern corner of the enclosure (cut 5444) the ditch was infilled by three successive dumps of material possibly deriving from smithing and domestic activity, after the initial period of natural silting represented by the primary fill (5466). The first of these (5460) included the remains of two smithing hearth bottoms, a piece of vitrified hearth lining, one sherd of M-LIA pottery and some fired clay. The later deposits contained smithing slag, fuel ash slag, carbonised wood, fired clay, bone and MIA-LIR pottery. This may indicate that smithing took place in the vicinity, but it is not clear when this occurred. It is likely to have been during the occupation of the phase 2 enclosure on the basis of the LIR pottery and the fact that other sections of the ditch appear to have been infilled at this time. The later fills of the early ditch, at the junction with the phase 2 enclosure ditch (5503), 8 m. to the NW., appear to be the same as those of the phase 2 ditch and contained a similar range of pottery, suggesting they were contemporaneous. This part of the phase 1 enclosure ditch was evidently open, and filled, during the second phase of settlement.

None of the features inside or around this enclosure can be definitely attributed to the first phase of the occupation, though the single section cut through gully 5681 to the NW. contained only MIA pottery, possibly indicating that this feature was also early in the occupation of the site. This feature was 0.64 m. wide and extended SE.-NW. for 16.5 m., before it joined the phase 2 enclosure ditch (5240) at its northern end. The feature was on the same alignment as the phase 1 enclosure ditch, but was separated from it by a 5 m. gap. The gully was 0.43 m. deep and was filled with friable mid grey-brown clay silt with charcoal flecks. This deposit contained a single sherd of M-LIA pottery and two small pieces of animal bone. It was very similar to the top fill of the phase 2 enclosure ditch at the point where they joined and, despite a lack of pottery, could have been contemporary. This feature could have formed an internal division within the enclosure, rather than a land division associated with the phase 1 enclosure.

The rapid infilling of ditch 5708 and the limited infill of ditch 5403 prior to the cutting of the phase 2 ditches indicates that phase 1 was very short-lived. It may be that there were never many features relating to this phase, and those that did exist were reused or destroyed by the second phase of activity.

The enclosure: phase 2 (Fig. 6)

The main phase 2 enclosure was also approximately rectangular, but larger than the earlier one. The interior dimensions of this enclosure were roughly 52 m. x 40 m., an area of 2080 m.². It overlapped the area of the phase 1 enclosure, and lay on the same NW.-SE. alignment, but was centred a little to the NW. A ditched annexe was added to the W. side, enclosing a further area of 1258 m.².

The SW. side of the main enclosure was common to both phases. A recut relating to this reuse was evident at the SW. junction of the two ditches, but was not recorded further north. This part of the ditch is not certain

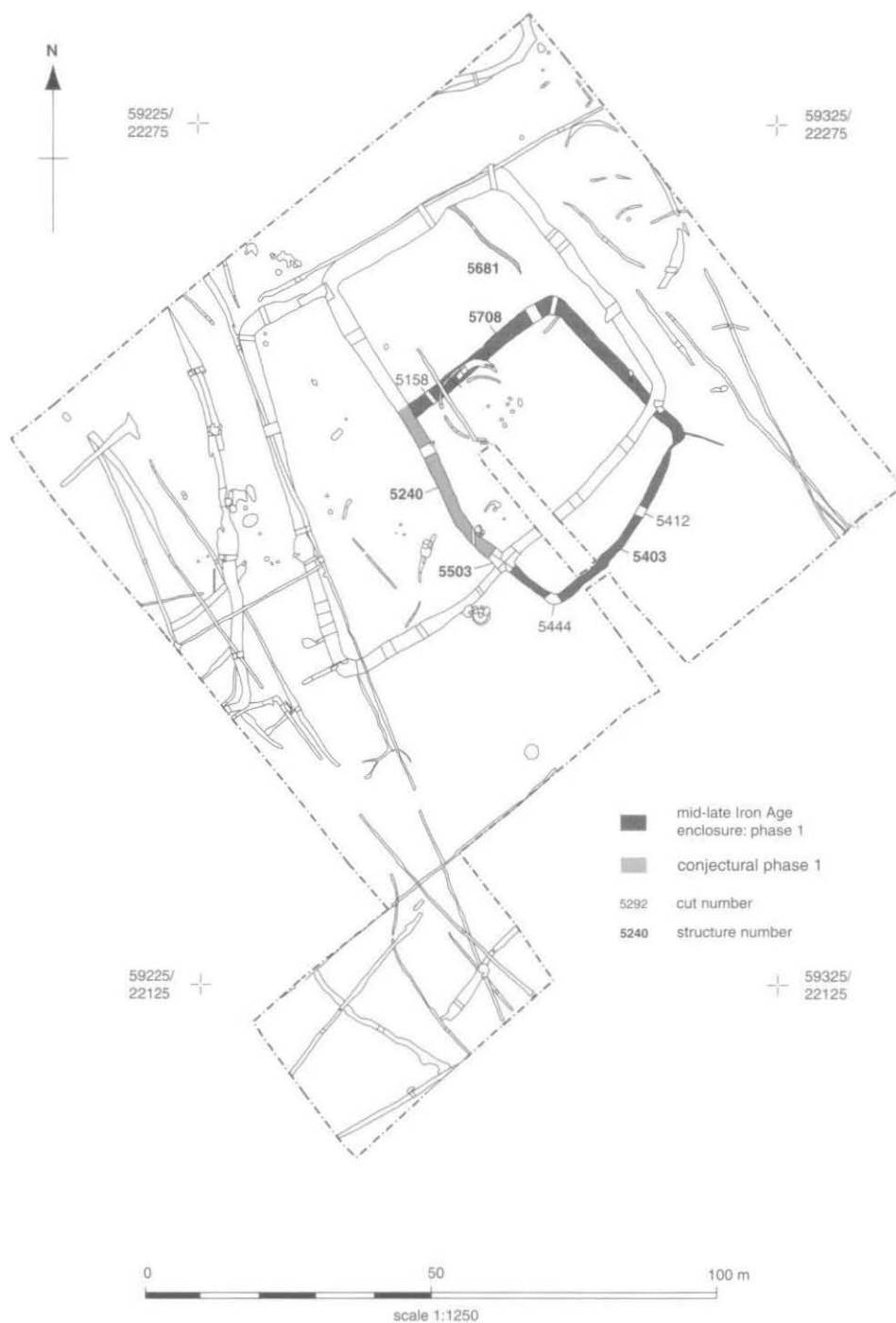


Fig. 5. Plan showing phase 1 enclosure, with all structures and cuts mentioned in the text numbered.

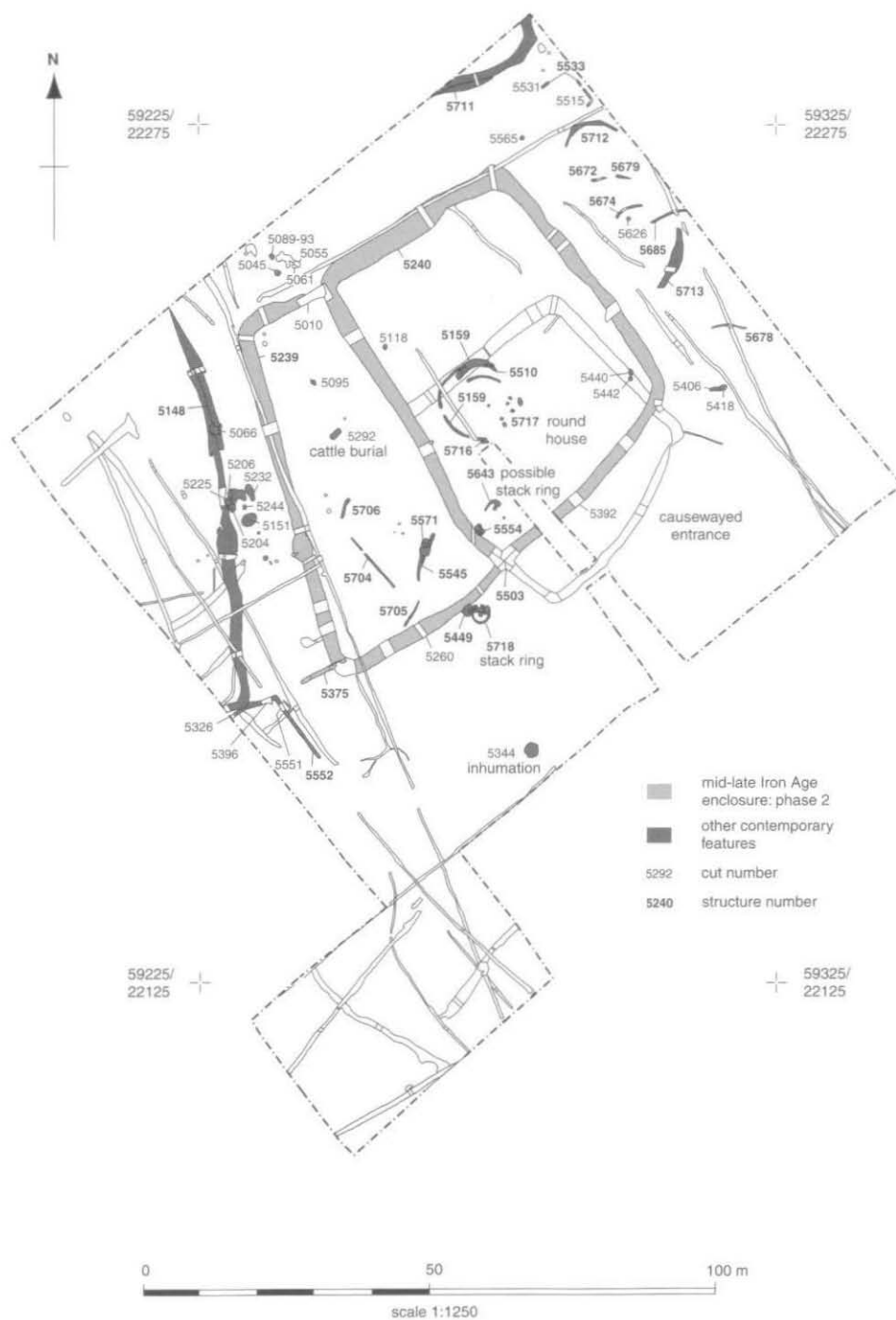


Fig. 6. Plan showing phase 2 enclosure and other mid-late Iron Age features, with structures and cuts mentioned in the text numbered.

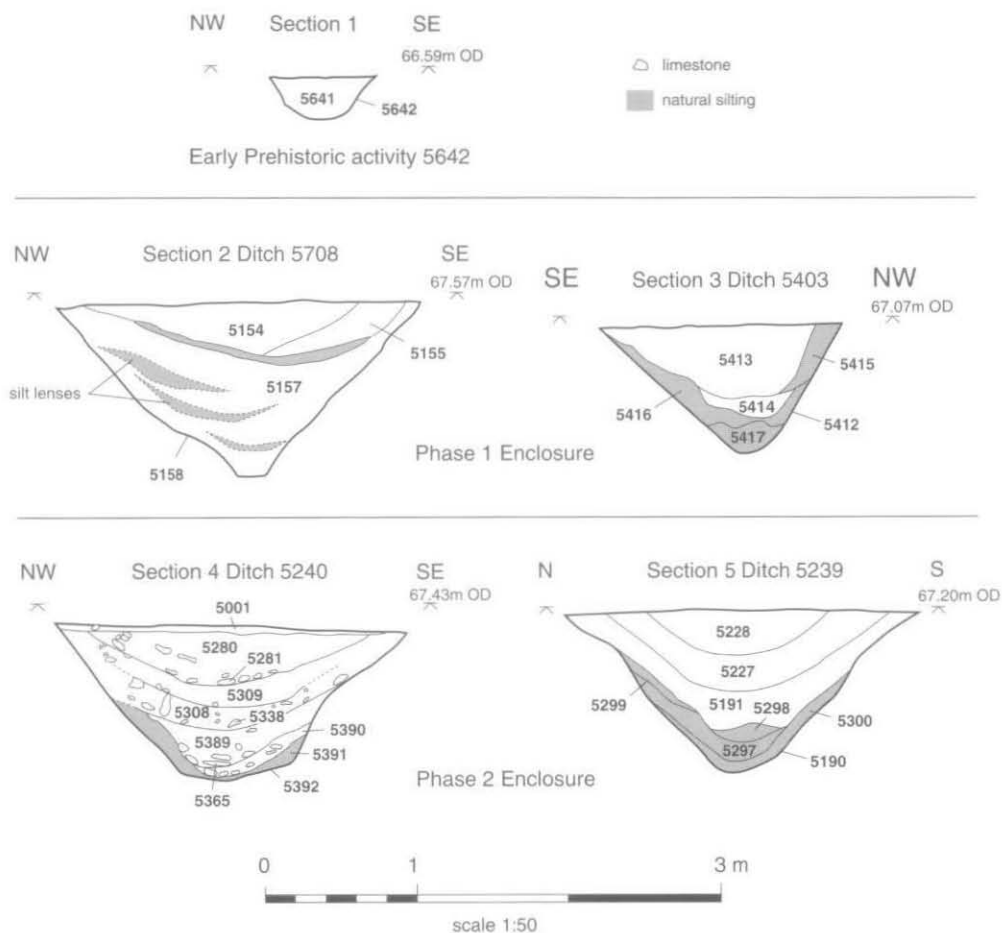


Fig. 7. Sections through ?Mesolithic gully and mid-late Iron Age enclosure ditches.



Fig. 8. Stone spread 5281 in enclosure ditch cut 5392 looking N. into the main phase 2 enclosure.

to have existed in phase 1, but it seems likely that it did. The lack of evidence may have resulted from thorough cleaning or enlarging of the ditch during the phase 2 construction. The phase 2 enclosure ditch (5240) was on average about 2.9 m. wide, a little broader than its predecessor. It was also slightly deeper, around 1.1 m. on average and U-shaped in profile (see Fig. 7, section 4).

On the SE. side of the annexe ditch 5239 appeared to be a continuation of the corresponding side of the main enclosure and may have been broadly contemporary with it. At this point, the annexe was about 32 m. wide, but it narrowed to only 14 m. in width towards the N. On the northern side of the annexe, ditch 5239 was clearly not a continuation of the main enclosure ditch as it was offset by about 2 m. During excavation it was thought that 5239 was earlier than 5240 and had almost completely silted up before being cut by ditch 5240, but the evidence from the southern junction casts doubt on this. This relationship was reinterpreted during post-excavation, as ditch 5239 was found to terminate just short of 5240. The main enclosure and annexe sections of ditch, though roughly contemporary, were dug separately and did not intersect except in their upper levels. Here the fills were very similar and the exact relationship was difficult to discern. There was no need for the two to be completely joined, as they would not have had a drainage function on this flat site.

It is not certain that ditch 5239 was exactly contemporary with the main enclosure as it was slightly narrower, and generally more V-shaped in profile (see Fig. 7, section 5). There was some evidence that ditch 5240 had begun to infill before 5239 was cut. At the southern junction (5503) of the two ditches sandy silts had accumulated in the bottom and on the side of ditch 5240, before the overlying sandy silt (5312), which forms the primary fill of 5239, was deposited in both ditches.

These two ditches had a very similar, probably contemporary, history of infill. In almost all excavated sections, the bottom of the ditches were filled by successive layers of natural silting, to a depth of approximately 0.4-0.6 m. These fills were generally fairly clean light-mid green, grey, yellow, orange or brown clay silts, silty clays or sandy silts, reflecting the character of the natural at the various points of the circuit. Some of these fills contained occasional charcoal flecks as well as manganese and iron staining, but the scarce finds recovered from them were largely restricted to occasional sherds of pottery, fragments of bone or burnt limestone. Darker grey brown deposits containing higher concentrations of charcoal, pottery, animal bone and burnt stone, representing infill by deliberate dumping, overlay these naturally accumulated fills. The pottery generally ranged in date from MIA-LIR. No distinction in date could be identified between the earlier and later fills, suggesting that they related to the same phase of occupation (see Pottery report, below).

Especially, though not exclusively, among these later fills, apparently discrete dumps of material could be discerned relating to particular episodes of dumping. These included groups of pottery and animal bone, especially skulls. Some of these could be considered to be special deposits. Unusually an almost complete LIA pot was found within one of the lowest fills (5312) of the main enclosure ditch at the southern junction (5503) of 5239 and 5240. Animal skulls were not found in any dumps within the enclosure and were rare in other contexts. Other dumps and concentrations of pottery, animal bone, charcoal and burnt limestone could also be distinguished. In several sections these were located towards the outer edge of the ditch suggesting they may have been deposited from outside the enclosure, indicating that activity was occurring outside the enclosure as well as inside it.

Some deposits of burnt and unburnt stone seemed to have been deliberately dumped at particular locations within the enclosure ditches. Pottery, bone and slag were also mixed with these deposits. It is possible that this accumulation of deposits was the result of some industrial or domestic process carried out nearby, but it is more likely that the products of these activities across the site were concentrated here for a particular purpose.

Causewayed entrances: The most notable of these was in cut 5392, on the SE. side of the enclosure, where stone deposits had been dumped from early in the history of the ditch. Only one thin layer of natural silting had accumulated in the base of the ditch at this point, before five successive layers of silty sand and silty clay rich in limestone were deposited on top (see Fig. 7, section 4). Even this primary silting layer (5391) contained a concentration of pottery, bone and burnt limestone along the outer side of the ditch. The later layers were interspersed with denser spreads of limestone (5365, 5338 and 5281 - see Fig. 8). It is probable that the concentration of stone represented a deliberate attempt to construct a causeway into the interior of the main enclosure. The denser spreads of limestone could have been intended to create surfaces. A horse skull, a sheep mandible (5364 and 5310 respectively) and other deposits of animal bone were found within these layers.

No other entrance was identified in the plan of the enclosures or during excavation, but if this was indeed the form of entrance used during this phase of the enclosure it is possible to suggest others from the limited proportion of the enclosure ditch excavated. Cut 5260, towards the SW. corner of the annexe, also contained deposits rich in stone, some of which was burnt. The deposition of these stone-rich dumps seems to have begun soon after the ditch was dug. No natural infilling had occurred before the first dump was made in this cut. No dense spreads of limestone were recorded in this cut, and it yielded less burnt stone generally, but it may, nonetheless, have been close to the edge of a similar causeway. A causeway into the western enclosure would have been as necessary as one into the main enclosure and this location would have provided easy access to the stack-ring from the western annexe.

A third possible causeway, slightly later in the sequence, may be represented by deposit 5215 in cut 5010, on the NE. side of the annexe. This deposit of silty clay, made when the ditch was filled to within 0.58 m. of the top of the cut, formed a mound within the ditch to bring it level with its surroundings.

Other mid to late Iron Age features and boundaries (Fig. 6)

At some point prior to the complete infill of the enclosure ditch a short spur was added to the SW. corner of the annexe. This spur (5375) jutted out towards the WSW. for 6.8 m. It was 0.76 m. wide and 0.65 m. deep, with a steep sided, U-shaped profile. It cut enclosure ditch 5239 at some point after the latter had partially silted up, but before the darker, finds-rich deposits which formed the later fills of the enclosure ditch had been dumped. The upper fills of feature 5375 matched those of the enclosure ditch at this corner. Both fills (5228 and 5320) contained LIR pottery.

A series of small intercutting ditches, gullies and pits collectively numbered 5148 (see Fig. 9 section 6 and Fig. 10) may represent a boundary feature to the W. of the enclosure annexe. At a point opposite the SW. corner of the annexe, feature 5148 turned towards the SW., and ran into the edge of the excavation. A variety of clay silts and sandy silts generally with occasional-moderate charcoal flecks filled this group of features. Many of these deposits yielded pottery, animal bone and/or burnt stone, and the pottery ranged in date from MIA to LIR, as in other parts of the site. A single residual retouched flint flake was recovered from the primary fill of pit 5066.

A much smaller boundary ditch (5552) was located to the S. of feature 5148. The relationship between these two features was unclear, but it seemed likely that 5552 ran out on an E.-W. alignment from the corner of 5148 to within 4.4 m. of the ditch spur (5375) jutting SW. from the corner of the phase 2 enclosure ditch 5239. At this point it turned to run SE. for 13.2 m. Pottery of M-LIA date, frequent charcoal flecks and animal bone were found in the upper layers of fill. A third small gully (5326) was recorded in the area to the S. of 5148 and 5552, but its relationship to the larger features remains unclear.

The dimensions of ditch 5552 are comparable with those of ditch spur 5375, and their fills were very similar in character, with naturally accumulating silts and weathering filling the lower part of the ditch, while the top 0.2-0.35 m. was filled with deposits rich in charcoal flecks and finds in each case. A pottery spread (5397) containing almost-complete vessels lay within the top fill of cut 5396 on the E.-W. orientated arm of 5552. Similar concentrations of pottery, including almost complete pots, were recovered from the upper fills of cut 5551 in the N.-S. arm of this same feature (Fig. 11). The majority of this pottery was of LIR date, although material ranged in date from MIA to LIR. This material accorded well with what had been recovered from the later fills of 5375. From this evidence it seems likely that these two features are related and can thus be tied to the occupation and use of the phase 2 enclosure. These two boundaries could have been intended to close off the southern end of the possible driveway between the W. side of the phase 2 enclosure and the contemporary boundary 5148.

The final linear feature (5711) was located in the northern corner of the excavated area. It appeared to run roughly E.-W., approximately 16 m. N. of the phase 2 enclosure. Only one section was excavated through this feature, which was composed of a sequence of gullies (5621, 5623 and 5625 - see Fig. 9, section 7). The first of these (5625) was in excess of 1.3 m. wide and 0.45 m. deep, filled by a single deposit of friable mixed mid yellow brown and pale grey sandy silt with occasional manganese, grit and charcoal flecks which yielded MIA pottery. This was cut by another smaller gully (5623) on the northern side. This feature was smaller, only 0.5 m. wide and 0.3 m. deep. The feature was recut to the N. for the third time as a slightly larger gully (5621), 0.78 m. wide and 0.33 m. deep. Both these gullies were filled with similar more tenacious mid grey clay silt, mottled with orange brown, that also contained occasional charcoal flecks and manganese. No finds were recovered from either of these recuts. Feature 5711 curved northwards in the northern corner of the excavated area suggesting that it may have formed the southern boundary of an enclosure that lay beyond the edge of excavation. Despite the lack of LIR pottery from this section it is likely that this boundary was broadly contemporary with boundary 5148 and the occupation of the main phase 2 enclosure.

The occupation (Figs. 6 and 12)

The main evidence for occupation within the enclosure comprises a single roundhouse, and several other apparently contemporary features including a small annular gully and various pits and gullies within and immediately outside the enclosure.

The roundhouse (Figs. 6 and 12)

A roundhouse was identified within the second phase enclosure, and it appeared to have been rebuilt and redefined on a number of occasions. The remains of the roundhouse consisted of a series of annular gullies and postholes, the gullies overlying the N. ditch of the first phase enclosure boundary. Unfortunately the area of the roundhouse had been disturbed by a series of later linear features so that it was impossible to recover a complete plan of the structure and, owing to time constraints, it was only possible to excavate the more

certain of the possible postholes. Only the excavated postholes are described here, though all features have been illustrated (Fig. 12), whether excavated or not.

Few stratigraphic relationships were established between these features, so phasing is difficult. However, it is likely that the remains of the earliest structures would be the most fragmentary, having been eroded by the later occupation. On this basis it is suggested that the earliest roundhouse is defined by three lengths of annular gully: 5715, 5721 and 5716. Terminus 5721 indicates that the entrance to this house faced the SE. This may have been followed by another similarly orientated structure defined by gullies 5510 and 5421. Gully 5510 was 0.8 m. in width, and contained a large amount of burnt limestone in a moderately compact, mid grey sandy silt. No other finds were recovered from this feature.

The only stratigraphic relationship to be established showed that gully 5510 was cut by gully 5159 (Fig. 12, section 14). Gully 5159 is the latest and most complete circuit of the three. Terminus 5421, thought to be associated with the second stage of the roundhouse, may also have related to this third stage structure. Gully 5159 was generally shallow; varying from 0.45-0.55 m. in width and 0.04-0.4 m. in depth, with an internal diameter of almost 13 m. In section it was roughly symmetrical, with fairly steeply inclined sides and a flat or shallowly concave base, deepening where it crossed the softer fill of the earlier enclosure ditch. It was filled by deposits of very dark grey-brown to black clay silt with frequent flecks and fragments of charcoal, which yielded LIR pottery, animal bone and burnt stone.

This gully can best be interpreted as a drip gully surrounding a roundhouse. It is centrally placed within the main phase 2 enclosure, and is likely to have been contemporary with it. Inside the circuit of the gully the natural was overlain by a layer of compact, light brown clay silt with occasional limestone fragments (5357) around 0.05 m. deep. This layer yielded some small unidentified crumbs of M-LIA pottery during sieving, but no other finds. It was interpreted as an occupation layer, existing as it did only within the confines of the structure. The relatively clean nature of this deposit in contrast to the fills of the associated features suggests that this may not have been the main occupation layer but the truncated remains of a deeper occupation deposit.

A single associated feature (5426) was recorded inside the roundhouse. This feature was circular with a diameter of 0.4 m. and truncated to a depth of 0.03 m. It was filled with friable mid-dark grey brown sandy silt with some charcoal. The interpretation of this feature is uncertain but its shallowness makes it unlikely to have been a posthole. A deposit formed by burning *in situ* is another possibility, but the similarity to the fills of the drip gully suggest that charcoal may have been very common in the environs of the roundhouse, though no hearth has been identified.

A narrow, apparently original, entrance 1.25 m. wide existed on the W. side, while the main entrance was probably located to the SE. A group of four stone-filled postholes (5717) were located on the edge of the projected circle of the drip-gully, which was absent at this point (see Fig. 12). These postholes varied in size and shape, but were generally oval, around 0.6 m. long by 0.5 m. wide, and 0.25-0.3 m. deep. They were filled with friable dark grey sandy silt with 40-50% limestone slabs, roughly half of which were burnt, and which are likely to represent post-packing. No clear evidence of postpipes was found and it is likely that the posts were pulled out leaving the disturbed post-packing to fill the holes. A single small, unidentified sherd of M-LIA pottery was recovered from the fill of posthole 5314, but no finds were recovered from any of the other postholes in the group. The group was interpreted as forming the porch for roundhouse structure 5159, but may have related to any of the earlier house structures or have been used in more than one.

The stack-ring and associated pit cluster (Figs. 6 and 14a)

Immediately outside the SE. ditch of the annexe was a small annular gully 5718 (cut 5242 - see Figs. 6, 13 and 14a). This gully was 0.38 m. wide, 0.14 m. deep and the whole feature had an external diameter of around 3.2 m. A circular pit (5275), 0.91 m. in diameter by 0.3 m. deep, with almost vertical sides and a flat base was located at the centre of this ring and may have been contemporary with it. Both features were filled with single deposits of friable grey brown clay silt, with occasional charcoal, though the fill of the central pit was mottled with orange. The fill of the gully (5241) yielded LIR pottery, a single piece of unidentified animal bone, flint and burnt stone, while the fill of the central pit (5274) contained animal bone, burnt stone and a fragment of smithing slag.

A group of seven other pits, collectively numbered pit group 5449, cut both these features and the edge of the annexe ditch (see Fig. 14a). These pits were generally all oval, or roughly circular, and varied in area from 0.78 m. x 0.25 m. to 1.5 m. x 1.1 m., and in depth from 0.22-0.67 m. All were filled with friable mid grey brown clay silt with occasional charcoal flecks and fragments. Those cutting the edge of the annexe ditch (5451 and 5453) were mottled with orange manganese staining. Most of the pit fills contained only a single deposit usually, though not always, yielding pottery dating from MIA to LIR, animal bone and/or burnt stone, but a series of individual dumps of different types of material could be distinguished within two of the larger pits (5273 and 5277).

Pit 5273 had a primary fill of friable mid orange brown clay silt with occasional charcoal (5385) with MIA-LIR pottery, animal bone and burnt stone. A dump (5386) of burnt stone and animal bone, including a

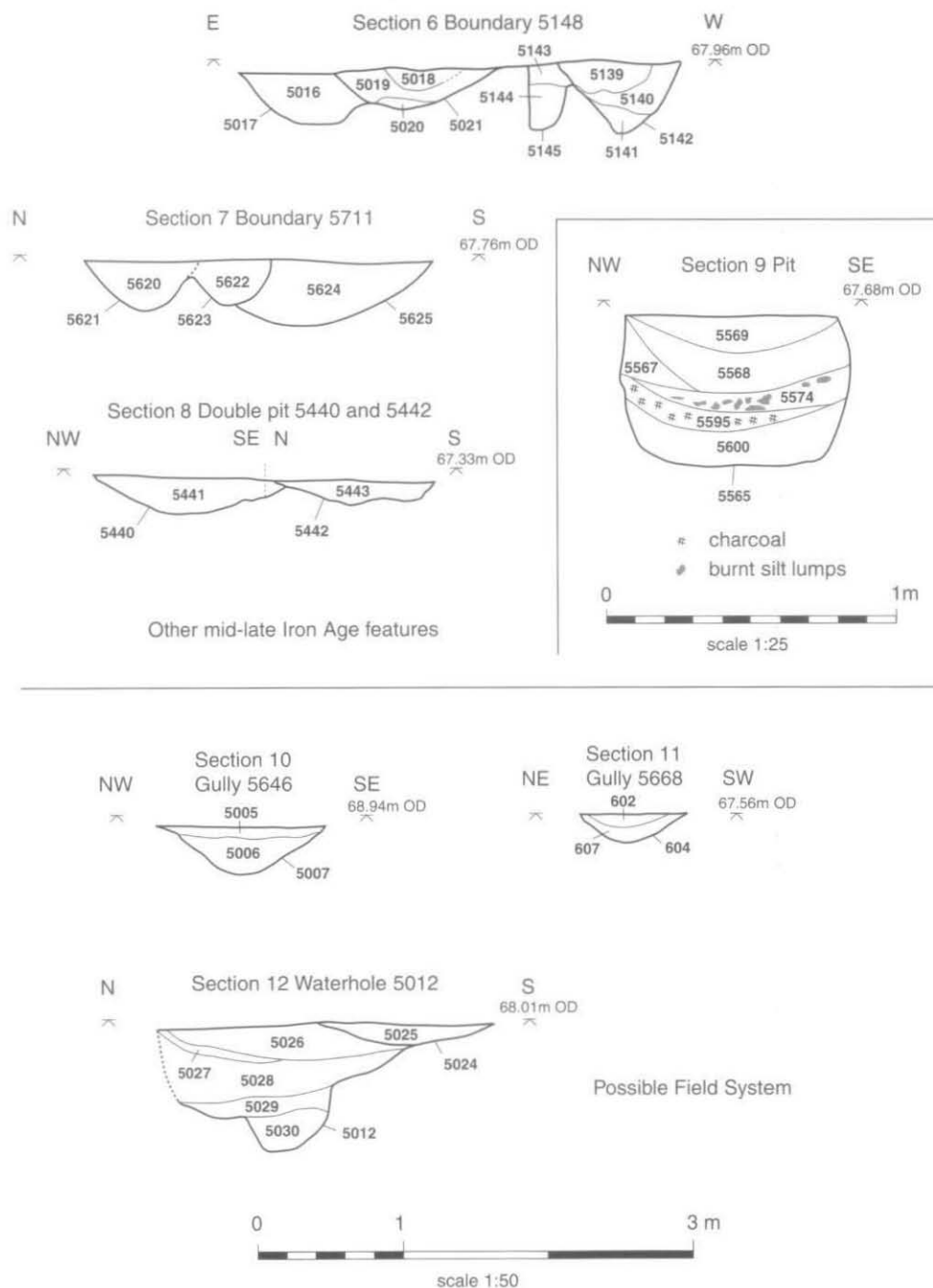


Fig. 9. Sections through other mid-late features and the possible early Roman field system.



