

THE CAMP GROUND EXCAVATIONS

Colne Fen, Earith



Roddy Regan, Christopher Evans and Leo Webley

CAMBRIDGE ARCHAEOLOGICAL UNIT
UNIVERSITY OF CAMBRIDGE



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- COLNE FEN, EARITH -

Assessment Report

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Volume I

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INTRODUCTION

Evaluation fieldwork first took place on the site in June 1996 and instigated what has become a continuing and extensive archaeological programme within the larger quarry area. In the late summer of 2001 a nine month-long programme of excavation commenced, the work being carried out by the Cambridge Archaeological Unit (CAU) on behalf of Hanson Aggregates Ltd.

The present quarry area is located on the fen-edge, approximately 1km south-east of Somersham and 1km north-east of Colne. The area of investigation was within two fields lying east and west of the track formerly leading to Colne Fen Farm (centred TL 37757825, Fig. 1) and covered an area of 5.14 hectares. Situated on First/Second terrace gravels, the site lies at a height of 4m OD at the south-west, falling off to the north and east with the lowest lying ground at 2.6m OD (Fig. 3).

Archaeological Background

The Earith/Colne fen-edge has long been renowned for its extensive and impressive Romano-British settlement remains. A number of excavations and earthwork surveys have been carried out in the area over the past century, giving the impression of a very densely settled Romano-British landscape. The CAU's surveys and excavations over the past few years have confirmed this picture of the Roman period (Regan 2003). This work has also revealed extensive evidence of earlier settlement in the area, particularly of the later Iron Age (Knight & McFadyen 1998; Regan 1998; 1999; 2001; Regan & Evans 1997; 2000).

The broader archaeological setting of the present site has been considered in an earlier desktop study compiled by the CAU, in anticipation of this and other work, prior to the commencement of quarrying (Regan & Evans 1997). The desktop report includes full aerial photographic appraisal and plotting (Palmer in *ibid.*), and the site's layout and implications are there discussed at length. The proposed site is mentioned in the *Oxford History of Roman Britain* (Salway 1984), the report of the Royal Commission on Historical Monuments in Huntingdonshire (1926) and *The Fenland in Roman Times* (Phillips 1970). Roman artefacts have been recovered from it throughout the 20th century, including pottery and coins suggesting its 'late' attribution (3rd-4th century AD). That unusual amounts of coins have been recovered over the years is suggested by another local name for the area: 'Money Fields'. Several interpretations have been postulated as to the nature of the site; from a settlement attached to a villa complex, (a large Roman structure is known to exist to the north of the site on Turkington Hill), to docks/wharves leading to an associated canal/communication system. Much of the site remained undisturbed by ploughing until at least the 1940s with upstanding earthworks noted as late as 1926. The earthworks as recorded by C.F. Tebbutt show a series of embanked rectangular and sub-rectangular compounds, these being separated by linear depressions suggesting either ditches or sunken trackways (Fig. 2a; Tebbutt 1926). Tebbutt also conducted several small-scale excavations in the mid 1920s, examining



Figure 1

some ‘hollows’ (pits?) located within the then standing earthworks (Tebbutt 1929). While some of these produced little in the way of artefacts, several contained relatively large quantities of domestic refuse including pottery and notably glassware, the latter perhaps indicating a high status settlement.

To the south-east several later Iron Age enclosures have now been excavated, suggesting extensive occupation along this part of the fen-edge during that period. Iron Age settlement was ultimately superseded by Roman fieldsystems, these containing several 'agrarian' structures (Regan 1998; Regan & Evans 2000). A major Roman farmstead was also uncovered to the south-east at Langdale Hale, based around two rectilinear enclosures subdivided by a road or track leading north, most likely connecting with the present site. This farmstead was occupied from the 1st to 4th century AD (Regan 2003a).

Site Taphonomy, Methodology and Excavation Context

Aside from the preceding phases in the Earith quarries themselves and other fieldwork in the fen-/Ouse-side environs (Haddenham and Barleycroft/Over), the key context — both by way of contrast and parallel — must, of course, be with the Iron Age and Romano-British centre at Stonea, excavated by the British Museum in the 1980s (Jackson & Potter 1996). On the one hand, both share questions relating to their status, particularly whether they should be considered as small towns and, equally, both pose issues of their potential official ‘state’ connection; in the case of the Camp Ground these arise in its possible relationship with the Car Dyke and as trade/transshipment depot. On the other hand, the chronology of these two settlements varies markedly. Stonea saw its floruit in Early Roman times (2nd to mid 3rd century AD) and thereafter saw massive decline, which its excavators linked to the fortunes of the administration of the Fenland as an Imperial Estate. In contrast, whilst also seeing Early Roman phases, the Camp Ground took off, as it were, and saw its most intense usage in the later Roman era.

The other site that looms large ‘behind’ and influenced the fieldwork was the 1993 investigations at Langwood Farm, Chatteris (Evans 2003b). Arguably another later Iron Age and Roman major complex/centre also located on a Fenland island, its impact was both interpretative and methodological. The latter is expressed in an interest in sampling techniques and, particularly, the need to mobilise and interrogate topsoil artefact distributions through fieldwalking; to this end, and as further discussed below, a number of experimental procedures were also employed at the Camp Ground.

The archaeological deposits on the Camp Ground site obviously reflected the underlying geology, in the main these consisting of variations of sandy or silty gravels. Within the lower areas of the site along the north-eastern side of the excavation areas, the sub-soil was siltier, no doubt deriving from periodic wetness. As with other areas within the Colne Fen environs, the soils were relatively acidic, perhaps leading to the degradation of smaller bones, which may explain the near-total absence of animal bone from the pre-Iron Age features. The effects of the soils could be seen most clearly with oyster shells which, unless sealed within non-acidic ashy matrices, were noticeable by their absence.



Figure 2

If shells were found within other non-ashy deposits then they occurred in a very degraded state. These effects were also noticeable within the shell-tempered pottery, where shell inclusions had often been eaten away by the acidic soils. Plough damage across the site was also apparent, with deeper plough-marks seen within the upper surfaces of features. The observation of earthworks by C.F Tebbutt in the 1920s (Fig. 2a) suggest these may have stood up to 1m high; as the ploughed fields are now level, this indicates how much the site has been denuded since.

Prior to machine-stripping, the entire site and part of the adjacent field to the west was fieldwalked. Collection was generally by a 10m grid, though this was augmented with a 50m wide 5.00m-square 'special' collection swathe across the eastern middle of the site. An intensive metal-detector survey was also carried out across the fieldwalking grid; again, there was an experimental component with four of the 10 x 10m squares being targeted for a secondary level detection when the topsoil profile was reduced by half its depth. The removal of the topsoil, which was no more than 0.35m deep, revealed that small pockets of a buried soil had survived within lower lying 'hollows' across the excavation areas and along the western side of the eastern field; this survival was due to the presence of the trackway to Colne Fen Farm and a headland of soil along this part of the field. As indicated on Figure 5, across the stripped surface separate areas were selected for both phosphate and magnetic susceptibility trials (see Appendices 1 & 2).

In total, 2930 'interventions' or excavated slots were hand-excavated and 10,822 individual contexts allocated (Fig. 4; Plate I). Surface collections were made across all exposed features, for example ditch lengths, while the surfaces of all features were also metal-detected. Largely in order to maximise the recovery of the site's important Late Roman assemblages, it should be mentioned that in April the Unit's team was augmented by hosting the University's two week-long training dig.

This report is structured according to the site's basic periodisation:

Period One	-	Neolithic/Bronze Age
Period Two	-	Later Iron Age
Period Three	-	Romano-British

with the latter being further divided into four phases (I-IV), each of which is divided into two sub-phases (e.g. Phases I.1 and I.2). Throughout the text archaeological features are referred to with an 'F' prefix (e.g. F. 305); individual contexts that are referred to are bracketed (e.g. [1405]) and are described within Appendix 3; the site code was ECG 01. Appendices are reproduced here in Volume II.

As expected from the evaluation, the site's Roman settlement proved both extraordinarily dense and prolific (Tab. 1), producing for example some 38,955 fragments of bone, 70,322 pottery sherds and 2008 Roman coins (including fieldwalking and metal-detecting finds). Given these factors, residuality is clearly a major concern, as indeed is the severe truncation of pre-Roman features. This itself promotes a sense of prioritisation of the site's sequence. This is not the site for interrogating the subtleties of either Bronze Age

fieldsystems or Iron Age settlement, as cumulative truncation has eroded their details in this instance.

However extensive the excavations, it must be stressed that only a part of the Roman settlement was investigated. As indicated by its cropmark plots, it still extends for a least another 30–50m into the adjacent field to the south-west, and also north-westward for some 50–100m to the line of the Cranbrook Drain. Equally, prior to the excavation the south-eastern margin of the site had been lost to quarrying; in total the settlement extended over 7.5ha of which only approximately 60% was dug.

As indicated on Figure 2b, offering a somewhat simplified image of the settlement (when compared to the site’s maze-like base-plan), the cropmark plots allows us to appreciate the main components of its layout. Aside from the central axis of its NW-SE trackway, it includes a polygonal-plan double-ditch surround; the character of this distinct perimeter will be discussed at length below.

Further to the Roman settlement structure, whilst a major shift of focus is evident between its Early and Late phases (I and II), in reality much of its development was a matter of organic elaboration of individual compounds and not ‘grand’ site-wide changes. One also has to be aware of just how short is the time-frame in which this occurs: four phases in some three centuries. It is a matter here of trying to appreciate different rhythms of development whilst distinguishing major trends. The elaboration of one compound — let alone the alteration of any single building — need not necessarily reflect larger patterns within the settlement as a whole, let alone relate to longer term changes in material culture. It is for these reasons that the Roman phase plans should be considered more like a series of snap-shots that freeze a trend without implying that their respective components were all directly contemporaneous events.

	Neo/BA	Iron Age	Roman Phase I	Roman Phase II	Roman Phase III	Roman Phase IV	All Roman
Pottery	2380 (6365g)	819 (15,653g)	1319 (26,707g)	8975 (210,538g)	16,816 (398,331g)	31,493 (810,753g)	60,621 (1,493,828g)
Animal bone	69 (6365g)	2776 (36,667g)	732 (12,261g)	10,523 (144,618g)	10,888 (168,199g)	15,477 (241,790g)	38,955 (587,229g)
Coins	0	1	0	22	74	276	378

Table 1: Stratified finds by period (excluding fieldwalking material)



Figure 3

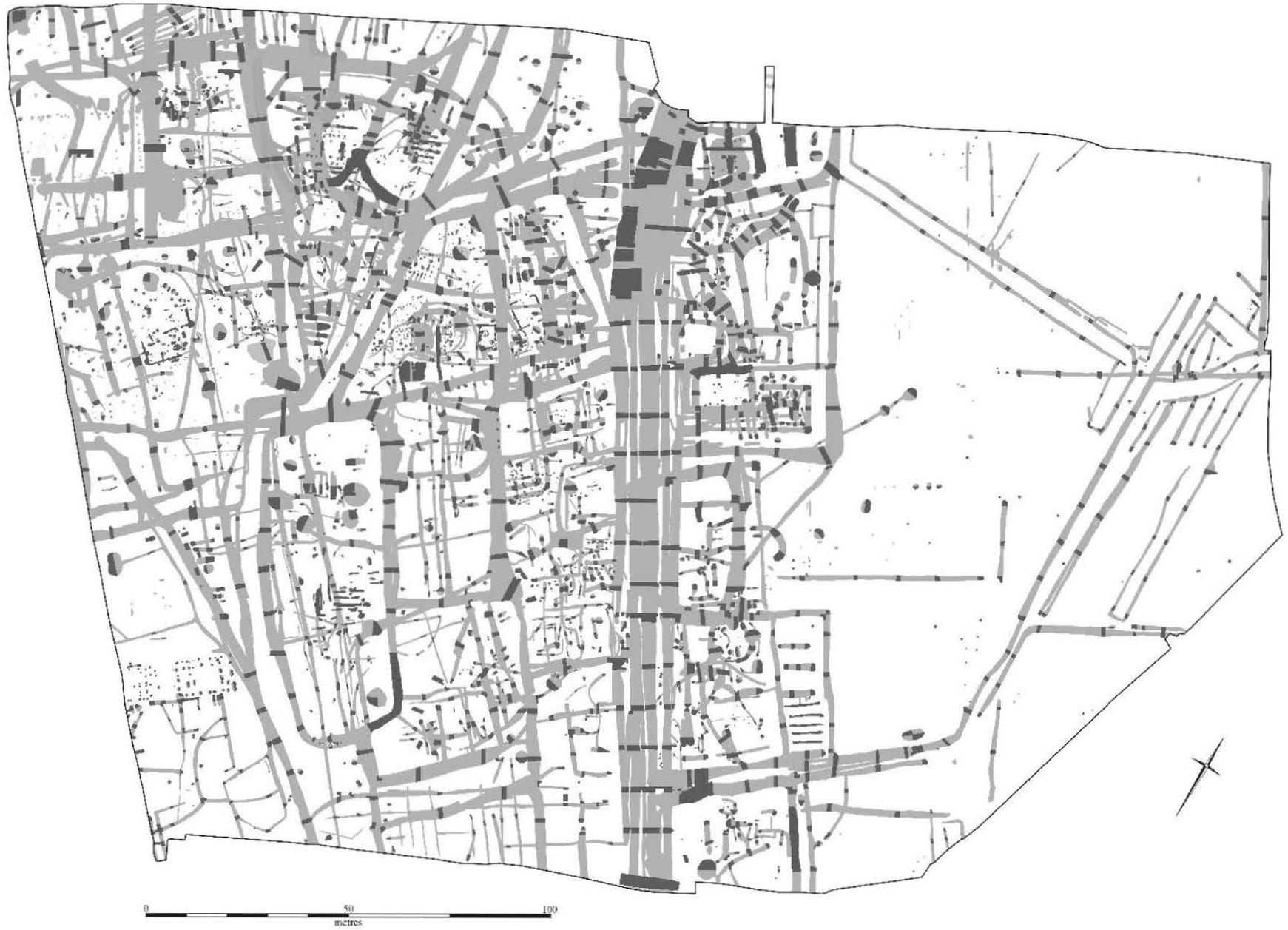


Figure 4. Excavation Slots / 'Interventions'



Figure 5



A



B

Plate I

EXCAVATION RESULTS

Neolithic and Bronze Age Activity (Period One)

Fieldwalking took place across the area of the site prior to the stripping of the topsoil, with finds recorded according to a grid of 614 10 x 10m squares. A total of 263 pieces of worked flint were recovered from 183 grid squares, giving a mean density of 0.43 per 10m square (Fig. 6; Tab. 2). Meanwhile, 87 pieces of burnt flint were recovered from 56 squares, giving a mean density of 0.14 per 10m square. The ratio of worked to burnt flint was thus approximately 3:1. Further collection took place from the stripped surface after removal of the topsoil. A total of 136 pieces of worked flint were recovered from 42 of the 406 exposed grid squares, giving a mean density of 0.22/10m square. Only seven burnt flints were retrieved from the stripped surface.

The material from the two phases of collection shows marked differences in distribution. The worked flint and burnt flint from the ploughsoil collection is strongly concentrated in the eastern field, the boundary with the western field marking a sharp drop-off in densities. This must be a result of modern land-use, as it cannot be explained by the distribution of pre-Iron Age features, and no comparable east/west disparity exists in the material collected from the stripped surface. It is also notable that very little flint was recovered from the general area of the Bronze Age ring-ditch, in marked contrast to the pattern from the stripped surface. This may be explained by the fact that this area was characterised by deep soil cover. The greatest density of both worked and burnt flint in any single 10m square (ten and eight pieces respectively) occurred in the eastern part of the eastern field, correlating with a cluster in flint densities from the stripped surface. The overall densities of flint collected from the ploughsoil can be considered fairly low compared to those recorded elsewhere in the Cambridgeshire Fens, where values of 25–30 worked flints or more per 10m square have been considered to mark a prehistoric ‘site’ *per se*, anything less simply indicating ‘background’ levels of activity (Edmonds *et al.* 1999).

The material collected from the stripped surface shows a much more clustered pattern than that from the ploughsoil. The densest cluster of material (up to 19 flints per 10m square) came from the northern part of the western field, correlating with the location of the Bronze Age ring-ditch. The two other clusters, consisting of swathes in the eastern field along its northern edge and centre-east respectively, are rather harder to explain as they do not correspond with known prehistoric features. Overall, the relatively modest quantity of lithics recovered may indicate that no substantial pre-Iron Age settlement component existed to complement the site’s evidence for burial and agricultural activity.

	Ploughsoil		Stripped surface	
	Worked flint	Burnt Flint	Worked flint	Burnt Flint
Total	263	87	136	7
Range	0-10	0-8	0-19	0-2
Density/10m square	0.43	0.14	0.22	0.01
Density excl. nil values	1.44	1.55	3.24	1.40
Std Deviation, excl. nil values	1.382	1.344	3.874	-

Table 2: Fieldwalking flint densities.

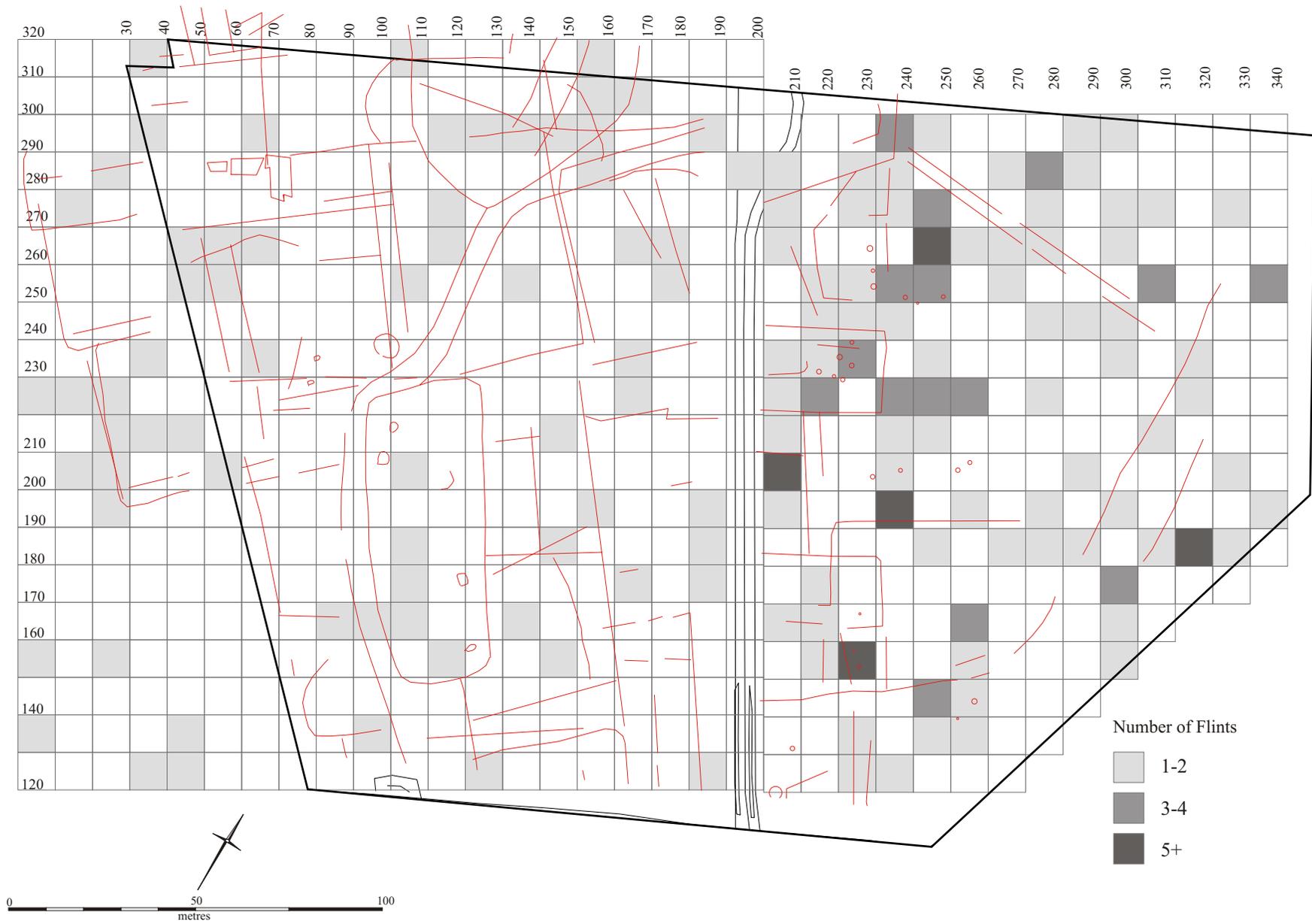


Figure 6

Early Neolithic

Evidence for Early Neolithic activity was solely represented by worked flint. Little of the material came from discrete deposits, including areas of surviving subsoil; the majority of the worked flint derived from later features, with most reworked into Roman deposits.

Later Neolithic and Early Bronze Age (Figs. 7–9)

Late Neolithic/Early Bronze Age settlement activity was suggested within the western part of the site. This was indicated by a burnt pit, F. 264, that was possibly associated with four postholes (F. 266) located to the south. While the posts suggest some form of structure, it is not clear what form this took. The pit displayed distinct signs of burning around its edges and the dark ashy fills and the presence of bones suggest this may have been a hearth or cooking pit. A sherd of Beaker pottery was recovered from the hearth alongside a larger assemblage of Collared Urn.

To the south of this grouping and possibly contemporary with it was a large pit, F. 365. Its basal fill consisted of a dark grey ashy deposit that contained part of a loomweight; the pit appeared to have partially silted up, prior to being backfilled with another dark ashy deposit. Possibly slumped into the pit were four large water-smoothed cobbles (possibly collected glacial erratics); these were seemingly deliberately set over or into the pit itself.

Importantly, the latter pit was cut on its southern side by ditch F. 246, part of a wider co-axial fieldsystem. If F. 365 is associated with the hearth and post grouping to the north, dated to the Early Bronze Age, then the ditch system can be seen as later, dating perhaps to the Middle Bronze Age.

To the west of the site, pit F. 279 contained large sherds of Grooved Ware. The fragments of at least two vessels appeared to be set around the edges of the pit, and did not appear to be the result of later breakage.

Three crouched inhumations are located within this north-western part of the site, F. 271, F. 273 and F. 274. As F. 274, an adult female, was cut by a Middle Bronze Age 'C'-ditch (see below) it can be inferred that it, and possibly the other crouched inhumations, belong to the earlier Bronze Age. While F. 271 may be related to the 'C'-ditch, the positioning of F. 273 on the very edge of the promontory overlooking the river further indicates the 'special' nature of this location. Its importance as to burial may be further evidenced with two cremation pits F. 275 and F. 276. F. 276 contained the remains of an adult individual; however, more exceptionally, F. 275 held 11.5kg of burnt human bone representing the remains of at least six individuals. Three sherds in a Collared Urn-type fabric were recovered from the latter feature.