Fig. 10. View looking S. along mid-late Iron Age boundary 5148 during excavation, section 6 in foreground.



Fig. 11. Pottery dump in top fill of cut 5551, N.-S. orientated arm of ditch 5552, looking N. Fully excavated section of this ditch in foreground.

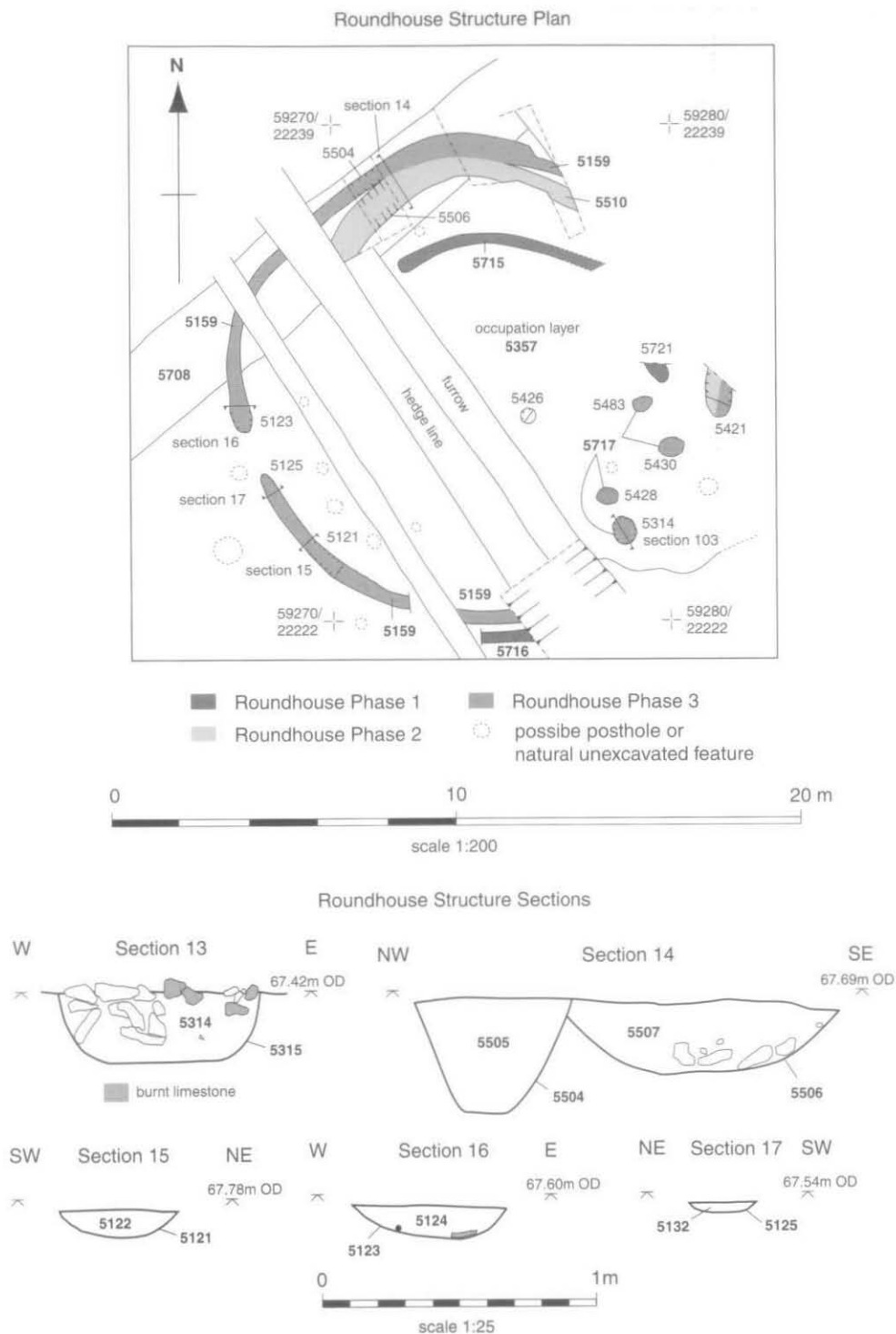


Fig. 12. Plan and sections of roundhouse structure showing three phases of building.

fragmentary horse skull, overlay this. Another layer of clay silt (5369) with frequent charcoal, some animal bone and burnt stone was followed by a dump of pottery, animal bone and burnt stone (5358). This was overlain by another layer of clay silt with frequent charcoal (5272) containing pottery, a loomweight fragment and a piece of smithing slag. A dump of pottery, including a whole pot, and two fragmentary, but almost complete pots, and some burnt limestone fragments (5294) completed the sequence. The sequence in pit 5277 was very similar in character but varied slightly in detail. The first deposit in this pit was a dump of bone fragments and burnt limestone (5316). This was overlain by a layer of friable mid orange brown clay silt with occasional charcoal (5296), and succeeded by another dump of burnt stone and animal bone. A second layer of clay silt with occasional charcoal (5276) containing pottery, an amorphous piece of fired clay, a fragment of loomweight and a small fragment of iron overlay this. A final dump of animal bone and burnt limestone (5268) completed the sequence. These pits, the others within the annular gully and that gully itself were overlain by another layer of friable, very dark black brown clay silt with frequent charcoal (5243). Finds of LIR pottery, animal bone, burnt stone and fired clay, including loomweight fragments, came from this layer.

The penannular gully and possibly also the central pit probably represent a stack-ring used for the storage of fodder on the site at some point during the lifetime of the phase 2 enclosure. The fills of domestic and industrial waste in both these features and the overlying pits, suggest that the stack-ring went out of use during the period of occupation of the site and that the empty features were used for the disposal of waste. It is likely from the number of intercutting waste-filled pits here, that this location became a regular dumping ground in the later years of the settlement after the enclosure ditch had at least partially infilled.

Other contemporary features

A number of features within and around the enclosure also yielded M-LIR pottery and are likely to be contemporary with, or at least open at the time of, the occupation of the enclosure. These included various pits and short lengths of gully. The pits occurred singly, in pairs and in groups. Some gullies were related stratigraphically with these groups of pits, and one group may have been a second stack-ring. Generally, however, the original function of these features is uncertain. Many were backfilled with waste indicating at least a secondary use for rubbish disposal.

A possible second stack-ring (Fig. 14b) A group of features (collectively numbered 5643) comprising a heavily truncated curvilinear gully (5581), a pit (5583) and two postholes (5590, 5597) were located around 11 m. S. of the roundhouse within the main phase 2 enclosure. The gully, which was 0.25 m. wide and 0.18 m. deep with an inferred diameter of around 3 m., was comparable in size to the small annular gully of the stack-ring. Its fill resembled the fill of the latest of the roundhouse gullies (5159), and yielded LIR pottery, animal bone, flint and burnt stone. Pit 5583 cut this gully at its eastern terminus. It was circular, 0.38 m. deep, with a diameter of 0.72 m. and a fill (5584) similar to that of the gully, containing M-LIA pottery and further animal bone and burnt stone. Posthole 5590, 0.5 m. in diameter and 0.22 m. deep, lay 0.13 m. to the SW., at the centre of the semi-circle. A second posthole (5597) 0.33 m. across and 0.18 m. deep, was located 1.75 m. to the SE. Both postholes contained clear postpipes, 0.21 m. and 0.14 m. in diameter respectively, and limestone post-packing, similar to that used in the postholes of the roundhouse porch. No finds were recovered from the fills of these postholes but it is likely that they were contemporary and associated with the gully.

The interpretation of this group of features is uncertain, although it could be suggested that the gully is all that remains of a ploughed-out stack-ring structure with posthole 5590 at the centre, later used for the dumping of waste, as with the other stack-ring outside the enclosure. The apparently associated smaller posthole is not paralleled in the stack-ring group outside the annexe, and there is no evidence that the central pit of that group was ever stone-packed. The stone-packing could derive from a secondary reuse of these features after the stack-ring passed out of use, or it may be that the whole group represents a working area with some form of semi-circular shelter to the NW.

Pits (Fig. 6) Pit group 5554 containing MIA-LIR pottery was located 3 m. to the SW. on the edge of enclosure ditch 5240. The earliest and most northerly of the pits, 5528, was oval, 1.25 m. x 1.1 m. and 0.34 m. deep, U-shaped in profile and filled with two deposits of clay silt. The lower of these fills (5537) contained only occasional charcoal and yielded some burnt stone, while the upper one (5527), darker and greyer in colour, contained frequent charcoal flecks and yielded LIR pottery and animal bone as well as burnt stone. A second pit, 5525, cut this to the S. It was circular, 0.73 m. in diameter and 0.17 m. deep and also cut the enclosure ditch. It was later cut to the SE. by a third pit (5523), also circular, but smaller and deeper with a diameter of 0.57 m. and a depth of 0.26 m. A fourth pit, 5521, lay 0.4 m. to the E. of these pits. It was oval, 0.67 m. by 0.6 m. across and 0.18 m. deep. These pits were all filled with clay silts, very similar to the top fill of the first pit, and yielded a similar range of finds. All are likely to be roughly contemporary, but dug in succession for dumping domestic waste as required.

Further N. along this side of the enclosure ditch and 12 m. NW. of the roundhouse was feature 5118, a roughly oval, steep-sided pit with a flat bottom. The two fills of this pit (5120 and 5119) were similar, both consisting of friable mid grey brown sandy silt, but the upper one contained charcoal flecks. The lower fill



Fig. 13. View of stack-ring 5718 and associated pits 5449 after excavation, looking SE. from inside enclosure. Box section into the top fills of ditch 5239 in immediate foreground.

yielded LIR pottery, including a dense scatter (5128) with decorated rim sherds (Figs. 15 and 23:48-50) and the upper one animal bone, burnt stone and more pottery of similar date. The original function of this pit is unclear, its characteristic shape perhaps indicating a different purpose from that of the other possible rubbish pits, but its final use seems to have been as a dump for domestic waste in the same way the group 5554 pits were used.

Two further pits, 5440 and 5442, were located in the SE. corner of the enclosure and cut the NE. ditch of the first phase enclosure (Fig. 9 section 8). Pit 5440 was oval, 1.2 m. x 0.65 m. across and 0.28 m. deep, with steeply sloping sides and an uneven concave base. Immediately to the N. was the similar feature 5442. The two were probably contemporary; both were filled with compact dark grey brown silty sand with charcoal specks and a fairly substantial proportion of burnt limestone. The latter pit yielded finds of MIA-LIR pottery and animal bone as well as burnt stone.

A similar pair of pits, 5406 and 5418, lay outside the SE. corner of the phase 2 enclosure. Pit 5418 was roughly circular, 1.2 m. x 1 m. x 0.18 m. deep and filled by a single dump of silty clay with charcoal flecks. This was cut to the W. by pit 5406, which was oval, 1.75 m. x 0.87 m. x 0.18 m. deep with a more irregular base. It too was filled with a single dump of silty clay. The fills of both pits yielded LIR pottery, bone and burnt stone. Neither bore any indication that they had been left open before having been infilled. It would appear that these pits were dug deliberately for disposal of domestic waste. The later pit contained less burnt stone and charcoal than the earlier, but considerably more pottery. Fill 5419 (of 5418) yielded 23 sherds of pottery weighing 73 g. in contrast to 50 sherds weighing 429 g. from 5407 (fill of 5406).

Two rather larger pits that may originally have been quarries were located W. of the enclosure, between the annexe ditch and boundary feature 5418. The first of these, a large scoop or pit, 5151, was oval, measuring 2.1 m. by 3.1 m. by 0.52 m. deep, with a somewhat irregular base, possibly suggesting that it had been recut. The primary fill was made up of redeposited natural to a depth of 0.14 m., overlain by a deposit of mottled clay silt with occasional-moderate charcoal flecks. This deposit yielded finds of animal bone and burnt stone. The primary fill suggested that the feature was open for a while before having been used for dumping domestic waste.

A similar pit (5232) was located 2 m. to the N. and a similar pattern of infill was observed there. A group of intercutting, smaller, more irregular pits (5244, 5204, 5206 and 5225) lay close by. These features were also filled with deposits of clay silt or silty clay with occasional charcoal and generally also bone, MIA to LIR pottery and/or burnt stone.

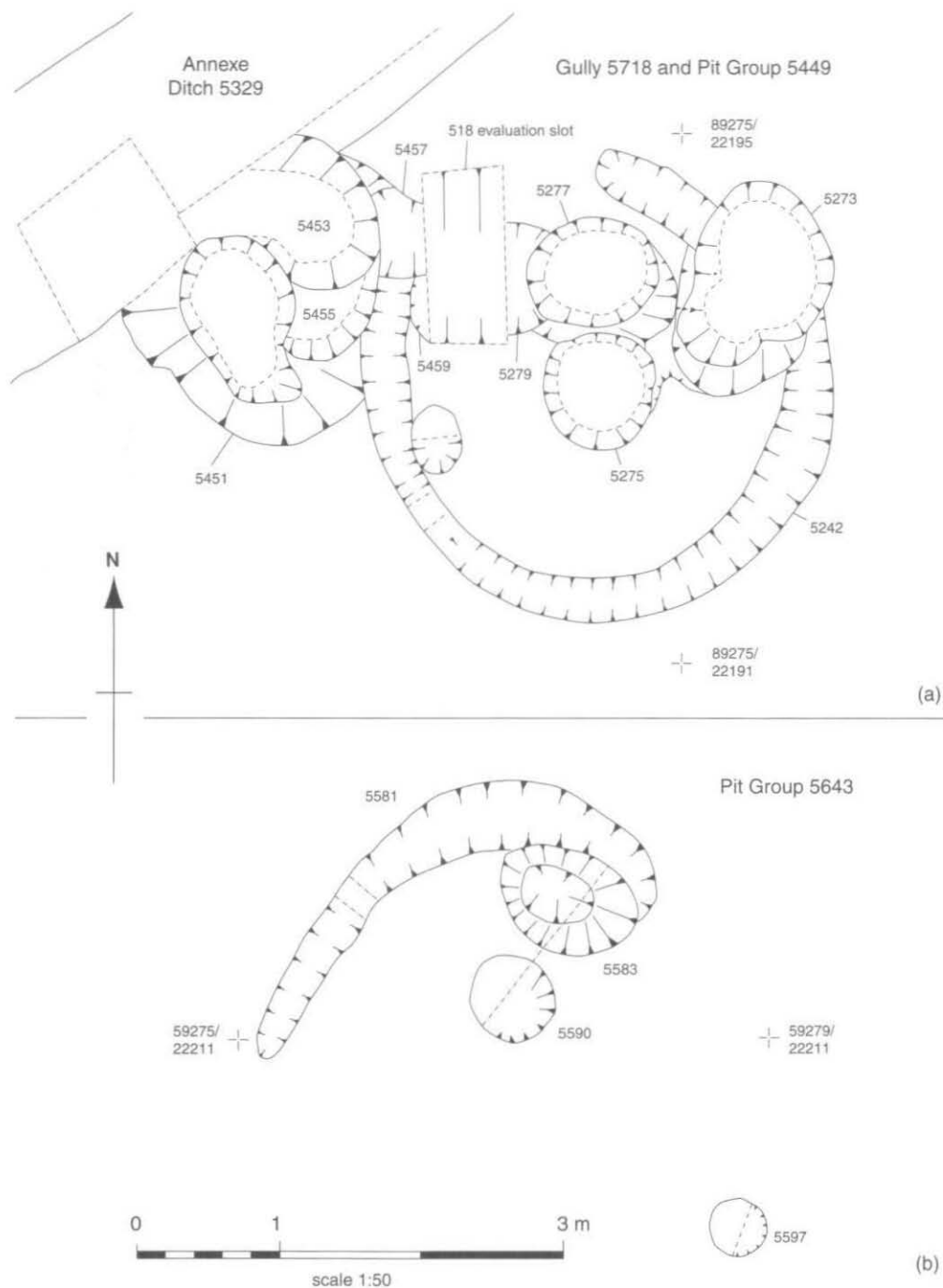


Fig. 14. Stack-ring plans: (a) Plan of stack-ring 5718 and associated pit group 5449; (b) Plan of possible stack-ring and associated pits structure 5643.



Fig. 15. Looking down into pit 5118 when partially excavated with pottery spread 5128 in base.

At the NW. edge of the site, beyond the enclosure, lay a group of irregular features (5045, 5061, 5055, 5089, 5091 and 5093). Many of these features were intercutting with obscure edges. Feature 5045 appears to have been a tree-throw hole, which was used for the dumping of burnt material, before natural slumped back into the hole. A small, shallow, circular deposit of greenish brown clay silt on the top of this feature may represent a posthole cutting this feature, but this was not certain. This deposit yielded LJR pottery, burnt stone and charcoal. The other features in this group are less distinct and may in many cases have been substantially disturbed, if not caused, by root or animal disturbance. None of these features yielded any finds datable to this period with any certainty, though the deposits tended to contain animal bone, burnt stone and charcoal. These features all lay around a fairly large and amorphous area of disturbance (5083-8 and 6116-7). No clear edges or cut could be discerned for these deposits, but the upper layers contained charcoal, and one sheep tooth was recovered from 5083. Tree disturbance seems the most likely interpretation of these deposits, with the upper parts of the spread being contributed by the disposal of domestic waste from the Iron Age occupation.

Pit 5565 lay some 5.5 m. NE. of the corner of the phase 2 enclosure ditch. It was barrel-shaped, 0.75 m. in diameter and 0.56 m. deep, with near vertical, slightly undercut sides, and a sharp break to a flat bottom (Fig. 9 section 9). The bottom 0.12 m. was filled by natural silting, overlain by a dump of fire debris. This deposit (5595) was composed of tenacious mid brown grey silty clay with large quantities of charcoal (see Charred Plant Remains report, below). There were no obvious signs of *in situ* burning of the surrounding fills or sides of the pit, making dumping the most likely interpretation. The fire debris was overlain by a dark grey and light yellow grey mottled deposit of sandy silt (5574) containing large patches of burnt sandy silt and a fairly high percentage of charcoal. A slump of natural sandy silt (5567) from the NW. side of the feature succeeded this. Further dumps containing burnt material followed. The first of these (5566) was a dump of charcoal-rich, mottled mid-dark brown grey sandy silt containing patches of burnt clay. The final dump infilling this pit (5569) was similar in composition with a lower percentage of charcoal. Ten crumbs of unidentified M-LIA pottery were recovered during sieving from dump 5566 and pieces of fired clay and undiagnostic slag came from the earlier dump 5574. These finds suggest that the pit was contemporary with the enclosure and the burnt material is likely to have been associated with the smithing activity occurring on the site at this time.

An irregular cut feature, 5095, interpreted as a tree-throw hole lay within the northern half of the annexe. Waste dumped into its top (fill 5096) included MIA-LJR pottery, animal bone and charcoal flecks. Its earlier fill was restricted to one side of the cut and was composed of redeposited or slumped natural.

Towards the SE. corner of the annexe was an intercutting group of pits (5571) and a shallow gully (5545). The first of these pits (5547) was roughly circular, around 1.2 m. in diameter. It was cut on its southern edge by a second pit (5570). A third pit (5544) cut the second to the S. Both these later pits were also roughly

circular, 1.3 m. and 1.8 m. in diameter respectively, and 0.7 m. deep. All three pits were filled with compact mid brown clay silt. The last of the three (5544) contained occasional charcoal which had been lacking from the others making it more grey in colour. All yielded finds of M-LIA pottery and animal bone. The later pits (5544 and 5570) may have been contemporary, making a double pit feature such as existed on other parts of the site.

The earliest pit of the group, 5547, was cut by the narrow, shallow gully 5545. This was 0.6 m. wide, 0.3 m. deep and stretched for around 8.5 m., orientated roughly N.-S. The single fill of this feature was very similar to that of pit 5544, but in addition to pottery, animal bone and occasional charcoal, it also contained occasional small-medium fragments of burnt limestone. The later pits in this group cut this gully near where it cut the earlier one. This spot was evidently used for the dumping of waste over a considerable period. Though the gully was filled with waste material, it seems unlikely to have been created for this function. The original function of the feature is unclear.

Gullies (Fig. 6) Several other similar narrow, shallow, linear gullies (5704-6) were recorded within the annexe and were found to contain some MIA-LIR pottery suggesting that they were open during the period of use of the enclosure. These features did not form any coherent pattern and need not have all been contemporary. No ring gullies or other features suggesting structures were represented among them. It is more likely that they are the remains of various short-lived boundaries within the enclosure, possibly to do with stock control or other control of access to the space within the enclosed area.

A group of short lengths of linear gully (5533) in the northern corner of the site may represent a small enclosure or building greatly truncated by later ploughing. This group comprises a 4 m. stretch (gully 5515) parallel to the edge of excavation, with a right-angled bend at the eastern end, and a 1.8 m. continuation in a NE.-SW. direction, before gully 5515 was truncated by a plough furrow. Another 1.65 m. stretch (5531) lay parallel to gully 5515 to the NW. The former gully was recorded as 0.3 m. wide and 0.22 m. deep, while the latter was 0.2 m. wide and 0.1 m. deep. It is likely that gully 5531 was larger prior to truncation. These gullies could represent a rectangular structure around 6.8 m. by in excess of 4.15 m. Gully 5515 contained a few crumbs of unidentified M-LIA pottery, suggesting that this structure may have been contemporary with the main occupation of the site.

Further SE. were numerous short stretches of curvilinear gullies (5712, 5672, 5678, 5679, 5674, 5685 and 5713). Plough furrows and uneven stripping truncated the majority of these features so that their full extent could not be traced. This made them difficult to characterise. A single short section was excavated through most of these features, but few could be dated. Gully 5712 was not excavated at all but the plan of this feature was such that it may have been part of a ring gully associated with a structure of around 10 m. diameter. LIR pottery was recovered from gully 5685 together with some animal bone and an amorphous fragment of fired clay. Five sherds of this date were also retrieved from gully 5713 together with animal bone. This feature was more substantial than the other gullies, at 0.9-1.8 m. wide and 0.5 m. deep in comparison to 0.3-0.8 m. wide and 0.07-0.13 m. deep, and could perhaps be better described as a shallow ditch. It possibly formed part of another of the smaller boundaries around the enclosure. A single, truncated small pit or posthole (5626) lay among these gullies close to 5674, but it was not clear how this feature related to any of them. The single fill of this feature contained occasional charcoal and yielded LIR pottery, animal bone and burnt stone fragments, suggesting it was broadly contemporary with gullies 5685, 5713 and the occupation of the enclosure.

Special deposits

In addition to the almost complete pot deposited in the bottom of the phase 2 enclosure ditch and the various animal skulls in the fills of that ditch, a cattle burial within the annexe (see Figs. 16 and 17) could have been deliberately placed as a ritual or special deposit. This represents the only find of articulated animal bone on the site and conformed to one of the categories of 'special animal deposit' set out by Hill in the context of Iron Age sites in Wessex.⁹ It was found within a steep sided pit (5292), 1.7 m. x 0.75 m. across and 0.17 m. deep, with an uneven concave base. The feature had been fairly heavily truncated, with the result that the cattle skeleton (5291) had been disturbed. It was also disturbed during the excavation by an intruder. Only the left side of the skeleton survived and the skull was missing (see Animal Bone report, below). This last did not appear to have been the result of the later disturbance, but seems likely to have been deliberately removed before burial.

The pit was backfilled with a deposit of friable mid brown silty clay. A single sherd of LIR pottery was retrieved from this deposit together with the skeleton and some other animal bone. The date of this pottery agreed well with the radiocarbon determination obtained from the skeleton. A radiocarbon date of 334-326

⁹ J.D. Hill, *Ritual and Rubbish in the Iron Age of Wessex: a study on the formation of a specific archaeological record* (BAR Brit. Ser. cxlii, 1995), 27-8.

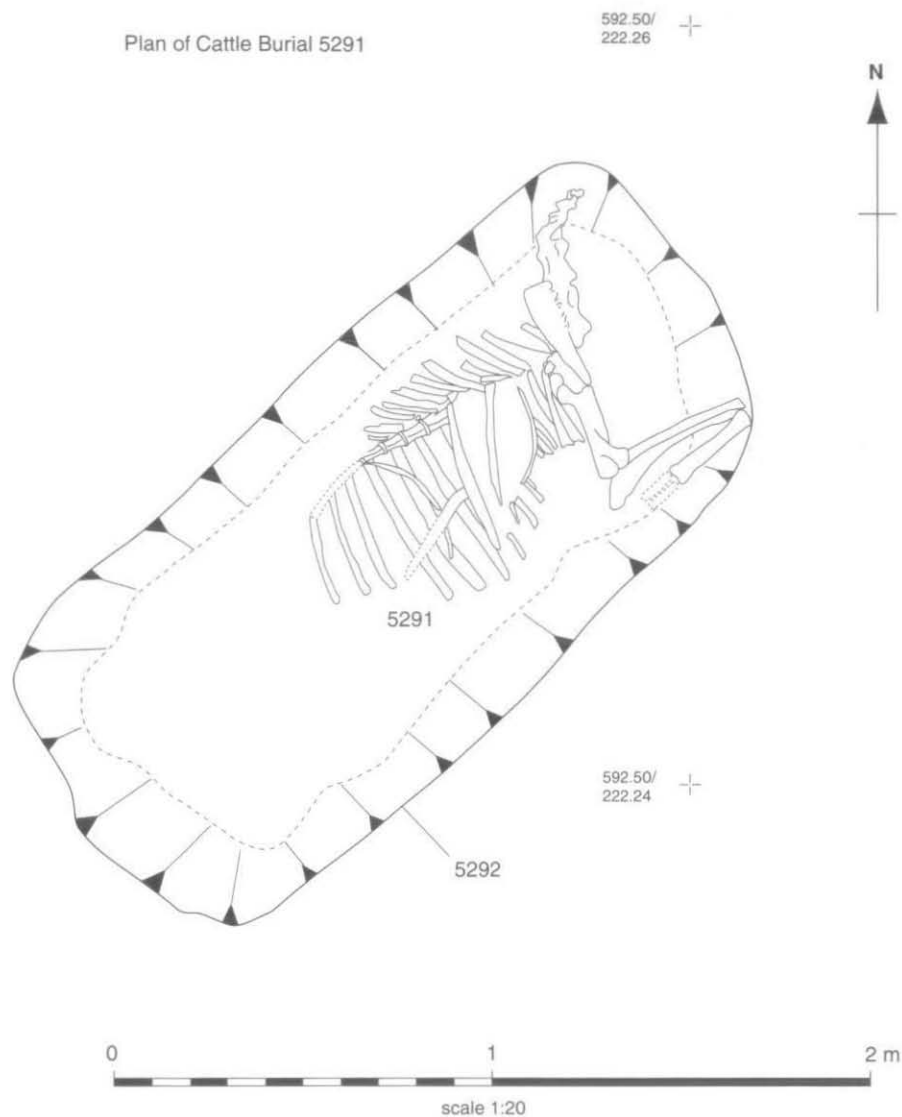


Fig. 16. Plan of cattle burial 5291.

cal BC and 200 cal BC-66 cal AD (95% confidence) (2079 ± 58 BP; NZA9634) was obtained for the cattle skeleton (see Radiocarbon Determinations, below). This proved that the burial was contemporary with the occupation of the site.

The inhumation (Fig. 18)

A grave containing the burial of a young woman (5405) was located towards the S. edge of excavation, more than 20 m. beyond the settlement enclosure, and set apart from all other contemporary features on the site. The grave (5344) was oval, aligned roughly N.-S., 2.6 m. by 2.2 m. by 0.65 m. deep, and cut by a plough furrow at its northern extent. The sides sloped shallowly to a depth of 0.5 m., where they fell away much more steeply to the smaller, slightly D-shaped flat base. A crouched skeleton (5405), with arms and legs flexed, was placed on its left side, orientated N.-S., in this lower part of the pit.

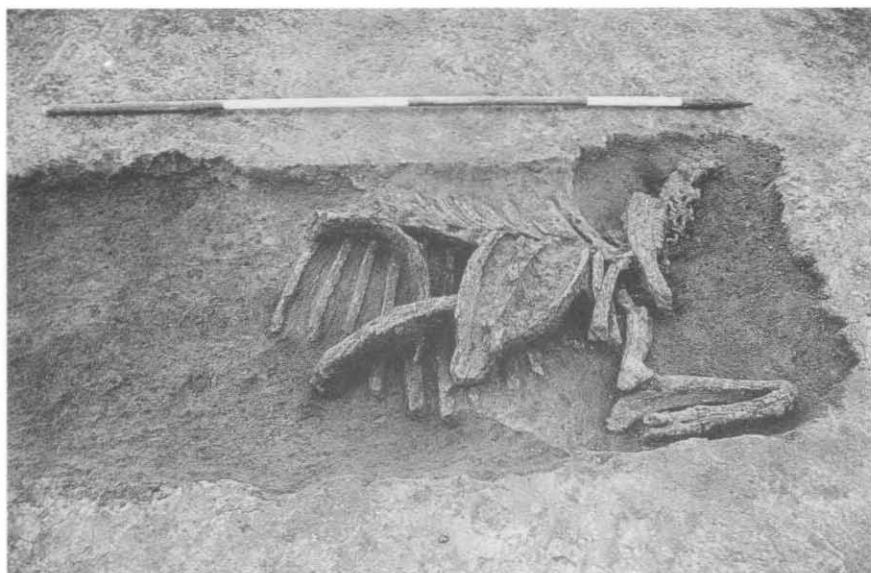


Fig. 17. Cattle burial 5291 looking NW.