Given its relative position, lying on the north-western side of the site, elongated pit F. 277 may also be attributed to the Early Bronze Age. This showed distinct signs of burning around its edges and contained a dark grey ashy deposit and a number of burnt stones and



Figure 7

burnt flints. A lack of pottery makes this difficult to date, although this same factor probably points to a pre-Roman, if not a pre-Iron Age, date. The two worked flints recovered would assign the pit to the Bronze Age. The pit may be associated with the burial traditions practised within this location, although no evidence of cremated bone was found.

Middle Bronze Age

Similarly situated on the higher ground and probably deliberately located on a promontory overlooking the river valley to the north was a small 'C'-shaped ring-ditch monument (Fig. 8). If associated, the primary focus of this monument may have been crouched inhumation F. 274. Its position on the central-southern apex of the later 'C'-ditch suggests their relationship is more than coincidental, and that perhaps its builders were aware of the earlier inhumation.

The ditch itself was heavily truncated on its western side, although it must have terminated here as no evidence of a western circuit or an 'opposite' northern side was apparent. It measured 15m across from the centre of the eastern terminus to the postulated western terminus. For the most part the ditch was steep-sided, more so on the inner edge, with a sharp concave base, measuring between 1.70–1.85m in width and 0.71–0.90m deep. Whether the upcast of the ditch created a slight mound to the north of the ditch, effectively creating a small mound, or formed a small bank along the line of the ditch, was not clear from the excavation. There is also the possibility that the ditch began as a series of smaller segments eventually joined to form one continuous circuit. Evidence for this was seen within the western ditch circuit, where an earlier cut, or possible segment butt was apparent; however, the evidence was limited to this western area and not apparent within the other excavated ditch lengths.

Relatively little was recovered from the lower fills of the excavated ditch, finds being limited to 16 fragments of pottery in the Deverel-Rimbury tradition, along with 12 flints, four fragments of bone and 15 pieces of burnt clay.

Lying above these lower fill deposits and located at the southern apex of the ditch were the remains of a possible cremation pyre, F. 1394. This consisted of the carbonised remains of certainly two and possibly three timbers ([9257]) lying within the circuit of the ditch. Some reddening of the surrounding soil suggested burning/scorching, while the presence of burnt human bone indicated that this was the remains of a pyre. However, neither of these — the burnt soil or the ash/bone remains — were sufficient to necessarily suggest that this was the place of primary cremation. The pyre may have lain nearby and possibly only certain elements of it were deposited within the ditch circuit, the scorched nature of the soil immediately above and below the burnt wood suggesting the wood was still then hot. Sealed by the same backfill deposit as the pyre material was cremation F. 303, and it is possible that it and the pyre material are related. The ditch itself may have been deliberately backfilled sometime after this burnt wood was deposited, as the upper

fills produced little to suggest activity around the ditch, with only one pot sherd, a flint and six bone fragments being recovered.

Although the ring-ditch may have been backfilled, the area of the monument was still thereafter used as a burial focus. This was indicated by the presence of 13 definite cremations (F.280, F. 282, F. 289, F. 294–8, F. 301–3 and F. 305) and 11 ‘possibles’ (F. 281, F.283–7, F. 290–2, F. 299 and F. 304). The ambiguous status of the latter group is due to later truncation, not only by Iron Age and Roman activity but also by the presence of a concrete-footed post-medieval barn. This, plus extensive burrowing by rabbits, made it difficult to be certain of the exact number of cremations present. Those that qualified as ‘possible’ cremations all contained burnt human bone, along with ash and charcoal, these usually occurring in small discrete hollows or pits. Several deposits containing minute amounts of human bone were discounted as cremations due to the ephemeral nature of the features and the occurrence of the bone could otherwise be ascribed to later disturbance, mostly by burrowing animals. Of the 13 definite cremations, six were accompanied by urns or parts thereof (F. 282, F. 289, F. 294, F. 295, F. 297 and F. 301), all in Deverel-Rimbury forms. Amongst the cremated material from F. 295 was a burnt barbed and tanged arrowhead and a perforated wolf’s or large dog’s tooth. While the latter was surely a personal pendant, the former may just as easily have been the cause of the individual’s death (i.e. embedded within the body) rather than a grave good.

The cremations appear to be in two clusters, one along the southern apex of the ditch and the second at the eastern ditch terminus. This patterning bears a striking similarity to that seen at the Barleycroft double ring-ditch (Butchers Rise; Evans & Knight 1998; Evans & Knight 2000) and secondary interments in barrows elsewhere in the region. The associated urns suggest a Middle Bronze Age date for the cremation activity. Five of the cremations are inserted into the upper fill of the backfilled ditch and must belong to the later phases of the monument; it is, however, more difficult to be sure of the temporal relationships of those lying outside the ditch circuit.

The positioning of the monument and the earlier surrounding burials on this high ground must be seen as deliberate, possibly enabling the monument to be observed by those passing on the river. Another possible ring-ditch seen on aerial photographs and occupying the same ridge as the present monument is located to the west in the adjoining field. Other monuments within the Earith Quarry hinterland indicate similar positioning on the higher ground on the edges of marsh or fen delineated islands. This was seen for example with the ring-ditch uncovered within Site II at Colne Fen Farm (Regan & Evans 2000).

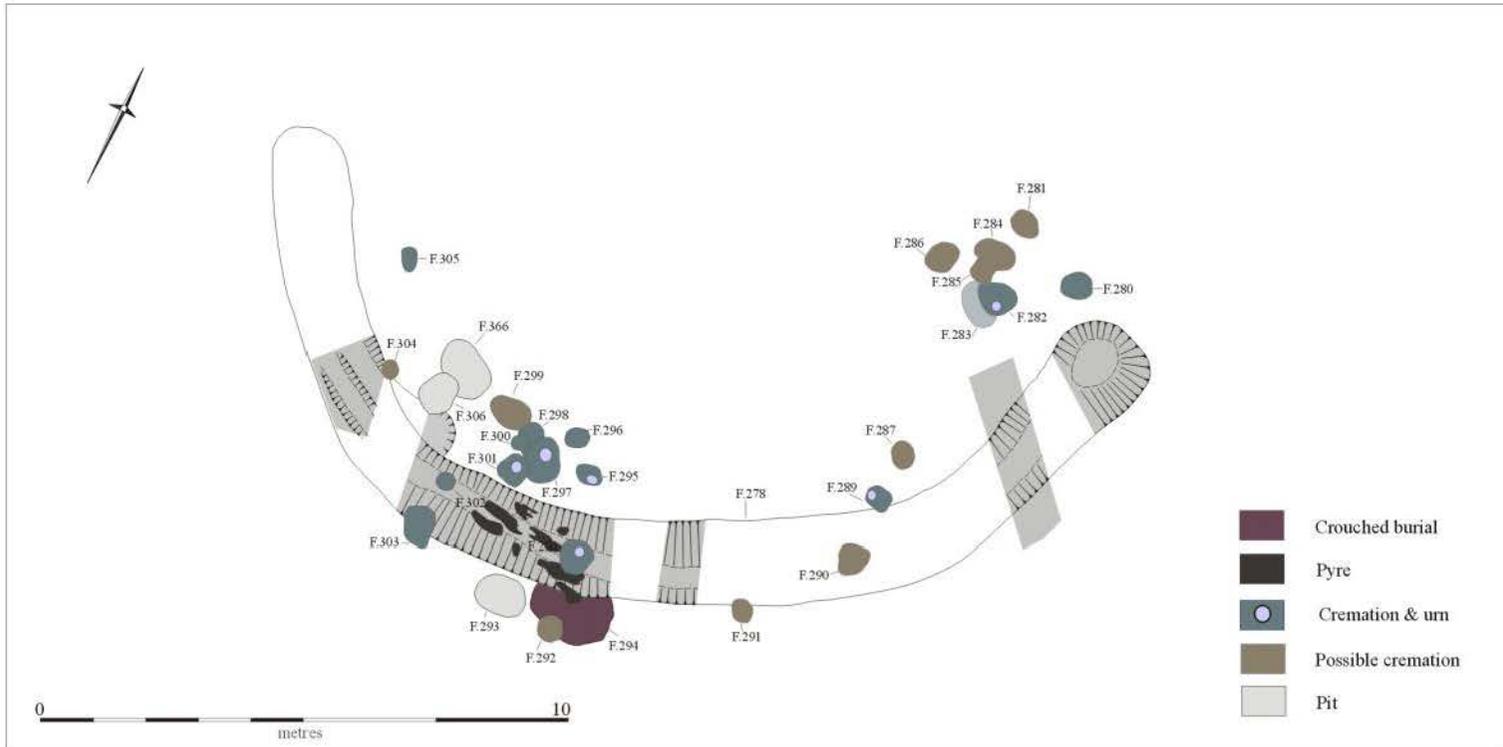


Figure 8. Ring-ditch

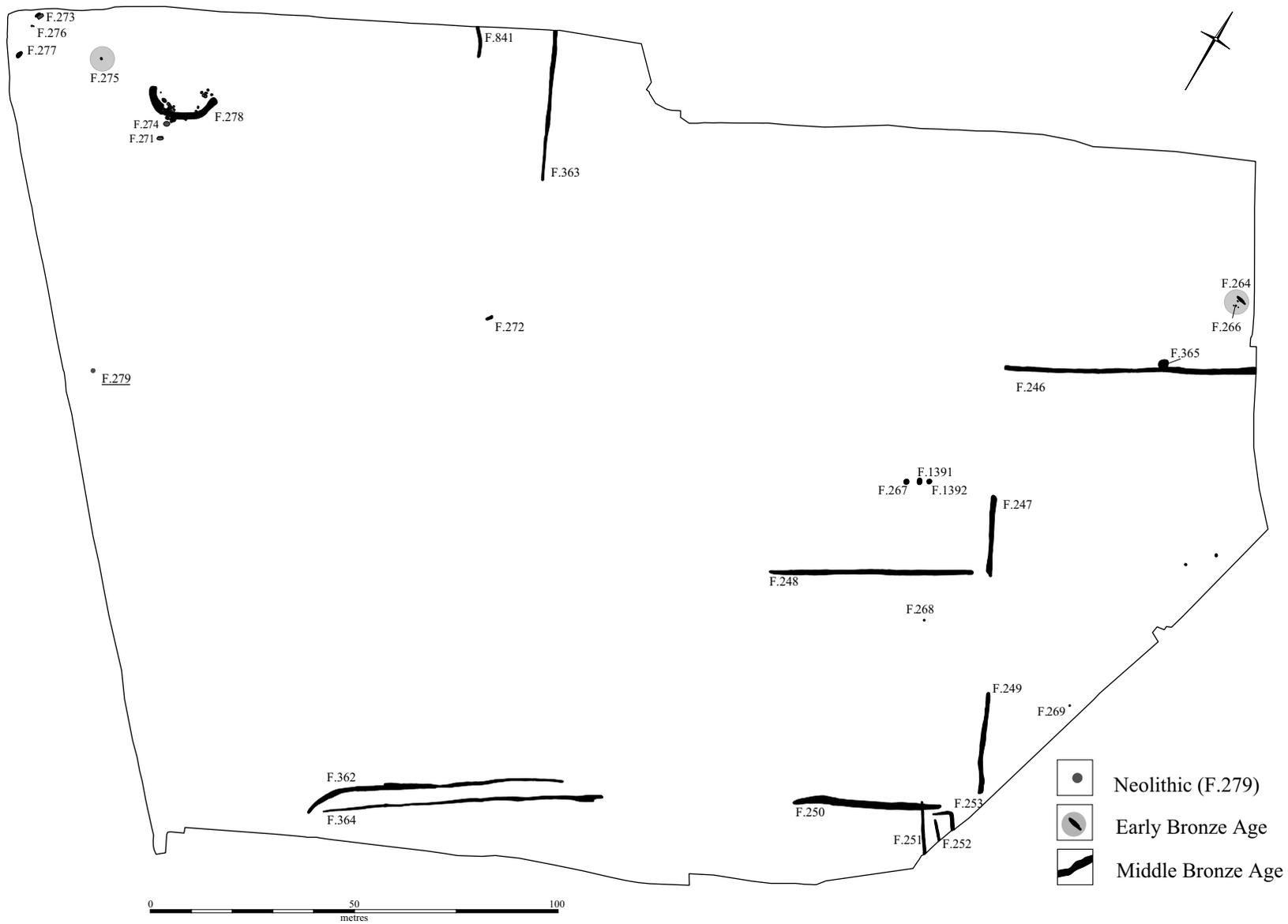


Figure 9

Other Burials and Cremations (Fig. 9)

Two other burials may also be attributable to the Bronze Age: F. 272 and F. 307, both situated some distance from the monument to the south-east and south respectively. The former, while crouched, was not as tightly bound as those burials around the monument and could possibly date to the Iron Age given its proximity to Period Two settlement.

F. 307 was badly truncated with only part of the flexed lower leg surviving, indicating that this may have been a crouched inhumation. Placed as it was in the centre of what became an early Roman trackway, it seems unlikely to date to that time and more probably belongs to an earlier period, possibly the Iron Age, although an earlier date can not be discounted.

Two cremations were located within the south-eastern part of the site: F. 268 and F. 269. Both these pits contained small amounts of cremated human bone and the associated pottery from both suggests a Bronze Age date.

The Fieldsystem (Fig. 9)

To the west of the 'C'-ditch and possibly contemporary with the later cremations in and around it was a coaxial fieldsystem. In the eastern part of the site this appeared very regularly laid out. Three ditches were aligned on a slightly SW/NE axis, these being, from north to south, F. 246, F.248 and F. 250. Complementing this alignment were two NW/SE aligned ditches, F. 247 and F. 249, that appeared to respect the eastern termini of F. 248 and F. 249, with F. 247 also aligning with the western terminus of F. 246. The spacing separating the three SW/NE aligned ditches also seemed regular, with 50m between F. 246 and F. 248 and 55m between F. 248 and F. 250. The relatively deep nature of the ditch termini and the way these abruptly ended could suggest that the layout seen in plan was the extent of the ditches, rather than their upper lengths being lost through later truncation. This however seems unlikely on the grounds that the fieldsystem is essentially mutually discrete from the main area of later Roman settlement, which suggests that some lateral truncation was, in fact, involved, restricting the fieldsystem's survival. Moreover, this would not exclude the possibility of the ditch/field boundaries continuing in some other form, such as fence or hedge lines.

On similar alignments, but located to the west of the main co-axial system, were SW/NE aligned ditches F. 364 and F. 362. Their proximity suggests that one of these may have replaced the other, although which came first in the sequence is difficult to determine. Both may be seen as a westward continuation of the field delineation suggested by ditch F. 250 to the east. Apart from several flints, the only firm dating for the ditch system comes from a single sherd of Post-Deverel-Rimbury pottery from ditch F. 250, which tentatively places it in the Late Bronze Age.

Cut by Period Two Iron Age features and reflecting the overall alignment of the Bronze Age fieldsystem was ditch F. 363. Oriented NW/SE, this can be seen as belonging to this wider layout.

More tentatively it is suggested that three parallel ditches F. 251–3 also belong to this fieldsystem. F. 251 cut ditch F. 250 at its eastern end and was thus later. There is the slight possibility that these ditches belong to the later system of Roman banks and/or fieldsystems. Against this, perhaps, was the very light silty nature of the ditch fills, differing markedly from the darker brown humic fills of the majority of the Roman fieldsystem features. In the absence of any dating material this factor alone probably places the ditches within the Bronze Age landscape.

The fieldsystem is possibly associated with several other discrete features located within the eastern portion of the site. Three aligned pits, F. 267, F. 1391 and F. 1392, suggest modes of demarcating space other than ditches. Although their alignment reflected that of the fieldsystem, whether or not they are directly contemporary remains uncertain.

Lithics Mark Edmonds

The lithic assemblage recovered during field investigation comprised a total of 1637 pieces of worked stone. Of this total, 350 pieces were recovered during fieldwalking with a further 143 pieces recovered less systematically from the surface [10399] after machine stripping. A total of 227 pieces were recovered from cut features defined as prehistoric on the basis of stratigraphic relations or the nature of fills, with a further 917 from later features where they are most likely residual.

The entire assemblage comprises artefacts made from flint, the bulk of it probably derived from secondary gravels sources. A small component of the flint assemblage may reflect the use of material from primary chalk contexts. However, difficulties with the characterisation of flint, particularly on pieces where little or no cortex remains, makes it difficult to establish the contribution of these sources. Whatever the precise scale, it is likely to be small.

In what follows, the character of the assemblage recovered from different forms/scales of field investigation will be described and discussed in turn. This serves the basis for a broader, final, discussion.

Fieldwalking

The initial phase of fieldwalking across the area resulted in a rich and varied crop of material. While the densities involved are by no means all that high, they are an indication of a significant prehistoric presence in the area during more than one phase of activity. The highest densities (maximum of 10 pieces per 10m square) occur in the eastern half of the study area, and correspond broadly with the higher density spreads of

burnt worked flint. In the western sector, the densities are both lower and more sporadic and it is perhaps interesting to note a relative scarcity of worked stone in the vicinity of the ring-ditch in the north-west.

Inevitably, a good deal of the material is undiagnostic, comprising irregular secondary and tertiary flakes in some numbers, together with a smaller proportion of primary flakes (a total of 14). There are also a number of irregular multi-platform cores, most in fragmentary condition. These pieces are neither chronologically nor technologically sensitive and may date to any or all of the periods represented by more distinctive artefacts.

The diagnostic pieces indicate a considerable date range. There is material indicative of a later 3rd/early 2nd millennium date, including thumbnail scrapers (e.g. from 250/140) and large discoidal or horseshoe scrapers. A similar date may also be ascribed to a plano-convex knife (from 220/150), though these have been recovered from earlier contexts elsewhere. The other significant horizon of activity is likely to be rather earlier in date. A significant number of late secondary and tertiary blades were identified, with a distribution that extends across the study area as a whole. These vary in size but frequently display regular parallel ridges on their dorsal surfaces and evidence for careful trimming/preparation prior to removal from their parent cores. The regularity of the blades is also varied, from sharp, prismatic pieces to elongated regular flakes with trimmed platforms. Both reflect a structured approach to working in a consistent manner to create regular products. Whether both were created as a function of the same general reduction sequence or represent different phases of activity is uncertain. Some of the larger blade-like flakes would not look out of place in earlier Neolithic contexts and a presence at this time is hinted by the occurrence of two leaf-shaped arrowheads, one abandoned during working (from 50/250) and another finely worked and elongated example (from 40/320). A similar date may also be ascribed to a small triangular-sectioned fabricator (from 240/250), though these have a slightly broader chronological range.

An Early Neolithic presence may be suggested by these pieces, but the density of definitively diagnostic finds is actually rather low. There are only two endscrapers and no laurel leaves or serrated pieces and this perhaps suggests a limited character to activities involving stone at this time. What seems more likely is that this happened against a background of a more significant earlier presence that stretched back into the Mesolithic. This is suggested by a spread of finer blades, some of them quite large, the majority smaller, across the study area. These are complemented by a number of blade cores, comprising single, pyramidal, opposed and double platform examples, which are more commonly found in the western half of the area. A Mesolithic date is also suggested by the steep angles on one endscraper and one thumbnail scraper, and by a microlith — a scalene triangle. A burnt endscraper made on a fine blade (from 210/250) may also be from the same broad phase and the condition of the piece suggests that at least some of the undiagnostic burnt flint across the area also dates to this time.

Machine-Stripped Surface

The assemblage recovered from the machine-stripped surface shows both similarities and differences with the surface material. Collection at this scale was neither as uniform nor as systematic as the fieldwalking. However, cores were recovered wherever they occurred and this is reflected in the discussion here. What is perhaps notable is a 'cluster' of blade cores and blades in the north-western sector, an area less well represented in the fieldwalking. This has its strongest expression in 70/240 where three blade cores were recovered, and 90/300, where a blade core, blade core rejuvenation flake and a blade were recovered with two more irregular pieces. Whether this relates to the disturbance of a buried surface or sub-surface features is uncertain; no clear signature was recognised in the field.

The majority of these pieces are likely to be Mesolithic in date, the only later artefact being a part-made leaf-shaped arrowhead (from 50/250). Just when in the Mesolithic is more difficult to say. As with the fieldwalking assemblage, the small size of many of the blades and cores suggests a later Mesolithic date. That said, some highly regular blades are also relatively long (over 4cm). Though the picture is far from clear, these could just as easily date to the earlier Mesolithic.

Cut Features

The material associated with the ring-ditch is again indicative of an early horizon of activity in the immediate area. Alongside more irregular flakes and core fragments, blades also occur in a number of contexts (e.g. F. 278 [8498] & [9360]), including the fill around a cremation vessel (F. 297 [8281]). In addition, a simple microlith — a backed blade — was identified in the analysis of sample residues (F. 301 [8351]). Beyond these pieces, there was little in the area that can be taken as diagnostic of another particular period of activity. Irregular waste and smaller trimming chips and spalls could date to a much later period of activity, though this is impossible to test. While most pieces showed signs of having been worked prior to excessive heating, the burnt flint from the immediate area contained no diagnostic artefacts.

At a somewhat broader level, material from cut features in the general area of the ring-ditch displays a similar range of characteristics. A Mesolithic, perhaps earlier Mesolithic, date can be assigned to a finely-worked obliquely-blunted point from animal burrow [8996]. The blade core from F. 1328 [9383] belongs to the same broad period, as do several of the blades recovered from other contexts nearby. By contrast, a part-made bifacially-flaked piece from [9600] may be a leaf-shaped arrowhead abandoned during working. Though small, the form of the piece certainly invites this interpretation, though once again, it is difficult to be entirely certain. That later material is present in the area is demonstrated by the burnt barbed and tanged arrowhead recovered from [8222], inside cremation vessel F. 295 [8223]. This is a heavily burnt example of Green's elongated Sutton type (Green 1980) and most likely represents an artefact burnt in or with the body on the pyre.

Material from other cut features, most of them likely to be post-prehistoric in date, makes up over half of the total assemblage recovered during fieldwork. Once again, a wide range of dates can be assigned to the more diagnostic elements within this group, making it more than likely that they are residual, caught up in the fills of much later cuts. Irregular secondary and tertiary flakes and fragments of cores with more than one platform are found across the area, though perhaps more commonly in the eastern sector. A good many of these may reflect activities in the later 3rd or early 2nd millennia, a date consistent with the barbed and tanged arrowhead fragments recovered from F. 50 [5390], and a number of thumbnail scrapers and flakes with invasive unifacial retouch. An earlier date is again suggested by a broad spread of regular blades and blade cores, both complete and in fragmentary form. As noted earlier, these include single platform examples with extensive flaking and opposed platform cores. A second obliquely blunted point was recovered from F. 1036 [10589].