The grave was backfilled with a deposit of tenacious dark grey clay mottled with light grey and yellow brown silty clay. This fill (5368) appeared to be redeposited material dug from the lower part of the pit, though occasional charcoal flecks, a single unidentified animal bone and two small sherds of pottery had become incorporated in it. A deposit (5345) of dark red brown silty sand with occasional charcoal overlay this. It yielded a number of sherds of pottery, two pieces of animal bone and residual flintwork. The pottery from both fills was MIA-LIR in date.

An attempt was made to obtain an AMS radiocarbon determination from the skeleton, but the bone was found to contain insufficient collagen (see Radiocarbon Determinations below). Small sherds of MIA-LIA pottery are the only dating evidence for the inhumation. The date is supported by the 19 further sherds of this date, which were recovered from the upper fill of the pit. Assuming that the pottery is not intrusive then it provides a *terminus post quem* for the burial. It seems likely that the inhumation was associated with the occupation of the site, though it is unclear during which phase of the occupation the inhumation occurred.

Post-abandonment activity (Fig. 19)

The only features definitely post-dating the abandonment of the M-LIA settlement enclosure are a number of gullies and the later plough furrows. Due to lack of other dating evidence several undated features and remnants of plough soil in hollows across the site have been assigned to this phase, though it is possible that they actually relate to earlier activity. The date of the gullies is uncertain, though they are clearly not all of the same date. The orientation of several of the gullies and their relationship to an undated waterhole could suggest that they delineate a field system.

A possible ?early Roman field system Gullies 5646, 5668 and 5669 all cut the infilled phase 2 enclosure ditches and are clearly of a considerably later date. Gully 5646 was aligned roughly NE.-SW., stretching for approximately 68 m. from the NE. baulk, to stop 5.6 m. short of gully 5668, at right-angles to it, near the corner of the earlier annexe. Four sections were excavated through gully 5646, showing that it was relatively uniform along its length, varying from 0.6-1.06 m. in width and 0.2-0.4 m. in depth (Fig. 9 section 10). It was filled with clay silts with occasional charcoal, LIR pottery sherds and animal bone.

Gully 5668 was orientated NNW.-SSE. and stretched the entire length of the excavated area, from the middle of the NW. baulk of the main area to the SE. baulk of the smaller southern area. A 4 m. gap in the gully near the southern corner of the main excavated area is unlikely to have been original, but rather the result of the later truncation by ploughing seen across the whole site. No sections were excavated through this feature to the S. of this gap to ascertain that the gully continued through the southern area as 5697, but this is almost certain. Three sections were excavated through the northern half of this gully, showing it to vary

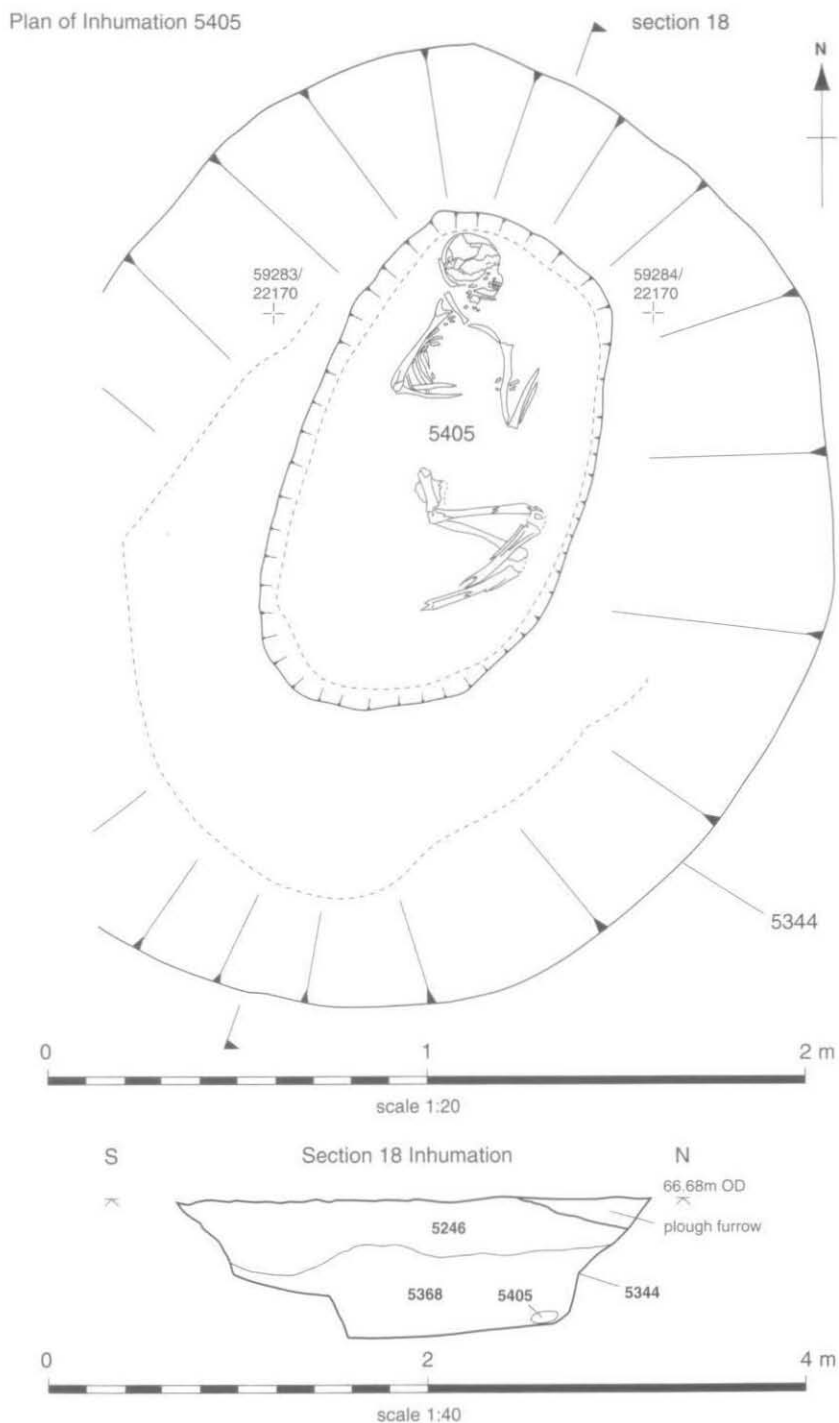


Fig. 18. Plan and section of inhumation 5405 in pit 5344.

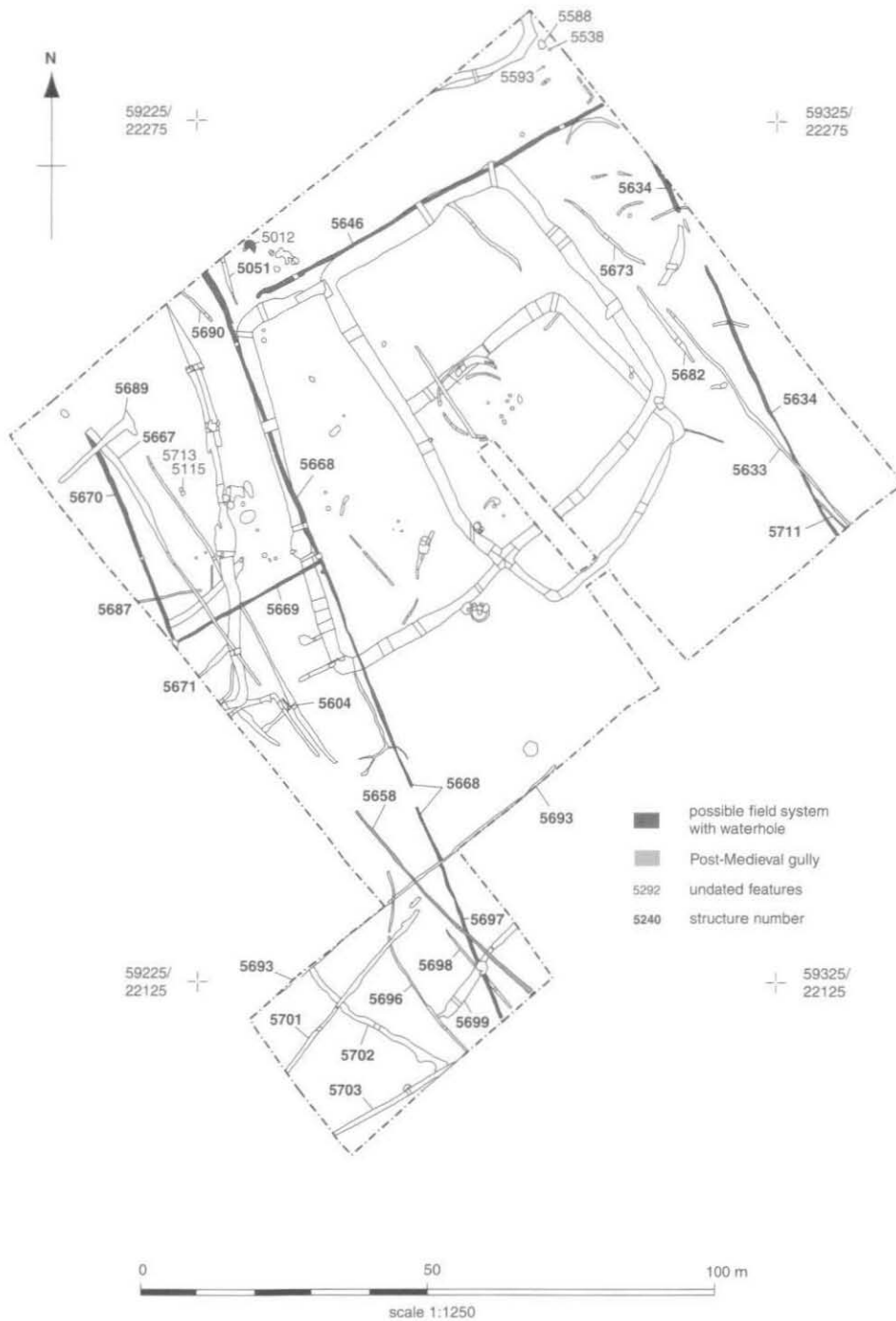


Fig. 19. Plan showing possible early Roman field system and waterhole, with structures and cuts mentioned in the text numbered. Other undated features also numbered.

between 0.66-0.9 m. wide and 0.15-0.22 m. deep (Fig. 9 section 11). The fills of these sections varied from friable clay silt or sandy silt to more tenacious silty clay, in line with the variations in the Oxford Clay natural. These fills contained occasional charcoal flecks and sherds of LIR pottery.

The third of these gullies (5669) projected for 28 m. at right-angles from the W. side of gully 5668, on the same alignment as 5646. No sections were excavated in this gully, but the plan shows it to be of similar dimensions to the others in this group. The feature meets another gully (5670) of similar dimensions at its northern end close to the baulk. This junction was not investigated owing to the time constraints of the project, so the exact relationship of these gullies was not established. A single section was excavated through gully 5670 and showed it to have been of roughly similar dimensions. This gully lay parallel to gully 5668.

Another gully on the same alignment was recorded near the eastern corner of the site. This gully (5634) stretched 71 m. from the SE. edge of the excavated area to the NE. baulk. Several gaps existed in this gully as recorded, where the feature had been cut by later plough furrows. Two sections showed this feature to have been between 0.59-0.75 m. wide and 0.23-0.29 m. deep, filled with friable clay silt with occasional charcoal, LIR pottery sherds, animal bone and burnt stone.

The similarity of alignment and dimensions of these features suggests that they may be related, and have formed part of a system dividing the whole area into a series of small rectangular fields or paddocks. An undated feature (5012) near the NW. edge of the main excavated area may have related to this phase. This was a large, roughly circular pit with an irregular, stepped base (Fig. 9 section 12). It measured 1.8 m. by 1.6 m. and was 0.9 m. deep, with its base 0.1 m. below the modern watertable at the time of excavation. It is unclear how it related to the contemporary watertable. The initial fill of this feature consisted of a clay silt deposit with occasional charcoal. A layer of clean apparently natural clay succeeded this. The later fills seemed to have been tipped from the NE. side and consisted of more mixed deposits with water worn pebbles, fleck of limestone and charcoal. No finds were recovered from any of these deposits to date the feature. Its purpose is uncertain, but it may have functioned as a waterhole when the watertable was higher than it was in 1998, located as it is near the corner of the fields defined by the possible gully system. The stepped side of the feature would have allowed access.

The date of this field system and possible waterhole is unknown. The LIR pottery recovered from several of the gully sections provides only a *terminus post quem* for this phase of use of the site. The gullies were obviously cut significantly later than the Iron Age enclosure, since its ditches had completely infilled before gullies 5646 and 5668 were cut. However, the later gullies appear to respect the alignment of the earlier ditches. It may be that the gully system was created at a time when the enclosure was still remembered and had meaning, despite being infilled. This would suggest a date soon after the abandonment of the settlement, possibly in the late Iron Age or early Roman period as suggested by the pottery, but it could equally be that the sherds are residual and the alignment coincidental.

Undated features (Fig. 19) A number of other gullies were recorded, with a particular concentration in the smaller southern area of excavation (5051, 5667, 5671, 5682, 5687, 5689-90, 5693, 5695-6, 5701-3). Insufficient finds were recovered to date these features, or to characterise their function. Other undated features (5604, 5113, 5115, 5588, 5538, 5593) included pits, postholes and a number of tree-throw holes, which were scattered across the site and do not form a coherent group. Any of these features could date from any period of the use of the site and need not be late. Details of these features are available in the project archive.

Ploughing Later plough furrows cross the whole site. These were recorded in plan, but were not investigated in detail since they related to an aspect of the site that was known before excavation and is not unusual. Where one of these features was sectioned during excavation of an earlier feature, it was shown to remain as a broad, shallow feature around 0.18 m. deep. Sherds of MIA-LIR pottery were occasionally recovered from these features, but these were clearly residual.

Most of this ploughsoil was removed during stripping of the site, but some remained filling depressions created by earlier features. A layer of mid brown clay silt (5226) with occasional-moderate charcoal, animal bone and burnt stone, extended across the depression created by the group of intercutting pits near boundary 5148 interpreted as quarry working contemporary with the M-LIA settlement. This may have been a remnant of ploughsoil.

THE STRUCK FLINT by HUGO LAMDIN-WHYMARK

A total of 78 pieces of struck flint and a single piece of burnt unworked flint were recovered from the excavation. A further 4 flints and 2 burnt unworked flints were found in the evaluation. The flint was found in 27 contexts. Fifty of the worked flints were recovered from a single context, 5641, the fill of a pit or gully, and would appear to be Mesolithic in date.

Raw material

All the flint from the site appears to be gravel-derived, available locally from the river gravels. All is in fresh uncorticated condition, except for the pieces from context 5641, which exhibit a heavy white cortication.

TABLE 1. ALL FLINT BY CATEGORY

Category Type	Grand Total
Flake	38
Blade	12
Bladelet	6
Blade-like	4
Chip	11
Rejuvenation flake tablet	2
Core single platform blade core	1
End and side scraper	1
End scraper	1
Other scraper	1
Side scraper	1
Retouched flake	3
Microlith	1
Grand Total	82

The assemblage

The composition of the flint assemblage is shown in Table 1. The flint from pit 5641 will be considered separately from the rest of the assemblage. The remaining excavated material consists of 28 flints spread between 22 contexts, and the four flints from the evaluation came from a further four contexts. There were no diagnostic artefacts to date this material, although a single platform blade core may be Mesolithic or earlier Neolithic. The rest of the material could date from the Neolithic to early Bronze Age. The flint from the evaluation consisted of four flakes, one of which was retouched.

The flints from pit 5641 (see Table 2) appear to represent a coherent assemblage. A broad blade microlith, unfortunately broken and impossible to classify, and a backed bladelet suggest a Mesolithic date, possibly earlier Mesolithic. The presence of two rejuvenation tablets from bladelet cores and a flake to blade-like flake ratio of 1:1 further support this.¹⁰ The flint from this context appears to have been struck using a soft hammer. In this context 34% (17 flints) showed evidence of use wear, although this was not examined in further detail. 18% (9 flints) were burnt and 52% (26 flints) were broken.

Discussion

The flint from the site, with the exception of flint from pit 5641, represents the incorporation of residual flints in the fills of various features across the site. By contrast, pit 5641 appears to contain a coherent Mesolithic assemblage. The only other find recorded from this feature is one piece of undiagnostic slag weighing 1 g., which may be intrusive. It is therefore plausible that this may be a Mesolithic feature, containing a small quantity of utilised and broken material.

¹⁰ S. Ford, 'Chronological and Functional Aspects of Flint Assemblages', in A. Brown and M. Edmonds, *Lithic Analysis and Later British Prehistory* (BAR clxii, 1987), 79.

TABLE 2. ALL FLINT FROM PIT FILL 5641 BY CATEGORY

Category Type	Context 5641
Flake	18
Blade	9
Bladelet	5
Blade-like	2
Chip	11
Rejuvenation flake tablet	2
Side scraper	1
Retouched flake	1
Microlith	1
Grand Total	50

THE POTTERY by KAYT BROWN

A total of 3757 sherds of pottery (23,083 g.) was recovered from the evaluation and two subsequent phases of excavation at Bicester Fields. This total includes 303 sherds (935 g.) recovered from samples taken for environmental processing. The latter material is not considered in the further quantification of the assemblage, as the sherds were in poor condition (with an average weight of *c.* 3 g.), were not always identifiable to ware and to include them in the figures would introduce bias. Only when such sherds were the sole contents of a particular fill or feature are they discussed in further detail, as for example with the pottery from the grave cut (5344). The minimum number of vessels recovered was 133 by rim count (20.04 EVEs).

The majority of the pottery can be assigned a late Iron Age date, with very little earlier material and a total absence of characteristic Romanised fabrics and forms. Therefore the assemblage can be seen as relatively short lived, dating from the late middle Iron Age to late Iron Age/early Roman period, though here with a closing date probably before the Roman conquest. The assemblage was recorded following the system developed by the OAU for Iron Age and Roman sites within Oxfordshire, to enable comparison with other sites within the region, through the systematic use of consistent fabric and type codes. Pottery was recorded by fabric, form and decoration and use-related characteristics such as sooting where this survived. The assemblage was quantified by sherd count, weight, rim count and vessel equivalents (EVEs).

Condition of assemblage

Pottery was recovered from a total of 152 contexts. Only two layers produced pottery, the majority of the material being recovered from cut features. Although there does not appear to have been much recutting of features the pottery was generally well fragmented with an average sherd weight of 6.4 g. (not including the material from the environmental samples). However a few contexts produced pottery with considerably higher average sherd weights, such as various upper fills from 5239 and 5240 (phase 2 enclosure ditches), rubbish pit 5118 and pit group 5449. A pottery scatter within pit 5118 produced parts of a minimum of five vessels, all Belgic style cordoned jars, with an average sherd weight of 21.5 g. In contrast to those groups with high average sherd weights, a number of groups in the phase 2 enclosure ditches had very low average sherd weights (below 5 g.) as did gullies 5148, 5634, 5552, 5713 and pits 5055, 5643, 5151, 5418, 5626 and 5344 (inhumation). Surfaces of the sherds were at best in moderate condition, with some survival of diagnostic treatments such as burnishing. In general, however, the fragmented nature of the assemblage is its most striking characteristic.

Fabrics

The fabrics were identified microscopically (x20) and initially assigned fabric numbers in a simple numerical sequence. These fabrics were then grouped in terms of their principal inclusion types (e.g. A = quartz sand, C = calcareous grit, S = shell) and a decreasing scale of fineness (from 5: very coarse to 1: very fine) and the

mid-late Iron Age (M-LIA) fabrics were given fabric/ware codes accordingly. The late Iron Age/early Roman (LIR) fabrics were assigned the relevant E ware codes used in the OAU system for distinguishing 'Belgic style' fabrics,¹¹ in use in the region in the decades each side of the Roman conquest, from preceding prehistoric and subsequent Romanised material. These LIR categories identify a group of fabrics with a restricted date range and generally belonging to a distinct fabric tradition. Although in this assemblage only one of the fabrics is wheel-thrown, the remaining E wares can be distinguished from the middle Iron Age ceramics partly on the basis of inclusion types and also on the basis of vessel form and decoration, such as the use of elaborate cordoned decoration. Similarly these fabrics do not fit into the oxidised and reduced ware categories used for characteristically Roman material.

A total of 40 fabrics were identified initially, but on further examination it was felt that many of the minor differences were not significant. Some of these fabrics were therefore combined in slightly broader groupings for ease of analysis, and in particular to facilitate comparison between the middle Iron Age component of the assemblage and the later sand, shell and grog-tempered material for which broader ware group codes were used. The fabric and ware groups are listed below using standard OAU codes, and the quantities of different fabrics are shown in Table 3. The original fabric numbers, which identify the components of these groups, are also given to facilitate cross-reference to the project archive.

Ware: C3
Fabric: 17; 21; 31
Soft, soapy fabric containing moderate to common calcareous grits, shell (>3.0 mm.) and moderate amounts of limestone (0.25-1.0 mm.)
Forms: C; CE; Z (for these codes see below)
Date: M-LIA

Ware: C2
Fabric: 32
Relatively fine, reduced fabric containing moderate to common calcareous grits (0.25-1.0 mm.), sparse shell (<1.0 mm.) and rare sub-rounded quartz (0.25-1.0 mm.) and limestone.
Forms: CB
Date: M-LIA

Ware: LA3
Fabric: 16
Contains moderate amounts of moderately sorted oolitic limestone (0.25-1.0 mm.) and sparse, sub-angular quartz sand (0.25-1.0 mm.)
Forms: C; CB
Date: M-LIA

Ware: S3
Fabric: 3
Soft, soapy fabric containing common to very common poorly sorted shell (0.25-3.0 mm.).
Forms: C; CB; CD; CG
Date: M-LIA - LIR

Ware: SA4
Fabric: 2
Soft, soapy fabric containing common linear vesicles and rare, moderately sorted, sub-angular sand (0.25-1.0 mm.)
Forms: C; CG; CH; Z
Date: M-LIA

Ware: AS3
Fabric: 30
Granular fabric containing moderate to common moderately sorted sub-angular sand (0.25-1.0 mm.) sparse to moderate amounts of shell and vesicles. Surface displays leaching.
Forms: CB; CD
Date: M-LIA

Ware: A3
Fabric: 29; 37
Sandy fabric containing common to very common, moderately sorted, sub-angular quartz (0.25-1.0 mm.)
Forms: C; CB; CD; CE; CH; Z
Date: MIA

Ware: A2
Fabric: 28
Fine, sandy fabric containing very common, well sorted fine quartz (0.25-1.0 mm.) rare quartz (>3mm.) and calcareous material
Forms: N/A
Date: M-LIA

Ware: AI3
Fabric: 18
Moderate amounts of medium, sub-angular quartz, occasional voids and moderate to common iron oxide inclusions
Forms: CB
Date: M-LIA

Ware group: E30
Fabric: 9; 25; 34; 35; 24; 14; 22
Medium to coarse sand tempered fabrics, often containing sparse amounts of grog
Forms: C; CD; CE; CF; HA; Z
Date: LIR

Ware group: E40
Fabric: 23; 27; 30; 33
Shell tempered fabrics
Forms: CB; CE; HD
Date: LIR

¹¹ I. Thompson, *Grog-tempered 'Belgic' Pottery of South-eastern England* (BAR cviii, 1982), 4.

Ware group: E80

Fabric: 12; 11; 4; 15; 5; 6; 39; 1; 20; 26; 19; 40; 10; 7;
38; 13; 8

Grog tempered fabrics

Forms: C; CB; CD; CE; CG; CH; CN; HA; HD; Z

Date: LIR

Ware: Z30

Fabric: N/A

Date: Post Medieval

TABLE 3. QUANTIFICATION OF FABRICS

Ware	No. Sherds	%	Weight (g)	%
A2	2	0.05	36	0.16
A3	64	1.70	1010	4.38
AI3	435	11.58	1334	5.78
AS3	12	0.32	148	0.64
C2	12	0.32	66	0.29
C3	155	4.13	1158	5.02
LA3	4	0.11	68	0.29
S3	405	10.78	1888	8.18
SA3	3	0.08	42	0.18
SA4	388	10.33	824	3.57
E30	383	10.19	1496	6.48
E40	130	3.46	597	2.59
E80	1460	38.86	13480	58.40
Z30	1	0.03	1	—
Unid	303	8.06	935	4.05
TOTAL	3757	100.00	23083	100.00

All the pottery could have been produced locally and the range of fabrics represented at Bicester Fields is comparable with that at the nearby site of Slade Farm,¹² and compares well generally with other sites within the region. The fabrics are divided into characteristically M-LIA fabrics containing calcareous material, limestone, sand, shell or any combinations of these and the LIR ware groups which contain varying amounts of sand (E30), shell (E40) and/or grog (E80). At Bicester Fields the E80 group accounts for 43% (by count, excluding the material from samples) of the assemblage (61% by weight). Other LIR ware groups (E30, E40) contain some grog, usually as a minor inclusion type, but are also identifiable by form, including characteristically cordon decorated material. Combined, the later (E) ware groups form c. 57% of the assemblage (c. 70% by weight). All the fabrics are handmade, with the exception of a single vessel in E30, a carinated form, which if not wheel-thrown is certainly wheel-finished. Context 5401, an upper fill of the phase 2 enclosure ditch, produced a range of vessels (Fig. 22:32-8) in both the earlier shell fabric and the later E40 shell tempered ware group. In the Thames valley, as typified by recently-recorded assemblages such as that from Yarnton, shell-tempering, which dominated assemblages in the early Iron Age, declined in importance in the middle Iron Age,¹³ probably to the extent that there was a break in its use before it re-emerged as a tradition in the late Iron Age/early Roman period (ware group E40). In the Bicester area shell-tempering,

¹² A. Woodward and J. Marley, 'The Iron Age Pottery', in op. cit. note 2.

¹³ G. Lambrick, 'Pitfalls and Possibilities in Iron Age Pottery Studies - Experiences in the Upper Thames Valley', in B. Cunliffe and D. Miles (eds.), *Aspects of the Iron Age in Central Southern Britain* (Oxf. Univ. Committee for Archaeol. Monograph ii, 1984), 162-77.

while perhaps not dominating assemblages quite to the extent that it did in the early Iron Age, seems to have survived right through the middle Iron Age, as seen in the earlier phases at Bicester Fields, where it is unlikely that such material was residual.

Although two phases were identified stratigraphically, ceramically the picture is less clear. Potentially all the pottery could be representative of a single phase spanning the emergence of grog tempered pottery. All the material was handmade, except in ware group E30, and may represent early attempts to copy Belgic styles. The M-LIA ceramics occur in the majority of cases alongside the grog-tempered material. As there was very little recutting of features, save for parts of the enclosure ditches, it is unlikely that the earlier material is redeposited. Practically no pottery was recovered from the primary fills of either phase 1 or 2 of the enclosure ditch, although in the phase 1 deposits all the E wares come from the upper fills, with the exception of a small sherd from 5435. Of the 43 sherds recovered from the phase 1 fills 22 were from upper fills. Other fabrics present in lower fills were A3, A13, C3 and C2.

Vessel Types

The general codes used for vessel types are:

Middle-Late Iron Age

CB Barrel shaped jars

CG Globular jars

Late Iron Age/early Roman

CD Medium mouthed jars

CE Squat, high shouldered (or 'necked') jars

CF Carinated jars

CH Bead rim jars

CN Storage jars

HA Carinated bowls

HD Necked bowls

Miscellaneous codes

C general jar code used when insufficient of rim survives to assign more specific code

Z where rim is too small to be assigned to vessel class

The range of forms is restricted to jars and bowls. However one vessel, a cordoned carinated jar from context 5294 (E30) (Fig. 23:54), appears to have been wheel thrown and a small number of cordoned vessels in E80 may have been wheel-finished. The most common type amongst the rims which could be assigned to vessel type was the squat, high shouldered or 'necked' jar, which comprised 5.48 EVEs, 27% of the assemblage. This is followed by barrel jars, bead rim jars, globular jars and medium mouthed jars, necked and carinated bowls (see Tables 4 and 5). A number of rims were too small to be assigned to a vessel class (Z) and a number could only be assigned to the broad Jar type (C). The majority of vessels occur in fabric E80 (21% by rim count) and all vessel types except carinated jars are represented in this fabric. At Slade Farm globular jars were mainly shell-tempered and necked or shouldered jars occurred in grog-tempered fabrics whereas at Bicester Fields there was a less clear-cut correlation between particular forms and fabrics with a number of fabrics (A3, C3 and E80) occurring in both simple M-LIA forms and later necked jars. However the carinated and necked bowls occurred only in the E ware fabrics. Although the average sherd weight for the assemblage is relatively low and the ratio of rim sherds to overall sherd count (1:28) is also low, suggesting a small number of vessels, the EVEs total of 20.04 indicates that of the few vessels there are, an average of 15% of the rim circumference of each survives. This figure appears high compared to the condition of the sherds, but may be a reflection of the 'special' deposits of near complete pots in pits 5118 and 5449 and pot scatter 5397 within ditch 5552.

Decoration and Use

Decoration is, for the most part, restricted to the E wares. In particular sherds in E80 displayed burnishing, cordon(s) and/or groove(s) at the base of the neck, shoulder, or body or any combination of these (e.g. Fig. 21:22; 23). Also represented is vertical, horizontal, oblique or wavy comb decoration occasionally associated with finger-tip indentations (Fig. 22:44; Fig. 23:49; 50; Fig. 24:66). The M-LIA material is much more limited in the use of decoration, which consists mainly of burnishing though occasionally cordons or grooves are present. One M-LIA rim sherd has diagonal finger-nail slashing on the rim, comparable to one from Slade Farm¹⁴ (Fig. 21:10; Fig. 24:56).

¹⁴ Woodward and Marley, op. cit. note 12.

TABLE 4. QUANTIFICATION OF FABRIC AND VESSEL TYPE BY MINIMUM VESSELS (RIM COUNT)

Type	A3	AI3	AS3	C2	C3	LA3	S3	SA4	E30	E40	E80	Grand Total
C	6	—	—	—	4	2	7	7	2	—	19	47
CB	1	3	1	1	—	1	4	—	—	1	2	14
CD	1	—	1	—	—	—	4	—	1	—	6	13
CE	2	—	—	—	2	—	—	—	2	1	21	28
CF	—	—	—	—	—	—	—	—	1	—	—	1
CG	—	—	—	—	—	—	1	1	—	—	1	3
CH	1	—	—	—	—	—	—	3	—	—	4	8
CN	—	—	—	—	—	—	—	—	—	—	5	6
HA	—	—	—	—	—	—	—	—	1	—	1	1
HD	—	—	—	—	—	—	—	—	—	1	1	2
Z	—	—	—	—	1	—	1	1	4	—	3	10
Grand Total	11	3	2	1	7	3	17	12	11	3	63	133

TABLE 5. QUANTIFICATION OF FABRIC AND VESSEL TYPE BY EVEs

Type	A3	AI3	AS3	C2	C3	LA3	S3	SA4	E30	E40	E80	Grand Total
C	0.44	—	—	—	0.41	0.06	0.54	0.63	0.18	—	3.55	5.81
CB	0.28	0.91	0.2	0.11	—	0.05	0.65	—	—	0.4	0.28	2.88
CD	0.41	—	0.11	—	—	—	0.48	—	0.08	—	1.83	2.91
CE	0.3	—	—	—	0.07	—	—	—	0.15	0.14	4.82	5.48
CF	—	—	—	—	—	—	—	—	0.35	—	—	0.35
CG	—	—	—	—	—	—	0.1	0.07	—	—	0.37	0.54
CH	0.17	—	—	—	—	—	—	0.36	—	—	0.56	1.09
CN	—	—	—	—	—	—	—	—	—	—	0.24	0.24
HA	—	—	—	—	—	—	—	—	0.08	—	—	0.08
HD	—	—	—	—	—	—	—	—	—	0.12	0.22	0.34
Z	—	—	—	—	0.05	—	—	0.05	0.06	—	0.16	0.32
Grand Total	1.6	0.91	0.31	0.11	0.53	0.11	1.77	1.11	0.9	0.66	12.03	20.04

Evidence of use can be seen on the small number of sherds (three examples) which display sooting on the neck and shoulder and a number of shell-tempered sherds with leached surfaces. One rim sherd had been pierced by a small hole in the neck, perhaps for suspension (Fig. 24:55). Post-firing holes in vessel bases, which are generally a common characteristic of ceramics of this period in the region, were, however, absent here.

Illustrated Vessels

The illustrated vessels are arranged by ware group by feature number. Within each ware group the vessels are arranged by vessel type, followed by context number. For the two phases of enclosure ditches the material is arranged by fabric and form by context.

Enclosure Ditch: Phase 1 (Fig. 20)

1. Fabric A3, Reddish brown exterior, irregularly fired. Slightly thickened and outslipping rim, C. 5460
2. Fabric SA4, greyish brown. Expanded rim of jar, C. 5155
3. Fabric S3, reddish brown to dark grey, irregularly fired jar C. 5413
4. Fabric C3, black. Jar rim C. 5413
5. Fabric S3, reddish brown to orange surfaces, reduced core, jar C. 5445

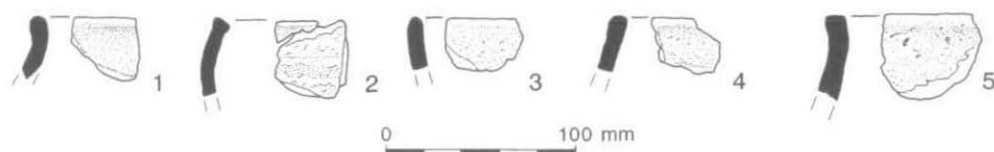


Fig. 20. Pottery from Phase 1 enclosure ditch fills.

Enclosure Ditch: Phase 2 lower fills (Fig. 21)

6. Fabric A3, irregularly fired, plain rim of jar, C. 5166
7. Fabric A3, irregularly fired mottled exterior surface, dark grey interior surface and core. Complete profile of barrel jar with slightly expanded rim, CB. 5060
8. Fabric Q13, reddish brown to greyish brown irregularly fired. Tapered, outslipping rim of globular jar, CB. 5502
9. Fabric SA4, greyish brown, jar, C. 5213
10. Fabric SA4, black. Groove and diagonal finger tip impressions on top of rim C. 5394
11. Fabric C3, greyish brown to dark grey. Rim of barrel jar, CB. 5560
12. Fabric C3, grey to dark grey. Outslipping rim of jar/bowl, C. 5282
13. Fabric AS3, greyish brown. Plain outslipping rim, CB. 5312
14. Fabric AS3, reddish brown surfaces, grey core. Slightly everted rim of jar/bowl, CD. 5307
15. Fabric S3, reddish surfaces, dark grey core. Plain rim of jar/bowl C. 5256
16. Fabric S3, greyish brown exterior, reddish brown interior surfaces, dark to light grey core. Barrel jar with expanded rim, CB. 5560
17. Fabric E40, grey to dark grey. Plain, slightly everted rim of jar, CB. 5177
18. Fabric E30, yellowish grey surfaces, grey core. Necked jar with cordons, CE. 5306
19. Fabric E80, reddish brown surfaces, greyish brown core. Barrel jar, CB. 5013
20. Fabric E80, red to greyish brown surfaces. High-shouldered jar, CE. 5394
21. Fabric E80, dark grey to black surfaces grey core. High shouldered jar with cordon decoration, CE. 5394
22. Fabric E80, reddish brown to grey surfaces, grey core. Jar with cordons and grooves, CE. 5527
23. Fabric E80, reddish surfaces, grey core. Shouldered jar with cordon decoration, CE. 5394

Enclosure Ditch: Phase 2 upper fills (Fig. 22)

24. Fabric A3, dark grey. Expanded rim, C. 5111
25. Fabric A3, reddish brown to black. Bead rim jar/bowl, CH. 5377
26. Fabric Q13, yellowish grey to dark grey. Jar, sooting on neck, CB. 5269
27. Fabric SA4, dark grey external surface and core, red to dark grey internal surface. Thickened rim, C. 5134
28. Fabric C3, greyish brown. Rim, C. 5401
29. Fabric C3, dark grey exterior and core, yellowish brown interior surface. Plain rim, C. 5235
30. Fabric C2, greyish brown. Slightly outslipping rim, CB. 5139
31. Fabric S3, yellowish grey to brown. Medium mouthed jar, CD. 5233
32. Fabric S3, dark grey to dark reddish brown. Barrel jar with expanded rim, CB. 5401
33. Fabric S3, light greyish brown to dark grey. Medium mouthed jar, CD. 5401
34. Fabric S3, Yellowish grey to greyish brown. Medium-mouthed jar/bowl, sooting below rim, CD. 5401
35. Fabric S3, greyish brown. Outslipping rim, C. 5401
36. Fabric S3, light grey to dark grey, medium-mouthed jar/bowl, CD. 5401
37. Fabric S3, greyish brown. Jar/bowl with everted rim, C. 5401
38. Fabric E40, greyish brown. Bowl with cordons on neck/shoulder, sooting on neck, HD. 5401
39. Fabric E40, yellowish brown to dark grey, grey core. Jar with everted rim and cordons on shoulder, CE. 5253

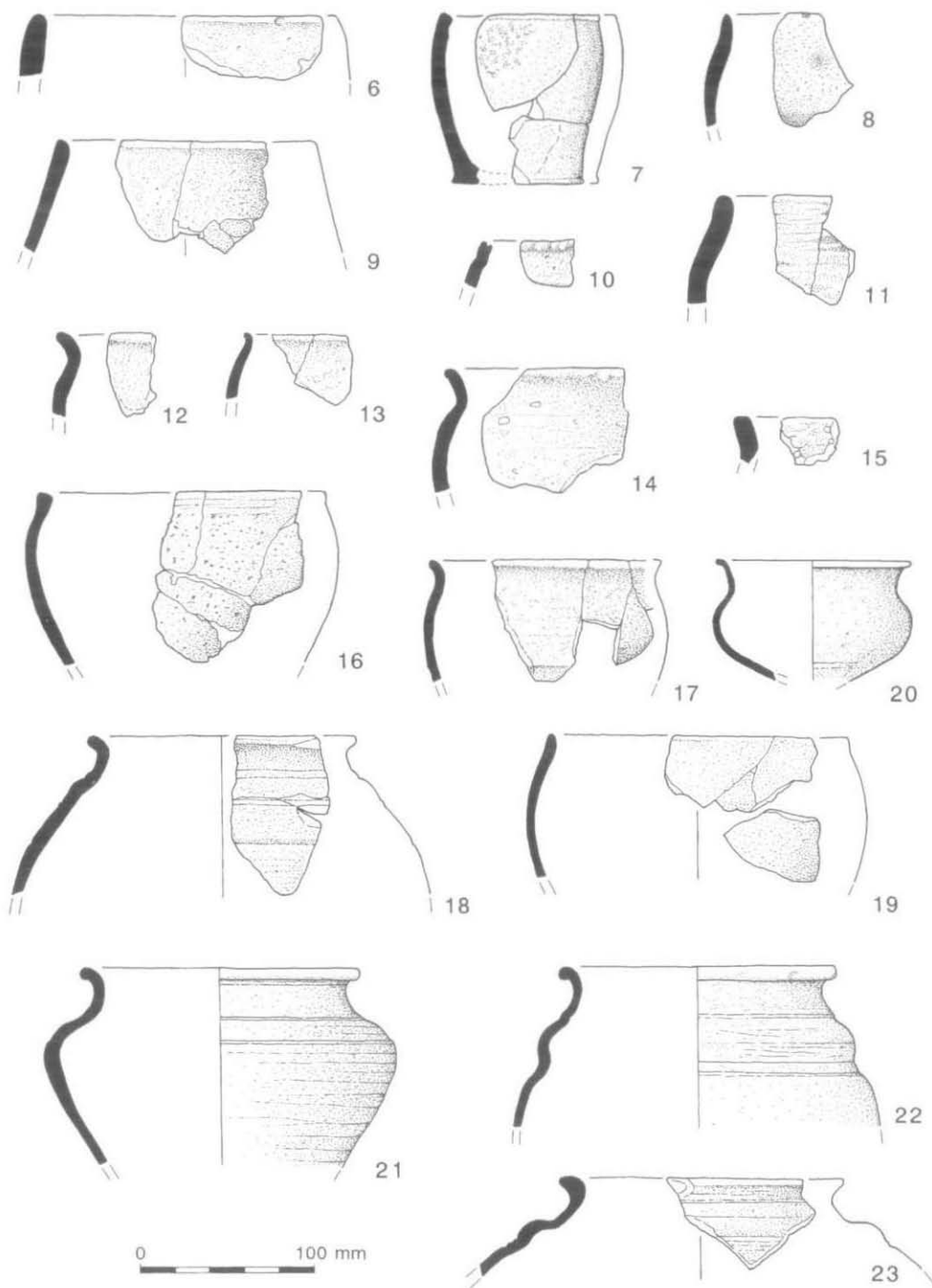


Fig. 21. Pottery from lower fills of Phase 2 enclosure ditch.

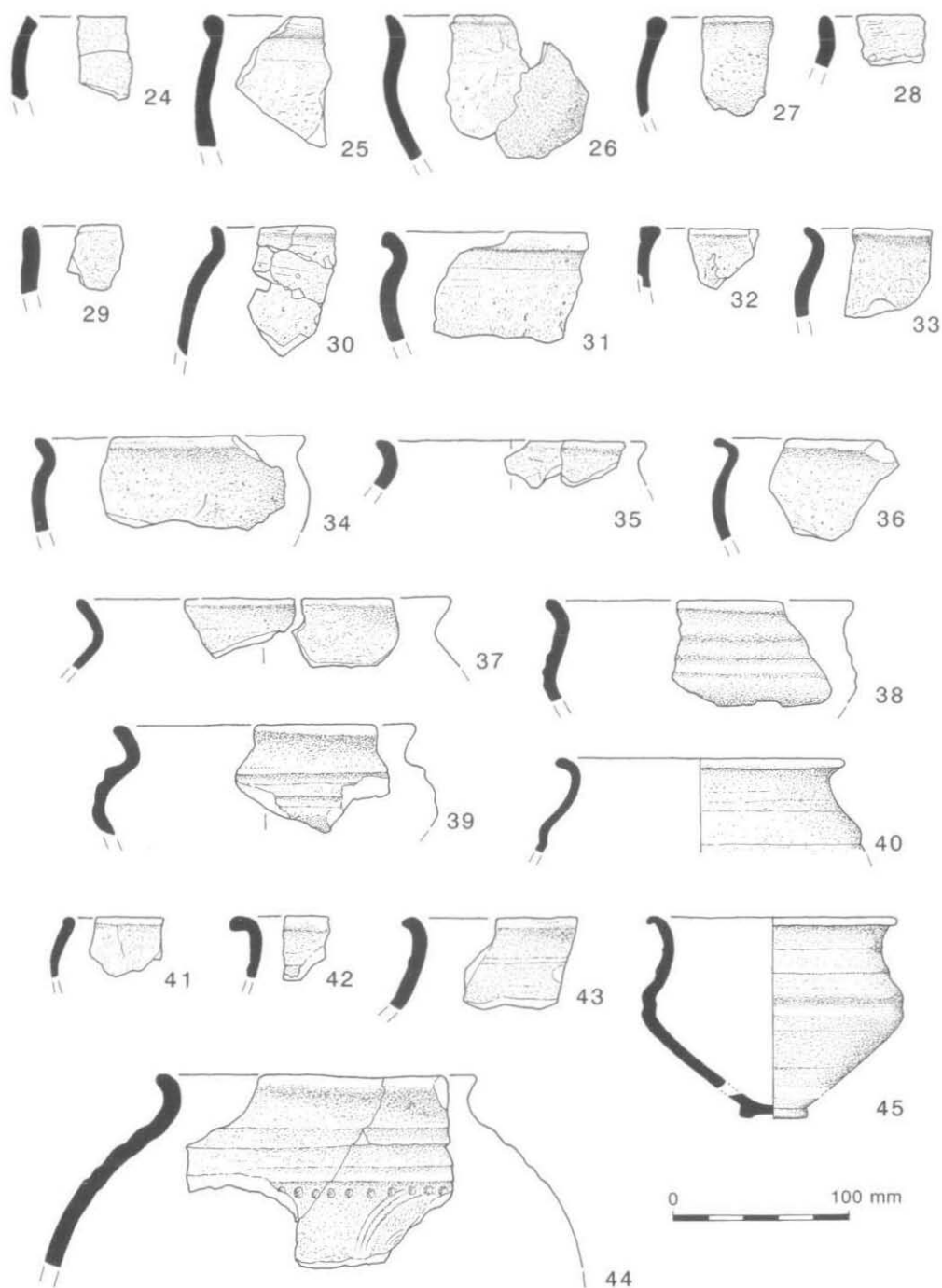


Fig. 22. Pottery from upper fills of Phase 2 enclosure ditch.

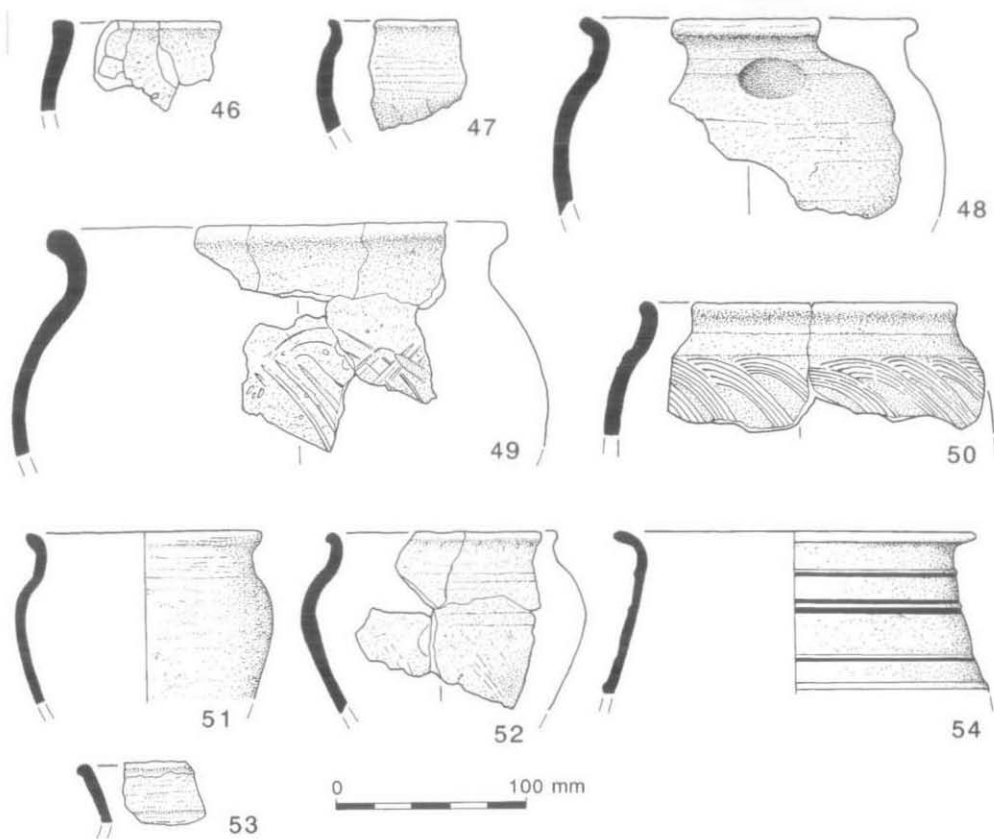


Fig. 23. Pottery from other Phase 2 features.

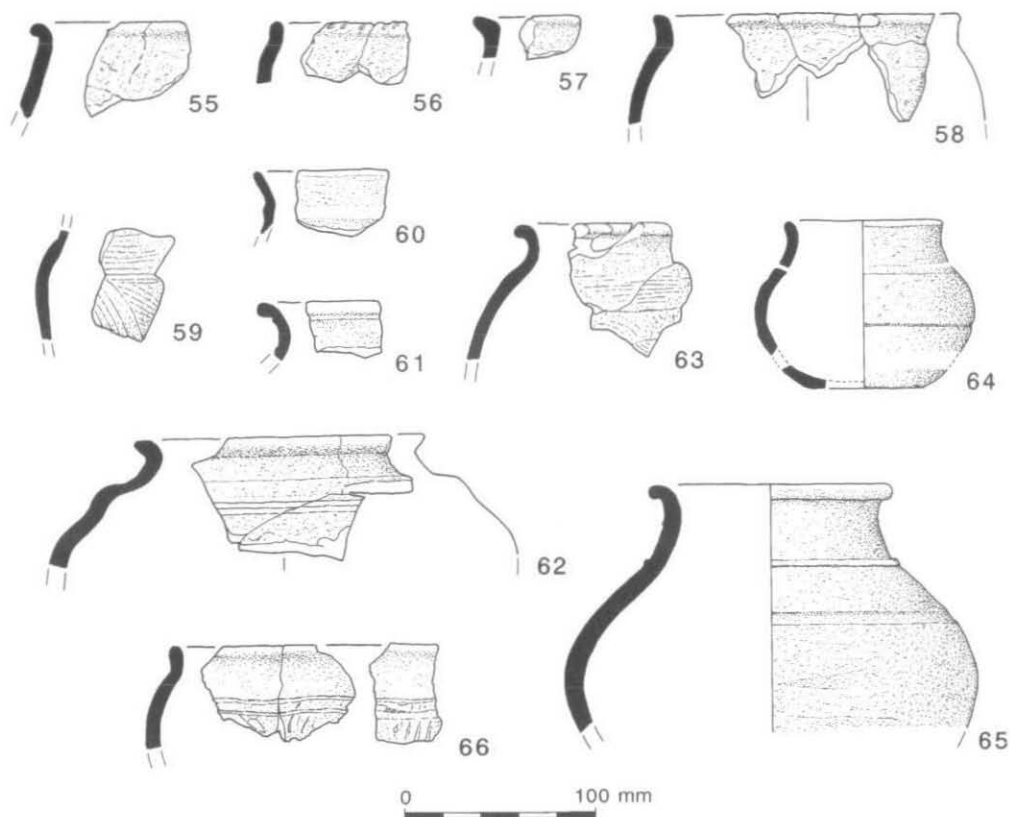


Fig. 24. Pottery from ditch 5552.

40. Fabric E30, yellowish grey, light grey core. Necked jar/bowl with cordons, CE. 5228
41. Fabric E80, dark grey with light grey core. Bead rim bowl/jar, CH. 5340
42. Fabric E80, dark grey, reddish brown core. Rim, C. 5163
43. Fabric E80, reddish yellow surfaces, grey core. Jar with cordon on neck and base of neck, C. 5235
44. Fabric E80, reddish brown surfaces, reddish orange on rim, with grey core. Large storage jar with cordons and finger-tip indentations on shoulder and upper body, CN. 5253
45. Fabric E80, dark grey. Necked bowl with grooves on shoulder/body, HD. 5492

Enclosure Phase 2: Pits 5118; 5554; 5449; 5406; 5225 and posthole 5244 (Fig. 23)

46. Fabric S3, dark brown to greyish brown. Thickened rim of jar/bowl, C. 5542
47. Fabric E80, reddish orange to black. Jar with plain, outslipping rim and rilling on shoulder. Sooting on neck, CB. 5128
48. Fabric E80, reddish orange to black. Necked jar with spalling on neck, CE. 5128
49. Fabric E80, red to dark grey. Jar with comb decoration, CD. 5128
50. Fabric E80, reddish orange to dark greyish brown. Jar with comb decoration, CD. 5128
51. Fabric E80, reddish orange to black. Necked jar, CE. 5128
52. Fabric A3, reddish orange to dark grey. Medium-mouthed jar, CD. 5126
53. Fabric E80, greyish yellow to dark grey. Bowl rim, burnished, groove at base of neck, HA. 5231
54. Fabric E30, reddish brown with reddish orange core. Wheel thrown, carinated jar with cordons, CE. 5294

Ditch structure 5552 (Fig. 24)

55. Fabric SA4 yellowish brown to dark grey. Jar, C. 5550
56. Fabric SA4, black. Rim with diagonal finger nail slashing, C. 5397
57. Fabric SA4, dark grey to black. Externally expanded rim, C. 5397
58. Fabric E80, reddish orange to reddish brown. Jar, CD. 5397
59. Fabric E80, dark grey, light grey core. Comb decorated body sherd, 5397
60. Fabric E80, dark grey, light grey core. Cordon below rim and at base of neck, C. 5397
61. Fabric E80, dark grey. Everted rim with cordon at base of rim, C. 5397
62. Fabric E80, reddish orange surfaces, grey core. Jar/bowl with cordons, CD. 5397
63. Fabric E80, dark grey. Shouldered vessel with rilling on shoulder, CE. 5395
64. Fabric E80 reddish orange surfaces, grey core. Shouldered vessel with grooves on shoulder, CE. 5578
65. Fabric E80, reddish brown surface, grey core and reddish orange rim. Jar with grooves and cordons, CE. 5578
66. Fabric E80, dark to light grey. Medium mouthed jar with coarse comb decoration below cordon, CD. 5578

Chronology

The settlement at Bicester Fields appears, ceramically at least, to be relatively short lived. There is an absence of earlier fabrics and forms, such as the coarse shell fabrics and angular vessels and finger-tip decoration that characterise early Iron Age assemblages in the region, such as at Ashville Period 1¹⁵ and Farmoor Phase II.¹⁶ The middle to late Iron Age component of the assemblage comprises barrel and globular jars with simple rims and little decoration, in finer shell, calcareous, limestone and sand fabrics, comparable to the assemblages from Ashville, A421 (Alchester),¹⁷ Deer Park Road, Witney,¹⁸ Slade Farm¹⁹ and Whitehouse Road, Oxford.²⁰ Like the nearby assemblage at Slade Farm, the M-LIA pottery from Bicester Fields shows associations with this material from the Upper Thames Valley and also with material from Northamptonshire. The channel-rim jar with nail-slashing decoration on the

¹⁵ C.D. DeRoche, 'The Iron Age Pottery', in M. Parrington, *The Excavation of an Iron Age Settlement, Bronze Age Ring-ditches and Roman Features at Ashville Trading Estate, Abingdon (Oxfordshire) 1974-76* (CBA Res. Rep. xxviii, 1978), 40-78.

¹⁶ G. Lambrick, 'The Iron Age Pottery', in G. Lambrick and M. Robinson, *Iron Age and Roman Riverside Settlements at Farmoor, Oxfordshire* (CBA Res. Rep. xxxii, 1979).

¹⁷ P. Booth and J. Evans, 'Iron Age Pottery', in P. Booth, J. Evans and J. Hillier, 'Excavations in the extramural settlement of Roman Alchester, Oxfordshire, 1991' (forthcoming).

¹⁸ G.T. Walker, 'A Middle Iron Age Settlement at Deer Park Road, Witney: Excavations in 1992', *Oxoniensia*, lx (1995), 67-92.

¹⁹ Op. cit. note 2.

²⁰ J. Timby, 'Pottery', in A. Mudd et al. 'Excavations at Whitehouse Road, Oxford, 1992', *Oxoniensia*, lviii (1993), 56-61.

rim can be paralleled with material from Northamptonshire,²¹ where the technique appears to cease by AD 50. There is continuity in the use of shell temper at Bicester Fields, through the M-LIA into the LIR. This trend differs from that in the Thames Valley at sites such as Farmoor and Gravelly Guy²² where shell temper is characteristic of the early Iron Age, decreasing in favour of sand and vegetable material into the MIA, a change which is particularly clear at Farmoor. The continued use of shell in MIA assemblages to the north and east of the Thames Valley can be seen at sites such as Slade Farm, Glympton Park,²³ and Steeple Aston²⁴ and at Nadbury Camp in south Warwickshire.²⁵ One difference between these assemblages and Bicester Fields Farm is the absence of scored ware at the latter. A small amount of scored ware was present at Slade Farm and a 'rudimentary' form of scoring was observed at Glympton Park. Its absence at Bicester Fields is perhaps another indicator that there is little genuine MIA material within the assemblage.

Parallels for the later Iron Age component can be seen principally in the large assemblages from Gravelly Guy and Yarnton and the assemblages at Slade Farm and Oxford Road, Bicester. Although 'Belgic' style pottery occurs widely within the Upper Thames Valley the material from Bicester Fields displays a number of characteristics generally atypical of this region, such as the finger indentations and combing decoration on the shoulder of some vessels, which can be paralleled within assemblages from Northamptonshire.²⁶ It is interesting to note that at Bicester Fields virtually all the grog tempered material appears to be handmade whereas at Slade Farm, Gravelly Guy and Yarnton²⁷ a much larger proportion of the assemblage is if not wheel-thrown then wheel-finished. Although mostly grog-tempered, the later pottery at Bicester Fields lacks any early Roman component such as fine wares, white ware beakers or imports such as South Gaulish samian or any amphorae. At a number of sites within the area this early Roman material is found in association with Belgic material, for example at Oxford Road, Bicester, where Booth assigns this material to his Phase 1 of c. AD20/30 – AD60/70.²⁸ The rudimentary nature of the M-LIA material combined with the lack of characteristic Roman material (including a total absence of any 'Romanised' coarse wares) would therefore indicate a terminal date for the assemblage not long after the middle of the 1st century AD, if not pre-conquest.

Discussion

Although there is likely to have been a certain degree of re-deposition within the assemblage its extent is unclear. The M-LIA fabrics occur alongside LIR ones in the majority of contexts and could well have been in use alongside them. It is interesting to note that comparatively far less pottery was recovered from the phase 1 enclosure ditch than phase 2 (see Table 6). Also there is far more diversity in the phase 2 groups. Apart from the upper fills of the phase 2 enclosure, most groups of pottery were too small to be used for confidently dating the features in which they occurred except broadly to the mid-late Iron Age. No features contained only M-LIA material, although it was dominant in the phase 1 enclosure ditch fills and it is possible that the single E80 sherd in the lower phase 1 ditch fills was intrusive. A number of pits contained only late Iron Age pottery and this material, as might be expected, had a higher average sherd weight and was in a generally better condition than the majority of the assemblage. Given the generally poor condition of the assemblage as a whole, it is interesting to note

²¹ R.M. Friendship-Taylor, *Late La Tene Pottery of the Nene and Welland Valleys, Northamptonshire* (BAR Brit. Ser. cclxxx, 1999).

²² S. Green, P. Booth and T. Allen, 'The Late Iron Age and Roman Pottery', in G. Lambrick, T. Allen and F. Healey, *Gravelly Guy, Stanton Harcourt: the development of a prehistoric and Romano-British landscape* (OAU forthcoming).

²³ P. Booth, 'The Iron Age Pottery', in C. Cropper and A. Hardy 'The Excavation of Iron Age and Medieval Features at Glympton Park, Oxfordshire', *Oxoniensia*, lxii (1997), 104-7.

²⁴ K. Brown, 'The Later Prehistoric and Roman Pottery', in Steeple Aston, OAU report (in preparation).

²⁵ C. McArthur, 'Excavations at Nadbury Camp, Warwickshire', *Trans. Birmingham and Warks. Archaeol. Soc.* 95 (1987-8), 1-16.

²⁶ Friendship-Taylor, op. cit. note 21.

²⁷ P. Booth, 'The Later Prehistoric and Roman Pottery', in G. Hey, *Iron Age to Roman Landscape and Settlement, Yarnton*, vol. 2, OAU monograph (in preparation).

²⁸ P. Booth, 'Pottery and other Ceramic Finds', in C. Mould et al., op. cit. note 3, p. 82.