Discussion

Taken together, the assemblages from the Camp Ground reflect several phases of activity in the area. A Mesolithic horizon or horizons is certainly indicated, the diversity of blade reduction strategies and forms indicative of a presence in both of the principal phases.

How far this continued or was echoed by activity in the earlier Neolithic remains unclear and on the basis of the lithics alone, it is probably best to conclude that if there was activity at this time, it was limited in both extent and duration. One caveat to this is that the so called 'transition' between the two periods is marked by both continuities and change in the nature of stoneworking technologies, and this may well blur the picture. The clearest indicator of a later phase of activity, broadly consistent with activities associated with the ring-ditch, can be found in the thumbnail scrapers and barbed and tanged arrowheads. Much of the more irregular tertiary waste may have also been generated at around the same time, though this is by no means certain.

In spatial terms, the spread of diagnostic pieces shows a greater density of earlier material in the north and west, suggesting a focus for activity in the immediate area. This is not, however, clear cut and it is probably best here to conclude that activities spread across much of the study area in all of the identified periods. Given the character of the deposits associated with the ring-ditch, it is perhaps worth noting that the immediate area is not marked by any significant concentrations of distinctive or diagnostic lithic artefacts. In fact, much of the material incorporated in the fills of associated features is likely to be residual, which at the very least hints at a lack of recognition or lack of interest in these scattered traces of the past by those responsible for the placing of cremations.

Neolithic and Bronze Age Pottery Mark Knight

The assemblage comprises 2170 sherds weighing 5819g (mean sherd weight 2.68g). The condition of the material is on the whole small and crumbly. The majority of the material (Fabric 6) is associated with the cremation cemetery attached to the ‘C’-ditch (94% of sherds; 67% of weight) and represents the remains of approximately seven separate Middle Bronze Age cremation urns. The remainder of the assemblage is made up of mainly Late Neolithic (Grooved Ware: Fabric 4) and Early Bronze Age (Collared Urn: Fabric 20) pottery derived from isolated pit features. The fieldsystem produced a single sherd of flint-tempered ware that could be either Early Neolithic or Late Bronze Age in date.

Fabric 1	Fabric 3	Fabric 4	Fabric 5	Fabric 6	Fabric 7	Fabric 20
2	1	62	12	2049	3	41
8g	6g	1409g	33g	3908g	18g	437g

Table 3: Neolithic and Bronze Age pottery, assemblage breakdown by fabric, by number of sherds and weight.

Grooved Ware

A single sherd from [1810] is a body fragment that has a possible vertical cordon. The 61 sherds from F. 279 represent the remnants of at least two richly decorated, barrel-shaped vessels. Both have internally bevelled rims and both are decorated with incised lines and have ‘collar’ zones demarcated by breaks in ornamentation. There are no base fragments present and it is estimated that about a quarter, at most, of each vessel is represented. All three pots have characteristics common on Durrington Walls style Grooved Ware.

Feature	Context	No. of sherds	Weight (g)	Fabric
-	1810	1	37	4
279	3615	61	1372	4

Table 4: Grooved Ware pottery

Vessel 1 (c. 250mm in diameter) has a ‘collar’ zone separated from the main body of the vessel by a thin applied cordon which has a continuous line of small ovoid-shaped stab marks. Above the cordon the pot is decorated with parallel vertical and horizontal incised lines that form regular blocks or panels. Below the cordon the decoration consists of horizontal rows of incised herring-bone. Two large body sherds with incised herring-bone decoration also have lozenge-shaped panels filled with ‘crowfoot’ impressions (pinched fingernail impressions). These body sherds could actually be from a third vessel.

Vessel 2 (c. 300mm in diameter). Whereas the rest of the pot appears to be covered in horizontal rows of incised herring-bone (broader than on Vessel 1) the collar area is emphasised by a continuous band of horizontally incised lines.

The proximity of the Grooved Ware feature to the ‘C’-ditch (less than 50m) fits a pattern recognised elsewhere (Cleal 1999) and more recently highlighted at the nearby excavations at Over and Barleycroft (Evans & Knight 2000).

Beaker

Two sherds represent the sum total of Beaker pottery. One of these has been identified by fabric alone (F. 288) whilst the other also has rusticated, finger-nail decoration.

Feature	Context	No. of sherds	Weight (g)	Fabric
264	108	1	5	1
270	288	1	3	1

Table 5: Beaker pottery

Early Bronze Age - Collared Urn

Pit and ‘hearth’ F. 264 and F. 266 produced 37 sherds (389g) of Collared Urn. These comprised a single decorated collar fragment (twisted-cord impression in a chevron design), a neck fragment with small twisted cord maggots in a herring-bone design and large parts of at least one narrow base.

The urn from F. 275 is a small, plain upright cup with a simple rim and flat base (as represented by three sherds). Its inclusion within the Collared Urn group is based upon a very similar vessel found amongst a large assemblage of Collared Urn pottery at King’s Dyke West, Whittlesey (Gibson & Knight 2000). All three sherds are burnt.

The single fragment from F.278 is a plain body sherd.

Feature	Context	No. of sherds	Weight (g)	Fabric
264	74	12	81	20
264	1461	16	246	20
266	76	9	62	20
275	9507	3	36	20
278	8497	1	12	20

Table 6: Collared Urn pottery

Deverel-Rimbury

Eight vessels were recovered from the Middle Bronze Age cremation cemetery located along the southern circumference of the ‘C’-ditch. With one exception, all of the identified vessels would appear to have acted as containers for burials, although only a percentage of the cremations were urned. The preservation state varies and some vessels are represented by just crumbs. Animal activity also caused some disturbance.

Cremation 1 (F. 282) Large bucket-shaped vessel. Base fragments only. Fabric 6.

Cremation 2 (F. 289) Indeterminate form. Base fragments only. Fabric 6.

Cremation 3 (F. 290) Indeterminate form. Body sherds only. Fabric 6.

Cremation 4 (F. 294) Indeterminate form. Crumbs only. Fabric 6.

Cremation 5 (F. 295) Indeterminate form. Body sherds only. Fabric 6. Possible trace of finger-tip impressions.

Cremation 6 (F. 297) Large bucket-shaped vessel. Base and lower body survives. Maximum diameter 280mm. Fabric 6. Decorated with a single horizontal line of finger-tip impression around body.

Cremation 7 (F. 301) Bucket-shaped vessel with a simple thickened rim. A small base fragment and several rim sherds survive. Diameter 240mm. Fabric 6. Decorated with a single horizontal row of vertical fingernail impressions just below the rim.

All the vessels are comparable in terms of form and construction. They are well built, probable by coil, using shell-tempered clay, and possess regular thin walls. Decoration is simple and occurs on three vessels as single horizontal lines of finger-tip impressions.

These forms are directly comparable with the urns located at Butcher's Rise ring-ditches at Barleycroft Farm (Pollard in Evans & Knight 1998) and as such can also be compared to other East Anglian and East Midlands Deverel-Rimbury assemblages (Longworth *et al.* 1988; Allen *et al.* 1987). The closest parallels are perhaps to be found amongst the bucket-shaped vessels decorated with uncordoned bands of finger-tip impressions from the cremation cemetery at Witton, Norfolk (Lawson 1984, fig.6.7).

Other Middle Bronze Age or Deverel-Rimbury type sherds (14 in total) were located within the confines of the 'C'-ditch. Some of these may have been introduced by animal action. Similarly, cremation pits F. 283 and F. 298 have some crumbs of pottery but again these could be intrusive given their proximity to urned cremations.

Miscellaneous

A single flint-tempered rim sherd (slightly everted) could be from a small diameter Mildenhall vessel or equally a Late Bronze Age Post-Deverel-Rimbury cup or jar.

Feature	Context	No. of sherds	Weight (g)	Fabric
250	244	1	6	3

Table 7: Miscellaneous sherds

Fabric series

1. Hard fabric with common SAND and sparse small to medium FLINT. Beaker.
3. Moderately hard fabric with common small to medium FLINT and moderate small to medium VOIDS. EN or M/LBA.
4. Moderately hard fabric with common to abundant small to medium GROG and moderate fine SAND. LN-EBA.
5. Medium fabric with abundant small to medium SAND and sparse small GROG. M/LBA.
6. Medium to hard fabric with abundant small to medium SHELL. BA?
7. Hard fabric with common small to large VOIDS and common small SAND. M/LBA.
20. Moderate to hard fabric with common GROG and moderate SAND. Collared Urn.

Baked Clay

Small pieces of baked clay were recovered from seven pre-Iron Age contexts. One piece from F. 249 [363] is in a very hard orange fabric, with smooth surfaces suggesting that it is a corner piece from a larger artefact. The other pieces are all amorphous lumps in soft sandy fabrics.

Human Remains Natasha Dodwell

Human remains that have been provisionally dated as pre-Roman can be divided into two broad groups; those directly associated with the Middle Bronze Age 'C'-ditch in the north-west of the site and those that are not. Within each of these groups there are deposits of cremated bone (some urned, some unurned and some associated with pyre debris or classified as cremation related deposits) and inhumations. The human remains found in association with the 'C'-ditch will be discussed first, followed by the remaining prehistoric burials identified across the site.

During excavation, the cremation burials were subject to 100% recovery as whole earth samples and these were wet-sieved and the bone >2mm was extracted for examination. Where possible, any vessels containing cremated bone were lifted so that they could be excavated in the laboratory. Unfortunately, many of the vessels were disturbed and fragmentary but wherever possible the contents of the urns and the material surrounding them were separated. For the deposits of cremated bone, all bone >4mm was analysed and the finer residues scanned. Identifiable bone was separated for further examination, being divided into skull, axial, upper and lower limb categories in order to identify any deliberate selection of skeletal elements for burial. Grave and pyre goods, including any animal bones, were separated at this stage.

In assessing the human osteology, general methods used are those of Bass (1992) and Buikstra and Ubelaker (1994). For the inhumations, an assessment of age was based on the stages of dental eruption (Ubelaker 1989) and epiphyseal union, on the degree of dental attrition (Brothwell 1981) and, where possible, on changes to the pubic symphysis (Brooks and Suchey 1990) and the auricular surface (Lovejoy *et al.* 1985). For the cremated bone, the degree of epiphyseal fusion, the stage of tooth development and, more

cautiously, the general size and robustness of skeletal elements was used to age individuals. In the case of both cremation burials and inhumations the following age categories are used:

foetus/neonate	<6 months
infant	0-4 years
juvenile	5-12 years
subadult	13-18 years
young adult	19-25 years
middle adult	26-45 years
mature adult	45 years +

There may be overlaps between categories or a broad category, such as adult, where insufficient evidence was present.

The sex of the adult inhumations was ascertained where possible from sexually dimorphic traits on the pelvis and skull and from metrical data. A five-part classification (female, ?female, not determinable, ?male, male) is used. No attempt was made to sex immature individuals. For the cremation burials an assessment of sex was made in only two cases and this should be treated with great caution as only one diagnostic trait could be used.

Unfortunately the majority of the features containing cremated bone, particularly those associated with the 'C'-ditch, have been truncated and disturbed by animal burrowing which has also affected the integrity of the deposits. These factors will also have affected the quantity of the observable bone within each feature and the bone fragment size. This disturbance has led to a certain degree of confusion; there are cremation burials, both urned and unurned, and then deposits that contain cremated bone which may be token burials, deposits of pyre debris or the result of animal burrowing. Because of the degree of disturbance and truncation it was only possible to lift and excavate two of the urned cremation burials, F. 295 and F. 297, in the laboratory.

Funerary Activity Associated with the 'C'-Ditch

The earliest funerary activity in this area was the interment of a tightly-crouched elderly male, F. 274, followed by the excavation of the 'C'-ditch itself, F. 278. A large cremation burial F. 303 was cut into the lower fills of the ditch and would seem to be contemporary with redeposited pyre debris, F. 1394 (carbonised planks/split logs and a small quantity of burnt bone). The upper fills of the ditch, which sealed these features, were themselves cut by later cremation burials. Other cremation burials located on the inside of the 'C'-ditch are probably contemporary with these later burials. The descriptions of these features are presented below in stratigraphic order. The later cremation burials and cremation-related deposits are also summarised in Table 9. A tightly-crouched inhumation, F. 271 was located approximately 3m from the southern edge of the 'C'-ditch and may be a satellite burial. Whilst it is described at the end of this section its position with regards to the monument may be coincidental.

The Crouched Inhumation

F. 274, skeleton [11371] (mature adult male)

The skeleton was lying on its right side, tightly crouched with its head in the west. The left scapula has been slightly truncated by the ditch [9440]. The body had been placed in a small ovoid cut measuring approximately 1.50 x 1.00 x 0.80m deep. The fill was a dark brown slightly gravelly sandy silt with occasional small charcoal fragments. The bones were well preserved although there were heavy concretions of iron panning on some of the elements. Degenerative changes indicative of osteoarthritis were recorded in the right shoulder joint, wrist and hand and throughout the spine. Four teeth had been lost prior to death; two of the surviving teeth had carious lesions and another was rotten.

The Large Cremation and the Contemporary Pyre Debris

The cremation burial F. 303 cuts the lower ditch fills and is sealed by the upper ditch fills. It might well be contemporary with the pyre debris identified nearby to the east.

F. 303, cremation burial

A large quantity of cremated bone mixed with charcoal and charcoal stained silty lenses [9269] was recovered from a large, sub-rectangular pit, 0.9 x 0.5 x 0.35m. The cremated human bone is buff white with only a very few fragments of blue/black bone, suggesting an efficient cremation. The fragment size is generally large, the largest fragment being a mid shaft of femur 85mm long and recognisable elements include skull, teeth, vertebrae, ribs, long bone shafts and epiphyses, hand and foot bones. The 1754g analysed probably represents a complete or near-complete adult. A small mastoid process suggests that this may be the cremated remains of a female. A large fragment of unburnt cow scapula with dismemberment marks (43g) was identified amongst the cremated bone and may represent a deliberate grave offering.

F. 1394, redeposited pyre debris

Three or four roughly worked burnt planks, [9257] were recovered lying on the lower ditch fills just to the east of the large cremation burial F. 303. A small quantity (14g) of white well-calcined human bone was recovered with the burnt wood. The fragments were generally small and while most of the fragments were unidentifiable, skull and long bone shafts and a metatarsal were recognisable. The material sitting directly above the burnt planks, [9042], also contained a small quantity (13g) of well-calcined human bone fragments including a tooth crown. The bones seem to derive from two individuals, an adult and an immature individual.

Urned Cremation Burials

F. 282

The 244g of bone inside the truncated vessel [9069] is poorly fired. The fill surrounding the urn, [9068], was charcoal-stained with occasional, small, well calcined human bone (92g). This could be pyre debris deposited around the vessel or it could just be the contents of the vessel that has been disturbed.

F. 289

The vessel was lying on its side and half of it had been truncated so that the cremated bone and charcoal [9349] were exposed. Fragments of bone and charcoal were also outside the urn but it is uncertain whether this was intentional or the result of truncation. Similarly, it is uncertain whether the urn was originally interred on its side or if it had been disturbed. A total of 521g of bone could be analysed. A burnt drilled wolf's tooth was identified whilst analysing the bone.

F. 294

The vessel was truncated and disturbed to such an extent that it was impossible to determine whether the 590g of cremated bone that was analysed had originally been placed inside or outside the urn. The bone fragments were predominantly well calcined and there was a concentration of charcoal-stained silt with small fragments of burnt bone and charcoal at the base of the shallow cut

F. 295

This was the only urn which could be excavated in the laboratory. The truncated urn [8222] contained poorly fired, predominantly brown-black cremated human bone mixed with a charcoal-stained sandy silt. A burnt barbed and tanged arrowhead was recovered 30–40mm down the truncated vessel, within the cremated bone. A total of 14g of burnt animal bone, including a fragment of sheep tibia, was identified during the analysis. The fill surrounding the vessel is charcoal-stained with a small quantity of poorly-fired small bone fragments. There was a lot of animal disturbance around this feature and the total weight of human bone collected and analysed from the burial was 1174g.

F. 297

The tall, truncated bucket-shaped vessel contained a mixture of buff-white and blue-black bone fragments weighing 459g. The recognisable elements derive from an immature individual, probably a juvenile. The fill around the pot was a charcoal-stained silt with 156g of well-calcined, small bone fragments. Identifiable fragments derive from an older sub-adult/adult.

F. 301

A disturbed urned burial possibly containing the remains of two individuals. Inside the fragmentary vessel 287g of generally well calcined bone fragments deriving from a young adult were recovered. Around the urn 25g of small, buff-white bone fragments were recovered. The bone fragments were generally smaller in size than those inside the vessel, and were from an infant. This burial also cuts the larger urned burial to the east, F.297, and so there may be some contamination of material, i.e. some of the bone recovered from outside the vessel may derive from the earlier burial.

Possible Urned Burial

F. 290

A very disturbed deposit of cremated bone (343g) which may have been originally urned; six sherds of pottery were recovered. The material could have been dumped in as part of the ditch fill.

Unurned Burials

F. 280

A shallow ovoid cut, 0.60 x 0.40 x 0.16m containing 1314g of buff-white bone fragments mixed with a charcoal-stained sandy silt. Both adult and a small quantity of immature remains were recovered.

F. 296

Shallow ovoid cut, 0.4 x 0.45 x 0.15m containing 260g of buff-white bone fragments mixed with a mid grey-brown silty sand. Identifiable fragments are those of an adult.

F. 283

A large ovoid cut, 0.9 x 1.0 x 0.31m containing a mottled charcoal-stained sandy silt with 360g of burnt bone (a mix of buff-white and blue-black) and charcoal fragments. This is either a disturbed cremation burial or possibly disturbance from the adjacent burial F. 282.

Disturbed Cremation-Related Deposits

The following features contained small quantities of cremated human bone and very often charcoal. They have been classified as cremation-related deposits rather than true burials or deposits of pyre debris because of the small quantity of bone and the irregular nature of many of the features, viewed in conjunction with the degree of animal disturbance in the immediate area.

F. 281

Shallow scoop filled with pale sandy silt with occasional charcoal and small fragments of calcined bone.

F. 284

Shallow pit filled with mottled brown sandy silt with occasional charcoal fragments and rare (15g) small fragments of well calcined bone. This deposit is in the vicinity of other cremation-related deposits, and so may just be the result of animal disturbance.

F. 285

Shallow pit containing charcoal-stained sandy silt mottled with natural, moderate charcoal fragments and flecks and 33g of small, well calcined bone fragments. Again, this deposit is adjacent to other cremation-related deposits and may just be the result of animal disturbance.

F. 288

Shallow scoop filled with grey sandy silt and rare charcoal and occasional small fragments (26g) of well calcined bone.

F. 291

A small shallow pit containing charcoal-stained sandy silt with frequent charcoal flecks and rare flecks of calcined bone (14g).

F. 292

A shallow, irregular sided pit containing charcoal-stained sandy silt with frequent charcoal fragments and flecks and occasional fragments of calcined bone (12g).

F. 298

Shallow pit with only 20g of well calcined cremated bone [8404]. The bone fragments are mixed with a charcoal-stained sandy silt mottled with lenses of natural sand and moderate charcoal fragments and some crumbs of pottery. This feature is surrounded by 'real' cremation deposits and both the bone fragments and pottery may be intrusive and the result of animal activity.

F. 299

Shallow depression containing 16g of well calcined bone in a brown sandy silt matrix with occasional charcoal fragments. This feature is adjacent to F. 298 and may also be the result of animal activity.

F. 300

Shallow depression containing only 3g of small, well calcined bone fragments in a mottled silty orange and black sandy silt with frequent charcoal fragments. This feature is adjacent to F. 298 and F. 299 and, like them may just be the result of animal disturbance.

F. 302

A shallow scoop containing frequent charcoal and a small quantity (33g) of cremated bone. This material has either been cut into or dumped into the 'C'-ditch fill and the identifiable elements suggest that there are two immature individuals in this deposit.

F. 305

A shallow cut filled with charcoal-rich sandy silt and a small quantity (89g) of cremated bone. There is considerable animal activity around this feature and its edges are ambiguous.

Disarticulated Human Bone associated with the Monument

Unburnt, disarticulated bone was recovered from several irregularly-shaped features within the ‘C’-ditch, which have been tentatively interpreted as animal burrows (very small quantities of cremated bone were also recovered and are recorded in the archive).

Context	S.F. no.	Skeletal element
[8404]	1589	left calcaneus
[8538]	-	right tibia shaft
[11042]	1588	right calcaneus
[11042]	1587	right navicular & unside fragment of proximal epiphysis of tibia

Table 8: Disarticulated human bone

These bones derive from a *minimum* of one individual (all are adult-sized except for the fragment of epiphysis which is likely to come from a sub-adult). Whilst it is possible that these elements could have been deposited deliberately in the inner part of the monument it is far more likely that they derive from an inhumation burial, disturbed by animal burrowing, which was not identified during the excavation.

Satellite Inhumation Burial

F.271, skeleton [9259] (mature adult male)

Well preserved, tightly-crouched burial, lying on his left side with head in the east of the grave. The grave lies c. 3m south of the southern edge of the ‘C’-ditch and may be related to the monument (i.e. a satellite burial). Several teeth had been lost ante mortem and deposits of calculus were recorded on the surviving dentition. Degenerative joint disease was recorded in the lower spine, the hip and foot. Schmorl’s nodes and an increase in porosity were recorded on several lumbar and thoracic vertebrae. A small area of eburnation and marginal osteophytes were recorded in the left acetabulum and eburnation and osteophytes were noted on the right 1st metatarsal phalangeal joint. C3 and C4 are fused and the spinous process of C4 is split, which is probably a congenital anomaly.