TABLE 6. QUANTIFICATION BY PHASE/FEATURE

Phase	Structure No.	Type	No. sh	Wt (g.)	MV	EVEs
pre m-lia	5292	pit	1	11	—	—
pre m-lia	5375	ditch	3	35	—	—
enclosure phase 1	5148	ditch	22	111	1	0.11
enclosure phase 1	5403	ditch	26	264	5	0.31
enclosure phase 1	5708	ditch	6	49	1	0.05
enclosure phase 2	5159	ditch	23	114	1	—
enclosure phase 2	5239	ditch	605	4614	21	3.41
enclosure phase 2	5240	ditch	238	2471	13	1.86
enclosure phase 2	5503	ditch	334	1086	11	1.17
phase 2	5045	pit	4	2	—	—
phase 2	5095	posthole	14	167	—	—
phase 2	5116	layer	2	22	—	—
phase 2	5118	pit	35	1249	6	1.46
phase 2	5136	furrow	1	1	—	—
phase 2	5225	pit	72	576	2	0.66
phase 2	5241	finds ref	95	119	—	—
phase 2	5243	finds ref	68	348	3	0.52
phase 2	5244	posthole	16	94	1	0.08
phase 2	5250	structure	126	684	2	0.42
phase 2	5256	pot scatter	91	544	1	0.36
phase 2	5293	ditch	49	559	11	0.98
phase 2	5324	gully	19	5	—	—
phase 2	5344	grave cut	21	67	—	—
phase 2	5406	pit	32	378	2	0.24
phase 2	5418	pit	23	73	1	0.06
phase 2	5420	ditch	43	528	6	0.45
phase 2	5442	pit	7	55	—	—
phase 2	5449	pit	163	966	2	0.35
phase 2	5512	finds ref	11	252	1	0.24
phase 2	5545	gully	14	15	1	0.1
phase 2	5550	pot scatter	215	1440	6	2.41
phase 2	5552	ditch	727	3800	23	3.49
phase 2	5554	pit	59	429	4	0.41
phase 2	5571	pit	8	80	—	—
phase 2	5573	layer	143	578	3	0.55
phase 2	5626	pit	1	3	—	—
phase 2	5678	gully	2	20	2	0.15
phase 2	5681	gully	1	18	—	—
phase 2	5685	gully	2	7	—	—
phase 2	5704	ditch	1	1	—	—
phase 2	5705	gully	3	19	—	—
phase 2	5711	ditch	5	20	1	0.05
phase 2	5713	ditch	5	18	—	—
phase 2	5718	gully	98	90	—	—
phase 1	5510	ditch	5	35	—	—
post abandonment	5634	gully	1	3	—	—
post abandonment	5643	gully	5	38	—	—
post abandonment	5646	gully	8	86	2	0.15
post abandonment	5668	ditch	1	4	—	—
Sub-total			3454	22148	133	20.04
Environmental			303	935		
Total			3757	23083	133	20.04

the significantly larger sherds in deposits within certain pits and in the 'pot scatters' within ditch fills which are suggestive, possibly, of some form of structured deposition. Unfortunately the only pottery recovered from the inhumation was a single badly abraded sherd retrieved during the processing of environmental samples, datable to the M-LIA.

The assemblage is therefore of interest in that it appears to span a relatively short period, essentially covering the late Iron Age and the transition to it from the middle Iron Age. Recent work at Slade Farm²⁹ and Oxford Road, Bicester,³⁰ has produced comparable assemblages spanning the EIA-LIA and LIA-ERB (early Roman) periods respectively. Bicester Fields falls between these two and as such shares elements with both with regard to the late Iron Age assemblages. There was no early Iron Age material at Bicester Fields and the quantity of middle to late Iron Age pottery, together with range of fabrics, does not indicate that this period of activity on the site was long-lived.

Unlike Slade Farm, there is evidence for metal working and exchange or trade evidenced through the presence of Droitwich briquetage and a piece of May Hill stone on the site. This combined with the fact that Bicester Fields was enclosed, unlike Slade Farm, might suggest that it was of higher status than Slade Farm. The proximity of the two sites and the fact that neither appears to extend into the early Roman period indicates that differences between them are unlikely to result from factors of location or chronology. There are very few sites within the region which appear to have the same cut-off date as Bicester Fields. The date range of the Oxford Road site, which continued in use from the late Iron Age into the early 2nd century AD, is more commonly observed within the region. Slade Farm is one of very few other sites which may have ceased to be occupied at about the conquest period, but it had been in use for much longer before that time. Site D on the A421 excavations,³¹ situated some 2 km. south-west of Bicester Fields, may well have had a similar, constricted date range, but the paucity of material there means that the absence of middle Iron Age and early Roman pottery, while suggestive, is not conclusive.

THE FIRED CLAY by KAYT BROWN

Some 3.9 kg. of fired clay was recovered from the evaluation and subsequent excavations. Although the majority of the assemblage comprised amorphous fragments, a small amount of structural daub, triangular loomweight fragments, a possible weight/spindle whorl and briquetage were identified. The material was quantified by number of fragments and weight by context, and broad fabric groups were identified macroscopically.

Four broad fabric groups were identified by principal inclusion, namely sand (Fabric 1), very fine sandy (?natural) (Fabric 2), no visible inclusions (Fabric 3), and sand and linear vesicles/organic tempered material (Fabric 4). The majority of material is sand tempered, with loomweights occurring in this fabric. The organic tempered fabric was restricted to the briquetage fragments and the spindlewhorl was in Fabric 3. Daub was identifiable through impressions from wattle, and although the material was in a relatively poor condition a number of fragments were identified. Where fragments displayed smooth surfaces and corners and/or perforations these were identified as loomweight fragments, with triangular loomweights identified from contexts 5227 and 5377. A small round, fired clay object with an oblique perforation, probably a spindlewhorl (Fig. 25:4), was recovered from context 5227. A small amount of briquetage was recovered from contexts 5096 and 5163 displaying the characteristic rough interior, although no rims were present.

The majority of the fired clay was recovered from negative features, principally the fills of the phase 2 enclosure ditches (5239 and 5240). This included the triangular loomweights, one of which was recovered in association with the spindlewhorl and with pottery. Only 12 g. of fired clay was recovered from the phase 1 enclosure ditch, and small amounts were retrieved from a number of pits and the phase 2 house gully. Briquetage was recovered from the upper fill of posthole 5015 and a fill of the phase 2 enclosure. Boundary ditch 5148 and gully 5552 also produced fired clay as did a number of the later gullies.

Although the majority of the assemblage is undiagnostic, the presence of fired clay is still an indicator of domestic settlement and the loomweight fragments and spindlewhorl indicate some textile production on site. Briquetage vessels are used in the drying and transport of salt and are an indicator of the distribution of this commodity. The briquetage at Bicester has been identified as that produced at Droitwich (Fabric 1),³² which points to some form of trade or exchange with areas outside the Upper Thames Valley.

²⁹ Woodward and Marley, *op. cit.* note 12.

³⁰ P. Booth, *op. cit.* note 28.

³¹ P. Booth et al., *op. cit.* note 17.

³² D. Hurst and H. Rees, 'Pottery Fabrics; a multi-period series for the county of Hereford and Worcester', in S. Woodiwiss (ed.), *Iron Age and Roman Salt Production and the Medieval Town of Droitwich* (CBA Res. Rep. lxxxi, 1992), 200-9.

THE METALWORK by IAN R. SCOTT

A very small assemblage comprises 11 copper alloy and 6 iron objects (Table 7). Five of the copper alloy objects are unstratified and most, probably all, are of recent (late post-medieval) date. Three further objects from context 5001 are of post-medieval date and include a coin of George III. The objects from contexts 5395 and 5407 are both very eroded and fragmentary and not identifiable. All the iron objects are stratified but none is of any intrinsic interest. Three objects (ctx 5149, 5276, 5394) are small strips or fragments, and a fourth object may be a horseshoe nail (ctx 5340). The horseshoe is of post-medieval date. The corroded object from context 5060 was X-rayed but still could not be identified.

TABLE 7. THE METALWORK ASSEMBLAGE

Context Number	SF No	Metal	No. of objects	Comments
U/s (=5723)		Ca	1	Flat circular button with cast in loop; the face is polished and has a milled edge.
U/s		Ca	1	cast flat circular button, with loop missing
U/s		Ca	1	machine made thimble, squashed with top missing
U/s		Ca	1	cast button with low relief decoration; loop lost. Copper alloy or possibly pewter
U/s		Ca	1	cast vessel, with wide splayed neck or mouth and thickened rim; possibly a bowl. Copper alloy (gun/bell metal?)
U/s		Ca	1	possible coin, worn flat
5001	55	Ca	1	Flat circular cast button with cast loop
5001	50	Ca	1	Penny of George III, 1806
5001	54	Ca	1	cast rumbler, or pellet, bell
5395	62	Ca	1	eroded fragment
5407		Ca	1	thin curved strip, very small fragment
Total		Ca	11	
5060	51	Fe	1	heavily corroded object
5102		Fe	1	horseshoe with narrow, but very thick branches, no calkins, but slight evidence for feathered heels; four nail holes visible on one branch, similar number on opposite side? The toe is worn.
5149		Fe	1	thin strip
5276		Fe	1	small fragment
5340		Fe	1	horseshoe nail with taper square section head
5394		Fe	1	thin strip
Total		Fe	6	

THE METALWORKING WASTE by LYNNE KEYS

Almost 1.3 kg. of debris identified as slag was recovered during the excavations. Most of this had been produced by secondary iron smithing, although there was a small quantity of undiagnostic slag present (56 g.). This slag could have been produced by either smelting or smithing although no diagnostic evidence for iron smelting was found.

The slag represents a brief period of smithing activity which may have taken place somewhere in the SW. area of the site during phase 2. Most, but not all, came from cut features in an area to the SW of the phase 1 ditch enclosure and the phase 2 enclosure. A fragment of quartzite which has been identified as part of an anvil was also found in this area.

Context 5460 is perhaps the most comprehensive in terms of the diagnostic debris it contains: two smithing hearth bottoms, some broken flake hammerscale (a micro-slag produced by secondary iron smithing), smithing slag lumps (46g.) and vitrified hearth lining (16g.); 40g. of the undiagnostic slag came from this context.

Elsewhere, very small amounts of slag were found (cuts 5182, 5406 and 5438) but no amount which might indicate a second focus of activity.

WORKED STONE by FIONA ROE

The assemblage of worked stone is a small one, consisting of 7 pieces, but it nevertheless contains items of interest (see Table 8). There is a complete pebble-hammer, which is probably of earlier prehistoric date. For the Iron Age, there are 2 fragments of saddle quern or rubber, 2 hammerstones and a battered fragment that may be part of a crude anvil or mortar. There is also a quantity of burnt stone, and two fragments of uncertain provenance that have the appearance of shale, although the poor condition of the material makes it impossible to identify them for certain. One of the quern fragments is made from May Hill sandstone, which had been transported at least 90 km. (56 miles). All the other artefacts are made from quartzite or sandstone which could have been collected locally.

TABLE 8. CATALOGUE OF WORKED STONE

Context	Phase	Description	Stone
601; evaluation; topsoil	U/s	Quern frag. all edges broken, nearly flat grinding surface; now 86x80x35 mm. (Fig. 25:3)	May Hill sandstone
601; evaluation; topsoil	U/s	Broken half of burnt pebble apparently used as hammerstone; now 55x52x52 mm.	Sandstone, coarse-grained and feldspathic
1500; evaluation; topsoil	U/s	3 frags, 2 fitting, no apparent traces of working, part of flat object	?shale
5126; fill pit 5225	LIA	Burnt frag; one v. slightly convex grinding surface; probably from rubber for quern; 100x89x57 mm.	Quartzitic sandstone
5243; layer sealing pit group 5449	LIA	Flake; slightly concave well battered surface prob. from flat side of cobble used as rough anvil or crude mortar; now 88.5x78x14 mm.	Quartzite
5246; top fill enclosure ditch 5240	LIA	Small hammerstone, nr spherical; 2 battered areas and chips missing; 61x59x55 mm.	Quartzite
5397; artefact spread in ditch 5552; SF 59	LIA	Small pebble used as pebble-hammer; hour-glass hole; slight traces battering at either end; 72x56x22 mm. (Fig. 25:2)	Light grey quartzite

Earlier prehistoric

The pebble-hammer (context 5397) is a simple quartzite pebble, modified only by an hour-glass shaft-hole (Fig. 25:1). The hole has been pecked out, and subsequently worn smooth around the waisted part. The pebble is slightly battered at either end. Such implements are quite common in Oxfordshire, where suitable quartzite pebbles would have been relatively easy to collect from Pleistocene deposits, particularly the Thames river gravels. At Bicester, the pebble was probably picked up locally from scattered Drift deposits. A further 12 examples of pebble-hammers have been recorded from Oxfordshire,³³ while an unpublished example is additionally known from Horton-cum-Studley. Nearly all of these, like the find from Bicester Fields Farm, are made from quartzite pebbles.

Pebble-hammers appear to have been in use for a lengthy period, from the Mesolithic until at least the Bronze Age,³⁴ and finds in general are not uncommon. It is assumed that the Bicester pebble-hammer belongs within such a time range, perhaps linked with the few flints found in the area, and that its presence in a late Iron Age context is fortuitous. The way in which these artefacts were utilised is uncertain, but one possibility is that they were weights for bow-drills,³⁵ and such a use could have caused the wear in the central part of the shaft-hole. A smooth area inside the hole is a common feature on these tools but often they are somewhat battered at the ends as well, suggesting that they could also have been used as small hammers.

Iron Age

The fragment of May Hill sandstone quern is unstratified, having been discovered in topsoil from the evaluation (context 601 - Fig. 25:2). It is a small piece, but the variety of stone is distinctive. A growing number of querns made from this sandstone are being recognised from early and middle Iron Age sites in Oxfordshire. In nearly all cases the querns are of the saddle variety. It is becoming clear that it is quite usual for Droitwich briquetage to be present at the same sites. In Oxfordshire, sites where this combination is now known include Watkins Farm, Northmoor,³⁶ Mingies Ditch, Hardwick-with-Yelford,³⁷ Gravelly Guy, Stanton Harcourt,³⁸ Abingdon Vineyard,³⁹ and Cresswell Field, Yarnton.⁴⁰ Further sites are in the process of being recorded from museum collections. The finds from Bicester are of interest since they are some distance from the source area, taking the distribution further east, beyond the concentration of Iron Age sites on the gravels of the Upper Thames Valley.

The two pieces of possible shale from context 1500 (again topsoil from the evaluation) are small, flat and worn fragments and were not part of a recognisable object. Since they are worn, it is not certain that they were ever worked, although they could represent working debris. Given their insecure context from an area well away from the Iron Age settlement, both date and association remain uncertain.

The remaining four pieces of worked stone are made from materials which, as with the quartzite used for the pebble-hammer, were probably collected from local Drift deposits. A second, unstratified, fragment of saddle quern or rubber from context 5126 is made from hard quartzitic sandstone. Implements of this type are quite common, and a similar worked fragment was recorded from Watkins Farm, Northmoor.⁴¹ The same site provides parallels for 2 hammerstones, one of sandstone from context 601 (topsoil), the other of quartzite from context 5246, the top fill of the phase 2 enclosure ditch. Such implements were common in the area

³³ H. Case, 'Mesolithic Finds in the Oxford Area', *Oxoniensia*, xvii/xviii (1953), 12; J.R. Kirk and H. Case, 'Archaeological Notes', *Oxoniensia*, xx (1955), 90-2; H. Case, 'Archaeological Notes', *Oxoniensia*, xxi (1956), 82-3; W.A. Cummins and W.R.G. Moore, 'The Petrological Identification of Stone Implements from the south-east Midlands', in T.H. McK. Clough and W.A. Cummins (eds.), *Stone Axe Studies Volume 2: The petrology of prehistoric stone implements from the British Isles* (CBA Res. Rep. lxvii, 1988), 41-4.

³⁴ F. Roe, 'Typology of Stone Implements with Shaft-holes', in T.H. McK. Clough and W.A. Cummins (eds.), *Stone Axe Studies: Archaeological, Petrological, Experimental and Ethnographic* (CBA Res. Rep. xxiii, 1979), 23-48.

³⁵ R.M. Jacobi, 'The Early Holocene Settlement of Wales', in J.A. Taylor (ed.), *Culture and Environment in Prehistoric Wales* (BAR lxxvi, 1980), 131-206.

³⁶ T.G. Allen, *An Iron Age and Romano-British Enclosed Settlement at Watkins Farm, Northmoor, Oxfordshire* (Thames Valley Landscapes: The Windrush Valley, i, 1990).

³⁷ T.G. Allen and M.A. Robinson, *The Prehistoric Landscape and Iron Age Enclosed Settlement at Mingies Ditch, Hardwick-with-Yelford, Oxfordshire* (Thames Valley Landscapes: The Windrush Valley, ii, 1993).

³⁸ G. Lambrick et al., op. cit. note 22.

³⁹ T.G. Allen et al., 'Report on Excavations at Abingdon Vineyard, Oxon' (OAU report, forthcoming).

⁴⁰ G. Hey et al., 'Reports on Excavations at Yarnton, Oxfordshire' (OAU report, in preparation).

⁴¹ Allen, op. cit. note 36, p. 94.

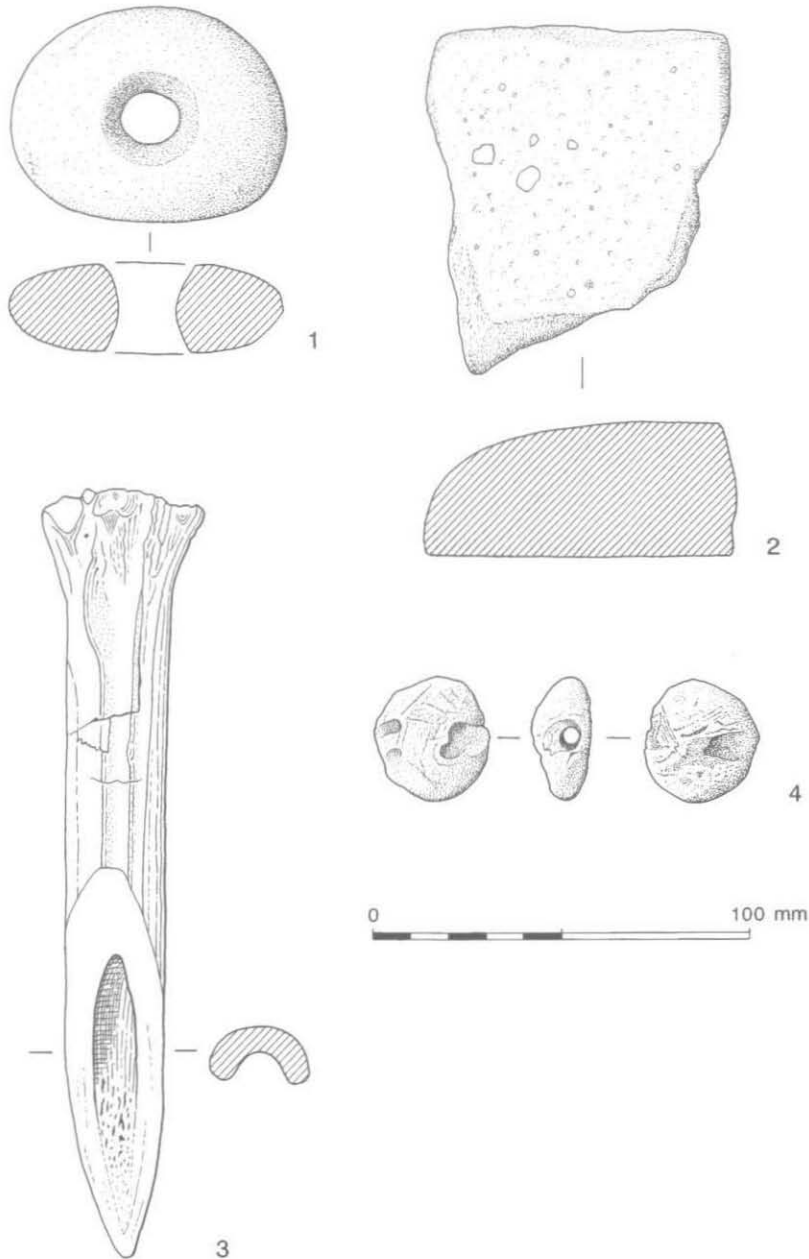


Fig. 25. Other finds illustrations: (1) fired clay spindle whorl; (2) pebble-hammer; (3) quern fragment of May Hill sandstone; (4) bone gouge.

from Neolithic times onwards wherever suitable pebbles and cobbles were available, as for instance at Yarnton.⁴² Similar artefacts of Iron Age date are known from Mingies Ditch⁴³ and Whitehouse Road, Oxford.⁴⁴

The final fragment of worked quartzite, from late Iron Age context 5243, is of wider interest. The worked surface of this piece is well battered and slightly concave, and it appears to have been part of a small boulder used for heavy duty hammering. It could have been a kind of rough anvil or crude mortar used for breaking up pieces of iron ore before smelting, and so could be linked with the evidence for metalworking on the site. A low grade ironstone outcrops in the Jurassic Marlstone Bed of the Banbury area, and was available from about 15.7 km. (9.75 miles) away.⁴⁵ Fragments of this ironstone were found amongst the unworked stone from Bicester Fields Farm. Similar rough anvils have recently been found at an Iron Age site at Humberstone, Leicester,⁴⁶ where they were made both from quartzite cobbles and Millstone Grit. This site also has evidence for ironworking, and is close to an area of Jurassic ironstone. A similarly utilised boulder of Mendip Old Red Sandstone has been noted from Glastonbury,⁴⁷ and once again there was evidence for metalworking on the site.⁴⁸

Burnt stone

There are 364 fragments of burnt stone, of which 98.6% are limestone, with only 4 fragments of quartzite and 1 of sandstone. Jurassic limestone, in the form of Forest Marble, was available within 2–3 km. of the site.

Discussion

It is assumed that the unstratified pieces, which include the May Hill sandstone quern and the possible shale fragments, belong with the Iron Age occupation at Bicester Fields Farm, since this is basically a one-period site. The quern may represent the end of the time range when saddle querns made from this sandstone were used, since by the late Iron Age rotary querns of different materials were current. Droitwich briquetage often occurs at the same sites as May Hill sandstone querns, the implication being that the same trading network could have been used to bring goods into the county from the north-west. It may, however, have taken until the late Iron Age for such goods to penetrate as far east as Bicester. Whatever the status of this small settlement, there was the ability to obtain high quality goods from outside the region.

WORKED BONE AND ANTLER OBJECTS by LEIGH ALLEN with species identifications by BETHAN CHARLES

Three fragments of worked antler and a single bone object were recovered from the site. The antler fragments are all from red deer and are fragments of manufacturing waste. SF 53 from context 5213 is a fragment of antler beam and brow tine that is sawn across at the junction of the two and separately across the beam and tine; the beam is hollow at the beam end. SF 56 from context 5346 is a red deer antler tine sawn at the end. SF 57 also from context 5436 is a fragment of tine that has been sawn at both ends.

The only bone object from the site, SF 60 from context 5437, is a large gouge made from a horse metatarsal (Fig. 25:4). It has an oblique diagonal cut across the shaft in a longitudinal direction, exposing the medullary canal, and the tip is sharply pointed. The butt of the tool is formed by the distal end of the bone that has been left intact. This example has a long pointed terminal the extreme tip of which is a thin flat point. There are traces of wear in the form of polish at the tip, on the upper and lower surfaces and on the shaft, particularly towards the butt. Gouges in the Iron Age were predominately manufactured from sheep long

⁴² F. Roe, Reports on worked stone, in Hey, op. cit. note 40.

⁴³ Allen and Robinson, op. cit. note 37, p. 80.

⁴⁴ Mudd et al., op. cit. note 20, pp. 33–85.

⁴⁵ E.A. Edmonds, E.G. Poole and V. Wilson, *Geology of the Country around Banbury and Edge Hill: Memoir of the Geological survey of Great Britain for Sheet 201* (1965).

⁴⁶ F. Roe, Report on worked stone, in OAU Report on Excavations at Leicester, Humberstone (in preparation).

⁴⁷ F. Roe, 'Stone', in J. Coles and S. Minnitt, *'Industrious and Fairly Civilised': The Glastonbury Lake Village* (Somerset Levels Project and Somerset County Council Museum Service, 1995), 161–7.

⁴⁸ C. Mortimer and D. Starley, 'Ferrous and Non-ferrous Metalworking', in Coles and Minnitt, op. cit. note 47, pp. 138–43.

bones, as at Glastonbury,⁴⁹ All Cannings Cross⁵⁰ and Danebury.⁵¹ Examples made from horse bones are unusual; there is only one example out of a total assemblage of 38 from Danebury. The Bicester example, like the Danebury one, has all the characteristics of the Danebury class 1 gouge. It is suggested they could have had a multitude of uses but the particular wear patterns present may indicate their use as pin-beaters in association with textile weaving.

ENVIRONMENTAL EVIDENCE

THE HUMAN BONE by ANGELA BOYLE

A single skeleton (5405) was recovered from the fill of a large oval pit (5344). The date of the skeleton is uncertain although a small quantity of pottery was recovered from the upper fills of the pit. The skeleton was crouched on its left side and was orientated N.-S. (Fig. 18). The preservation of the bone was extremely poor: there were no complete bones and all extremities were absent (see Table 9).

TABLE 9. HUMAN BONE RESULTS

Preservation and completeness:	Very poor, skull and long bones only
Age:	Adult (25-35 y)
Sex:	Female
Discontinuous traits:	Right septal aperture
Dentition:	

8 7 6 5 4 - - -	- - - 4 5 6 7 8
8 7 6 5 4 3 2 1	1 2 3 4 5 6 7 8

- = tooth and socket absent

A sample from this skeleton was submitted for radiocarbon dating. Unfortunately, the bone proved to have been too severely degraded to allow a date to be obtained. Sherds of pottery and the majority of the activity elsewhere on the site is of middle-late Iron Age date. It is therefore conceivable that the skeleton is of middle Iron Age date; burials of comparable date have been found recently at Yarnton, Worton Rectory Farm.⁵²

THE ANIMAL BONE by BETHAN CHARLES

A total of 9,968 fragments of bone were hand-collected from site. The high fragment count is slightly misleading since many of them came from the numerous skulls and the partially articulated skeleton found in pit 5292. Many of these were reassembled to reduce the fragment count to 3,893. Several of the broken skulls, and other elements from the partially articulated skeleton that could be positively identified as coming from one individual element, were counted as one. In addition to the hand-retrieved bone, 4,674 fragments were retrieved through sieving. Some of these fragments were reassembled as individual bones, reducing the fragment count to 4,567. The sieved material assessed was collected using a mesh of 10 mm., 4 mm. and 2 mm.

⁴⁹ A. Bulleid and H.St.G. Gray, *The Glastonbury Lake Village*, ii (1917), 419-21.

⁵⁰ M.E. Cunliffe, *The Early Iron Age Inhabited Site at All Cannings Cross-Farm, Wiltshire. A description of the excavations and the objects found by Mr and Mrs B H Cunliffe 1911-1922* (1923), 84-7.

⁵¹ L. Sellwood, 'Objects of Bone and Antler', in B. Cunliffe, *Danebury: an Iron Age hillfort in Hampshire Vol. 2: the excavations, 1969-1978: the finds* (CBA Res. Rep. lii, 1984), 382-7.

⁵² G. Hey, A. Boyle and A. Bayliss, 'Iron Age Burials at Yarnton, Oxfordshire', *Antiquity* (forthcoming).

Condition of bone

The condition of the bone was graded from 1 to 5 using the criteria stipulated by Lyman,⁵³ grade 1 being the best preserved bone and grade 5 indicating that the bone had suffered such structural and attritional damage as to make it unrecognisable.

The condition of the bone was quite variable. However, the majority of surfaces showed varying degrees of pitting with fine crevices, typical of mining by plant roots. Whilst the majority of root damage was minor, it is almost certain that some indications of butchery damage or pathological changes may have been obscured by the condition of the bones.

The majority of the hand-collected assemblage, elements from the larger mammals, tended to be between grades 1 and 3. However, certain fragments were in particularly poor condition, such as the articulated skeletons in context 5291, contributing 872 fragments which broke after removal from the soil, and which were very fragmentary and are responsible for the high proportion of fragments with fresh breaks. Over half of all elements had signs of fresh breaks, although most were minor breakages.

Most of the bone sieved through a mesh of >10mm. was in a similar, if not slightly better, condition. However, as the size of the mesh was reduced the percentage of unidentified and badly damaged bone increased. This is not untypical since the mesh is more likely to collect the small broken fragments from larger bones that would be missed in excavation in the same way that it collects minor mammal, bird and amphibian bones.

Sampling Method

The environmental sampling strategy for the Bicester Fields Farm excavations was formulated by Gill Campbell⁵⁴ following the methods suggested by Wilson⁵⁵ and Hill.⁵⁶ This strategy was used in order to understand the spatial distribution of the animal bones on the site. Wilson has suggested that animals tended to be slaughtered on the periphery of Iron Age settlement areas, leaving evidence in the form of butchery waste such as skull fragments and foot bones from large and small animals, and body fragments (ribs, spines, hipbones) from the larger animals. The other more identifiable bones would most likely be taken on to site with the bulk of the carcass.

Wilson⁵⁷ suggests that, to permit analysis of spatial distribution of animal bone, the main areas chosen for the retrieval of bones should be the central occupation areas (houses and pits) and the peripheral areas (outside surfaces, enclosure ditches and fields). The sampling strategy was adapted around this framework. A consistent percentage of pits were sampled in each part of the site, including pits in which finds were poor or absent. Segments excavated through enclosure ditches and penannular features were dug at consistent lengths and consistent intervals, as stipulated by Hill.⁵⁸

Attempts were made to sample the features as evenly as possible so as to study the high activity areas and those with very little activity in comparison. Samples of 100 litres were taken from each context, or the feature was fully sampled if there was less. Samples were generally not recovered from intercutting features where the chances of the bone being redeposited were increased.

Methodology

Quantification of species was carried out primarily using the total fragment method. All fragments were counted including elements from the vertebral centrum, ribs and long bone shafts. In addition the minimum number of individuals (MNI) was calculated for the main domestic species from the mandibles. However, the total fragments method can be prone to inaccuracies, especially in the quantification of sieved assemblages, due to the fact that it assumes that a single individual animal is represented by each separate individual bone specimen. The recovery of small bones such as phalanges and loose teeth would accentuate this problem by enlarging the total number of individuals. Allowance is not made for the fact that bones may be related, or that different species have more bones than others.

⁵³ R.L. Lyman, *Vertebrate Taphonomy*, Cambridge Manuals in Archaeology (1996).

⁵⁴ G. Campbell, '1998 Fields Farm, Bicester, OXON (BIFF 98) Ecological Evidence Recovery Strategy' (OAU unpubl. internal report).

⁵⁵ B. Wilson, *Spatial Patterning among Animal Bones in Settlement Archaeology: An English Regional Exploration* (BAR Brit. Ser. ccli, 1996).

⁵⁶ Hill, op. cit. note 9.

⁵⁷ Wilson, op. cit. note 55, p. 85.

⁵⁸ Hill, op. cit. note 9, p. 79.

MNI was used only on the mandibles since they were the most numerous of the fragments identified from almost all of the phases. This is especially relevant for the pig bones of which 36% of the identified fragments were from mandibles and for the sheep bones of which 41% were mandible fragments. Only the more complete mandibles were used, both with and without teeth still in place. Care was taken not to include partial mandibles thought to be related to more complete fragments, in order to avoid counting the same element from one individual twice. Mandibles from each species were separated and the number of left and the right mandibles totalled. In order to calculate the numbers, all of the mandibles from each phase were looked at together rather than separating them for each context.

MNI is a more selective method of quantification, and its results are more likely to be accurate than the total fragment method. However, it is also problematic, and has been shown to vary under different circumstances. The method depends on finding and recording the most numerous left or right hand components from a skeleton. These components are then paired in order to calculate a total. It is not always possible to get enough elements from an excavation, especially when the bone count is low and the fragments are divided into phases, as with this assemblage. As cited by O'Connor,⁵⁹ Gilbert, Singer and Perkins have shown through their calculations that a sample of 60,000 - 70,000 is required to give the same degree of consistency as is given by NISP with much smaller samples.