Feature	Context	Type	Age & sex	Comments firing	Weight (g)	Pathology	Pyre goods
F. 280	8945	Unurned burial	Adult & infant/juvenile		1314	Marginal osteophytes on vert. body	
F. 281	11386	?disturbed/ crem-related deposit	?	Bone missing	?		
F. 282	9069 & 9068	Urned burial	Adult	Poorly fired	336		
F. 283	9066 & 11384	?disturbed/ crem-related deposit	Adult	Mixed	363		
F. 284	9064	?disturbed/ crem-related deposit	Subadult/adult	Well calcined	15		
F. 285	9062	?disturbed/ crem-related deposit	Subadult/adult	Well calcined	33		
F. 288	9396	? disturbed /crem -related deposit	Adult	Well calcined	26		
F. 289	9349	Urned burial	Adult, ? male		521		Drilled wolf tooth

F. 290	8835	? urned burial	Adult	Well calcined	343		
F. 291	9255	?disturbed/crem-related deposit	Subadult/adult	Well calcined	14		
F. 292	8633	? disturbed/crem-related deposit	Adult	Well calcined	12		
F. 294	7971	Urned burial	Adult		590		
F. 295	8222 & 8224	Urned burial	Adult	Poorly fired	1174		Barbed & tanged arrowhead, animal bone
F. 296	8835	Unurned burial	Adult	Well calcined	260		
F. 297	8281 & 8282	Urned burial	Juvenile & adult	Mixed	737		
F. 298	8404	?disturbed/crem-related deposit	Subadult/adult	Well calcined	20		
F. 299	8406	? disturbed/crem-related deposit	Subadult/adult	Well calcined	16		
F. 300	8279	?disturbed/crem-related deposit	?	Well calcined	3		
F. 301	8351 & 8353	Urned burial	Young adult & infant	Well calcined	312		
F. 302	9231	? disturbed/crem-related deposit	Infant & older juvenile/subadult	Well calcined	33		
F. 303	9269	Unurned (primary) cremation	Adult ?female	Well calcined	1754		Cow scapula (unburnt)
F. 305	11318	Unurned burial	Adult	Mixed	89		

Table 9: Summary of features containing cremated human bone associated with the ‘C’-ditch; weights are the *total* weights of cremated human bone collected from each feature (i.e. bone from outside and inside a vessel, or in the case of ‘double’ cremations the adult *and* the immature individual).

The Cremation Burials — Discussion

With the exception of burials F. 275 and F. 303, all the features containing cremated human bone have been truncated or disturbed to some (unknown) degree. Unfortunately this will have affected the quantity of the bone available for analysis and the integrity of the burial context. Several general points can be made. The cremated bone that was analysed was predominantly a buff-white colour indicative of full oxidation. Exceptions to this are F. 282, F. 295 and F. 305 where the bone inside the vessel is a blue-black colour. The bone fragment size ranges from 2–85mm with the majority being between 20–40mm. The larger, more readily identifiable bone fragments were either those contained within the urns, suggesting that the vessel offered protection from post-depositional activity or those from undisturbed burials. No evidence of pyre sites was observed in the area of excavation. This is not surprising given that most pyres would have been constructed on the ground surface and that the visual effects of the pyre on the ground surface are very limited.

It is possible to make a distinction between those items placed on the pyre with the deceased and then interred with the cremated bone, and those items placed in the grave, which have not been subjected to burning. The pyre goods that have been identified here should be viewed as a minimum; some pyre goods such as wooden or leather objects or certain foodstuffs would not have survived cremation. Since not all the bone was always

collected for burial it is likely that not all the pyre goods were collected. In addition, the majority of deposits containing cremated bone have been truncated to some degree. Two possible pyre goods were identified in the burials from the 'C'-ditch: the barbed and tanged arrowhead from F. 295 and drilled wolf's tooth from F. 289 that may have been worn as an amulet. Burnt animal bone was recovered from burial F. 295 and unburnt bone from burial F. 303. Their inclusion in the features may or may not be deliberate. Three double burials have been tentatively identified in the 'C'-ditch. It should be stressed that the extent of animal burrowing and disturbance might mean that the burials have been contaminated.

Other Human Bone

In addition to the cremated human bone found in association with the 'C'-ditch, four features provisionally dated as prehistoric and containing cremated human bone were identified across the site (F. 268, F. 275 and F. 276). Three inhumation burials were also recorded (F. 272, F. 273 and F. 307). Unfortunately there is little or nothing with which to date some of these graves; those skeletons in F. 272 and F. 307 have been provisionally dated to the Iron Age purely because they are crouched (but not as tightly as the Bronze Age ones) and they are not close to any Bronze Age activity on the site.

Cremation Burial F. 268 [288], sample 5, <2415>

Dark grey-black sandy silt with frequent bone fragments, moderate small stones and a small pot sherd in the upper half of the fill. The largest bone fragment is 57mm long although the majority are much smaller. A total of 520g of bone could be analysed and identifiable fragments were mainly limb shafts but also skull and teeth.

Cremation Burial F. 275

An intriguing deposit was identified in the north-west of the site. A small, shallow pit measuring 0.6 x 0.5 x 0.4m contained approximately 11.5kg of cremated bone and a rapid scan of the material showed that a *minimum* of 6 individuals were represented (five adults and a juvenile/sub-adult). The total weight of bone recovered would concur with this. The majority of bone derived from the bottom 0.26m of the pit, [9508]. The bone was mixed with a brown silty sand with rare small fragments of charcoal. This context was sealed with a cleaner, pale yellow-grey silt, [9507] with far fewer bone fragments and three sherds of earlier Bronze Age pottery. The bone fragments were all well calcined and were uniformly beige-white in colour; in the whole feature there are only three or four fragments of bone that are blue-black. There seems to be minimal fragmentation, suggesting that the bones had not travelled a great distance (i.e. the pyre site(s) was/were close by) or that they were collected and deposited with great care.

Cremation Burial F. 276 [9485]

This cremation is in the far north-west of the site close to inhumation F.273. It is a shallow sub-circular scoop containing a compact dark brown/black sandy silt (charcoal-stained) with frequent fragments of cremated bone, occasional small stones and fragments of charcoal. The majority of the fragments are small (the largest is 35mm long) and white with a few blue/black fragments. A total of 362g of bone was analysed and identifiable elements included skull fragments, teeth, long bone shafts, and vertebrae fragments.

Inhumation F. 272, Skeleton [7245] (mature adult female)

Moderately preserved, crouched burial with some plough damage to the face and legs. The head is in the south of the grave, facing west and the hands are clenched. Bony changes characteristic of osteoarthritis were recorded in the right hip, in the right and left elbows, in the left hand and throughout the spine. No maxilla survives but the mandible is edentulous.

Inhumation F. 273, Skeleton [9488] (young adult female)

This burial was in the far north-west of the site, close to the cremation burial F. 276. The skeleton was tightly crouched, arms flexed across the body, with her head in the north-east end of the grave, facing north-west. The bones were poorly preserved with very abraded surfaces and most of the epiphyseal ends missing. No pathology was observed.

Inhumation F. 307, Skeleton [6667] (adult)

This skeleton had been severely truncated by both ploughing and machine stripping. Only the right leg and foot survive together with fragments of the pelvis, lower vertebrae and right hand. Most of the epiphyseal ends are missing. The position of the surviving limb suggests that this may have been a crouched burial or flexed burial with its head in the south or south-west. No pathology was recorded.

Animal Bone Chris Swaysland

The bones were identified with the aid of Schmid (1972), and the reference collections of the Cambridge Archaeological Unit and the McDonald Institute for Archaeological Research, University of Cambridge. No attempt was made to distinguish between the remains of sheep and goat. Categories of 'large-sized mammal' and 'medium-sized mammal' were used for ribs and vertebrae that could not be ascribed to species. Quantification is by number of individual fragments (NISP) only. Where it was clear that a group of fragments originated from a single bone they were grouped together and counted as a single element (e.g. 100 fragments from a broken skull were counted as one bone). Measurement of bones follows the conventions of von den Dreisch (1976). Generally the condition of the material was varied; many specimens had iron-rich concretions adhering to the surfaces, in some cases this was so severe as to preclude identification.

A very small assemblage was recovered from features attributed to Period 1 ([108] [185] [1461] [9045] [9359] [9360]). A total of 25 fragments were recovered of which six could be identified (Table 10). The absence of sheep/goat from the assemblage is unlikely to be significant. The interpretation that can be made from such a small sample is very limited.

Species	NISP
Cattle	3
Dog	2
Large mammal	1
Unidentified	19

Table 10: Neolithic and Bronze Age animal species, proportions by NISP

In addition to the above material, a perforated canine tooth of a wolf was recovered from a disturbed urned Bronze Age cremation, F. 278, of a possible male, located inside and possibly cutting ring-ditch F. 278 (see Dodwell above). The tooth is heavily calcinated and the root is missing. The remaining section of tooth measures 31.4mm in length, 11.1mm at its widest point and is 6.2mm thick. The tooth shows no signs of wear. The hole is circular and 3.1mm in diameter. The sides of the hole are flat and it is presumed to have been drilled. The hole is located 7.0mm from the occlusal (biting) end of the tooth. No other signs of working are apparent on the tooth. It seems likely that this tooth had a decorative or symbolic purpose and was worn as a pendant or amulet.

Environmental Samples Rachel Ballantyne

All 30 samples from prehistoric contexts (including Iron Age; see Ballantyne below) were processed by hand using bucket-flotation. Flots were collected within a 300µm sieve, and the heavy residue washed over a 1mm sieve. No fully waterlogged contexts were identified, and all flots and residues were dried prior to analysis under a low-power binocular microscope. All plant taxonomy in this report follows Stace (1997).

Only three samples from two Bronze Age-attributed features were examined. Two of the contexts came from the same Bronze Age pit F. 365 (grid 310/240): the charcoal-rich middle fill [706] and basal silts [709]. The middle fill contains a moderate amount of well-carbonised but fragmented charcoal. Limited evidence of food preparation is provided by one charred barley grain (*Hordeum vulgare s.l.*), an indeterminate grain, one fragment of hazelnut shell (*Corylus avellana*), and a burnt bone fragment. The basal silts include very low amounts of charcoal, but are otherwise bioarchaeologically ‘clean’. Hearth pit [1461] F. 264, despite appearing charred during excavation, has produced a remarkably sterile flot. Only a tiny amount of small charcoal is present. It is possible that fine charcoal dust and ash occur within this context, which would suggest intense burning conditions.

sample number		<11>	<12>	<68>
context		[706]	[709]	[1461]
feature		F.365	F.365	F.264
description		mid silts	basal silts	
feature type		pit	pit	hearth/pit
phase/date		BA	BA	BA
sample volume/ litres		8	1.5	10
grid location - Easting/Northing		310/240	310/240	330/250
CHARRED REMAINS				
<i>Hordeum vulgare sensu lato</i> grain	barley grain	1		
cereal grain indet.		1		
<i>Corylus avellana</i> nutshell	hazelnut	1		
charcoal fragments				
large charcoal (>4mm)		++		
med. charcoal (2-4mm)		++	-	-
small charcoal (<2mm)		+++	+	-
burnt bone fragment		-		
burnt flint		+		
UNCHARRED REMAINS				
<i>Prunella vulgaris</i> L.	self-heal			-u
<i>Picris echioides</i> L.	bristly oxtongue	- u		
moss				+u
intrusive roots		+ u	+ u	+++u
insect exoskeleton		- u	- u	

Table 11: Environmental samples, Bronze Age contexts. All items are charred, unless indicated as 'u' uncharred, probably modern; 'w' waterlogged. KEY: '-' 1 or 2 items, '+<10' 10-50 items, '++' 10-50 items, '+++>' >50 items

Evidently the Bronze Age activity at the site did not produced significant charred remains. The two grains and the hazelnut shell fragment within pit F. 365 do, however, indicate some food preparation activity in the vicinity.

Period One — *Discussion*

The relatively low density of worked (and burnt) flint recovered in the course of the fieldwalking and also the ensuing excavations is typical of the fieldwork to date in the Colne Fen environs. Indeed, rather than being comparable to riverside gravel terraces elsewhere, they almost seem more akin to values on Ely's clays (Evans 2002). Prior to the mid 2nd millennium BC, their numbers would only attest to very occasional visitations and, unlike the Barleycroft/Over investigations on the Ouse nearby, no substantive Neolithic pit cluster sites have been recovered.

With many cremations along its southern aspect, the 'C'-shaped 'ring' excavated in the extreme north-west quarter of the site is generally comparable to the double-circuit Butcher's Rise ring-ditch dug at Barleycroft Farm. While no central interment was found in the case of the Camp Ground monument, its interior was severely truncated by later, Roman features that may well have entirely eradicated such a setting. Burnt timbers from the ring-ditch produced a radiocarbon date of 3520±60BP (calibrated 2010–1690BC to 2 s.d.; Beta-195162). The similarity between the main Butcher's Rise ring-ditch and the Camp Ground monument is more than just a matter of vague analogy. The 'C'-shaped form of the latter directly matches the secondary horseshoe-shaped ditch configuration — also associated with an inhumation at the top/apex of its part-circle (all Collared Urn-associated) — of the Barleycroft Farm monument (Evans & Knight 2000, fig. 9.7).

It warrants mention that Camp Ground 'C' is not the only mortuary-related ring-ditch investigated in the course of the Colne Fen fieldwork; the one found at Site IV being preserved and not excavated as such (Regan & Evans 2000). Closer at hand, aerial photographs indicate that yet another monument of this type is located in the field immediately west of the Camp Ground complex.

The F. 275 pit-interment of some 11.5kg of burnt human bone is extraordinary and with little direct parallel. Seemingly deposited in one episode, it raises the question of whether some of these remains were somehow 'stored' beforehand or if they represent a mass-death 'event', presumably either through disease or violence. Given its importance charcoal was from this deposit was accordingly submitted for radiocarbon dating, its assay of 3360±40BP (calibrated 1740–1530 BC to 2 s.d.; Beta-195163) being entirely consistent with the context of, and pottery recovered from, this feature. (That the barbed and tanged arrowhead may have been the cause of the demise of individual interred within Cremation F. 295 also raises the spectre of violent death.)

The Middle Bronze Age field boundaries exposed in the course of these excavations are clearly only 'fragments' of a much more extensive system that subsequent settlement in this area has otherwise eradicated. This having been said, it would not seem to have consisted of a 'great reeve'-type system such as at Barleycroft/Over or Fengate, and rather seems to follow a smaller plot-interval pattern such as was excavated in the south of the quarry zone at The Holme (Evans & Patten 2003).

The Camp Ground field divisions provided no obvious indication of where any associated settlement may have been situated. Only four sherds of pottery, 13 fragments of bone and 21 flints were recovered from both the excavated ditch segments and the exposed surface fills of these features; quantities hardly suggestive of immediate habitation.

Iron Age (Period Two)

Activity dating to the Middle and Late Iron Age appears to be centred around two enclosure complexes: Enclosures 1 and 2 in the north-western part of the site, and Enclosure 3 to the south (Figs. 10–11). Enclosure 1, F. 5, appeared as the southern extent of a large elliptical compound with an entrance on its eastern side (or at least an interruption). Initially its western side may have been formed by ditch F. 353. This was subsequently widened at the north-west as the ditch ‘drifts’ west to become the shared eastern boundary with Enclosure 2. Neither of these enclosures appeared to contain structures. Although internal sub-division could be suggested by ditch F. 17 in Enclosure 2, this may rather relate to the small compounds conjoining Structure V (see below).

Along the eastern edge of Enclosure 1 a series of pits were located to both sides of the enclosure ditch. As none either cut or were cut by the ditch, discounting coincidence, the pits and ditch must be seen as contemporary. As the land begins to drop towards the damper ground where the majority of the pits are located, it is unlikely that their primary function was storage. Indeed, most were shallow and bowl-shaped, rather than the deep and straight/bell-shaped examples more traditionally associated with storage in this period. If not for storage then it is difficult to gauge their purpose; localised borrow pits may explain some, but certainly not all. One (F. 329) contained a complete articulated horse. This was deliberately placed on the western side of the pit and, beyond ritual, it is difficult to explain this deposit.

‘Connected’ by ditches to both Enclosures 1 and 2, Structure V, as represented by a large eaves-gully, was probably in existence through the earlier and later stages of the enclosure’s development. The apparent width of the eaves-gully is slightly misleading as it showed signs of at least three episodes of re-cutting, exaggerating the width in plan. The internal area of the gully from the inner ditch edges was 12m across. Given that the roof of any building probably extended beyond the wall lines, then it could have been 10–11m in diameter. No certain evidence of any structure survived although a few undated posts located within the circumference of the surrounding gully may have been associated. Even if these proved to be structurally related, they are too few in number to postulate any definite structural patterns. As with Structure V, Structures VI–VIII, lying to the southeast, appear to be unenclosed (i.e. not set within a compound). Within this group Structure VII may be seen as the main domestic building, with Structures VI and VIII possibly representing smaller ancillary buildings. Structure V consisted of a circular eaves-gullied building, the gully indicating at least three ‘versions’ on its eastern side. The gully encompasses an internal space of 10–12m. An entranceway is hinted at on the eastern side of the structure, suggested by the terminus of two gullies at this point and the presence of another gully, F. 352, leading off from this space. One gully-arc, however, did enclose this gap, possibly indicating a change in entrance alignment along this eastern side. Again, no discernable internal features relating to this structure were apparent. This said, however, some of the many postholes located within the internal space of the building may belong to it, though most if not all appear to belong to the later, Roman phases of the site.

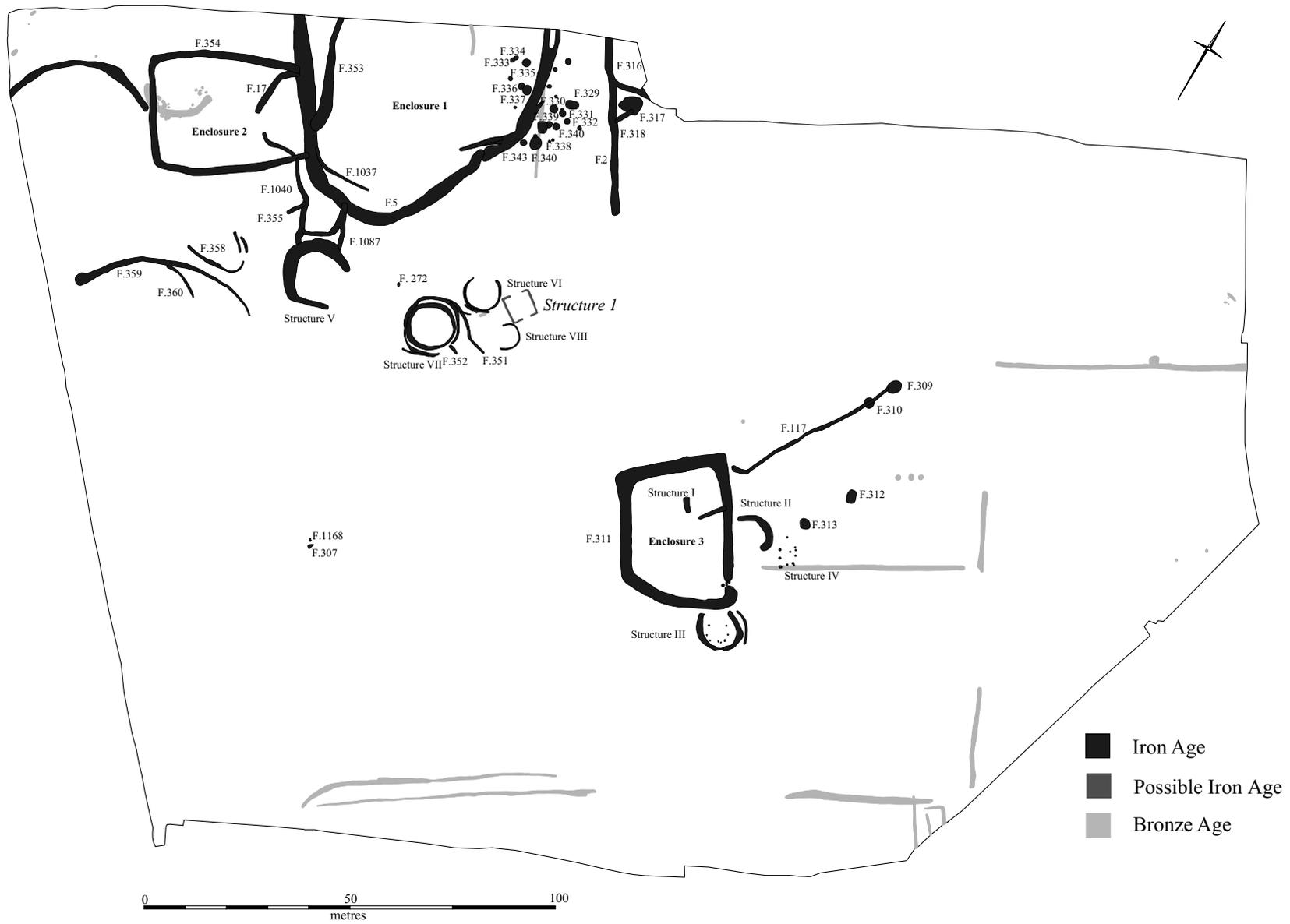


Figure 10

Gully F. 351, running off the eastern side of Structure VII, appears to delineate this building space from Structures VI and VIII, suggesting that, while related, these buildings were used for activities that were kept separate from the main household/domestic structure. This arrangement of buildings has similarities with the northern enclosure compound seen within Site I (Regan & Evans 1998). Here, as with this group of structures, the larger building is separated from two smaller buildings by a discontinuous gully.

Structure VI was the larger of the two ancillary buildings, encompassing an internal space of 8m across, with the gully showing signs of being re-cut at least twice. No signs of an entranceway were in evidence, this possibly being masked by later, Roman features. The discontinuation of the gully at the north-west was probably due to the shallow nature of the gully at this point and subsequent truncation, rather than being suggestive of an entrance terminus. Structure VIII to the south was smaller in size encompassing an internal space of 5.5m. Slight traces, or the 'shadow', of a gully could be traced on the eastern side of the structure, suggesting the gully fully enclosed the internal space on this side, although this does not preclude an entrance on this side. Neither of these structures had internal structural settings.

Lying east of Enclosure 1, ditches F. 2 and F. 316 possibly indicate the corner of another enclosure, although without the other sides this suggestion has to remain tentative. If an enclosure, a pit/well, F. 317, may have serviced it, this fed by a small length of ditch (F. 318) running west from ditch F. 2 to F. 317. It is possible that ditch F. 2 extended southwards and connected with Enclosure 3; however, the very shallow nature of the ditch at its southern extent and masking by subsequent Roman features makes this suggestion far from certain.

The centre of occupation within the southern part of the site in this period was Enclosure 3. This was a squared 'D'-shaped enclosure with an entrance at its south-eastern corner. The internal space of the enclosure was 30m north-south by 20m east-west. No roundhouses could be seen within the enclosure, although two gullies, F. 308 and F. 320, may represent a structural presence that was largely truncated (Structure I); this putative building was located within the north-east of the enclosed area.

Several pits or large postholes, F. 539/540, appear to be related to Enclosure 3 and possibly indicate the presence of a gateway. Two pits, [2556] and [2558], contained apparently placed deposits of cattle 'head and hooves' (see Swaysland below).

Two structures appear to be directly linked to Enclosure 1. To the east, Structure II was represented by the north-eastern arc of an eaves-gully with an internal space of 8m. No western 'half' of the gully was observed and it would seem that none was present, given the very definite termini of the existing gully. No related internal/structural features were present.

Structure III consisted of a more or less complete gully circuit, showing at least two re-cuts on its western side; the two differently set gully-arcs on the eastern side suggest the

building or at least its roof changed in size over time. The internal space encompassed by the gullies was 8m and 10m taking the internal and external eastern gully-arcs respectively. An entranceway is indicated by the abrupt narrowing and shallowing of the gullies along the south-eastern side, although a slight gully continued across this space. Internally, 11 post/stake-holes formed an alignment and appear structurally related, probably representing internal roof supports. Two shallow pits also appear to belong to this phase, F. 468 and F. 1395, although hollows were also found around other post-settings. The wearing away of the ground was possibly caused by animal activity and may also explain the nature of these features.

Ditch F. 513 led from Structure III to the south-west, representing a small demarcation gully. Two wells/catch-waters, F. 309 and F. 310, lay to the north-east of Enclosure 3, connected or fed by ditch/gully F.117. The wells appear to be mirrored by F. 312 and F. 313 lying to the south, which also appear to have been wells. These features seemed to have remained remarkably 'clean' with little or no domestic waste entering them, which makes them difficult to date, apart from their general proximity to other Iron Age settlement features. The relative absence of 'waste' from wells/catch-water features dating to the Iron Age is a factor that has been observed on previous sites within the Colne Fen landscape. It occurs with such frequency that it may be more than chance that these water sources were kept 'clean', given that they occur within areas of high occupation where other features such as eaves-gullies and ditches are receptacles of domestic waste.

Structure IV was slightly more enigmatic in nature than the eaves-gullied buildings, consisting of 11 post-settings arranged in a roughly rectangular configuration. More probably, the post-settings may represent the remains of a series of four-post structures. The similarity of their fills, however, precludes speculation as to which posts may have gone with which phase of building.

To the east of Structure IV lay pit F. 315. In the absence of dating evidence this has been ascribed an Iron Age date due to its proximity to the structure and the similarity of its fill to the dark grey ashy deposits of the posts of the structure.

Dated more tentatively to the Late Iron Age were a series of curvilinear ditches lying to the west of the excavated area. F. 359 and F. 600 appear to represent the northern and western sides of an enclosure, the shallow nature of the southern and eastern extent of their ditches possibly indicating that any opposing sides have been lost through subsequent truncation. F. 358 may be the elongated eaves-gully of a building. Yet with little dating evidence and lack of internal post settings, both whether this represents a structure at all and whether it dates to the Iron Age remains open to question.

Discussed at length below, at this point it only warrants mention that, tucked in tightly beside Structures VI and VIII, Structure 1 — a small square building and arguably a shrine — could possibly have been of Late Iron Age attribution; its defining gullies did not themselves produce any dating evidence.

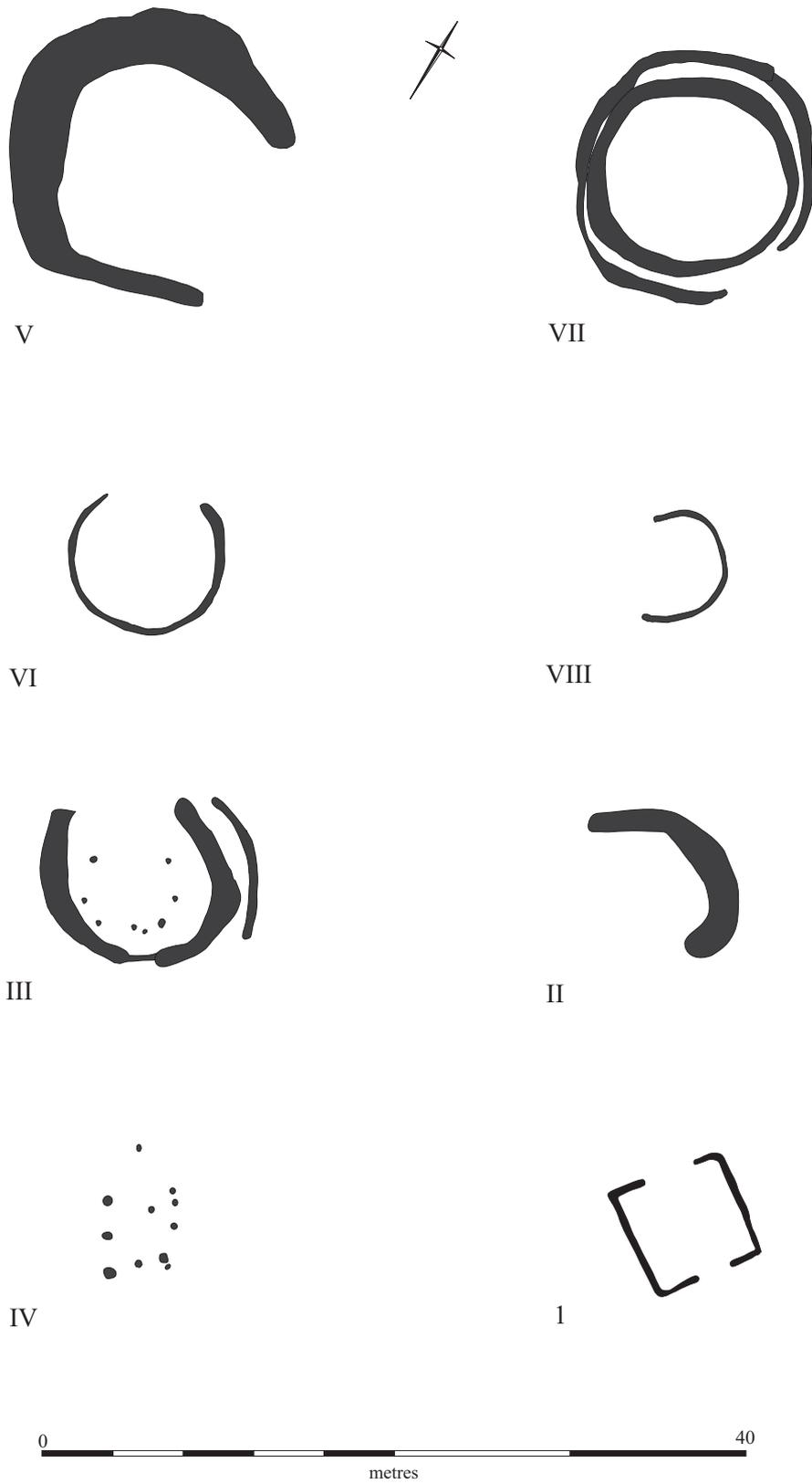


Figure 11. Iron Age Structures

Iron Age Pottery Leo Webley

This report discusses the Iron Age pottery from fieldwalking and from those contexts identified during the early stages of post-excavation analysis as being Iron Age in date. Further Iron Age pottery will no doubt be identified as residual material from Roman contexts. The material has been rapidly examined to assess its character, date range and interpretative potential. No detailed recording or analysis has been carried out.

Fieldwalking

Fieldwalking yielded only eight sherds of Iron Age pottery. These ranged in date from the later Early Iron Age to the early-mid 1st century AD. The presence of two later Early Iron Age sherds — one geometrically decorated body sherd and one La Tène-style rim — is notable as only a single sherd of this date was identified in the much larger excavated assemblage. Also notable were two cordoned ‘Aylesford-Swarling-style’ wheelmade sherds. The Iron Age sherds were all found in the eastern field, a surprising distribution given that this does not correspond with the focus of Iron Age settlement as shown by excavation. It does, however, correspond to the distribution of worked flint from fieldwalking. The distribution was probably more influenced by modern land-use or differential conditions for fieldwalking between the two fields than by actual patterns of Iron Age activity.

Excavated Features

The excavated assemblage identified to date consists of 373 sherds from 73 contexts. Both handmade and wheelmade wares are present, and a number of contexts contain both types (F. 311 [1913] & [2803]; F. 319 [2286] & [2574]; F. 350 [6945]; F. 352 [6263]; F. 357 [8251], [8285] & [8865]).

Handmade pottery comprises the clear majority of the material. The assemblage shows high fragmentation and low completeness, although substantial parts of vessels were recovered on a few occasions, notably the base and lower walls of a vessel from F. 335 [3590]. The earliest datable piece is a late Early Iron Age ‘T’-shaped rim, recovered as a surface find. This is similar to a sherd from the ditch of the putative square barrow at Earith Site IV (Hill in Regan and Evans 2000), and probably dates to the 5–4th century BC. The rest of the handmade assemblage can be identified as Middle to Late Iron Age. Slack-shouldered jars/bowls predominate, with the majority of rims being upright. Surface treatment can be seen in the form of burnishing, scoring, combing and fingernail impressions. Eleven sherds were scored, mostly in a rather irregular fashion, although four conjoining sherds from F. 316 [2786] show a more regular slanting mesh of lines. The low proportion of scored sherds contrasts with other sites at Earith (Site I: Hill in Regan and Evans 1998; Site IV: Hill in Regan and Evans 2000) as well as nearby sites such as Haddenham V (26% of sherds >4g in weight: Hill forthcoming). Seven sherds were combed and three show fingernail impressions (one marked along the top of the

rim, and two marked with a band below the rim). Several handmade sherds show burnt food residues attached to either the internal or external surface.

Most of the wheelmade pottery examined is Late Iron Age, although 14 sherds have been recorded as Late Iron Age to Early Roman. One context containing Late Iron Age pottery also included a probable Early Roman sherd (F. 311 [1238]). Though most of the material again comprised small to medium-sized sherds, there was also a significant number of larger fragments, including substantial wall/rim pieces from F. 311 [1238], F. 318 [1699] and F. 352 [6263], and a complete base from F. 357 [7693]. Vessel types included several examples of fine jars or bowls with burnished exteriors, everted rims and multiple horizontal cordons or 'ripples' on the neck/upper body (F. 311 [1238], F. 318 [1699], F. 319 [2574], F. 352 [6263], F. 354 [8869]). Rilling could be seen on the lower part of two of these vessels (F. 311 [1238] and F. 318 [1699]). Meanwhile, there were two sherds from a fine burnished tazza ([9937]). Less fine wares in sandy or shelly fabrics also occur, and include a small amount of wheel-finished though initially handmade pottery (from F. 350 [6239] and F. 357 [7693]). Combed decoration was seen on pottery from F. 357 [7753] and F. 359 [8881]. Sherds with food residues were less common than in the handmade material, but were seen in F. 352 [6263] and F. 357 [7753]. One vessel shows use-wear in the form of internal erosion (F. 311 [1238]).

The fact that several contexts contained both handmade and wheelmade pottery suggests continuity of Middle Iron Age-type pottery into the Late Iron Age alongside wheelmade forms, as well attested at sites elsewhere in the Fens. There are also two contexts in which handmade pottery is found with clearly Romano-British sherds (F. 118 [1507] and F. 319 [2549]). While only 27% of the examined sherds were wheelmade, this statistic is skewed by the greater fragmentation of the handmade material. It is also highly likely that there was a bias towards handmade sherds when the initial identification of Iron Age contexts took place, so that more wheelmade Late Iron Age pottery can be expected to emerge later. Thus, while the occupation of the site may have begun during the Middle Iron Age, it is quite possible that most or all of the assemblage dates to the Late Iron Age.

The pottery assemblages from the Colne Fen sites are of significant interest due to the location of Earith at a cultural boundary zone during the Middle-Late Iron Age. The area lay at the boundary between the South Cambridgeshire tradition of sandy Plain Wares and the East Midlands tradition of shelly Scored Ware, and was also at the northernmost limit of the 'Aylesford-Swarling' tradition during the final century of the period. The manifest differences between the Colne Fen sites in the proportions of Scored to Plain Wares and in the frequency of Aylesford-Swarling type pottery are intriguing, and may reflect underlying social or cultural differences between these sites. Full analysis of the material has the potential to shed light on this issue.

Baked Clay

The assemblage of baked clay from Iron Age contexts consists of 51 individual pieces weighing a total of 887g (Table 12). The pieces can be broadly classified by fabric as follows:

- A: Fairly hard, sandy fabric with sparse shell, flint and/or fine gravel
- B: Soft sandy fabric with moderate fine to medium gravel
- C: Hard fabric with common fine flint
- D: Very soft, powdery yellow fabric
- E: Mixture of baked clay, slag, and gravel

The majority of pieces are in Fabric A. This fabric ranges in colour from buff to brown to pink/orange. The sparseness, irregularity and poor sorting of inclusions may suggest that they are fortuitous components of the clay rather than deliberate additions.

The most notable piece in this fabric is a fragment (about one half) of a flattened ball or pellet with a smooth outer surface, from [1651]. It measures *c.* 30mm diameter x 25mm, with a central *c.* 5mm diameter moulded perforation penetrating 17mm down its short axis. The function of this item is unclear; it resembles a spindle whorl except that the central perforation does not penetrate the full thickness of the object.

While many of the other pieces in this fabric are merely irregular lumps, a fairly high proportion has one or more smooth surface. Sometimes these smoothed surfaces bear fine striations (especially [2286]), perhaps suggesting that they were wiped with a cloth whilst still 'wet'. Thin 'slivers' (5–7mm thick) of baked clay from [2850], [2586] and [6263] have notably smooth and flat surfaces on one side, while the other side is irregular. These could perhaps be from oven linings or the like. Larger 'blocks' of baked clay with 1–2 fairly smooth surfaces were found in [2369] and [8887], the latter piece being a corner fragment with a slightly acute angle. These could possibly be fragments of firebars. Of the less regular pieces in this fabric, a notable piece is from [7752], with finger pinch marks and an impression of five fine parallel lines (from reed?). None of the pieces are obviously suggestive of daub, with no impressions of wattle or wood present.

Fabric B is represented by 24 pieces from [3916]. These soft pieces are all very rounded from erosion and no suggestion of function can be made.

Fabric C has a single example, from [8933], with one smooth face. It is just possible that this is a sherd of (?Neolithic) pottery rather than baked clay.

Fabric D also only has a single example, from [3387]. Little can be said about this small eroded lump.

'Fabric' E, comprising a mixture of baked clay, spongy iron slag and gravel, is represented by a single piece from [1507]. This is an irregular lump measuring 80 x 50 x 30mm (123g). It seems likely that this is a fragment of a smithing hearth bottom.

Feature	Context	No.	Weight (g)	Fabric	Comments
17	9389	1	24	A	
118	1507	3	150	A & E	Inc. piece containing slag - from smithing hearth/oven?
308	2369	2	81	A	Inc. block with smooth surface
312	1081	1	2	A	
319	2286	1	8	A	
319	2568	1	2	A	
319	2576	1	6	A	
319	2580	2	21	A	1 with very smooth surface
319	2586	5	27	A	1 with smooth surface
319	3387	1	5	D	
330	1651	1	17	A	Perforated ball
340	3916	24	402	B	Very eroded
350	6239	1	22	A	
352	6263	1	5	A	
357	7752	1	29	A	Amorphous with finger pinch marks
359	8933	1	7	C	Or pot sherd? Smooth surface.
360	8887	1	71	A	Two fairly smooth surfaces, corner of block?
1064	8107	2	8	A	1 with very smooth surface

Table 12: Iron Age baked clay

Iron Age Coinage Adrian Challands

Two Iron Age coins have been identified to date:

<590> The silver (AR) coin is Icenian and of Anted (Mack 420). Obverse: Two crescents back to back between vertical lines. Reverse: Horse. The type is well discussed, and possible minting dates range from c. 15BC to c. AD47.

<596> Possible Potin coin which is very corroded, needing further analysis to refine identification.

Other Finds

A single quern fragment was found in an Iron Age context, F. 311 [2328]. This is of Millstone Grit, up to 40mm thick, with 90 x 70mm of the grinding surface preserved. The edge of the quern was curved, though not enough of the object survives to indicate whether it was of saddle or rotary type.

Iron objects were recovered from four contexts. From F. 311 [1913] came a rod or spike, 80mm long, with a diameter of c. 20mm at one end, coming to a blunt point at the other. The remaining pieces of iron are all small, amorphous, corroded lumps (F. 342 [3971]; F. 354 [8869]; F. 354 [9152]). Iron-working is indicated by two pieces of slag from F. 319, 142g coming from [3387] and 22g from [3408].

Animal Bone Chris Swaysland

An assemblage totalling 2776 bone fragments (36,667g) was examined from contexts of this period (see Swaysland above for methodology). Of these 941 fragments were from a complete horse burial and 792 fragments were from two cattle ‘head and hooves’ deposits. Of the remaining fragments, 354 (33.9%) were identified to species, a further 82 fragments (7.9%), mainly ribs and vertebrae were identified to size only.

Pits in the Vicinity of Enclosure 1

A series of pits was identified clustering around a section of enclosure ditch F. 5. Five pits were on the interior of the enclosure ditch and nine were on the exterior. None of the pits cut, or were cut by the ditch.

Species	NISP Interior Pits	NISP Exterior Pits
Cow	2	3
Sheep/goat	0	2
Medium sized mammal	0	1
Large sized mammal	21	1

Table 13: Animal species proportions, pits around Enclosure 1

Clearly the amount of animal bone recovered from these pits is too low to form any solid interpretations. The absence of sheep/goat from the interior of the enclosure may be significant and could hint at its purpose. The absence of significant amounts of animal bone from these pits strongly indicates that waste disposal was not their primary purpose.

Enclosures

Three enclosures of varying size and shape were identified by the excavator; the identified faunal material recovered is presented below (Table 14). Data from the enclosures shows a range of species represented in Enclosures 1 and 3 with cattle predominant. The second most frequently occurring species in Enclosure 1 is sheep/goat whereas in Enclosure 3 it is horse. Enclosure 2 is somewhat different to the other enclosures having a predominance of sheep/goat. However the sample size of Enclosure 2 is very small and thus confidence in these results should be less.

Species	Enclosure 1		Enclosure 2		Enclosure 3	
	NISP	NISP%	NISP	NISP%	NISP	NISP%
Cattle	21	56.8	2	25	19	55.9
Sheep/goat	9	24.3	5	62.5	3	8.8
Pig	0	0	0	0	1	2.9
Horse	1	2.7	0	0	5	14.7
Dog	1	2.7	0	0	2	5.9
Medium sized mammal	4	10.8	1	12.5	0	0
Large sized mammal	1	2.7	0	0	4	11.7

Table 14: Relative species proportions for enclosures

All Areas

Cattle and sheep/goat account for the vast majority (63.2%) of the identifiable animal bone remains from the site. Less commonly occurring species are horse, pig, and dog. Non-domestic species are represented by wolf teeth and one section of worked deer antler. Wolf was represented by the maxillary P4 and M1 teeth both showing signs of wear, from F. 2. The deer antler is discussed in greater depth below.

The representation of skeletal elements of cattle and sheep/goat shows that all elements were present, indicating that animals were raised and slaughtered on site. The more robust elements have survived in greater numbers.

A total of 40 (12% of non-articulated) specimens show evidence of carnivore gnawing. Butchery marks are apparent on 20 (6% of non-articulated) specimens. Many specimens had iron-rich concretions adhering to the surfaces, and this may have obscured identification of some marks.

Species	NISP	NISP %
Cattle	136 (792)	41.2
Sheep/goat	72	21.8
Horse	18 (971)	5.5
Pig	13	3.9
Dog	6	1.8
Wolf	1	0.3
Deer	1	0.3
Large sized mammal	60	18.2
Medium sized mammal	23	7.0

Table 15: Relative Iron Age animal species proportions, all areas, articulates given in brackets.

Comparanda

When compared with the data from other Iron Age sites at Colne Fen (Higbee in Regan & Evans 2000), the faunal remains are similar in that all assemblages are dominated by cattle and sheep/goat. The relative proportions of these species differ, however in that the levels of cattle are moderately higher at the Camp Ground and the levels of sheep/goat are moderately lower. Other species (pig, horse and dog) are of much lesser importance and are broadly similar in proportion.

Species	Site I NISP%	Site IV NISP%	Camp Ground NISP%
Sheep/goat	37.7	46.5	29.4
Cattle	42.5	39.7	55.5
Pig	10.3	4.8	5.3
Horse	5.5	7.2	7.3
Dog	3.9	1.8	2.5

Table 16: Major species proportions Iron Age excavations at Colne Fen, Earith (excluding articulates).

Worked Antler

A section of worked antler was recovered from F. 318. The antler is 108mm in length and ovoid in section, measuring between 27mm and 20mm at its thickest end tapering to a point at the other. The antler is shaped such that it would make an ideal handle for a knife. The interior of the antler seems hollow, however it is heavily concreted, thus obscuring identification of any evidence of hafting. Antler can be very difficult to identify to species, but the size of the artefact would indicate that it came from Red Deer.

Placed Deposits

Horse: A complete horse burial was recovered from context [3866], just east of and exterior to Enclosure 1. The condition of the burial was fair, though many bones were highly fragmentary. Sex was determined by the absence of canine teeth, indicating that the horse was female. The pelvis was highly fragmentary thus precluding confirmation of sex on this basis.

The horse was mature, as the sequence of long bone epiphyseal fusion was complete. The teeth exhibited substantial wear. An estimation of the age at death may be calculated from the degree of wear shown on the teeth. Three different sources (Table 17) were consulted and give an age at death of between 18 and 21 years.

Source	Estimated age at death (years)
Willoughby (1974) in Davis (1987)	<i>c.</i> 20
St Clair (1975)	<i>c.</i> 18
Silver (1969)	<i>c.</i> 21

Table 17: Estimated age at death of horse [3866], based on tooth wear

The shoulder height of the horse has been estimated using the conversion factors of Kiesewalter, as recommended by von den Dreisch and Boessneck (1974). All undamaged long bones were measured using the conventions of von den Dreisch (1976). Table 18 gives the measurements taken and the results given.

Bone measured	Measurement (cm)	Conversion factor	Height Estimate (cm)
Radius LL	28.6	4.34	124.1
Radius & Ulna GLL	36.5	3.40	124.1
Tibia LL	28.4	4.36	123.8
Metatarsal LL	23.7	5.33	126.3

Table 18: Estimated withers height, horse [3866]

The estimate obtained for the metatarsal seems above the rest of the bones and therefore will be disregarded as anomalous. The remaining figures give a mean shoulder height estimate of 124cm, or about 12 hands. By modern standards this is rather small and this animal would be regarded as a pony (<14 hands).

Previous excavations at Earith Site II recovered the complete skeletons of two foals. These were in a semi-articulated state and died at birth or soon after. Neither showed any

sign of disease or trauma (Higbee in Knight and McFadyen 1998). These foals may represent a ‘special deposit’ or could simply be the disposal of still births, perhaps from the same mare. These foals are currently the subject of DNA research by M. Bower, Department of Archaeology, University of Cambridge in connection with the genetic differences between Iron Age and Roman horses.

Cattle: Two cattle ‘head and hooves’ deposits were recovered from pits [2556] and [2558]. The deposit from [2556] consisted of four lower leg bones from the same animal. These were complete from the ankle joint though one hoof was missing. A heavily fragmented skull was also recovered with small horns. No evidence of cut or skinning marks were apparent, however, the bones were heavily concreted, which may have precluded identification of these marks.