An attempt was made to separate the sheep and goat bones, whose similarity often poses difficulties in identification, using the criteria of Boessneck,⁶⁰ and Prummel and Frisch.⁶¹ However, since only two positive identifications of goat could be made, all caprine bones have here been listed as sheep. Cattle and sheep sex determinations were made on the basis of the medial wall of the acetabulum since the majority of innominate bones were incomplete. The only elements indicative of differences in sex between the horse bones in the assemblage were the mandibles and maxillae; for this the presence of canine teeth was recorded. The sex determination of pigs relied on differentiation of tusks, again as a result of the lack of other indicative fragments.

Ageing was based on tooth eruption and epiphyseal fusion, although the latter is less precise. Silver's tables alone were used to give timing of epiphyseal closure for cattle, sheep, pigs and horses.⁶² Sheep tooth eruption and wear was measured using a combination of Silver's,⁶³ Payne's⁶⁴ and Grant's⁶⁵ tables. Cattle and pig tooth eruption was measured using Silver's⁶⁶ tables alone. Horse tooth eruption and wear was measured using a combination of Silver's⁶⁷ and Levine's⁶⁸ tables. No attempt was made to age the cattle from the few cattle horncores in the collection, owing to the fragmentary condition of the majority of material present. Both hand-collected and sieved bone were used for ageing.

The measurements taken are those defined by von den Driesch.⁶⁹ Only the cattle, horse and dog bones were measured since almost no complete long bone elements were retrieved from the sheep and pig. The sieved material proved to be lacking in appropriate bone fragments to contribute to the data.

Species frequency

The total number of fragments (Tables 10 and 12) show that cattle dominate the assemblage followed by sheep, horse, pig and the other animals. However, the sieved assemblage does not show such a marked difference, and cattle and sheep are present in almost equal quantities (Tables 11 and 13). This serves to underline the importance of bone collection from sieved samples, to compensate for retrieval bias amongst hand-collected material.

⁵⁹ T.P. O'Connor, *The Archaeology of Animal Bones* (forthcoming), Chapter 6.

⁶⁰ J. Boessneck, 'Osteological Differences in Sheep (*Ovis aries* Linné) and Goat (*Capra hircus* Linné)', in D. Brothwell and E. Higgs (eds.), *Science in Archaeology* (1969), 331-58.

⁶¹ W. Prummel and H.-J. Frisch, 'A Guide for the Distinction of Species, Sex and Body size in Bones of Sheep and Goat', *Jnl. of Archaeol. Science*, xiii (1986), 567-77.

⁶² I.A. Silver, 'The Ageing of Domestic Animals', in Brothwell and Higgs, op. cit. note 60, pp. 283-302.

⁶³ Ibid.

⁶⁴ S. Payne, 'Kill-Off Patterns in Sheep and Goats: The Mandibles from Asvan Kale, Anatolian Studies', *Jnl. of Brit. Inst. of Archaeol. at Ankara*, xxiii (1973), 281-303.

⁶⁵ A. Grant, 'The Use of Tooth Wear as a Guide to the Age of Domestic Ungulates', in B. Wilson et al., *Ageing and Sexing Animal Bones from Archaeological Sites* (BAR Brit. Ser. cix, 1982).

⁶⁶ Silver, op. cit. note 62.

⁶⁷ Ibid.

⁶⁸ M.A. Levine, 'The Use of Crown Height Measurements and Eruption-Wear Sequences to Age Horse Teeth', in Wilson et al., op. cit. note 65, pp. 223-50.

⁶⁹ A. von den Driesch, 'A Guide to the Measurement of Animal Bones from Archaeological Sites' (*Peabody Museum Bulletin* i, 1976).

TABLE 10. HAND COLLECTED ANIMAL BONE FRAGMENTS FROM DITCHES
(TOTAL FRAGMENT METHOD)

	Phase 1	Phase 2	Other	Undated	Total
Cattle	11	288	19	7	325
Sheep	7	149	6	1	163
Pig	—	28	3	1	32
Horse	3	30	4	—	37
Dog	—	4	1	—	5
Red deer	—	7	2	—	9
Roe deer	—	5	—	—	5
Goat	—	2	—	—	2
Total	21	513	35	9	578
Unidentified	4—	1455	252	12	1759

TABLE 11. SIEVED ANIMAL BONE FROM DITCHES (TOTAL FRAGMENT METHOD)

	Phase 1	Phase 2	Other	Total
Cattle	—	36	1	37
Sheep	—	30	1	31
Pig	—	6	—	6
Dog	—	1	—	1
Field Vole	—	2	—	2
Total	—	75	2	77
Unidentified	3	677	49	729

TABLE 12. HAND COLLECTED ANIMAL BONE FRAGMENTS FROM PITTS, GULLIES, LAYERS
AND POSTHOLES (TOTAL FRAGMENT METHOD)

	Phase 2	Other	Undated	Total
Cattle	37	82	31	150
Sheep	8	20	11	39
Pig	—	3	2	5
Horse	3	24	1	28
Dog	—	—	—	—
Red deer	1	—	2	3
Roe deer	—	—	—	—
Goat	—	—	—	—
Total	49	129	47	225
Unidentified	76	1065	190	1331

TABLE 13. SIEVED ANIMAL BONE FRAGMENTS FROM PITTS, GULLIES, LAYERS AND POSTHOLES (TOTAL FRAGMENT METHOD)

	Phase 2	Other	Undated	Total
Cattle	—	1	36	37
Sheep	5	6	40	51
Pig	—	—	6	6
Horse	—	—	2	2
Red deer	1	—	—	1
Roe deer	—	—	1	1
Field Vole	—	—	1	1
Wood Mouse	—	1	1	2
Frog/Toad	—	—	33	33
Total	6	8	120	134
Unidentified	9	116	3469	3590

Table 14 shows the minimum number of individuals, calculated from the mandible data, for the main domestic species. No mandibular fragments were recorded for cattle and pig in the phase 1 enclosure ditches, or in any of the other mid to late Iron Age features except those attributable to the phase 2 enclosures and roundhouses, although there are a small number of other elements present for those species. Although the information from the MNI data does appear to be more representative of the number of animals from within the assemblage, it is also apparent how easily results can be affected by a deficiency or over representation of certain elements from different species.

TABLE 14. MINIMUM NUMBER OF INDIVIDUALS (MNI) FROM MANDIBLE DATA FOR THE MAIN DOMESTIC SPECIES

	Phase 1		Phase 2		Other M-LIA features	
	No	%	No	%	No	%
Cattle	—	—	10	42	6	46
Sheep	1	50	8	33	6	46
Pigs	—	—	4	17	1	8
Horse	1	50	2	8	—	—
Total	2		24		13	

Cattle

Cattle are the dominant species amongst the hand-collected assemblage, representing 59% of the total identified fragments. In comparison, the MNI tables show a smaller percentage. This apparent disparity may be due to the fact that smaller and less robust bone (as of pigs and sheep) survives less well over time than the bone of cattle and horses, and the dominance of cattle may therefore simply reflect better survival of material, rather than a genuine bias in animal consumption or husbandry at the settlement. However, it must also be remembered that simulations have shown that MNI tends to over-represent the less abundant taxa.

Table 15 shows the occurrence of the main cattle skeletal elements from the hand-collected assemblage. The percentage survival figures are shown in Fig. 26 in the order of best surviving elements thought to occur, from the best on the right to the worst on the left.⁷⁰ This ordering is based on the supposition that the elements would have been simultaneously deposited and that the resulting differences are due to taphonomic

⁷⁰ After A. Grant, 'Animal Husbandry', in B. Cunliffe and C. Poole, *Danebury: An Iron Age Hillfort in Hampshire Vol. 5 The Excavations 1979-1988* (CBA Res. Rep. lxxiii, 1991), 447-87.

processes. It can be seen from Table 15 that higher proportions of the elements recovered come from phase 2 and the other mid to late Iron Age features. The larger, denser and early fusing fragments are the most characteristic elements found from the site, perhaps because much of the bone would have been left lying on the ground surface and have been damaged prior to burial. There were also signs of gnaw damage from dogs on many of the cattle bones as well as those of the other domestic species. This indicates that many of the softer less robust elements may have been destroyed. The elements from phase 1 are probably unrepresentative owing to the small number recovered. The number of metatarsals recovered, of which many were complete, was larger than that of the metacarpals.

TABLE 15. CATTLE ELEMENTS BY PHASE (KEY: P = PROXIMAL D = DISTAL)

	Phase 1		Phase 2		Other M-LIA		Undated	
	No	%	No	%	No	%	No	%
Horn core	—	—	7	47	1	7	1	20
Upper Orbit	—	—	3	20	1	7	—	—
Lower Orbit	—	—	4	27	1	7	—	—
Occipital cond.	—	—	3	20	1	7	—	—
Maxilla	—	—	6	40	5	36	—	—
Mandible	—	—	15	100	14	100	1	20
Scapula D	—	—	6	40	5	36	5	100
Humerus P	—	—	4	27	—	—	—	—
Humerus D	2	100	15	100	9	64	2	40
Radius P	2	100	10	67	4	29	1	20
Radius D	—	—	8	53	3	21	1	20
Ulna P	1	50	7	47	2	14	—	—
Metacarpal P	—	—	3	20	1	7	1	20
Metacarpal D	—	—	2	13	1	7	—	—
1st Phalanx	—	—	6	40	6	43	2	40
2nd Phalanx	—	—	9	60	1	7	2	40
3rd Phalanx	—	—	3	20	—	—	—	—
Pelvis	—	—	3	20	7	50	—	—
Femur P	—	—	6	40	—	—	1	20
Femur D	—	—	5	33	4	29	—	—
Tibia P	1	50	9	60	1	7	1	20
Tibia D	1	50	11	73	2	14	—	—
Calcaneum	—	—	10	67	—	—	1	20
Astragalus	1	50	10	67	1	7	—	—
Metatarsal P	1	50	11	73	6	43	1	20
Metatarsal D	—	—	7	47	3	21	1	20
Atlas	—	—	2	13	1	7	1	20
Axis	—	—	1	7	—	—	1	20

Tables 16 and 17 show that the majority of the animals appear to be between four and five years of age. The mandible wear stage (MWS) was used on as many mandibles as possible, and most had enough teeth to assign an accurate mandible wear stage. However, no information could be recorded from phase 1 due to the lack of suitable material.

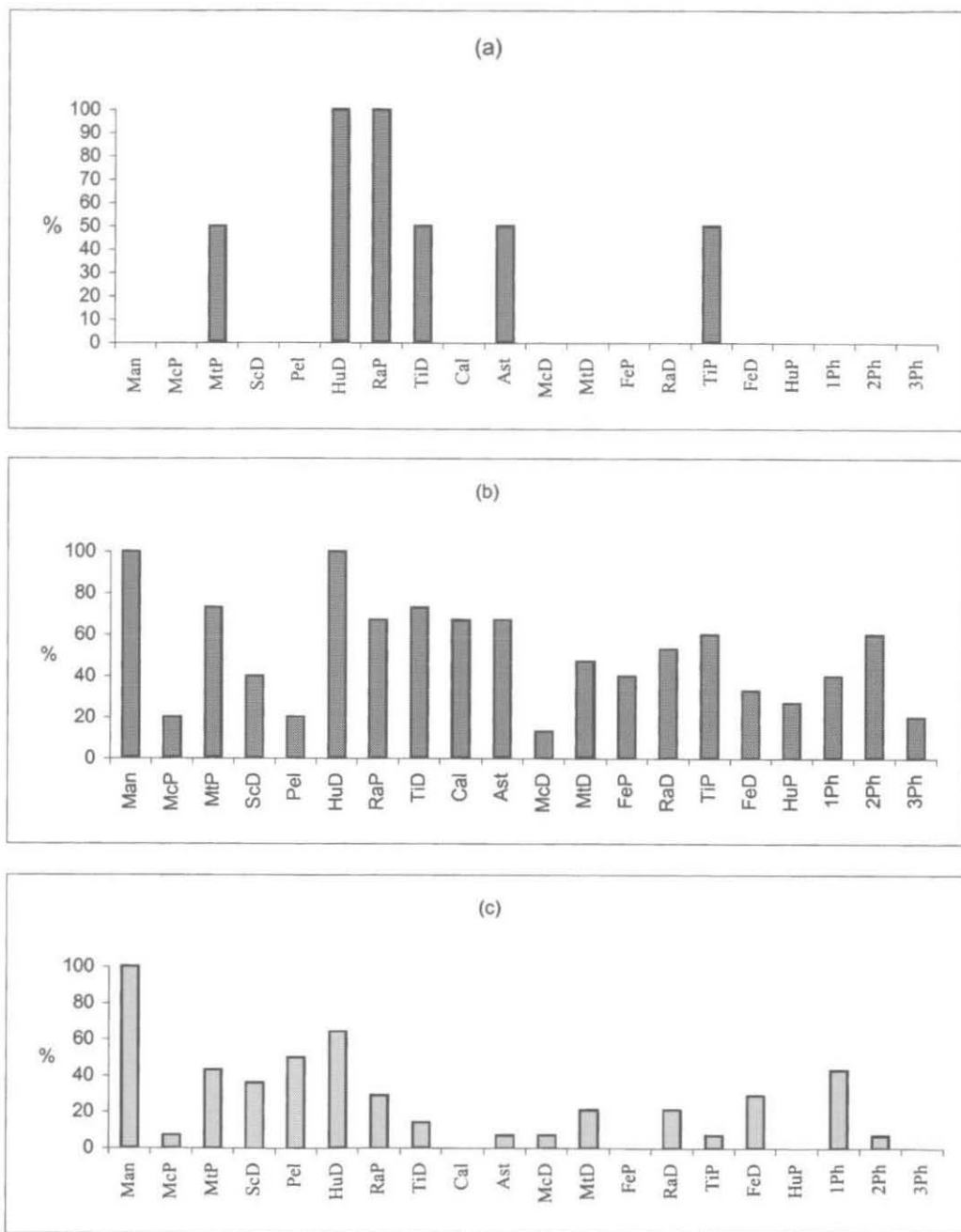


Fig. 26. Cattle: skeletal element percentages (a) phase 1 enclosure; (b) phase 2 enclosure; (c) other M-LIA features.

KEY: % = percentage of the most common element; P = proximal; D = distal; Ast = astragalus; Cal = calcaneum; Fe = femur; Hu = humerus; Man = mandible; Mc = metacarpal; Mt = metatarsal; P = pelvis; Ra = radius; Sc = scapula; Ti = tibia; 1Ph = first phalange; 2Ph = second phalange; 3Ph = third phalange.

TABLE 16. AGES AT ERUPTION OF MANDIBULAR TEETH IN CATTLE FOLLOWING SILVER (OP. CIT. NOTE 62)

Estimated Age	Phase 2	Other M-LIA features
30 m.	3	—
4–5y.	7	6

TABLE 17. CUMULATIVE FREQUENCIES OF TOOTH SEQUENCES OF CATTLE AS STAGED BY THE METHOD OF GRANT (OP. CIT. NOTE 65)

Mandible wear stage	7	21	24	25	30	31	32	36	37	40	42	44
Phase 2 enclosure ditch	1	1	—	1	1	1	—	2	—	1	1	—
Other M-LIA features	—	—	1	—	—	—	1	1	1	—	2	2
Total M-LIA	1	1	1	1	1	1	1	3	1	1	3	2

Although not as accurate as data from the cattle mandibles, the bone fusion data in Table 18 does cover all phases, and appears to indicate a larger number of individuals of less than two years of age than was evident from tooth eruption and wear stages. This may indicate a slight variance in the data beyond the accuracy of the two techniques.

TABLE 18. EPIPHYSEAL FUSION IN CATTLE BONES FOLLOWING SILVER (OP. CIT. NOTE 62)

Age	Element	Phase 1		Phase 2		Other M-LIA		Undated	
		F	UF	F	UF	F	UF	F	UF
10 mo.	Scapula D	—	—	3	—	2	—	3	—
18 mo.	Humerus D	1	1	10	—	7	—	1	—
	Radius P	2	—	8	1	3	—	1	—
2–2.5 yr.	Metacarpal D	—	—	—	—	1	—	—	—
	Tibia D	1	—	9	1	2	1	—	—
	Metatarsal D	—	—	6	1	2	1	—	1
3.5 yr.	Calcaneum P	—	—	1	—	—	—	1	—
	Femur P	—	—	5	1	—	1	1	—
3.5–4 yr.	Humerus P	—	—	2	—	—	—	—	—
	Radius D	—	—	5	2	3	—	1	—
	Ulna P	—	—	4	—	1	—	—	—
	Femur D	—	—	3	—	4	1	—	—
	Tibia P	1	—	1	1	1	—	—	—

A number of cattle skulls were found, buried the right way up and partially complete, though they were fairly fragmentary by the time they were examined. These skulls may have been specially placed deposits with a ritual or sacrificial meaning, since skull meat was often eaten during the Iron Age. Grant writes that butchery marks are often found on skull fragments of cattle, sheep and pigs.⁷¹

Metatarsals were the most numerous complete fragments of bone. Table 19 shows the biometric data compared with that from sites at Danebury,⁷² Mingies Ditch and other Iron Age measurements from Thames

⁷¹ A. Grant, 'Survival of Sacrifice? A critical appraisal of animal burials in Britain in the Iron Age', in C. Grigson and J. Clutton-Brock (eds.), *Animals in Archaeology: 4, Husbandry in Europe* (BAR Internat. Ser. cclxxvii, 1984), 221–8.

⁷² Grant, op. cit. note 70.

Valley sites.⁷³ Although the cattle from the site would have been much smaller than their modern-day counterparts, they do appear to have been slightly bigger than many of the Iron Age cattle from analogous sites. However, the small numbers of complete elements may not be totally representative of the animals that were once at the site.

TABLE 19. CATTLE METATARSAL MEASUREMENTS

	Measurements	Range (mm.)	Mean (mm.)	Number
Phase 2	GL	192-212	203.5	4
	Bd	45-46.5	45.75	2
Other L - MIA features	GL	208-210	209	2
	Bd	-	-	-
Danebury	GL	178-240	197.5	32
	Bd	41-59	50	40
Mingies Ditch	GL	189-207	198	2
	Bd	45-47	45.9	2
Other Thames Valley sites	GL	-	206.7	-

Five of the pelves that were complete enough to sex the animals were identified as being female. One other pelvis was possibly from a male individual but was too damaged to be certain. It is possible that this is typical of the sex ratio on site since it would have been economically more viable to keep a greater number of females than males, fewer males being required to maintain the herd. However, the small number of indicative fragments retrieved makes it difficult to be certain of this.

The Cattle Burial (Figs. 16 and 17)

A partial burial of one of the cattle along with two other fragments of cattle bone was found in a pit within the main enclosure. A radiocarbon determination confirmed a mid to late Iron Age date. Only the left half of the skeleton remained. The right side, which would have been nearer the surface if the body was buried whole, may have decayed or have been disturbed. The head would have been facing east and the front leg was flexed. The skull was missing, with only the right mandible remaining. Elements surviving included the scapula, metacarpal, radius, femur, humerus, tibia, proximal phalanx, cuboid and a large number of fragments from the vertebral column and rib cage. All but the tibia and mandible were from the left side of the body. The pelvis, sacrum and many of the smaller bones were missing. All the bone was in very poor condition and many elements had broken into hundreds of little fragments. Site notes indicate that the burial appeared to have been disturbed by plough damage and also more recently by vandals.

The mandible and teeth were very badly damaged and in too many small fragments to reassemble for analysis of tooth eruption and wear. However from the bone fusion data it appeared that the animal was over 4 years of age, or older. The likelihood that this was a ritual deposit is increased by the fact that the entire animal seems to have been buried, apart from the skull which may have been removed for a particular purpose, or may have been disturbed at a later date. However, as Grant mentions in connection with the possible ritual deposits at Danebury, it must also be remembered that many of the animals may have died in a manner that caused them to be unfit for human consumption, and they were therefore buried separately.⁷⁴

Cattle would have been prized animals during the Iron Age, able to provide a large amount of meat, milk and hides, as well as being used for traction purposes. The data regarding age of death of the cattle indicates that the animals were generally kept until mature. It is possible that the animals from this site were being used mainly as draught animals, although there are hardly any examples of bones in the collection with pathology that could be attributed to animals that have been exploited in this way. It is also possible that the cattle were kept for dairy products, although it is notable that there are very few immature skeletons in the assemblage, which is contrary to what might be expected from a dairy herd.

⁷³ Collated by B. Wilson in 'Report on the Bone and Oyster Shell', in T.G. Allen and M.A. Robinson, *The Prehistoric Landscape and Iron Age enclosed settlement at Mingies Ditch, Hardwick-with-Yelford, Oxon* (1993), 168-204.

⁷⁴ Grant, op. cit. note 70.

Sheep

Sheep made up only 25% of the total number of identified fragments from hand-collected material. However, the data retrieved from the sieved bone and the data from the minimum number of individuals taken from the mandibles gives a slightly higher proportion. This may indicate distortion of the results due to the preservation and retrieval of some of the elements, as outlined above, or that many of the other elements were being taken off site.

TABLE 20. SHEEP ELEMENTS BY PHASE

	Phase 1		Phase 2		Other		Undated	
	No	%	No	%	No	%	No	%
Horn core	—	—	2	12	2	29	—	—
Upper orbit	—	—	—	—	—	—	—	—
Lower orbit	—	—	—	—	—	—	—	—
Occipital cond.	—	—	—	—	—	—	—	—
Maxilla	—	—	—	—	—	—	1	50
Mandible	3	100	17	100	7	100	—	—
Scapula D	—	—	3	18	1	14	1	50
Humerus P	—	—	1	6	1	14	—	—
Humerus D	1	33	7	41	2	29	2	100
Radius P	—	—	2	12	—	—	—	—
Radius D	—	—	—	—	—	—	—	—
Ulna P	—	—	—	—	—	—	—	—
Metacarpal P	—	—	5	29	—	—	—	—
Metacarpal D	—	—	3	18	—	—	—	—
1st Phalange	—	—	3	18	—	—	—	—
2nd Phalange	—	—	2	12	—	—	—	—
3rd Phalange	—	—	1	6	—	—	—	—
Pelvis	—	—	4	24	—	—	—	—
Femur P	—	—	1	6	—	—	—	—
Femur D	—	—	—	—	—	—	—	—
Tibia P	1	33	5	29	—	—	—	—
Tibia D	—	—	6	35	—	—	—	—
Calcaneum	—	—	1	6	—	—	—	—
Astragalus	—	—	2	12	—	—	—	—
Metatarsal P	—	—	2	12	2	29	—	—
Metatarsal D	—	—	4	24	1	14	—	—
Atlas	—	—	—	—	—	—	—	—
Axis	—	—	—	—	—	—	—	—

It is clear from Table 20 and Fig. 27 that the mandibles were the predominant elements among the sheep remains, and this is almost certainly a factor of differential preservation. Very few fragments were found in phase 1, which suggests that very few sheep were kept at the site. More fragments occur in phase 2 and the other mid to late Iron Age features. As with the cattle bones, the elements that have survived amongst the phase 2 assemblage are typically the more dense, larger and early fusing bones.

The data from the mandible wear stages are shown in Tables 21 and 22. None of the mandibles from phase 1 was complete enough to use this method. Evidence from phase two and other features indicates that the majority of the animals were between two and eight years of age. It is possible that there were remains of younger individuals on the site. However, the unfavourable soil conditions of the site may have destroyed the majority of remains from these individuals if they were present in any number.

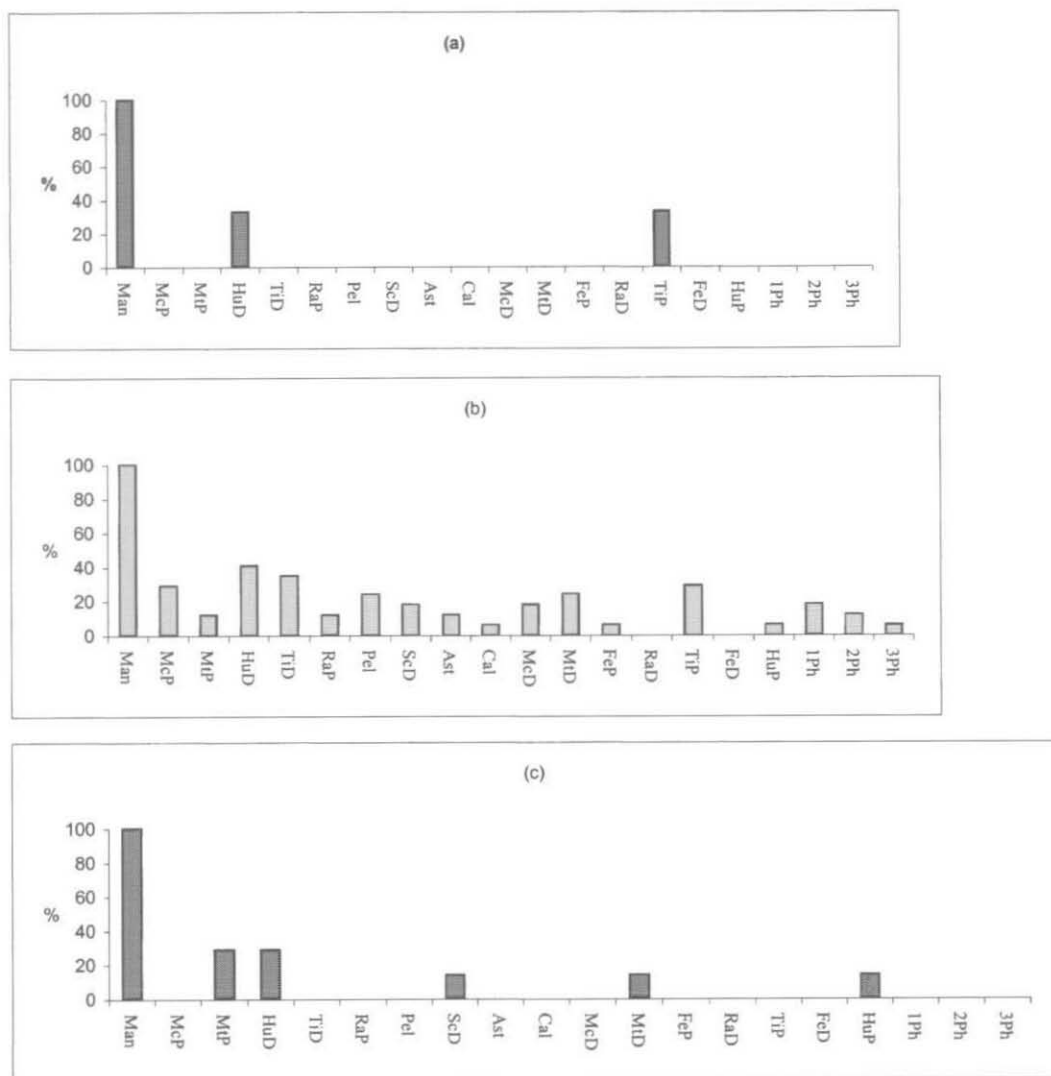


Fig. 27. Sheep: skeletal element percentages (a) phase 1 enclosure; (b) phase 2 enclosure; (c) other M-LIA features. (See Fig. 26 for key.)

TABLE 21. TOOTH SEQUENCES OF SHEEP/GOAT FOLLOWING STAGES OF PAYNE (OP. CIT. NOTE 64) FOR THE IRON AGE OCCUPATION

Estimated Age		Phase 2 enclosure	Other M - LIA features
0 - 2 mo.	A	-	-
2 - 6 mo.	B	1	-
6 - 12 mo.	C	-	1
1 - 2 yr.	D	3	1
2 - 3 yr.	E	1	1
3 - 4 yr.	F	1	-
4 - 6 yr.	G	3	1
6 - 8 yr.	H	1	1
8 - 10 yr.	I	-	-

TABLE 22. CUMULATIVE FREQUENCIES OF TOOTH SEQUENCES OF SHEEP/GOATS AS STAGED BY THE METHODS OF GRANT (OP. CIT. NOTE 65)

Mandible wear stage	2	4	11	24	27	28	29	30	33	34	36	39	40	41
Phase 2 enclosure	1	1	-	-	1	1	1	1	-	2	1	1	1	-
Other M-LIA features	-	-	1	1	1	-	-	-	1	-	-	1	-	1
Total M-LIA	1	1	1	1	2	1	1	1	1	2	1	2	1	1

Bone fusion data (Table 23) are very scarce, and completely absent for phase 1. Only a small number of bones could be recorded, and this inevitably undermines the reliability of the analysis. However, the tables do appear to correlate with the tooth wear and eruption data, with possibly a slight increase in the number of immature individuals in phase 2.

TABLE 23. EPIPHYSEAL FUSION IN SHEEP/GOAT BONES FOLLOWING SILVER (OP. CIT. NOTE 62)

Age	Element	Phase 2 enclosure		M-LIA		Undated	
		F	UF	F	UF	F	UF
10 mo.	Humerus D	3	1	1	-	1	-
	Radius P	2	-	-	-	-	-
	Scapula D	3	-	1	-	-	-
1.5 - 16 mo.	Tibia D	3	-	-	-	-	-
	Metacarpal D	1	2	-	-	-	-
	Metatarsal D	2	2	-	1	-	-
2.5 - 3 yr.	Calcaneum	1	-	-	-	-	-
	Radius D	-	-	-	-	-	-
	Femur P	-	-	-	-	-	-
3 - 3.5 yr.	Humerus P	-	1	1	-	-	-
	Femur D	-	-	1	-	-	-
	Tibia P	-	-	-	-	-	-

Unfortunately there were no complete sheep bones in the collection to allow comparison with biometric data from other Iron Age sites. However, the bones appear to be similar in size to modern Soay sheep, which are thought to resemble Iron Age sheep. Adequate fragments of bone for sexing the skeletons were also lacking in the collection. The sheep on this site were more probably kept for their by-products than for their meat.

Ageing data suggest that the majority of the animals were being kept to full maturity in order to make full use of the animals' wool, milk and dung. Although weaving was probably practised on site, it does not appear to have been practised on a large scale and it is possible that surplus wool was used in trading and interaction between other sites.

Pig

Only 5% of the bones recovered were those of pigs. The majority of these came from ditch deposits. Most of the fragments came from phase 2 and other mid to late Iron Age features. No fragments were found in phase 1. Table 24 shows the skeletal element analysis and Fig. 28 gives the percentage survival figures of the most common elements expected to survive taken from criteria set by Grant.⁷⁵ Mandibles were the best-represented elements whilst long bone fragments are almost absent. It should be noted that small long bone shaft fragments have been omitted from the table.