The fusion of the proximal epiphysis of the 1st phalanx was in two cases just fusing and in the other six unfused. This indicates an age at death of 20–24 months (Habermehl 1961 in Amorosi 1989). The distal end of the right metatarsal was just fusing whereas the left was unfused. The distal metatarsal fuses between the ages of 24–30 months (*ibid.*). The metacarpals were unfused.

The tooth eruption sequence indicates a very similar age at death. The M2 was just in wear and the M3 unerupted, this gives an estimated age at death of 21–24 months (Grigson 1982).

The fusing metatarsal was measured using the conventions of von den Dreisch (1976) and a withers (shoulder) height calculated using Fock (1966) as recommended by von den Dreisch and Boessneck (1974). There were no indications as to the sex of the animal. Therefore the height estimation is given as a range between the male and female figures. The animal is estimated to have stood between 102.7 and 106.6cm at the shoulder.

The skeletal representation of [2558] was very similar to that from [2556]. A fragmentary skull, horns and all leg bones from the ankle down were represented. All bones seem to come from the same individual. In contrast to [2556], the animal from [2558] was aged. Age estimations become much less precise the older animal becomes. The sequence of epiphyseal fusion was complete. Tooth wear indicates an age in excess of three years (Grigson 1982) and possibly much older than this. The metapodials were measured using the conventions of von den Dreisch (1976) and withers (shoulder) heights calculated using Fock (1966) as recommended by von den Dreisch and Boessneck (1974).

Element	Greatest Length (cm)	Conversion factor (female)	Conversion factor (male)	Estimated height (cm)
Metacarpal L	17.2	6.0	6.25	103.2-107.5
Metacarpal R	17.3	6.0	6.25	103.8-108.1
Metatarsal L	20.5	5.35	5.55	109.7-113.8
Metatarsal R	20.5	5.35	5.55	109.7-113.8

Table 19: Estimated withers height for cattle deposit [2888]

There were no indications as to the sex of the animal, it is therefore estimated to have stood between 103.2 and 113.8cms at the shoulder. The upper limit of this estimate is just above the expected range of heights. Iron Age cattle were small and lightly built with a range of shoulder heights from 100–113cm (Harcourt 1979 in Davis 1987). In addition to the 'head and hooves' the proximal end of a cattle radius and a horse 1st phalanx were also present in [2558]. The significance of these two bones is difficult to assess. The location of the 'head and hooves' burials [2556] and [2558] is provocative. Both pits were adjacent to one another in the entranceway to Enclosure 3. Another feature with a very similar deposit was recovered from the previous excavations at Colne Fen Site I. Feature F. 381 contained 'a calf skull and foot bones' (Higbee in Regan & Evans 2000). This deposit was located just inside the entranceway of the southern enclosure.

These repeatedly occurring deposits would seem to have a 'ritual' purpose. Stallibrass (1996) has discussed some arguments concerning cattle 'head and hooves' deposits. The material she examined was recovered from a bog and traces of hide were remaining. It is possible that the deposits from the Camp Ground also were originally interred with hides. Hides have been seen as essential components in divination rites from Irish, Scottish and Germanic cultures from the Iron Age to the 18th century AD (Piggott 1962).

Discussion

The faunal material from this phase shows an economy dependent almost entirely on domestic species. Wild species are represented by one specimen of wolf maxillary teeth and a section of worked deer antler. The domestic species are dominated by cattle and sheep/goat. Horse, pig and dog occur in much smaller numbers. The site is interesting in having a number of placed deposits, two cattle 'head and hooves' deposits and a complete horse burial.

Further work should consider the age at death of the major domestic species in an attempt to understand animal husbandry strategies. Work in progress by M. Bower, Department of Archaeology, University of Cambridge is currently considering the DNA of Iron Age horses in relation to that of Roman horses and the influence of imported breeding stock.

Plant Remains Rachel Ballantyne

Charring has preserved the majority of plant remains from the 27 samples examined attributable to Iron Age contexts (see Ballantyne above for methodology). There are also frequent uncharred inclusions of seeds and vegetative material. By the survival of starch-rich components, and the fresh appearance of much of this material, many of the items are of recent, intrusive origin. Repeatedly occurring taxa include *Chenopodium album*, *Atriplex patula/prostrata*, *Hypericum* c.f. *perforatum*, *Rosa* sp., *Picris echioides* and *Carduus/Cirsium* sp.; these are characteristic of disturbed soils, and probably represent the excavated locality, or the storage environment of the samples.

A number of the deeper contexts include uncharred items, which could represent once waterlogged, anoxic conditions; recent quarrying has dramatically reduced the water table in the area. Uncharred remains from these contexts are therefore also discussed below. Items such as fragments of wood, and taxa characteristic of wet soils, strongly imply the presence of archaeological material; these contrast with the clearly intrusive remains characteristic of disturbed soils. However, there are many other taxa present that cannot be discounted as either intrusive or waterlogged, and this is a problem within interpretation of the 'damp' contexts at this site.

Results

The sampled contexts have been grouped below according to their location within the site, broadly those from the eastern, northern and western excavated areas. Only one structure, roundhouse F. 319, was comprehensively sampled; these contexts have been grouped together for analysis with their associated postholes and nearby gully F.322.

Eastern Features (east of grid 190E): The sampled contexts may be grouped into those near to Structure III (F. 319), and those elsewhere within the eastern area. Of the contexts away from the roundhouse, basal pit fills F. 309 [264], and F. 312 [1084] both contain very few charred remains, including wood charcoal, and no evidence of waterlogging. Further west, basal ditch fill F. 124 [1898] also lacks charred remains, but does include a few seeds of duckweed (*Lemna* sp.). The seeds of duckweed are mineral-rich, and often survive in previously damp contexts where other organic remains have been lost.

Lower ditch fill F. 98 [1665] does include more notable charred remains, with moderate amounts of charcoal, and evidence of waterlogging. Four charred grains are identifiable to hulled wheat types (*Triticum spelta/dicoccum*). There is also one fragment of six-row barley chaff (*Hordeum vulgare s.l.*) and one of hulled wheat chaff. Charred seeds of vetch/wild pea (*Vicia/Lathyrus* sp.) and clover (*Trifolium* sp.) could be cereal weeds. There are moderate quantities of duckweed, accompanied by wood fragments, and water flea (*Daphnia* sp.) egg cases. Other uncharred remains are present, but cannot be identified as clearly waterlogged or modern.

Near roundhouse Structure III (F. 319), the small pit [2551] includes a couple of charred grains of hulled wheat chaff, and a couple of seeds of knotgrass (*Polygonum c.f. arenastrum*) and meadow-grass (*Poa* spp.); charcoal is negligible. In contrast, the basal fill of enclosure ditch F. 311 [2328] is rich in charred remains. The predominant items are cereal chaff, mostly glume bases and spikelet forks of spelt wheat (*Triticum spelta*) and emmer wheat (*Triticum dicocum*). Lower amounts of barley chaff also occur, and there are low amounts of both wheat and barley grains. The wild taxa are all potential crop weeds, but are in low quantity, mostly of brome grass (*Bromus c.f. secalineus*). The presence of charred rush seeds (*Juncus* spp.) suggests either the use of this plant as a resource, or that cereals were being grown on damp soils.

Roundhouse Structure III: The sampled contexts may be grouped into those representing ditches and gullies, and those representing the internal postholes. The composition of samples between the two groups is broadly similar, with low amounts of fragmented wood charcoal, and occasional charred grains and chaff items. Within the group of ditches and gullies, notable contexts are [3386] and [3387]. The first context includes a number of hulled wheat grains, a little hulled wheat chaff, and large grass seeds including brome grass. The presence of a small number of charred great fen sedge leaves (*Cladium mariscus*) is unusual for a prehistoric site in the region. Great fen sedge is unlikely to tolerate arable conditions, and these leaves may represent the collection and use of the plant, possibly for thatching. However, the remains could also

be intrusive from later activity, and until the Roman assemblage is studied fully this source cannot be discounted.

Of the postholes, [2568] and [2549] contain slightly greater quantities of charred remains than the others: [3381], [2547] and [2541]. The remains correspond to lower concentrations of those within the gullies and ditches.

Northern Features (north of grid 280N; Enclosure 1 and Neighbouring Feature): The sampled contexts all represent pits and ditches. Of the pits (F. 340 [3916], F. 341 [3969] and F. 342 [3972]), all are devoid of charred remains other than low to moderate amounts of wood charcoal. The ditches F. 5 [3640] & [4042] and F. 354 [8869] contain occasional charred cereal or wild plant remains, again with low to moderate amounts of wood charcoal. The only rich context is lower fill [2787] of ditch F. 316. In addition to charcoal, there are charred rootlets, parenchymous tissue (probably tubers or rhizomes), woody stems, and grass stems. The accompanying seeds are also unusual, and represent water-associated taxa, including several true sedge types (*Carex* spp.), wood-rush (*Luzula* sp.) and mint (*Mentha* sp.). Such remains indicate burning of turf or uprooted material. The range of wild taxa corresponds well to the waterlogged seeds from this context (discussed below), and suggests burning linked to clearance of ditch vegetation.

The best evidence for damp, once waterlogged features has been recovered from the northern area. Ditches F. 5 and F. 354 both include mineralised duckweed seeds, although waterlogging is absent. However ditch F. 316 [2787] and pit F. 340 [3916] do have organic seeds preserved. Both contexts contain low amounts of fragmented wood. In [2787] this is accompanied by numerous seeds of bristle club-rush (*Isolepis setacea*), characteristic of wet ground in open ditches, fens and marshes. Other plant seeds are less frequent, but include true sedge (*Carex* sp.), blinks (*Montia fontana* ssp. *chondrosperma*), pale persicaria (*Persicaria lapathifolia*) and buttercup (*Ranunculus* c.f. *repens*), which are also associated with damp, open soils.

The second context, pit F. 340 [3916], has numerous elder seeds (*Sambucus nigra*), with some bramble (*Rubus fruticosus* agg.) and hawthorn (*Crataegus monogyna*). There are no water-associated taxa, which suggests that during infilling the pit was located within the type of scrubby vegetation usually found in areas once cleared and disturbed by humans.

Western Features (west of grid 150E; Enclosure 1 and Neighbouring Features): There are three clusters of remains: Enclosure 1 (ditch F. 5 [7910] & [8413]), Structure V (F. 357 [7751]) and Structure VII (eavesgully F. 350 [6239] and gully F. 352 [6263]). The ditches have similar remains to those (excepting [2787]) in the northern area, with few charred remains and limited evidence (duckweed) for standing water.

Of the two gullies, [6239] also contains few remains, but [6263] is very rich, most notably in cereal chaff and seeds of arable weeds. The main cereal is spelt wheat, with a few examples of barley. Of the wild taxa, brome grass (*Bromus* c.f. *secalineus*) is most common, and the number of seeds almost outnumbers the total number of cereal items. The seeds of rye brome are a similar size to grain, and are often difficult to remove from cereal crops. However, there is also a recent history of its cultivation for fodder, and it could be that the numerous seeds indicate deliberate collection of the seed heads. The other, fewer, taxa include vetch/wild pea, with one seed comparable to hairy vetch (*Vicia* c.f. *hirsuta*), scentless mayweed (*Tripleurospermum inodorum*) and common spike-rush (*Eleocharis* c.f. *palustris*). Both the first two species suggest cultivation on light soils, whilst spike-rush indicates occasionally damp conditions.

Four Iron Age contexts rich in charred remains have been identified, three of which are cereal-processing remains linked to nearby structures; the fourth, F. 316 [2787], is different and appears to represent ditch clearance. The main cereal is spelt wheat, with emmer wheat and six-row barley also cultivated. From the associated crop weeds, the soil

appears to have been light, but occasionally damp, which corresponds well to the sandy soils upon the local gravel terraces. Compositionally, the three cereal-rich contexts are comparable. Ditch/gully F. 319 [3387] includes roughly equal hulled wheat grains to chaff, whereas ditch F. 311 [2328] and gully F. 352 [6263] are both chaff rich and contain greater numbers of weed seeds. Despite this variation, all three contexts represent charred debris from the cleaning of grain prior to milling or consumption. In all three contexts brome grass seeds are the most numerous wild taxa; this may have been a pervasive weed, or possibly a cultivated plant. Other wild resources included hazelnut and possibly great fen sedge.

Of the two damp contexts with surviving organic remains, ditch F. 316 [2787] suggests the presence of wet, water-filled enclosure ditches in an open, cleared setting. Occasionally other ditch contexts have mineralised seeds of duckweed surviving, suggesting that standing water was once present. The second damp context, pit F. 340 [3916], indicates scrubby vegetation associated with the regeneration of once cleared land. The infilling of this pit may be associated, therefore, with the ceasing of activity in this area.

In conclusion, during the Iron Age, ashy remains from charring of crop-processing debris are present *outside* two of the roundhouse structures (F. 319 and F. 350). Many of the sampled ditches and postholes contain only low amounts of 'background' surface material. The main, locally grown, crops were spelt wheat, with lesser quantities of emmer wheat and six-row barley. The crops, their weeds, and the possible use of great fen sedge (*Cladium mariscus*) compares particularly well with remains from nearby Wardy Hill (Murphy 2003).

In the north of the site there is better survival of organics at the bases of deep features. The limited organic plant remains suggest wet ditches within open land, which subsequently became more scrubby and overgrown.

There is little further work that could be undertaken upon these samples. The limited number of contexts (unless further Iron Age contexts should be identified), and their often-low number of plant remains means that any spatial analysis or detailed interpretation would be unreliable. However, it will be informative to integrate the microartefactual information from the heavy residues, once these have been sorted.

sample number		<4>	<54>	<159>	<175>	<205>	<220>
context		[264]	[1084]	[1665]	[1898]	[2551]	[2328]
feature		F.309	F.312	F.98	-	-	F.311
description		basal fill	basal silts	lower silt	basal fill	small	basal fill
feature type		pit? well?	pit	ditch	ditch	pit	encl. ditch
phase/date		IA	IA	IA	IA	IA	IA
sample volume/ litres		13	7	10	6	13	15
grid location - Easting/Northing		250/230	240/200	190/270	200/230	210/180	200/180
CHARRED REMAINS							
<i>Hordeum vulgare sensu lato</i> grain	barley grain						2
<i>Triticum</i> c.f. <i>spelta</i> grain	spelt wheat grain			1			
<i>Triticum spelta/dicoccum</i> grain	spelt/emmer wheat grain			2			4
cereal grain indet.				1			2
6-row <i>Hordeum</i> rachis internode	6 row-barley chaff			1			2
<i>Hordeum vulgare sensu lato</i> rachis internode	barley chaff						2
<i>Triticum spelta</i> spikelet fork	spelt wheat chaff						2
<i>Triticum spelta</i> glume base	spelt wheat chaff						6
<i>Triticum dicoccum</i> glume base	emmer wheat chaff						2
<i>Triticum spelta/dicoccum</i> spikelet fork	wheat chaff						5
<i>Triticum spelta/dicoccum</i> glume base	spelt/emmer chaff			1		2	19
<i>Triticum</i> sp. glume base	wheat chaff						1
<i>Triticum spelta/dicoccum</i> rachis internode	hulled wheat chaff						1
<i>Avena</i> sp. awn fragment	oat 'hairs'						+
rachilla indet.	cereal chaff						1
<i>Stellaria media</i>	chickweed						1
<i>Persicaria maculosa</i> Gray	redshank						2
<i>Polygonum</i> c.f. <i>arenastrum</i> Boreau	equal-leaved knotgrass					1	
<i>Rumex sanguineus/conglomeratus/obstusifolius</i>	small-seeded dock						2
<i>Brassica nigra</i> type [coarse textured form]	black mustard						1
small <i>Vicia/Lathyrus</i> sp. (<3mm)	vetch/wild pea			2			
small <i>Trifolium</i> spp. (<1mm)	small-seeded clover			2			
<i>Galium</i> c.f. <i>aparine</i>	cleavers						2
<i>Juncus</i> spp.	rushes						3
<i>Festuca/Lolium</i> sp.	fescue/rye-grass						2
<i>Poa</i> spp.	meadow-grass					1	
<i>Agrostis</i> sp.	bents						3
<i>Bromus</i> c.f. <i>secalinius</i>	rye brome						7
small Poaceae indet. (c.2mm)	small Grass Family seed						1
Poaceae culm node	grass stem joint			1			
small seed indet. (<3mm)							8
large seed indet. (>3mm)							1
charcoal fragments							
large charcoal (>4mm)		-		++			+
med. charcoal (2-4mm)		-		+++		-	++
small charcoal (<2mm)		+	+	+++	+	+	+++
- twiggy charcoal				-			
charred concretion		++ (<2mm)		-			
burnt soil fragment					+		
UNCHARRED REMAINS							
<i>Thalictrum flavum</i> L.	common meadow-rue		- u				
<i>Urtica dioica</i> L.	stinging nettle			- w/u			
<i>Chenopodium album</i> L.	fat-hen	++ u		+ u	- u		
<i>Atriplex patula/prostrata</i>	common/spear-leaved orache					++ u	++ u
<i>Stellaria media</i> (L.) Villars	chickweed	++ u					
<i>Persicaria maculosa</i> Gray	redshank	- u					
<i>Rumex</i> c.f. <i>obstusifolius</i> tepal	patience dockseed-case	+ u					
<i>Rumex sanguineus/conglomeratus/obstusifolius</i>	small-seeded dock	+ u					
<i>Salix</i> sp. <i>bract</i>	willow flower fragment			- u/w			
small, flat Brassicaceae indet.	small, flat Cabbage Family seed		- u				
<i>Rubus fruticosus</i> agg.	bramble			- w/u			
<i>Rosa</i> sp.	rosehip	+++ u					
<i>Crataegus monogyna</i> leaf fragment	hawthorn leaf	- u					
<i>Crataegus monogyna</i> L.	hawthorn	+ u					
<i>Euphorbia peplus</i> L.	petty spurge						- u
<i>Pastinaca sativa</i> L.	wild parsnip	+ u					
<i>Sambucus nigra</i> L.	elder			+ w/u			
<i>Picris echioides</i> L.	bristly oxtongue	+ u			- u		
<i>Lemna</i> sp. seed	duckweed			++ w/u	+ w/u		+ u
<i>Eleocharis</i> c.f. <i>palustris</i>	common spike-rush	- u					
indet. wood fragments				+ w			

Table 20: Iron Age environmental samples, eastern features.

All items are charred, unless indicated as: 'u' uncharred, probably modern ; 'w' waterlogged; KEY: '-' 1 or 2 items, '+<10 items, '++' 10-50 items, '+++>50 items

sample number		<129>	<189>	<190>	<191>	<192>	<195>	<196>	<197>	<198>	<200>	<201>	<202>
context		[2286]	[3413]	[3410]	[3406]	[3408]	[3386]	[3387]	[3381]	[2568]	[2547]	[2541]	[2549]
feature		F.319	F.322	F.319	F.319	F.319	F.319	F.319	-	-	-	-	F.319
description		roundhouse	ash butt-end	butt-end	r-house	r-house	r-house	ashy	r-house	r-house	r-house	r-house	r-house
feature type		ditch	gully	ditch	gully	gully	gully/ditch	gully/ditch	p/h	p/h	p/h	p/h	ditch
phase/date		IA	IA	IA	IA	IA	IA	IA	IA	IA	IA	IA	IA
sample volume/ litres		8	10	5	8	10	8	10	1	1	1	1	12
gnd location - Easting/Northing		210/170	210/170	210/170	200/170	200/170	200/170	210/170	210/170	210/170	210/170	200/170	200/170
CHARRED REMAINS													
hulled, twisted <i>Hordeum vulgare</i> s.l. grain	6-row hulled barley grain							1					
hulled, straight <i>Hordeum vulgare</i> s.l. grain	hulled barley grain							1					
<i>Hordeum vulgare sensu lato</i> grain	barley grain						1	2		1			
<i>Triticum</i> c.f. <i>spelta</i> grain	spelt wheat grain							2			1		
<i>Triticum</i> c.f. <i>dicoccum</i> grain	emmer wheat grain							3					
<i>Triticum spelta/dicoccum</i> grain	spelt/emmer wheat grain	1						16	28	4			7
cereal grain indet.		1			2			4	5				1
<i>Triticum spelta</i> glume base	spelt wheat chaff	2						1	7		3		
<i>Triticum dicoccum</i> spikelet fork	emmer wheat chaff								2				
<i>Triticum dicoccum</i> glume base	emmer wheat chaff	1							2				
<i>Triticum spelta/dicoccum</i> spikelet fork	wheat chaff								10	1	1		
<i>Triticum spelta/dicoccum</i> glume base	spelt/emmer chaff			1		3	5	28					3
<i>Triticum</i> sp. glume base	wheat chaff										6		
cereal indet. culm node	straw joint								3				
<i>Corylus avellana</i> L. nutshell fragment	hazelnut												1
<i>Atriplex patula/prostrata</i>	common/spear-leaved orache								2				
<i>Fallopia convolvulus</i> (L.) A. Love	black-bindweed								1				
<i>Rumex sanguineus/conglomeratus/obstusifolius</i>	small-seeded dock								1				
small <i>Vicia/Lathyrus</i> sp. (<3mm)	vetch/wild pea								1				
<i>Conium maculatum</i> L.	hemlock							1 c.f.					
<i>Centaurea scabiosa</i> L.	greater knapweed							1					
<i>Tripleurospermum inodorum</i> (L.) Schultz-Bip.	scentless mayweed										1		
<i>Eleocharis</i> c.f. <i>palustris</i>	common spike-rush												1
vegetative <i>Cladium mariscus</i> fragments	great fen sedge leaves							+					
<i>Cladium mariscus</i> (L.) Pohl	great fen sedge				1								
<i>Avena</i> sp.	wild/cultivated oat							1	1				
<i>Bromus</i> c.f. <i>secalineus</i>	rye brome							2	20		3		
<i>Bromus</i> spp.	brome											1	2
<i>Bromus/Avena</i> sp.	brome/oat	1				1						1	
<i>Anisantha</i> c.f. <i>sterilis</i>	barren brome										1		
large Poaceae indet. (>4mm)	large Grass Family seed		1					4	3		1		2
medium Poaceae indet. (c. 4mm)	medium Grass Family seed							2					
Poaceae culm fragment	grass stem								2				
small seed indet. (<3mm)										1			1
large seed indet. (>3mm)								1					
Monocot. stem base with roots									1				
nutlet indet.									1				
charcoal fragments													
large charcoal (>4mm)							-	++					
med. charcoal (2-4mm)		+	-	+	-	-	+	+++		++			+
small charcoal (<2mm)		++	+	++	+	+	++	+++	+	++	+	-	++
charred concretion			1					1 (1.5cm)	+				1
fly ash								+					
UNCHARRED REMAINS													
<i>Betula pendula</i> Roth.	silver birch								- u				- u
<i>Alnus incana</i> (L.) Moench	grey alder							- u					
<i>Alnus</i> sp. catkin fragment	alder catkin			- u									
<i>Chenopodium album</i> L.	fat-hen	+++ u	- u				+				- u		
<i>Atriplex patula/prostrata</i>	common/spear-leaved orache	- u	++ u	++ u	+ u	+ u	+ u	+ u	+ u	+ u	+ u	- u	+ u
<i>Stellaria media</i> (L.) Villars	chickweed	+											
<i>Polygonum aviculare</i> L.	knotgrass		- u										
<i>Fallopia convolvulus</i> (L.) A. Love	black-bindweed	- u											
<i>Rumex sanguineus/conglomeratus/obstusifolius</i>	small-seeded dock							- u					
<i>Fraxinus excelsior</i> L.	ash			- u									
<i>Carduus/Cirsium</i> sp.	thistle			- u								- u	
<i>Picris echioides</i> L.	bristly oxtongue		- u		- u	+ u	- u	- u					- u
<i>Sonchus asper</i> (L.) Hill	prickly sow-thistle									- u			- u
<i>Lemna</i> sp. seed	duckweed							+			- u		
indet. leaf fragments				+									
moss									+				
intrusive roots		+	+	++	+	++	- u	+	+	- u	- u	- u	++

Table 21: Iron Age environmental samples, contexts associated with Roundhouse F. 319. Key: see Table 20.

sample number		<155>	<209>	<241>	<242>	<243>	<245>	<673>
context		[2787]	[3916]	[3640]	[3972]	[4042]	[3969]	[8869]
feature		F.316	F.340	F.5	F.342	F.5	F.341	F.354
description		lower fill	burnt fill	base	base	base	charcoal	
feature type		ditch?	pit	encl. ditch	pit	encl. ditch	pit	ditch
phase/date		IA	IA	IA	IA	IA	IA	IA
sample volume/ litres		8	16	6	6	10	1	12
grid location - Easting/Northing		180/300	170/280	150/300	170/280	170/280	170/280	130/300
CHARRED REMAINS								
<i>Triticum spelta/dicoccum</i> grain	spelt/emmer wheat grain							1
<i>Triticum</i> c.f. <i>aestivum sensu lato</i> grain	free-threshing wheat grain					1		
cereal grain indet.								1
<i>Triticum spelta/dicoccum</i> glume base	spelt/emmer chaff							1
<i>Triticum</i> sp. glume base	wheat chaff					1		
large <i>Ranunculus</i> c.f. <i>bulbosus/acris/repens</i>		1						
small <i>Chenopodium</i> sp	goosefoot							4
medium Caryophyllaceae indet. (1-3mm)	medium Pink Family seed					1 kernel		
<i>Rumex sanguineus/conglomeratus/obstusifolius</i>	small-seeded dock	2						
medium <i>Trifolium/Medicago</i> spp. (2-3mm)	medium-seeded clover/medick			1				
<i>Mentha</i> sp.	mint	1						
<i>Luzula</i> sp.	wood-rush	1						
small flat <i>Carex</i> sp.	sedge	1						
small trilete <i>Carex</i> sp.	sedge	1						
elongate <i>Carex</i> s.p.	sedge	2						
<i>Phleum</i> sp.	cat's tail	2						
<i>Bromus</i> spp.	brome							1
Poaceae culm node	grass stem joint	2						
small seed indet. (<3mm)		1			1			
large seed indet. (>3mm)						1 frag.		
charcoal fragments								
large charcoal (>4mm)		-		+	+		++	
med. charcoal (2-4mm)		+	-	+	++	+	++	+
small charcoal (<2mm)		++	-	++	+++	++	+++	++
- twiggy charcoal		-						
- rootlets & parenchymous tissue		++						
- woody stems		+						
charred concretion					+			
UNCHARRED REMAINS								
large <i>Ranunculus</i> c.f. <i>repens</i>	c.f. creeping buttercup	- w						
large <i>Ranunculus</i> c.f. <i>bulbosus/acris/repens</i>	c.f. bulbous/meadow buttercup	-w/u						
<i>Urtica dioica</i> L.	stinging nettle			- u				
<i>Betula pendula</i> Roth.	silver birch			- u		- u		
<i>Chenopodium album</i> L.	fat-hen	+ u	- u			- u		
<i>Montia fontana</i> ssp. <i>chondrosperma</i> (Fenzl) Walters	blinks	- w						
<i>Persicaria lapathifolia</i> (L.) Gray	pale persicaria	+ w						
<i>Polygonum aviculare</i> L.	knotgrass	- w/u						
<i>Hypencum</i> c.f. <i>perforatum</i>	perforate St.John's wort			- u	- u	+ u		
<i>Rubus fruticosus</i> agg.	bramble		+ w/u		+ u	+ u		
<i>Potentilla</i> sp.	cinquefoil			- u				
<i>Crataegus monogyna</i> Jacq.	hawthorn		- w/u					
<i>Epilobium</i> sp.	willowherb			- u		- u		
<i>Lamium album/purpureum</i>	white/red dead-nettle						- u	
<i>Galeopsis tetrahit</i> L.	common hemp-nettle		- u					
<i>Sambucus nigra</i> L.	elder		+++ w/u	+ u		+ u	+ u	
<i>Picris echinoides</i> L.	bristly oxtongue		- u		+ u	+ u	+ u	
<i>Lemna</i> sp. seed	duckweed			+++ u		+++ u		+ u
<i>Isolepis setacea</i> (L.) R. Br.	bristle club-rush	+++ u/w						
medium trilete <i>Carex</i> sp.	sedge	- w						
Poaceae culm fragment	grass stem				+ u			
indet. wood fragments		+ w	++ w/u					
indet. leaf fragments			- u		+ u			
moss		++ u						
intrusive roots		- u	+ u	+ u	- u	++ u	- u	+ u
insect exoskeleton				+ u				
pupal case	fly pupae				+ u			
<i>Trichia</i> sp.	catholic snail		- u					

Table 22: Iron Age environmental samples, northern features. Key: see Table 20.

sample number		<456>	<457>	<514>	<527>	<608>
context		[6239]	[6263]	[7910]	[8413]	[7751]
description			lower fill	dessicated	dower peaty	basal fill
feature		F.350	F.352	F.5	F.5	F.357
feature type		eaves gully	gully	ditch	ditch	ditch
phase/date		IA	IA	IA	IA	IA
sample volume/ litres		12	8	14	12	7
grid location - Easting/Northing		140/240	140/240	120/270	120/270	100/260
CHARRED REMAINS						
hulled, twisted <i>Hordeum vulgare s.l.</i> grain	6-row hulled barley grain		1			
hulled <i>Hordeum vulgare s.l.</i> grain	hulled barley grain		2			
<i>Hordeum vulgare sensu lato</i> grain	barley grain		6			
<i>Triticum c.f. spelta</i> grain	spelt wheat grain		3			
<i>Triticum spelta/dicoccum</i> grain	spelt/emmer wheat grain		8	1	2	
cereal grain indet.			4	1	1	
<i>Triticum spelta</i> glume base	spelt wheat chaff		35			
<i>Triticum spelta/dicoccum</i> spikelet fork	spelt/emmer chaff		7			
<i>Triticum spelta/dicoccum</i> glume base	spelt/emmer chaff	1	23		1	
<i>Triticum spelta/dicoccum</i> rachis internode	spelt/emmer chaff		1			
rachis internode indet.	cereal chaff		2			
<i>Chenopodium album</i> L.	fat-hen			1		
Chenopodiaceae indet.	Goosefoot Family			2		
<i>Rumex acetosella</i> L.	sheep's sorrel	1	3			
<i>Rumex sanguineus/conglomeratus/obstusifolius</i>	small-seeded dock		2			
<i>Vicia c.f. hirsuta</i>	hairy tare		1			
small <i>Vicia/Lathyrus</i> sp. (<3mm)	vetch/wild pea		14			
small <i>Trifolium</i> spp. (<1mm)	small-seeded clover				1	
<i>Odontites vernus</i> (Bellardi) Dumort.	red bartsia		1			
<i>Tripleurospermum inodorum</i> (L.) Schultz-Bip.	scentless mayweed		4			
small Asteraceae indet.	small Daisy Family seed	1 kernel				
<i>Eleocharis c.f. palustris</i>	common spike-rush		3			
small <i>Festuca</i> sp.	fescue			1		
<i>Festuca/Lolium</i> sp.	fescue/rye-grass		1			
<i>Poa</i> spp.	meadow-grass	1	1	1		
<i>Avena</i> sp.	wild/cultivated oat					
<i>Agrostis</i> sp.	bents		1			
<i>Bromus c.f. secalineus</i>	rye brome		74		2	
<i>Bromus</i> spp.	brome				4	
medium Poaceae indet. (c. 4mm)	medium Grass Family seed		4			
twig bud indet.			1			
charcoal fragments						
large charcoal (>4mm)					+	
med. charcoal (2-4mm)		-		-	++	
small charcoal (<2mm)		+		+	+++	-
charred concretion					+	
UNCHARRED REMAINS						
<i>Chenopodium album</i> L.	fat-hen	- u				
<i>Fallopia convolvulus</i> (L.) A. Love	black-bindweed	- u				
<i>Hypericum c.f. perforatum</i>	perforate St.John's wort			- u		- u
<i>Rubus fruticosus</i> agg.	bramble				- u	- u
<i>Epilobium</i> sp.	willowherb					- u
<i>Sambucus nigra</i> L.	elder		- u			
<i>Carduus/Cirsium</i> sp.	thistle	- u	- u		- u	
<i>Picris echioides</i> L.	bristly oxtongue			+ u		- u
<i>Lemna</i> sp. seed	duckweed			++ u	++ u	
indet. leaf fragments						- u
intrusive roots		+ u	+ u	+ u	- u	++ u
- woody stems						- u
small bone					++ u	
insect exoskeleton						+ u
pupal case	fly pupae		+ u			

Table 23: Iron Age environmental samples, western features. Key: see Table 20.

Period Two - Discussion

Taken together with the Middle-Late Iron Age enclosures already revealed by excavation along the Colne fen-edge, the evidence presents a picture of dense settlement. Given this it is hardly surprising that this gravel promontory was also occupied in this period. From south to north these six settlements are Rhee Lakeside (Patten 2004), Langdale Hale (Site VI: Regan 2003a), the Plant Site (excavated by Alexander in the 1970s; 1976), High Field (Site I: Regan 1998), Colne Fen Farm (Site III: Regan and Evans 2000) and now the Camp Ground. To this could also be tentatively added the sub-square enclosure south-west of the Camp Ground. Prior to its destruction through extraction (without excavation) Late Iron Age wares were recovered there through fieldwalking, suggesting yet another settlement compound of the period.

As noted previously, the tendency is for these settlements to occupy the fenward side of the gravel terraces, a pattern repeated here. Similarly the structures and enclosures lie between the *c.* 2.50m and 3.0m OD contour, with the higher western ground of the terrace appearing unoccupied. This pattern was also seen in the location of Iron Age sites in the Haddenham Project's investigations on the Upper Delphs terrace (Evans & Hodder forthcoming). It perhaps attests to the fact that the wet/dry divide was a preferred location, giving access to water meadow/marsh resource and communication along the lower fringes and river systems, with the higher ground possibly used for cereal production.

The sub-rectangular and curvilinear plan of the Camp Ground's Iron Age enclosures — and their overall 'organic' arrangement — is entirely typical of the period. This having been said, the large sub-circular-type plan of Enclosure 1 has not been previously encountered in the Colne Fen investigations and would rather seem more akin to compounds found, for example, on the Isle of Ely at Wardy Hill and Hurst Lane (Evans 2003a & Evans *et al.* forthcoming). Beyond this it warrants mention that, apart from the ambiguous Structure I, no roundhouses were actually identified within the Iron Age compounds proper. This could suggest one of two things. On the one hand, it could conceivably indicate that the enclosures were primarily intended for stock, with settlement *per se* occurring outside. On the other hand, and far more likely, is that the heavily gullied buildings exterior to them may have actually pre-dated the enclosures. Certainly it is difficult to see how Structures II and III could have been directly contemporary with Enclosure 3. Equally, the small network of compounds that connected to Structure V appears to relate to those ditches that 'sub-divide' Enclosure 2 and, in all probability, pre-dated it. Therefore, it may be the case that 'lighter' and less robust buildings occupied the interior of the Iron Age enclosures, which did not survive subsequent Romano-British utilisation of the area.

There is little evidence that the layout of the site's Iron Age settlements directly influenced the arrangement of the ensuing Roman settlement. Aside from the possible 'transitional' status of the Structure 1 shrine, there really was only ditch F. 318 which seems to have mirrored, or better potentially determined, the alignment of the main Roman through-track. Equally, the fact that the south-western side of the Iron Age

Enclosure 3 flattened on this aspect would also indicate that a major boundary of this period continued on this line.

The presence of wheel-made wares from the previous Colne Fen sites suggested that their occupation continued into the 1st century AD, although there is little evidence of continuity beyond this. The paucity of Romanising wares from these sites, other than the Plant Site, indicates only limited cross-acculturation during the Conquest period. Within the Camp Ground, however, the presence of both Late Iron Age wheel-made wares and early Romanising wares suggests greater continuity into the Early Roman period.

This pattern of development could conceivably relate to the strategic capacity of the Colne landscape which may have seen an early Roman presence (immediately post-Conquest), possibly of a military and/or administrative character. Such an 'official' early Roman occupation may account for the apparent displacement of the terrace's Iron Age inhabitants (though environmental deterioration may have also played a role). Possibly an important factor in this was the tribal affiliation of the pre-Romanised occupants of these Colne fen settlements. As suggested previously, if the inhabitants were allied to the Iceni, then the political upheavals of 47 AD and/or the later Boudiccan revolt would certainly have made this area strategically/militarily important, and may have had important consequences for the then existing population. One of the two Iron Age coins from the Camp Ground hints, for the first time, that the settlement fell within the Icenian sphere of influence. This is perhaps not that surprising, given the proximity of the large and important Icenian centre of Stonea to the north-east. This cultural, and possibly martial, affiliation with the Iceni may partly explain why there appears to be such a discontinuity between distinctly Iron Age settlement patterns and succeeding Romanised ones over a relatively short time span.

Roman (Period Three)

It was the sheer scale and density of the site's Roman archaeology that, from the outset, proved the main challenge of the excavations. Its central trackway/road, which was visible beforehand on aerial photographs (and also roughly corresponded with the line of an extant field drove), was both a divide in terms of the organisation of the site work and also, in terms of the interpretation of the settlement. The stripping programme began along its eastern side (in the 50m wide swathe of 5.00m-square fieldwalking collection; Fig. 5). Thereafter the remainder of the eastern half of the field (Area 2) was exposed, excavated and then relinquished to the quarry. At no point were the site's features exposed in their entirety and it was, in effect, dug in two halves with work in the western field following immediately (though the complexity of the structures in the northernmost compound to the east of the track meant that this sector had to be cordoned off and excavation continued there after the rest of the eastern field was released).

The line of the settlement's through-trackway also proved a conceptual divide in terms of the site's interpretation. As opposed to the much more organic arrangement of the remainder of the settlement, the series of rectangular compounds on the eastern side seemed relatively formal in their layout. Aside from what was obviously a very large granary complex in the southernmost (Structure 13), the northern compound (23/30) included an enormous rectangular building (16.5 x 39m) and was accompanied by a series of quite regular square structures (Structures 12, 27 and 'Compound' 29). Floor surfaces were found to survive in the case of Structure 27, and it proved prolific in its finds and coinage (not only was a lock found in association with that building, but its key was recovered under a threshold stone). Alongside the very formal arrangement of Compound 31 (further discussed below), this east-of-track sector seemed different and 'formal', and was probably the settlement's civic administrative 'quarter', with Structure 11 representing a warehouse and/or an overseer's offices and residence.

Another obvious focus of the excavation was the large sub-rectangular enclosure along its west-central side. Clearly visible as a cropmark and emphasised by the fact that the western trackway deflected around it, this seemed quite distinct within the mass of the site's compounds, which otherwise had an almost maze-like quality. The apparent distinctiveness of this compound was further reinforced when, during the course of the stripping, a remarkable find was made in the upper fill of its ditch near the south-eastern corner: the discovery of the Jupiter sculptural panel. Described by Henig below, the quality of this piece is unparalleled in the Fenlands and certainly nothing comparable was found at Stonea (Jackson & Potter 1996). Accordingly, this area was intensively excavated and singled out for surface surveys (both metal-detecting, phosphate/magnetic susceptibility; Fig. 5). In the end, not having found any other stone fragments or sculptural features that obviously related to the sculpture, the upper profiles of the ditches in the vicinity were machine-reduced in an effort to retrieve further pieces. The results proved entirely negative; nor did the density of Roman tile fragments indicate that there was any kind of high status structure in that area. However, disarticulated human remains were found beside the panel in the upper fill of the Compound 19 ditch and it

would seem that the sculpture had probably been removed to this position to serve as a grave-marker.

Whilst the Jupiter bust may ultimately derive from a distant source — perhaps the villa known across the brook-/canal-side (where it could have been part of a larger sculptural frieze; see Henig below) — it was only in the course of post-excavation that an original settlement location was possibly identified for it, that being the small slot-defined square setting (Structure 52) located in the middle of the compound on the eastern side of the through-track. Located some 80m away from the sculpture's find-spot, the arrangement of this 'structure' and its compound (31) seem very formal. Its situation, moreover, mid-way along the eastern 'civic quarter', would have been an appropriate venue for a public viewing; located, in effect, within the settlement's centre, where it would have been readily appreciable and made a bold statement to those passing along the through-track.

Fieldwalking and Metal-detector Surveys Sam Lucy

As outlined above, the study area was subjected to an intensive fieldwalking survey; this produced large quantities of evidence for intensive Roman period occupation, as did a metal-detector survey over the same area and at the same intensity. Here this evidence will be briefly described, and its interpretive significance discussed.

Field-walking and metal-detector data can offer initial indications as to the extent of the settled area, its potential years of usage, and perhaps suggestions as to the types of activities conducted, offering some hypotheses as to the nature of the settlement. The following data have been plotted to a 10m-grid: Romano-British pottery (by number), with further refinement into the distribution of all Samian ware (by weight) and more specifically the early South Gaulish Samian (also by weight); these can then be compared with the distribution of the later Nene Valley Wares (again by weight). Also considered are tile fragments (by number), perhaps indicating the location of any potentially high-status buildings, and coinage, suggestive of clusters of commercial activity (Figs. 12–17).

Overall, the survey produced large quantities of Romano-British pottery: 8005 sherds weighing a total of 100496g. These were found predominantly to the west of the central trackway, where very few survey grid squares were completely devoid of pottery (Fig. 13). This contrasts with the area to the east, where, although pottery clusters are seen adjacent to the trackway itself, the area to the east of these appears relatively 'empty'; perhaps suggesting that these areas were not subject to intensive occupation (or rubbish disposal). Two areas display particularly high values: an area in the centre of the western half (with values up to 197 sherds per 10m square) and one at the top of the trackway to its west, where one grid square contains an exceptional 248 sherds (weighing 2989g). Much of the central western area displays relatively high values (over 25 sherds per grid square), suggesting this as the main focus of occupation activity. Looking at these pottery distributions chronologically (Table 24), although Samian wares represent only one per cent of the fieldwalked assemblage, its distribution reflects that of total pottery, with the main focus in the central western area (particularly along the trackway) and

again, at the northern end of the trackway to the east (Fig. 14). Interestingly, the small amounts of South Gaulish Samian, which can be dated approximately to AD40–100, appear to cluster more to the south-west of the survey area, perhaps suggesting that an earlier focus of activity lay here (Fig. 15).

Pot Type	Date Range	No. Sherds	Total Wt (g)	MS W (g)	% Total (by No)	% Total (by wt)
South Gaulish Samian	AD40-100	37	280	7.57	0.5	0.3
Central Gaulish Samian	AD120-200	73	599	8.21	0.9	0.6
East Gaulish Samian	AD110-250	7	53	7.57	0.1	0.1
Oxfordshire Red Slipped	Mid 2nd-Late 4th	14	144	10.29	0.2	0.1
Nene Valley	Mid 2nd-Late 4th	1154	14452	12.52	14.4	14.4
Quartz-tempered	Mid 2nd-Late 4th	10	301	30.10	0.1	0.3
Grog-tempered	3rd to Late 4th	25	446	17.84	0.3	0.4
Local wares	1st to Late 4th	6685	84221	12.60	83.5	83.8

Table 24: Fieldwalked pottery by date

Later phases of activity may be indicated by the distribution of the Nene Valley wares (these forming 14.4% of the whole Romano-British pottery assemblage, and 87.4% of the closely dateable pottery). Again, areas immediately bordering the trackway to the east appear to be foci, as does the central part of the western area (Fig. 16). Interestingly, the area further to the south-west also appears to have a dense distribution of this later pottery. This may, however, be reflective of rubbish disposal in a relatively empty area, as in general, numbers of sherds in this area (per grid square) are low, but mean sherd weights are relatively high; this may indicate disposal of broken material in an area where it was not subject to significant later disturbance.

The field-walking produced relatively low quantities of Roman tile: no grid square produced more than 500g of tile or box flue, and the maximum number of pieces recovered from any square was only five (Fig. 17). The observed concentrations of field-walked tile in the central western area presumably do not, therefore, indicate high status buildings, but rather fragmentary remains of other activities.

Earith Camp Ground produced a sizeable collection of coinage from the initial metal-detector survey: 311 coins; in addition a further 377 had been previously collected from the study area by a local metal-detectorist (these were not specifically recorded in terms of location, but they are incorporated with the site archive). While their dates have not yet been analysed, their distribution (Fig. 12) indicates several clusters, these lying mainly to the west of the trackway which runs through the site, with two further concentrations bordering the trackway to the east. If their date ranges correspond with the coinage sample so far analysed from the excavated phases (see below), which have a predominantly 3rd to 4th-century focus, then perhaps mercantile activity can be argued to have concentrated in the core of the settlement during these later phases.