TABLE 24. PIG ELEMENTS BY PHASE

	Phase 2		Other	
	N	%	N	%
Upper orbit	1	13	—	—
Lower orbit	1	13	—	—
Occipital cond.	1	13	—	—
Maxilla	3	38	1	50
Mandible	8	100	1	50
Scapula D	2	25	2	100
Humerus P	—	—	—	—
Humerus D	1	13	1	50
Radius P	—	—	—	—
Radius D	—	—	—	—
Ulna P	1	13	—	—
Metacarpal P	1	13	—	—
Metacarpal D	1	13	—	—
1st Phalange	—	—	—	—
2nd Phalange	—	—	—	—
3rd Phalange	—	—	—	—
Pelvis	—	—	—	—
Femur P	—	—	—	—
Femur D	—	—	—	—
Tibia P	—	—	—	—
Tibia D	—	—	—	—
Calcaneum	2	25	—	—
Astragalus	—	—	—	—
Metatarsal P	—	—	—	—
Metatarsal D	—	—	—	—
Metapodial P	—	—	—	—
Metapodial D	—	—	—	—
Atlas	—	—	—	—
Axis	—	—	—	—

⁷⁵ Ibid.

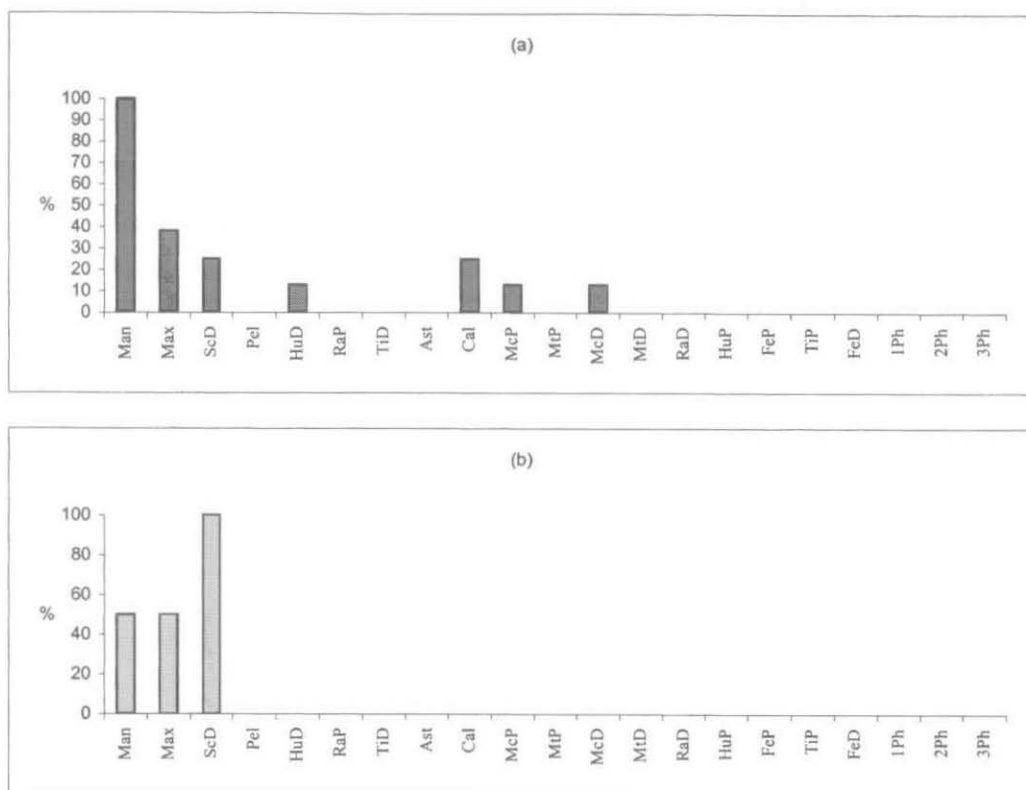


Fig. 28. Pig: skeletal element percentages (a) phase 2 enclosure; (b) other M-LIA features. (See Fig. 26 for key.)

Ageing of pigs has been carried out on the basis of eruption and wear of the mandibular teeth only, since there were not enough appropriate fragments of long bone present to allow assessment of epiphyseal fusion. Only a few of the mandibles were complete enough to allow ageing from tooth eruption, and even fewer could be given a precise mandible wear stage (Table 25).

TABLE 25. CUMULATIVE FREQUENCIES OF TOOTH SEQUENCES OF PIG AS STAGED BY THE METHODS OF GRANT (OP. CIT. NOTE 65)

Mandible wear stage	11	21	23	27
Phase 2	1	1	1	1

It can be seen from Table 26 that the majority died between the ages of 17 and 22 months, the ages at which they would have been reaching maturity. There were also individuals at the lower end of the wear stages. It is probable that very few of the pigs kept on site were kept beyond maturity since, assuming that the animals were being kept primarily for meat, it would have been an added expense to keep them once they had become fully grown.

TABLE 26. AGES AT ERUPTION OF MANDIBULAR TEETH IN PIG FOLLOWING SILVER (OP. CIT. NOTE 62)

Estimated Age	Phase 2 enclosure	Other M - LIA features
4 - 6 mo.	1	-
17 - 22 mo.	4	1

Only two elements indicative of the sex of the animals were recovered from the hand-collected and sieved bone, indicating two female pigs. It is probable that the majority of pigs kept were female and that the majority of male pigs were killed early, since very few would be required for breeding purposes. It must be borne in mind that pig bones tend not to survive as well as those of cattle and sheep, owing to the porosity of bone. This is especially the case for young individuals whose bone is yet more fragile. It is possible that if many of the pigs killed on site were young, preservation bias may be a significant factor affecting the evidence for pigs and the other species on the site. However, this cannot be assumed to be the reason why there are a small number of pig bones in the assemblage.

It does not appear that pig husbandry on the site was particularly intensive. Unlike cattle and sheep, pigs provide few by-products other than manure. Females are often able to breed from one year of age.⁷⁶ Additionally, they can be fertile all year round and are able to bear young twice a year.⁷⁷ Therefore the killing of a high number of immature and young adults would be unlikely to have a detrimental effect on the herd.

Horses

The horse bones from the site make up 8% of the total identified elements. The majority of fragments come from phase 2 and other mid to late Iron Age features. The bones were well distributed across the site with only a few features with high concentrations of bone. The more concentrated deposits tended to include skulls, partially articulated vertebrae and feet bones. The main elements retrieved were fragments of skull and loose teeth, which may indicate some ritual significance (see Table 27). Fig. 29 gives the percentage survival figures of the most common elements.

A combination of Silver's⁷⁸ and Levine's⁷⁹ eruption-wear sequences was used in order to estimate the ages of the horses from the site, shown in Table 28. Both information from the maxillae and mandible was used. Care was taken not to duplicate the information from related maxillae and mandibles. The majority of elements from horses were found in phase 2 of the enclosure ditch, hence the lack of data from the other phases.

It can be seen from the eruption-wear sequences that the majority of horses appear to have been over 5 years of age. The data from the epiphyseal fusion of the bone (Table 29) are less clear, and suggest that at least two individuals were less than 3 to 3.5 years old. However, this information is less reliable than that of the eruption-wear sequences, especially since the sample size was small.

Of the seven mandible and maxilla fragments that could be sexed, all were male. This preference for male horses brought on to the site may have cultural or ritual significance. Male horses may have been valued slightly less than female horses. From the results at Danebury, Grant proposes that horses may not have been bred on many Iron Age sites,⁸⁰ but rather taken from feral herds and trained. If this is the case here, then it may be that a greater number of male horses were taken so as not to disturb the breeding potential of the herds too greatly.

Very few of the long bone fragments retrieved from site were in good enough condition to be measured. Table 30 shows the results from the three that were measured, compared with data retrieved from Danebury⁸¹ and the Upper Thames Valley⁸² and the Ashville Trading Estate.⁸³ It can be seen that the Bicester horses appear to have been of similar size to those found at the other Iron Age sites.

None of the identified horse bones had any clear signs of butchery damage. However, since the majority of long bone and skull fragments were found separately it is not unreasonable to assume that at least some of the horses killed were later eaten. A worked horse metatarsal was found on the site, and may have been used as a gouge (see Worked bone and antler objects report, above).

⁷⁶ Ibid.

⁷⁷ C.G.M. Lauwerier, 'Pigs, Piglets and Determining the Season of Slaughtering', *Jnl. of Archaeol. Science*, x (1983), 483-8.

⁷⁸ Silver, op. cit. note 62.

⁷⁹ Levine, op. cit. note 68.

⁸⁰ Grant, op. cit. note 71.

⁸¹ Grant, op. cit. note 70.

⁸² Wilson, op. cit. note 73.

⁸³ B. Wilson et al., 'The Animal bones' in Parrington, op. cit. note 15, pp. 110-39.

TABLE 27. HORSE ELEMENT BY PHASE

	Phase 1		Phase 2		Other		Undated	
	No	%	No	%	No	%	No	%
Upper orbit	—	—	3	75	1	50	—	—
Lower orbit	—	—	3	75	1	50	—	—
Occipital cond.	—	—	2	50	1	50	—	—
Maxilla	—	—	3	75	1	50	—	—
Mandible	1	100	4	100	—	—	—	—
Scapula D	—	—	—	—	—	—	—	—
Humerus P	—	—	—	—	—	—	—	—
Humerus D	—	—	1	25	—	—	—	—
Radius P	—	—	—	—	—	—	—	—
Radius D	—	—	—	—	—	—	—	—
Ulna P	—	—	—	—	—	—	—	—
Metacarpal P	—	—	2	50	1	50	—	—
Metacarpal D	—	—	1	25	1	50	—	—
1st Phalange	—	—	—	—	2	100	—	—
2nd Phalange	—	—	—	—	—	—	—	—
3rd Phalange	—	—	—	—	—	—	—	—
Pelvis	—	—	1	25	—	—	—	—
Femur P	—	—	2	50	—	—	—	—
Femur D	—	—	1	25	—	—	—	—
Tibia P	—	—	—	—	1	50	—	—
Tibia D	—	—	1	25	1	50	1	100
Calcaneum	—	—	—	—	1	50	—	—
Astragalus	—	—	—	—	1	50	—	—
Metatarsal P	—	—	2	50	1	50	—	—
Metatarsal D	—	—	1	25	2	100	—	—
Metapodial P	—	—	—	—	2	100	—	—
Metapodial D	—	—	—	—	—	—	—	—
Atlas	—	—	—	—	—	—	—	—
Axis	—	—	—	—	1	50	—	—

TABLE 28. ESTIMATED AGE FROM ERUPTION WEAR SEQUENCES FROM HORSE MAXILLAE AND MANDIBLES

Estimated Age	Phase 2 enclosure
2 – 4yr. 6mo.	1
5 – 11yr.	4
5 – 20yr.	2
9 – 20yr.	1
15 – 25yr.	1

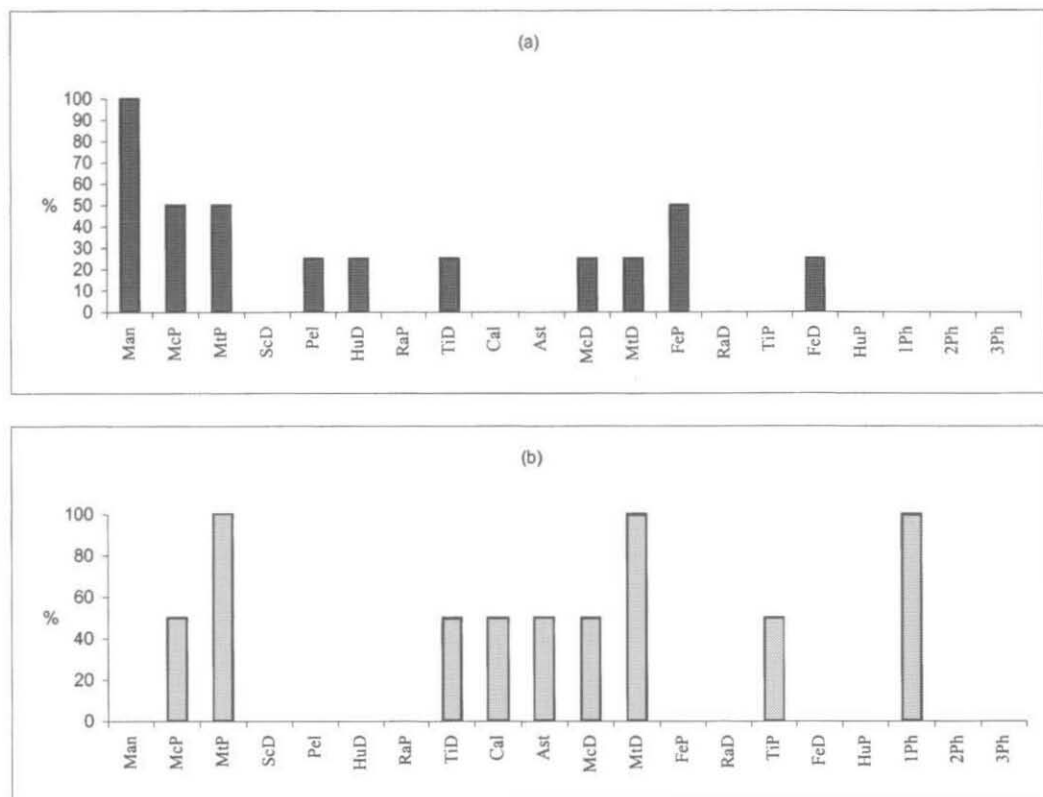


Fig. 29. Horse: skeletal percentages (a) phase 2 enclosure; (b) other M-LIA features. (See Fig. 26 for key.)

TABLE 29. EPIPHYSEAL FUSION IN HORSE BONES FOLLOWING SILVER (OP. CIT. NOTE 62)

Age	Element	Phase 2		Other M-LIA	
		F	UF	F	UF
15 – 18 mo.	Humerus D	1	–	–	–
	Radius P	–	–	–	–
	Metacarpal D	1	–	1	–
	Metatarsal D	1	–	2	–
18 – 24 mo.	Scapula D	–	–	–	–
	Tibia D	1	–	1	–
3 – 3.5 yr.	Humerus P	–	–	–	–
	Radius D	–	–	–	–
	Femur P	–	1	–	1
	Femur D	1	–	–	–
	Tibia P	–	–	1	–

TABLE 30. HORSE BONE MEASUREMENTS

	Element	Measurements	Range (mm.)	Mean (mm.)	Number
Phase 2	Metatarsal	GL	226	226	1
		Bp	38	38	1
		Bd	39	39	1
Other L – MIA features	Metatarsal	GL	234	234	1
		Bp	–	–	–
		Bd	37.5	37.5	1
	Tibia	GL	300	300	1
		Bd	57	57	1
Danebury	Metatarsal	GL	227 – 253	240.6	14
		Bp	40.8 – 47.7	44.9	8
		Bd	40.8 – 47.7	44.1	14
	Tibia	GL	229 – 343	321	3
		Bd	57.9 – 71.5	63.3	16
Upper Thames Valley	Metatarsal	Bd	–	62.6	–
Ashville Trading Estate	Tibia	GL	–	247.3	–

Dogs

Very few fragments of dog were found in the assemblage. Most were from phase 2 and other mid to late Iron Age features. All but one mandible fragment from pit 5149 were from ditch features. It is assumed that dogs were responsible for the majority of chewing damage observed, since there is no evidence of other carnivorous animals from the site. The destructive effect that dogs can have on bones is highlighted by Payne and Munson.⁸⁴ Many of the smaller species and smaller elements may have been totally destroyed by these animals.

The effects of dog activity need to be taken into consideration in any assessment of the spatial distribution and destruction of bones, and Kent has illustrated the influence dogs can have.⁸⁵ Even without competition it has been proven that dogs tend to remove bones from depositional sites to other areas. The severity of chew marks on the bones depends on the dog's hunger and the frequency with which it is given bones to chew. Sometimes the dog will chew a bone completely until fragmented, or eat a small bone whole, the bone being broken down again as it goes through the animal's digestive system.

Only one of the dog mandibles was complete enough for some measurements to be recorded. The results are shown in Table 31. However, the femur fragment from phase 2 and both mandible fragments from the other mid to late Iron Age features suggest that the dogs were of medium size. The dogs' function at the settlement is not clear: perhaps they were used as herding animals, or for hunting and guarding the site. They may also have been kept as pets.

TABLE 31. DOG MANDIBLE MEASUREMENTS (VON DEN DRIESCH, OP CIT. NOTE 69)

	7	8	9	10	11	12	13	14	19	20
(mm.)	82	75	67	34	40	33	21	20	23	18

⁸⁴ S. Payne and P.J. Munson, 'Ruby and How Many Squirrels? The Destruction of Bones by Dogs: Palaeobiological Investigators', in Fieller et al. (eds.), *Research Design, Methods and Data Analysis* (BAR Internat. Ser. cclxvi, 1985).

⁸⁵ S. Kent, 'The Dog: An Archaeologist's Best Friend or Worst Enemy – The spatial distribution of faunal remains', *Jnl. of Field Archaeol.* viii (1981), 367-72.

Wild Animals

Very few remains from wild animals were found in the assemblage. Those present were red deer, roe deer, field vole, wood mouse, frog and toad. The small species were collected from the sieved material. No bird or fish remains were found. This may be due to preservation factors, especially in the case of the fish bones.

Red deer was the most frequently represented wild species from the mammalian remains. The majority of the fragments were refuse from worked antlers and loose teeth. One metatarsal was found in context 601 with butchery marks. Roe deer is also present, but only a few tooth fragments were retrieved. It is possible that long bones and other elements may not have survived as well as those of the larger ungulates. Deer does not appear to have been a typical part of the diet of the site, probably because most meat was obtained from the domestic animals. Deer are capable of causing damage to crops and may have been killed to keep them away from arable farmland. However, hunting was probably practised more as a sport than as an essential part of acquiring food. From the remains of the horses and the few dogs on site it is clear that the people of this site would have had access to fast transport and tracking animals for hunting as well as other purposes.

Only a few fragments of field vole and wood mouse were found and indicate their presence around the site. Thirty-three fragments of frog and toad bone were recovered from posthole fill 5153. It is possible that the feature was left open and that the frogs may have used it for refuge. If foliage had grown around the base, offering more cover, the animals may have crawled in to hibernate and been killed by severe frost.⁸⁶

Spatial Distribution

In order to gain a better understanding of the manner in which fragments from the animal carcasses were being deposited over the site, an attempt was made to look at the spatial distribution of the bones. The method used was based on that used by Wilson at Mingies Ditch.⁸⁷ A central area was chosen from within the roundhouse inside the rectangular enclosure and a 'mandala' template⁸⁸ was placed over the top, centred on the roundhouse and aligned to the grid points. The aim was to look at the distribution of the bone at a radial distance from the central area within this frame.

Data from phase 1, phase 2 and other mid to late Iron Age features have been included in Table 32 since it is difficult to separate the features into the debris deposited during or after the building of the phase 2 house and enclosure.

TABLE 32. PERCENTAGE OF 4 MAIN DOMESTIC SPECIES AT RADIAL DISTANCE FROM CENTRE OF SITE

Distance from centre of site (m.)	Fragment number	Sheep %	Pig %	Cattle %	Horse %
10 - 18	9	60	—	30	—
18 - 26	13	23	8	54	15
26 - 34	—	—	—	—	—
34 - 42	13	38	8	31	23
42 - 50	25	24	8	68	—
50 - 58	262	26	6	63	5
58 - 66	139	15	4	75	6
66 - 74	81	28	4	52	16
74 - 82	53	22	2	70	6
82 - 90	82	34	7	54	5
90 - 98	39	23	3	69	5
98 - 106	59	25	3	41	31
106 - 114	24	50	—	46	4
114 - 122	—	—	—	—	—
122 +	8	13	13	74	—

⁸⁶ T. O'Connor, pers. comm.

⁸⁷ Wilson, op. cit. note 73.

⁸⁸ Ibid.

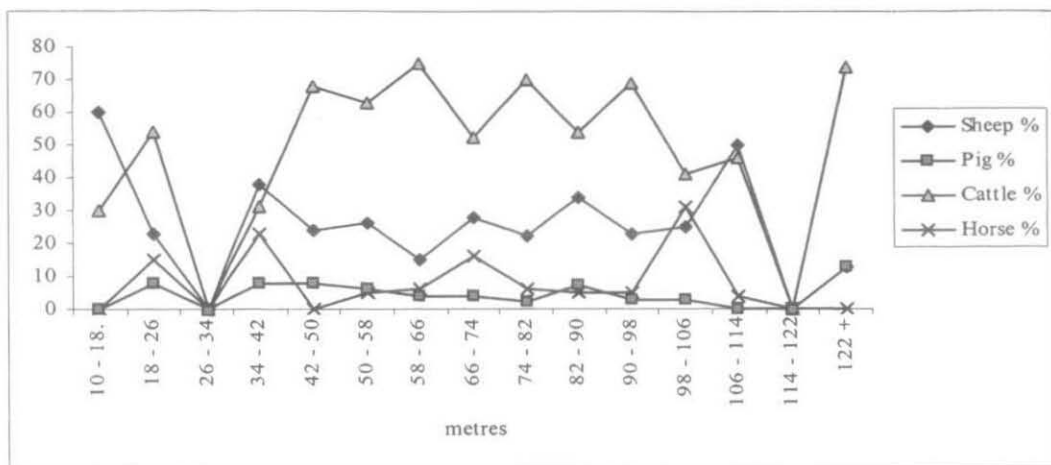


Fig. 30. Percentage of main domestic species outward from centre of site.

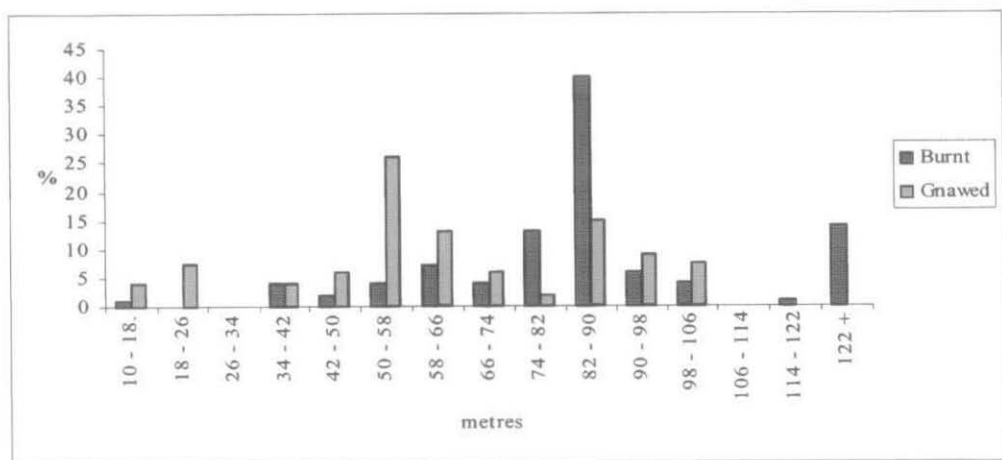


Fig. 31. Percentage of burnt and chewed bone outwards from centre of the site.

It can be seen that in the more central areas very few fragments were found. Many elements were probably removed from the centre of the site, and those that remained may have been subject to trampling. Fragments from the sheep bones appear to be more prevalent in this area and mainly consisted of loose teeth and small fragments of long bones. Fig. 30 shows that cattle fragments are the most frequently found elements in all but the most central areas. There are no fragments of bone found at a radial distance of 26-34 m. and 114-122 m. from the central point within the roundhouse, but this probably reflects a lack of features, rather than any significant trend in butchery practice. Fig. 31 shows the total percentage of burnt and gnawed bone outward from the centre of the site. It is interesting to note that the occurrence of gnawed bone gradually increases with distance from the centre of the site, with a striking absence of gnawed bone at a distance of 106 m. Only a small amount of burnt bone was found in the most central area, the majority coming from over 70 m. from the centre of the site.

Butchery

The majority of butchery marks were found on the cattle elements. The proximal half of a red deer metatarsal had signs of knife marks at the mid section, and a few of the radii and metatarsals from the sheep had knife marks just under the proximal epiphysis. It is not possible to gain a better understanding of the butchery techniques used on the sheep and pigs since so few elements from the main body and limbs were recovered.

None of the partly complete horse and cattle skulls had signs of butchery such as poleaxing or medial cleaving. However, one single fragment from the frontal section of a cattle skull from phase 2 has a few knife marks just below the horn. Chop marks were also found on the distal section of a horn still attached to a segment of the skull. Ventral and dorsal chopping of the atlas and axis of cattle were found. The most numerous butchery marks found on the cattle elements were from elbow joint cuts. Many of the cattle humeri had knife cut and chop marks just above the epiphysis of the distal humerus. This is probably over-represented since the distal humeri were one of the most frequently recovered elements. The proximal areas of some radii also had signs of knife and chop marks.

Very clear signs of knife marks were found on the anterior sections of the astragalus bones from the hock joint. The pelvic joint was another area for which there is clear evidence of butchery. Knife marks were found on separate elements of the pubis, ishium and ilium.

Pathology

Very few fragments of bone displayed evidence of pathological changes. It is possible, as mentioned earlier, that the attritional damage on many of the bones may have destroyed some of the evidence. The few bones with degenerative changes all came from phase 2. Cattle maxillae and mandible fragments from context 510 had signs of periodontal disease and the same problem was found on two of the horse skulls from context 308 and 5364. All were from fully mature animals. One sheep's tooth from context 5318 had possible signs of minor tooth decay. In addition to the dental pathology, one cattle astragalus from context 510 clearly displayed signs of eburnation on the distal articulation. All changes observed are those expected from older animals.

Discussion

The Bicester Fields Farm assemblage differs from many of the other Iron Age sites in the region in having a lower proportion of sheep remains. However, it does have similarities with sites such as Ashville⁸⁹ and the Iron Age site at Farmoor.⁹⁰ The Farmoor site had roughly equal numbers of cattle and sheep, as at Bicester Fields Farm. The slightly higher number of cattle bones in the assemblage may be a result of slight retrieval bias since the sieved material and the data from MNI produced a more balanced number.

The cattle would have flourished in the wetter lowland sites since it is important that they are kept with access to a large amount of water. It has been shown that they can consume as much as 16 gallons of water a day.⁹¹ The lush lands around this area, and access to the river, would have been ideal for a herd of cattle. In addition to this, the good pasture would have been ideal for haymaking, and areas would almost certainly have been managed for these purposes.

The cattle appeared to be bigger than those found on other Iron Age sites, which may have been due to better conditions and management. The age data indicates that the animals were killed off at a slightly slower rate than the sheep, possibly because they were more valued. It is possible that the cattle were used for ploughing although there is little evidence of pathological changes on the bones to support this.

Although there are quite a few sheep from the site, the area would not have been ideal for them since dampness makes sheep more prone to developing foot rot and liver fluke. This could suggest that the site was seasonal, since bringing the animals down during the drier months of the year would not have posed such a risk. It is probable that the sheep were generally kept on the higher pastures around the site in an effort to reduce damage to the flock from wet conditions. The slightly lower proportion of sheep in the assemblage may indicate that it was more viable to have a balanced farming structure, since the conditions were better for the cattle. The numbers of sheep may have been limited due to availability of pastureland, or because arable farming in the area required more cattle.

⁸⁹ Wilson, *op. cit.* note 83.

⁹⁰ B. Wilson, 'The Vertebrates', in Lambrick and Robinson, *op. cit.* note 16, pp. 128-33.

⁹¹ P.J. Reynolds, *Ancient Farming* (Shire Archaeology 1, 1987).

It is probable that there was interaction with other settlements, since there may have been a need for arable foods. If the site was seasonal, it could explain why so few immature animals were found (although the effect of preservation bias must also be borne in mind, as outlined above). Nevertheless, if the animals on this site were being taken off during the winter months, then it is possible that younger animals may have been killed off site at a different location.

The fact that there are many horse skulls buried on the site may have some sacrificial or ritual significance. Grant has argued that because the economic contribution that horses make to sites is relatively small, and they are expensive to feed, they may have been more likely to be chosen as the preferred sacrificial gift.⁹² Their loss would not have affected the economy of the site as much as the loss of the cattle or sheep. The majority of the horses appear to have been mature or elderly animals. The horses would have been prized and are an indicator of higher status, since it was expensive to keep animals that did not have the exploitation potential of the cattle and sheep. It is probable that the horses were valued mainly for their speed, and it is in fact thought unlikely that they were used for ploughing much before the late medieval or early post-medieval period.

Overall, fewer fragments were found in the deposits from the earlier phase of the enclosure, with no evidence of pig remains. However, there are no significant changes in the occurrence of the two most dominant species, and one left horse mandible was also present. It is probable that the status of the site increased during the later stages with an increase in pig husbandry and a larger number of domestic species on the site. The large number of horse elements also indicates that the economy of the site allowed the upkeep of animals that contributed very little to its productive potential.

THE CHARRED PLANT REMAINS by RUTH PELLING

During excavation of the mid-late Iron Age enclosed settlement at Bicester Fields Farm a series of samples were taken for the analysis of charred plant remains. Samples were taken from the enclosure ditch, gullies, pits and postholes. A total of 77 samples were processed by bulk water flotation. The volume of soil processed from each sample ranged from 10 to 120 litres, but was mostly 40 litres. The resultant flots were collected on to a 500µm mesh and allowed to air-dry before being submitted for assessment.

Assessment Methods

Each sample was first put through a stack of sieves to break them into manageable fractions. Each fraction was scanned under a microscope at x10 magnification. Any charred seeds and chaff noted were provisionally identified and an approximation of abundance was made. While this method may result in smaller items being missed it does provide a useful method of characterising the samples. Charcoal fragments were provisionally identified by examination in transverse section. With the exception of oak (*Quercus* sp.) the charcoal identifications must be taken as tentative.

Results

The flots were mostly poor, containing large quantities of modern rootlets. Small numbers of charred seeds or chaff were noted in 30 samples, generally in densities of less than 0.25 items per litre. These remains consisted mostly of occasional charred cereal grains, usually up to 5 per sample. One sample contained approximately 20 weed seeds, including Polygonaceae, *Fallopia convolvulus* and Chenopodiaceae, all arable or ruderal weeds, and *Valerianella dentata* (narrow-fruited cornsalad), a common cornfield weed. The occasional cereal grain included *Hordeum vulgare* (barley), hulled *Triticum spelta/dicoccum* (spelt/emmer wheat) and occasional short grained *Triticum* sp. The short grained *Triticum* was poorly preserved but does appear to be of a free-threshing variety, although a short grained spelt cannot be discounted. A glume base of a hulled *Triticum* was also noted in context 5124, but could not be identified to species. Short grained, possible free-threshing wheat was present in 8 samples, from 7 contexts (5060, 5119, 5512, 5368, 5407, 5437, 5492). Hulled wheat was present in 5 samples (contexts 5124, 5499, 5246, 5249, 5446).

Small quantities of charcoal fragments were present in most samples. *Quercus* sp. (oak) and cf. Pomoideae (hawthorn, apple, pear etc.) were most commonly recognised. Occasional samples contained larger quantities of charcoal, notably samples 68, 94 and 143 (ctxs 5247, 5393, 5595). Again the charcoal included *Quercus* sp., Pomoideae and *Corylus/Alnus* sp. (hazel/alder).

⁹² Grant, op. cit. note 73, pp. 221-8.

Discussion

The results generally conform with the crop pattern for this period in southern Britain. Hulled barley and hulled wheats, principally spelt wheat, are the major cereals recovered from Iron Age settlement sites in southern Britain. Free-threshing wheat is less commonly found but is present on sites in low densities from the Neolithic onwards.

RADIOCARBON DETERMINATIONS by ALISTAIR BARCLAY, ANNE MARIE CROMARTY and NANCY BEAVAN

Bone samples from two burial deposits recorded as discrete features were submitted for AMS dating to the Rafter Radiocarbon Laboratory, Gracefield Research Centre, New Zealand. The research objective was to try to demonstrate that both deposits were broadly contemporary with the M-LIA enclosure. The results are summarised in Table 33. The calibration programme used was developed at the Rafter Laboratory using the Intcal 98 calibration curves.⁹³

TABLE 33. SUMMARY OF RADIOCARBON RESULTS

Sample	Context	Sample ID	Collagen yield (%)	Carbon nitrogen ratio	Radiocarbon result uncal bp	68%	95%	Comment
NZA-9634	5291 – cattle burial	Animal bone	2	2.9	2079 ± 58	171BC to 2BC	334BC to 326BC and 200BC to 66AD	The result suggests that the cattle burial could be contemporary with the M-LIA enclosure
	5405 – inhumation	Human bone	Insufficient for dating					Sample dissolved completely during initial demineralisation

The single radiocarbon determination NZA-9634 obtained on bone from the cattle burial supports the suggestion that this burial is M-LIA in date and that the animal was buried at some time during the development of the enclosure. Bone from the human burial was found to contain insufficient collagen and could not be dated.

⁹³ *Radiocarbon*, xl:iii (1998).

DISCUSSION AND CONCLUSIONS by ANNE MARIE CROMARTY and PAUL BOOTH

Earlier prehistoric

The flintwork scattered across the site is a clear indication of use during the earlier prehistoric period. The majority of this material derived from a single feature (pit 5642) and dates to the Mesolithic. Although there is some uncertainty in the interpretation of this feature, it is possible to compare it to the shallow features found to contain worked flint of Mesolithic date in Area E at Slade Farm,⁹⁴ and at both sites the flintwork appeared to be intrusive in natural features. Taken together, the evidence from these two sites suggests that both the alluvial area of the floodplain and the edge of the limestone uplands were in use at this time. The larger flint assemblage recovered at Slade Farm may in part be due to the fact that a larger area was investigated, but may also indicate that the drier limestone area was more favoured than the floodplain. It is likely, however, that both zones formed essential parts of a single extensive system of landuse at this time.

The remainder of the flint assemblage from Bicester Fields Farm, dating from the Neolithic-early Bronze Age period, suggests limited, and probably only sporadic, use of the floodplain at this time. The clay soils would have been difficult to work with early agricultural implements and it is likely that other drier areas with lighter soils, like Slade Farm, would have been used in preference.

Late Iron Age settlement

The main occupation of the site occurred in the late Iron Age. The settlement, which was enclosed with a substantial ditch, showed many of the characteristics commonly found in settlements of this date. In other respects, however, it displayed some atypical attributes and was unlike other settlements known in the immediate vicinity.

Analysis of the pottery assemblage from this site has enabled the date and duration of the settlement to be determined fairly accurately. The close agreement of the single radiocarbon determination and the date of the pottery helps to confirm this dating. A certain amount of MIA pottery was recovered from the site, but the majority of this material was found in contexts also containing later pottery, suggesting that the early pottery was conserved and used beside later wares. The earliest fills of the phase 1 enclosure contained a single sherd of LIA pottery as well as M-LIA material. This may suggest that the settlement of the site began in the late Iron Age, but it is perhaps more likely that this sherd was intrusive and that the earliest major phase of activity on the site should be assigned to the later part of the middle Iron Age. If the entire site sequence is assigned to the late Iron Age it may have spanned a period of one or at most two generations, on the current understanding of the chronology of the late Iron Age pottery of the region. This is perhaps unlikely. Even so, if the commencement date of occupation is assigned to the later part of the middle Iron Age the total length of occupation on ceramic grounds could have been as little as 100 years and perhaps even less.

The end date of the occupation can perhaps be fixed more closely. The fact that the pottery assemblage is dominated by 'Belgic type' material suggests that activity extended well into the 1st century AD, particularly if a relatively late date (i.e. in the early part of that century) for the introduction of these wares is accepted. No Roman or Romanised wares were recovered from the settlement. While the date range of the E wares, the majority component of the pottery assemblage, extends both sides of the Roman conquest, it is unlikely that the terminal date was significantly after AD 43, or some Romanised wares might have been expected. The total absence of these wares might indicate pre-conquest abandonment of the site, but does not prove it. The Roman conquest of the region did not cause an immediate change in pottery types, and the present assemblage would be perfectly consistent with occupation up to AD 50, for example, though probably not after that date.

It is therefore impossible to determine if there was a causal connection between the abandonment of the site and the Roman conquest of the region. This is possible, though there is no evidence to indicate that the site came to a violent end. It is perhaps more likely that occupation ended shortly before the conquest. No simple cause can be identified, but possible environmental explanations are discussed below. A relatively short time span for the occupation is consistent with the structural evidence from the site. The single roundhouse within the main part of the phase 2 enclosure appeared to have been rebuilt on the same site perhaps twice during its life. This need not have spanned more than a century, on the basis that turf or timber houses, as this may have been, need to be renewed fairly frequently to keep them habitable.

Such a short-lived settlement is unusual for this period and area, and unlike most of the other LIA sites that have come to light in recent years in the vicinity. The excavations on the route of the A421,⁹⁵ a little over 2 km. to the south-west of Bicester Fields Farm, revealed in Sites B and C evidence for fairly intensive settlement that began in the middle Iron Age and was abandoned by the later Iron Age. This may have been before settlement began at Bicester Fields Farm, though there are parallels between the ceramic assemblage from the A421 and the earlier pottery at Bicester Fields Farm. At A421 Site D, however, a very small pottery assemblage, associated with a settlement of uncertain character, consisted entirely of late Iron Age (E ware) material and thus appears quite similar to the assemblage from Bicester Fields Farm. A domestic settlement of LIA date, found on the route of the Finmere B4031 Diversion 11 km. to the north,⁹⁶ also seems to have had the same restricted and rather unusual date-range. The date-range given by the later pottery at Slade Farm, 2 km. to the north-west, is likewise closely comparable to Bicester Fields Farm, but the settlement is of a different character.⁹⁷ In contrast the date-range of the nearby Oxford Road settlement, 1 km. west of Bicester Fields Farm, was different again.⁹⁸ Here an unenclosed, apparently low-status settlement appeared to have been established in the late Iron Age, but continued into the early 2nd century AD, a pattern of development that is much more common across the region, particularly, but not exclusively, in the Upper Thames Valley.

The character of the site

The Slade Farm site appears to have been an open settlement site of fairly low status, typical of those known from this period in other areas of the Upper Thames Valley. By contrast, there are some indications that the Bicester Fields Farm site was of a higher status.

The settlement enclosure. The most striking distinction can be seen in the enclosed form of the settlement. No other enclosed settlements of this date are known from the vicinity, and parallels have therefore been sought from a wider area including the floodplain and gravel terrace in the Upper Thames Valley in general, from Northamptonshire, and from the Cotswolds. The locations of these sites are shown in Fig. 1. Many settlement enclosures of MIA-LIR date are known from these areas,⁹⁹ and many have comparable pottery assemblages. The value of looking further afield for analogous settlements is also reinforced by the fact that other finds at Bicester Fields Farm confirm the existence of trading contacts beyond the immediate area.

⁹⁴ Op. cit. note 2.

⁹⁵ Booth, Evans and Hillier, op. cit. note 17.

⁹⁶ AOC Archaeology, 1998, 'An archaeological excavation and watching brief on the line of the Finmere B4031 Diversion, Oxfordshire (FDIV 97)' (unpubl. client report held at Oxon SMR).

⁹⁷ Op. cit. note 2.

⁹⁸ Mould, op. cit. note 3.

⁹⁹ B. Cunliffe, *Iron Age Communities in Britain* (3rd edn. 1991), 234-40.

The settlement enclosures were generally formed by substantial ditches similar to that at Bicester Fields Farm, though at some sites there is also evidence of accompanying banks. No evidence for a bank was recorded at Bicester Fields Farm. Any bank that may have existed could have been destroyed by the later ploughing, but no zone clear of cut features, as might have been expected beneath a bank on such a short-lived site, was evident on either side of the enclosure ditches. The ditch alone formed the enclosures. This could not have been defensive, but could have functioned to control the movement of livestock. The ditches could also have been dug to define the extent of the main settlement area, setting it apart from its surroundings. This distinction could have been symbolic, functional or both. The ditches were sufficiently large to deter cattle or other large animals from straying into the enclosure where they could damage structures and winter fodder stores.

Settlement enclosures vary in size, ranging from small sites containing only one house and a limited working area, to large enclosures with several houses, other structures, pit groups and apparently blank areas possibly used for corralling cattle. There is also considerable variety in form and setting. Small isolated enclosures such as at Bicester Fields Farm are known, though groupings of settlement enclosures, possibly villages, also exist, for example at Gravelly Guy in the Upper Thames Valley,¹⁰⁰ or Weekley in Northamptonshire.¹⁰¹ Curvilinear enclosures are more usually characteristic of the prehistoric period, but rectilinear enclosures like the Bicester Fields Farm example, that predate the Roman period, are known from various sites. Examples of such enclosures occur in Northamptonshire and the Thames Valley. One such is the earliest enclosure (Enclosure E) at Aldwinckle in Northamptonshire.¹⁰² Here a rectangular area approximately 72 m. x 48 m. with a single house structure in the centre was enclosed by a large ditch. During a second phase of occupation this ditch was enlarged on the same alignment, and the first phase house went out of use and was replaced by one or two others.

At Aldwinckle there is some indication that different parts of the enclosure were reserved for different uses. The main group of pits was located at the opposite end of the enclosure from the houses in both phases. This is a common feature of Iron Age enclosures and can be observed at Bicester Fields Farm, and elsewhere to a greater or lesser extent. Often, the areas within an enclosure are found to have no or very few cut features, in contrast to adjacent areas with numerous pits, gullies or other features surviving. The apparently featureless areas may, therefore, have been used in a different way that did not involve cutting the ground, so no traces of these activities remain in the archaeological record. This may be true of parts of the main enclosure at Bicester Fields Farm.

Sometimes internal divisions exist within the enclosures to demarcate these different areas, as at Twywell, also in Northamptonshire.¹⁰³ At Bicester Fields Farm the division seems to have been more formally marked with a separate ditched enclosure annexed to the main settlement enclosure. Parallels for this aspect of the site can also be found in Northamptonshire, at Wakerley.¹⁰⁴ This last example encloses a much larger area than that at Bicester Fields Farm, and probably contained more households, but it is likely that the motivation for the construction of the annexe was the same in both cases.

¹⁰⁰ G.Lambrick et al., op. cit. note 22.

¹⁰¹ D. Jackson and B. Dix, 'Late Iron Age and Roman Settlement at Weekley, Northants', *Northants. Arch.* xxi (1986-7), 41-58.

¹⁰² D.A. Jackson, 'Further Excavations at Aldwinckle, Northamptonshire, 1969-71', *Northants. Arch.* xii (1977), 9-54.

¹⁰³ D.A. Jackson, 'An Iron Age Site at Twywell, Northamptonshire', *Northants. Arch.* x (1975), 31-93.

¹⁰⁴ D.A. Jackson, 'Excavation at Wakerley, Northants, 1972-5', *Britannia*, ix (1978), 115-242.

The roundhouse. It was not unusual for an enclosure to contain only a single house, which could have accommodated only one extended family unit at most. The form of the house at Bicester Fields Farm, with a circular drainage gully, is a type of Iron Age house also identified at other sites within the Upper Thames Valley region.¹⁰⁵ Though these gullies have sometimes been interpreted as wall-trenches, there is no evidence that foundations have ever been set within them. They are more likely to have been cut to drain water dripping from the roof of a circular structure set within the circuit of the gully. In many cases, as at Bicester Fields Farm, the walls would have been set back slightly from the gully with an overhanging roof. Apart from the gully, the only other structural remains of the Bicester Fields Farm roundhouse were the four stone-packed postholes, which are thought to have formed a porch. In the absence of any convincing postholes or slots for walls of timber construction it is likely that the walls were of mass construction of turf or cob. Though the site had clearly been truncated by later ploughing, the survival of at least some of the occupation layer within the house shows that this part of the site was not so severely affected that structural postholes would have been lost. The size of the house is within the range, 12-14 m. in diameter, observed elsewhere at sites such as Ashville, Abingdon.¹⁰⁶

Contemporary ditches and droveway. Though only a limited area was excavated beyond the confines of the settlement enclosure at Bicester Fields Farm, enough evidence was recovered to suggest a system of contemporary lesser land boundaries surrounding the enclosure. These boundaries included a narrow linear space running along the western side of the enclosure bounded by fairly deep narrow ditches at its southern end. This could have represented a droveway, which could easily have been blocked off completely when necessary, to control the access of livestock to the area to the south-east of the enclosure. These features were not revealed during the earlier stages of the investigation of the site, so it is unclear how extensive this field-system was.

At a few sites on the gravel terraces of the Upper Thames Valley extensive systems of enclosures of late Iron Age date have been identified where large areas have been stripped prior to gravel extraction, for example at Thornhill Farm, Fairford¹⁰⁷ and the nearby site of Claydon Pike.¹⁰⁸ Unfortunately, these sites and others like them have not yet been fully published. As a result it remains unclear how typical the field systems suggested by the Bicester Fields Farm excavation are, either for the valley bottoms or for the upland areas in this period.

One smaller site within the Upper Thames Valley that has been published is Old Shifford Farm, Standlake.¹⁰⁹ At this site a number of adjoining rectilinear enclosures were occupied over a period of around one hundred years, running well into the early Roman period. Though the site underwent several modifications during this period, and not all the enclosures were exactly contemporary, it is likely that the enclosure system at Bicester Fields Farm was of a similar character. Rather than forming an extensive system of fields as in the case of many of the upland 'Celtic' field systems, the enclosures formed a fairly coherent small group, probably all farmed as a single agricultural unit. Such a unit may also have included further open areas surrounding the group of enclosures, used for activity that has left little archaeological trace. The enclosures may have had particular functions, possibly seasonal in nature.

¹⁰⁵ T. Allen, D. Miles and S. Palmer, 'Iron Age Buildings in the Upper Thames Region', in Cunliffe and Miles, *op. cit.* note 13, pp. 89-101.

¹⁰⁶ Parrington, *op. cit.* note 15.

¹⁰⁷ OAU, Thornhill Farm (in preparation).

¹⁰⁸ OAU, Claydon Pike (in preparation).

¹⁰⁹ G. Hey, 'Iron Age and Roman Settlement at Old Shifford Farm, Standlake', *Oxoniensia*, lx (1995), 93-176.

The system of 'inbye' and 'outbye' land known from many areas in later periods and still in use in the hill areas today is an example of such a system. In this system the inbye land close to the centre of habitation was used for birthing, cultivation and winter fodder production in the spring and summer, and for winter grazing, while the outbye land was used for summer grazing. Bicester Fields Farm may have had a similar but rather more specialised regime, probably restricted to the valley floor.

The status of the site. Enclosure of a site has often been taken as an indication of different status, and the artefact assemblage at Bicester Fields Farm contains some further evidence that the site may have been of higher status than other settlements in the region. Nevertheless, the evidence is not entirely consistent.

The evidence for ironworking on the site sets it a little apart from the other LIA sites in the vicinity of Bicester. This activity may have been very limited. The quantities of waste recovered are small and indicate only secondary iron smithing with any certainty. Since no roofed structures that could have been used for smithing, other than the roundhouse itself, could be identified on the site it is likely that this activity took place within the house. This could indicate that ironworking was not a fulltime occupation here, but rather something undertaken only when the need arose. No ironwork was recovered from contemporary or later contexts to indicate what was being produced on the site. The few pieces of ironwork recovered from the site were generally undiagnostic or commonplace, such as the thin strip from the fill (5394) of the boundary ditch 5552. Whether the ironworking was carried out by an itinerant smith or by a resident of the site is unknowable.

Ironworking was a fairly common home craft in the Iron Age generally,¹¹⁰ but no evidence of on site metalworking was recovered from the excavations of Slade Farm¹¹¹ or Oxford Road despite the extensive metalwork assemblage recovered at the latter site.¹¹² Bicester Fields Farm is thus the only site in the vicinity on which smithing is known to have been taking place at this time, and this may be indicative of a difference in status between this site and others nearby.

Other artefacts that show a distinction between this site and others in the area are the Droitwich briquetage and the quern made of May Hill sandstone from a source many kilometres away in the north of modern Gloucestershire. It is not unusual for these two artefact types to occur together on sites of this date, but Bicester Fields Farm is, to date, the furthest away from the source of the stone. These artefacts at Bicester provide evidence of contact between the site and areas well beyond the Upper Thames Valley. Neither of these two types of artefact was found at Slade Farm or Oxford Road, although the latter site is of a somewhat later date and patterns of trade may have changed. However, the fact that Oxford Road showed no sign of anything other than strictly local contacts does reinforce the argument for a difference in status.

By contrast, the pottery from Bicester Fields Farm is very similar to the assemblages both at the neighbouring sites, and at others of this date in the Upper Thames Valley as a whole. Nothing was found to suggest a settlement of higher status, and Bicester Fields Farm even lacks the fine wares and wheel-turned or wheel-finished pots sometimes seen elsewhere. However, pottery may not have carried any connotations of status at this time, and the household may have expressed its status by different means. All the pottery could have been

¹¹⁰ Cunliffe, *op. cit.* note 99, p. 453.

¹¹¹ *Op. cit.* note 2.

¹¹² Mould, *op. cit.* note 3.

locally produced. There was no evidence of domestic pottery production at Bicester Fields Farm, although results from a recent excavation at Finmere suggest that pottery was produced at domestic sites.¹¹³

The economy of the site. The environmental evidence indicates that the economy of the site may have been more unusual for the region than the structural remains alone would suggest. The range of cereals represented among the charred plant remains analysed is typical for Iron Age settlement sites in southern Britain, but the small quantities recovered make it unlikely that the cultivation of these cereals played a major part in the economy of the site.

It is likely that the agricultural regime of the site was predominantly pastoral, and based on beef production. Roughly equal proportions of cattle and sheep were represented among the animal bones, which is unusual for contemporary sites in the vicinity, where sheep tend to predominate. Conditions on the floodplain would have been more suitable for cattle than for sheep, and similar proportions of cattle to sheep have been recorded at other riverside sites in the Thames Valley, amongst them the small unenclosed Iron Age settlement at Farmoor¹¹⁴ and the more extensive Iron Age settlement at Ashville, Abingdon.¹¹⁵ The cattle at Bicester Fields Farm seem to have been larger than normal. This may be an indication that the settlement was dedicated to the production of prime cattle. That these were killed at a slower rate than the sheep suggests that they were more highly valued. The wealth and status of the site may have derived in great part from this.

Such specialisation would have necessitated, and provided a basis for, interaction with other sites. Bicester Fields Farm would have needed to obtain arable products for food and winter fodder from elsewhere, if only limited cereal cultivation was being carried out on site, and the prime cattle may have been very desirable to the inhabitants of other sites.

Although iron smithing seems to have been practised, the scale of the remains suggests that it is unlikely to have formed a major component of the site's economy.

Special Animal Deposits. All animal skulls or skull fragments recovered during the excavation of the site were found within the fills of the phase 2 enclosure ditches, with the exception of a few fragments within the rubbish dumps filling the pits cut in the area of the stack-ring outside the south-western annexe. No skull elements were found within the enclosed area, and it is notable that the skull was missing even from the cattle burial within the annexe. By contrast, other skeletal elements seem to have been disposed of both inside and outside the enclosure.

The enclosure ditch has long been recognised as a very significant element of enclosures in the late Iron Age, as it had been during earlier periods. It was a non-space between the familiar inside the enclosure and the unknown, other world outside. Boundaries were very important symbols at this time. The world was understood by partition into different areas for specific uses and groups. These boundaries were often marked and emphasised with special deposition of materials that had special significance in themselves.¹¹⁶

Many of the animal skulls were of horse, though cattle and a single example of pig were also present within the ditch fills. The total number of horse skulls deposited in the enclosure ditch appears to be disproportionate to the numbers of other horse bones present on the site, and it could be suggested that these deposits were regarded as special. A further suggestion of preferential deposition comes from the fact that the majority of other horse

¹¹³ AOC Archaeology, op. cit. note 96.

¹¹⁴ Lambrick and Robinson, op. cit. note 16.

¹¹⁵ Parrington, op. cit. note 15.

¹¹⁶ Hill, op. cit. note 9, pp. 76-83.

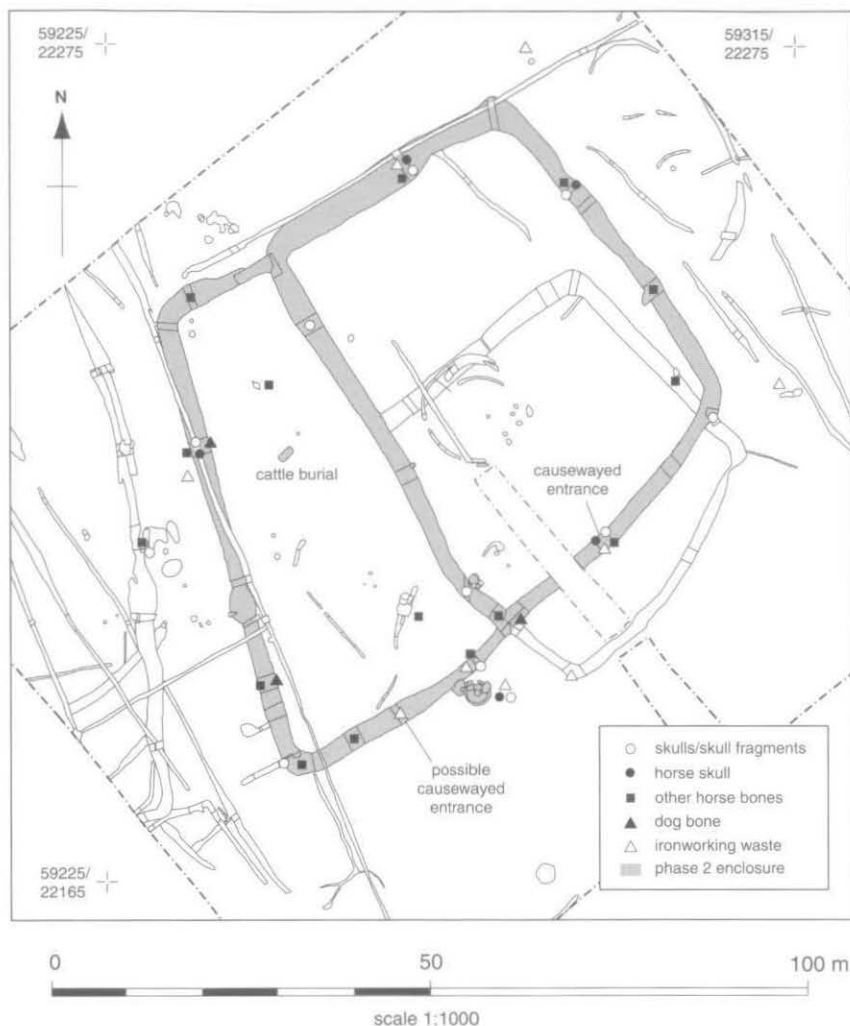


Fig. 32. Distribution of animal skulls, dog and horse bone, and ironworking waste relative to the phase 2 enclosure ditches.

bones were also found in the enclosure ditches or beyond, and the limited amount of dog bone was also restricted to contexts within the enclosure ditches. The distribution of each of these elements is shown in Fig. 32, compared with distribution of ironworking waste. All these elements seem to be preferentially deposited in or beyond the enclosure ditch, and this may not be coincidental.

From analysis of material from Iron Age sites in Wessex, Hill suggests that horse and dog were accorded special status in the way in which they were perceived and in their deposition at this time.¹¹⁷ Both of these species may have been regarded as intermediary between domesticated and wild animals and lying on the boundary between culture and nature,

¹¹⁷ Ibid. 62.

similar to humans.¹¹⁸ This conception of the horse as representing a kind of transition naturally associates them with the kind of transitional zone marked by the boundary ditches of the settlement enclosure. It may be that the ironworking waste, also found within the fills of the enclosure ditch, was also seen as transitional. The act of smithing transformed the metal, and waste products such as slag could have been seen as representative of this transition.

The distribution of these elements within the ditch is unlikely simply to reflect the disposal of unwanted parts of the carcass in the nearest convenient open ditch, as they are widely spread. Examination of the distribution of ironworking waste and horse skulls shows that a horse skull and some metalworking waste were placed in the ditch on each side of the enclosure. The points at which the skulls were deposited include the possible causeway entrance on the south-eastern side of the main enclosure. This may be related to what Hill has identified as basic principles for the structuring of Iron Age sites: cardinal points of the compass, and the location of the front and back of the enclosure.¹¹⁹ These horse skull deposits at Bicester Fields Farm do not coincide exactly with the cardinal points, but they do coincide with the front and back of the enclosure.¹²⁰

Abandonment and later activity

The dumps of material, including large quantities of artefacts, that make up the final fills of the phase 2 enclosure ditches and many of the other contemporary features, indicate that the settlement may have been deliberately abandoned, rather than slowly passing out of use. A gradual shifting of activity away from the site is more likely to have produced a slowly accumulated layer of silting in the tops of the larger features. Whether these dumps could be regarded as formal ritual deposits marking the 'death' of the settlement, or a convenient discarding of items no longer needed and a burden to transport to the new location of the main settlement, is open to question, but an intentional move away from this site by the occupants is clearly indicated.

The pottery assemblage indicates that the abandonment of the settlement probably took place about the middle of the 1st century AD. The possibility of some connection between this and the events of the Roman conquest period (or shortly before) has been mentioned above but on present evidence cannot be demonstrated either way. Alternative explanations for the abandonment of the site are also possible. Its demise preceded the abandonment of the Oxford Road site on the same floodplain by more than half a century, but may perhaps have been a response to the same mechanism. Mould¹²¹ attributes the abandonment of that site to a rise in watertable from the late 1st century BC or early 1st century AD as suggested by Lambrick.¹²² Because Bicester Fields Farm is slightly lower lying and closer to the Langford Brook than the Oxford Road site, it may have been affected by this rise first. Under such circumstances, occupation of Bicester Fields Farm could have become unsustainable, with a rise in the watertable making the site extremely wet, especially in winter, but also in other periods of high rainfall.

It appears that the site was then given over to a system of small fields. The presence of a waterhole at the corner of one of these fields strongly suggests that they were paddocks used

¹¹⁸ Ibid. 104.

¹¹⁹ Ibid. 93.

¹²⁰ Ibid. 83.

¹²¹ Mould, *op. cit.* note 3, p. 107.

¹²² G.H. Lambrick, 'The Development of Late Prehistoric and Roman Farming on the Thames Gravels', in M. Fulford and E. Nichols (eds.), *The Archaeology of the British Gravels: a Review* (Soc. of Antiq. Occ. Papers xiv, 1992), 78-105.

as pasture. The waterhole would not have functioned without a substantially higher watertable than that observed at the time of the excavations, which tends to support the argument that a substantial rise in the local watertable had taken place by the time the LIA settlement was abandoned. The period of use of these paddocks is difficult to define, but the pottery evidence and the alignment of the paddock boundary gullies on the earlier settlement enclosure suggests that their date was not significantly later than the abandonment of the settlement. The pottery may have been entirely residual however, as detailed analysis did not show any significant difference between the assemblage from these contexts and the occupation phase.

The field system may have dated to later in the 1st century AD or possibly later. Evidence from the vicinity of Alchester shows that new systems of field boundaries were put in place reflecting the alignment of the principal Roman roads. A rectilinear field system immediately south of the Roman town was set out on either side of the Alchester-Dorchester road, for which a late 1st century *terminus post quem* is likely.¹²³ North of Alchester, plot alignments laid out in relation to Akeman Street perhaps originated no earlier than the mid 2nd century and a possible component of this system was identified in A421 Site D, over 400 m. from Akeman Street.¹²⁴ Linear boundaries at Bicester Park, presumably part of a field system, were poorly dated but may have been associated with the similarly-aligned 2nd-century enclosure there.¹²⁵ This site lay on the opposite side of the Langford Brook from Bicester Fields and it may be no more than coincidence that the field systems of both sites were aligned *c.* NE.-SW. and NW.-SE. Nevertheless, the cumulative evidence suggests that there was considerable redefinition of boundaries in the 2nd century, and the Bicester Fields Farm paddocks may have originated as part of such a programme, even though they clearly respected the alignment of earlier features.

The land was probably used for pasture in the Roman period, given the high watertable at this time. Away from the centre of settlement few artefacts would have entered the archaeological record to date any features associated with this type of use. Paddocks are unlikely to have been manured with domestic waste, unlike cultivated fields.

The only evidence for later use of the site comes from the medieval plough furrows and later finds from the topsoil layer. This area was probably never again used for settlement and remained in agricultural use until the time of the excavation.

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¹²³ R.A. Chambers, 'A Roman Timber Bridge at Ivy Farm, Fencott with Murcott, Oxon.', *Oxoniansia*, li, 31-6.

¹²⁴ Booth et al., *op. cit.* note 17.

¹²⁵ *Op. cit.* note 5.

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LOCATION OF THE ARCHIVE

The archive will be deposited with the Oxfordshire Museum Service (OXCMS 1998.94). A master copy of the paper archive on microfilm will also be lodged with the National Archaeological Record, RCHME, Swindon.