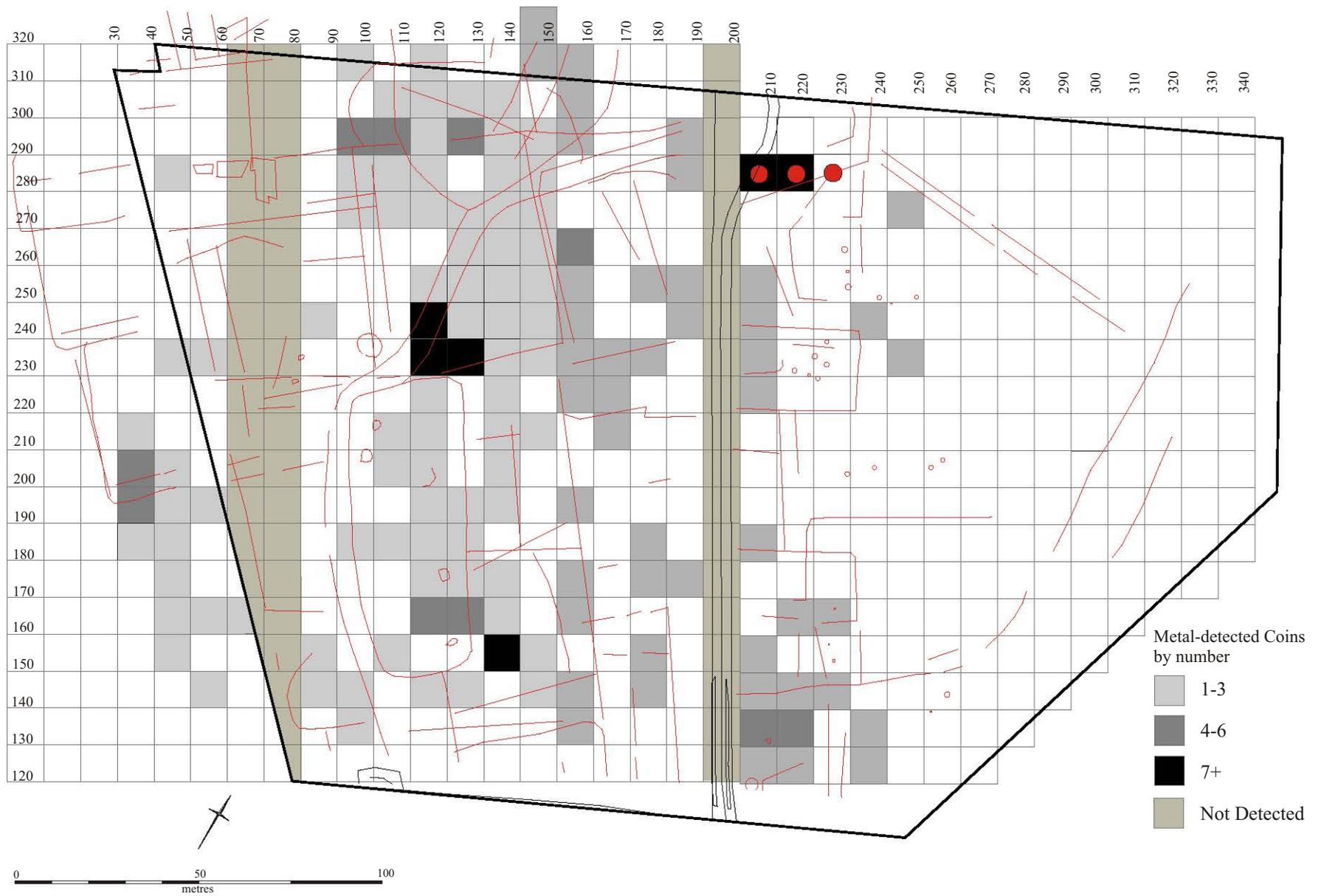


Figure 12

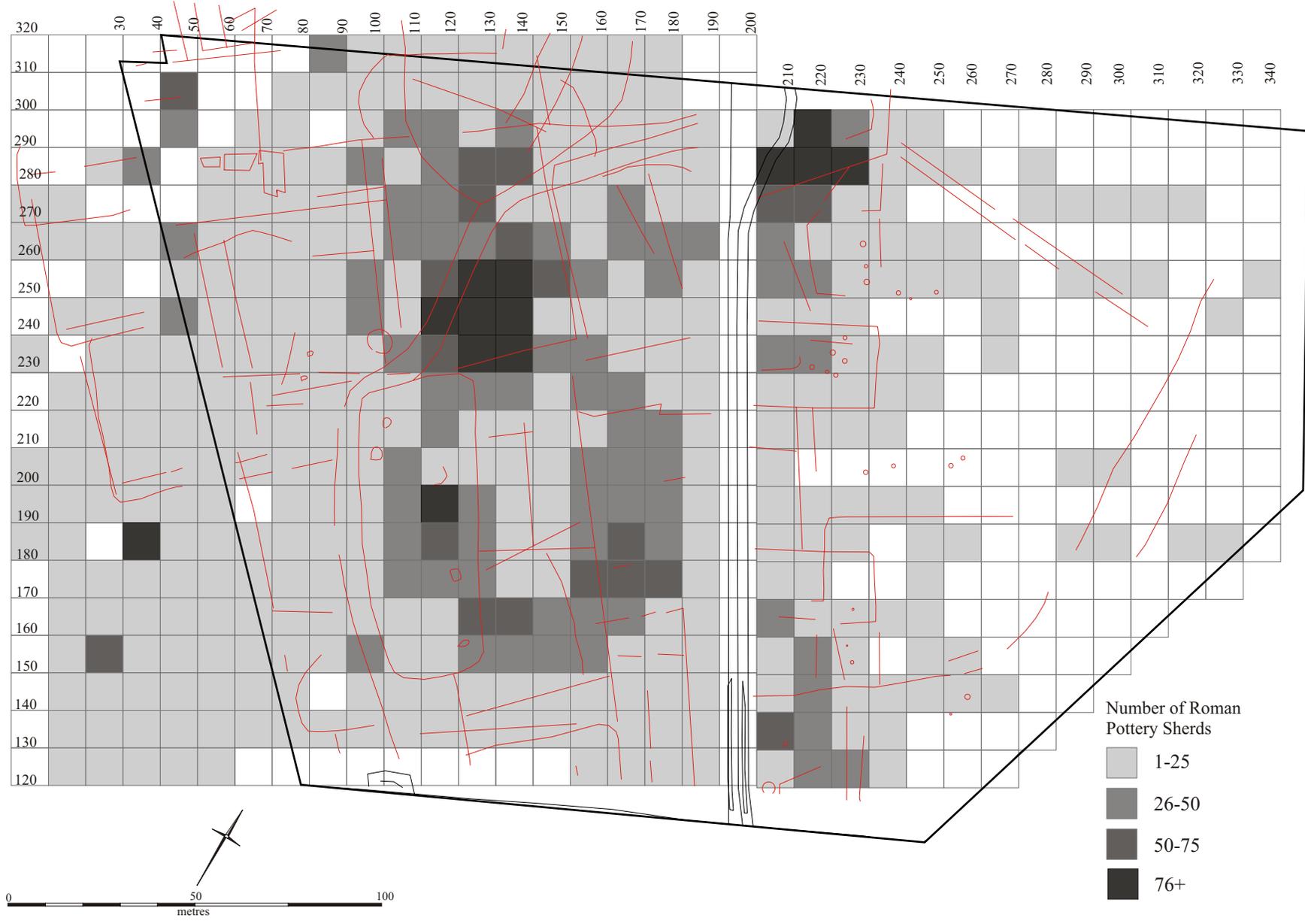


Figure 13

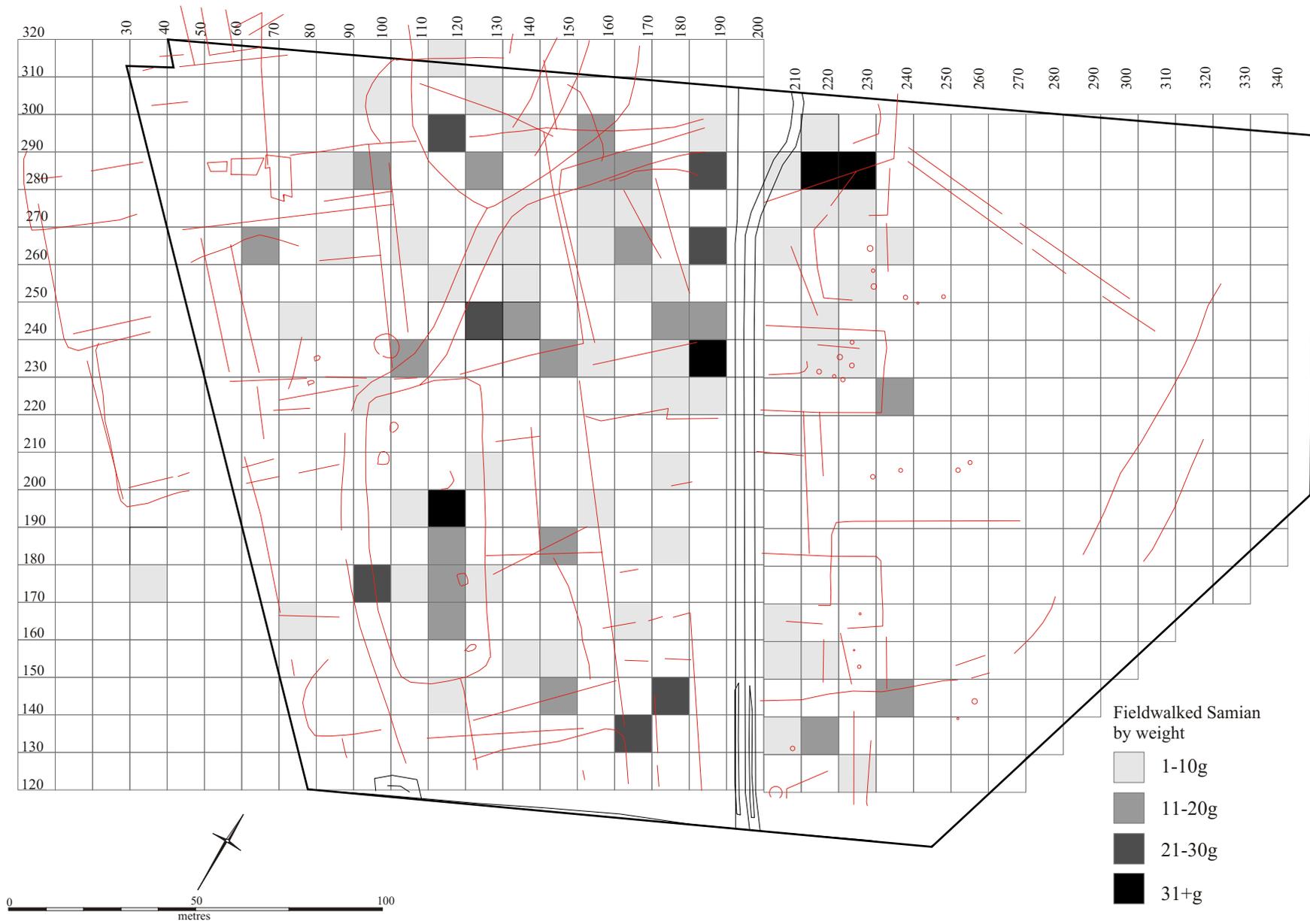


Figure 14

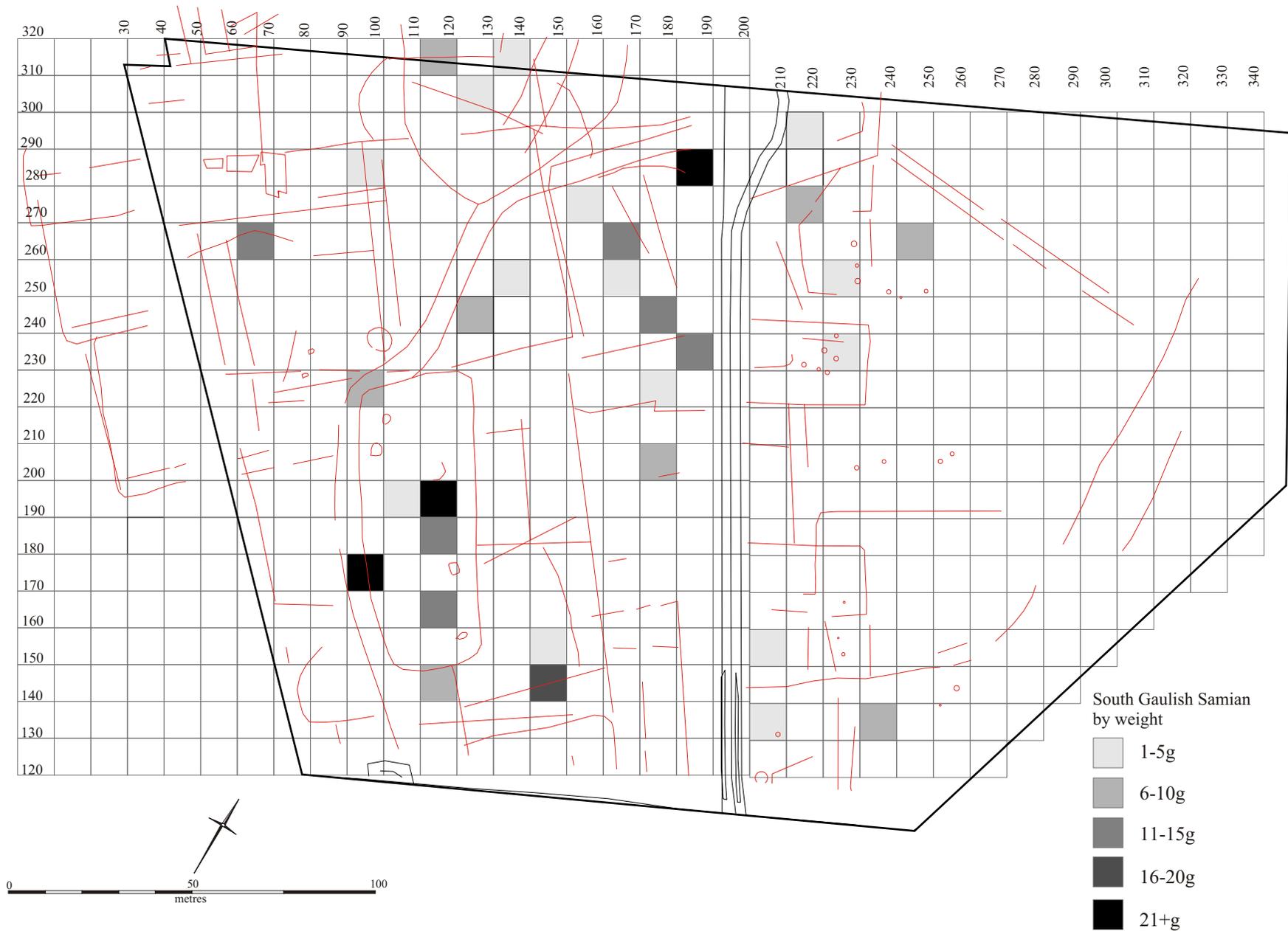


Figure 15

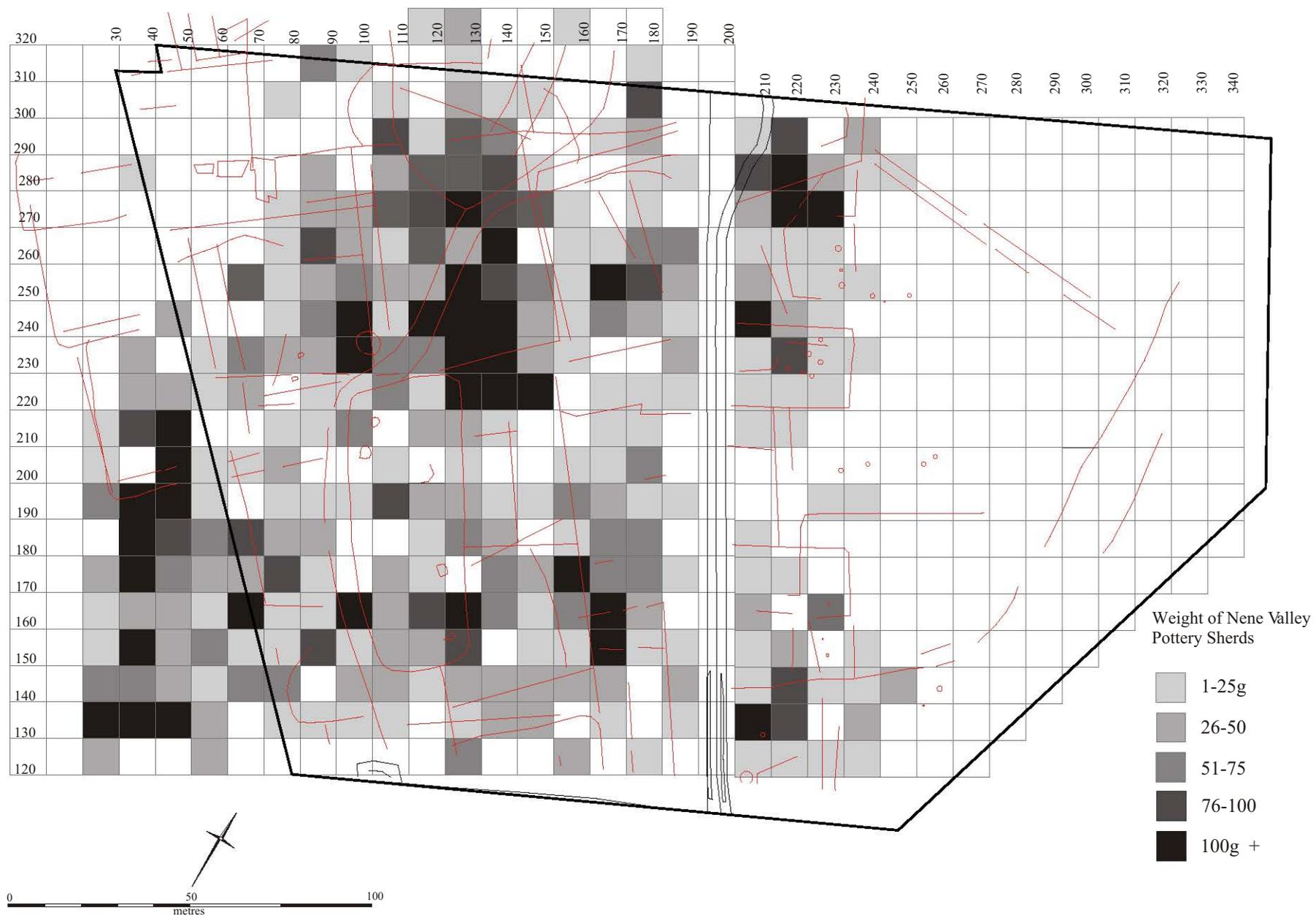
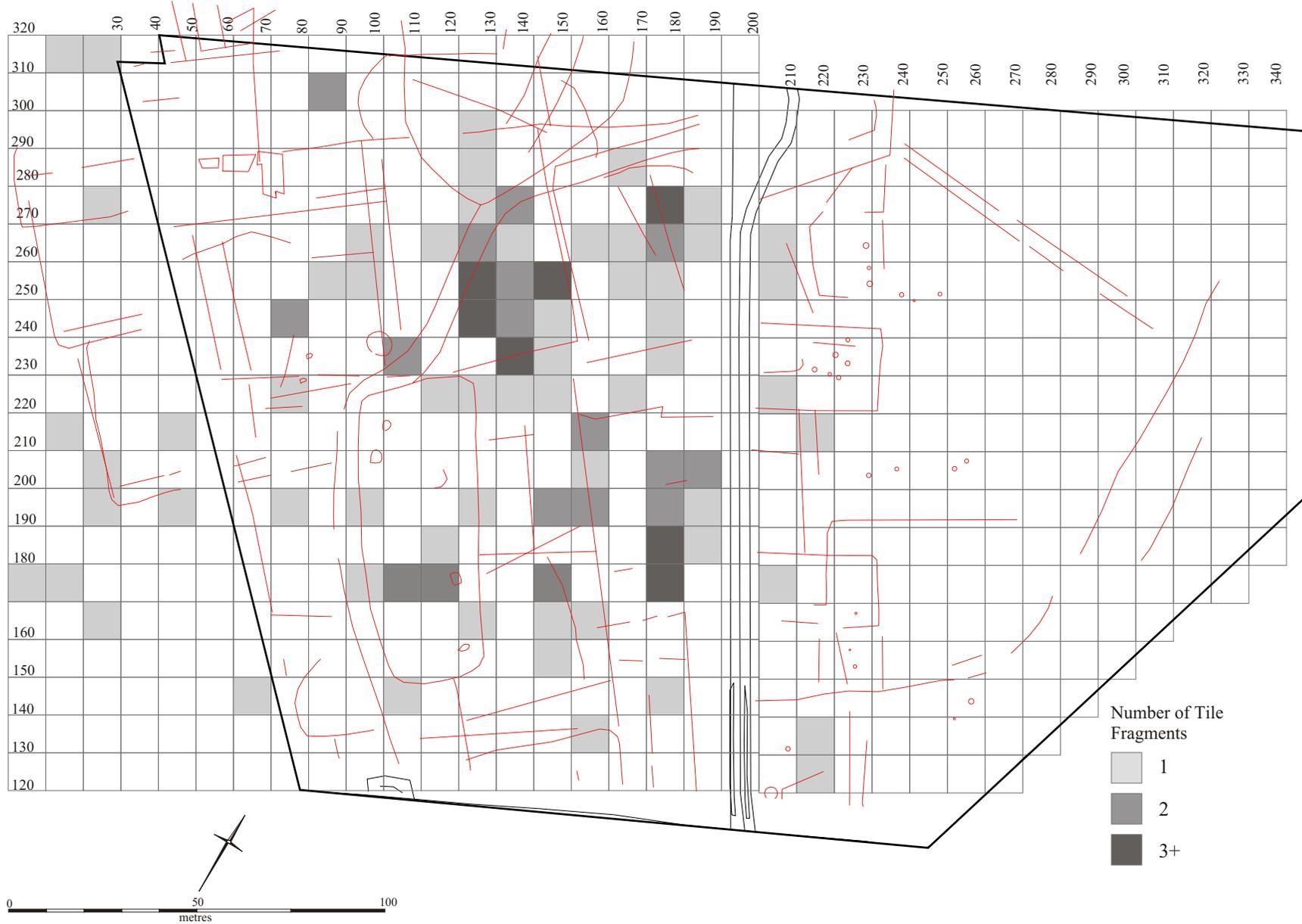


Figure 16



Some consideration can also be given to how this site compares to others in the area. During sample survey at Langwood Farm, Chatteris, metal-detecting of a 17.86 per cent sample of a 8.16 ha area (known as Site 26) produced 150 coins; extending this to the whole area might have produced in the order of 616 coins, though this is possibly an overestimate (Evans 2003b, 181 n. 21). The numbers from Earith (if combined with those resulting from previous metal-detecting activity) would seem comparable both with this and with the nearly 900 coins recovered over twenty years of metal-detecting of a similar-sized area at Stonea Grange, prior to the large-scale excavations which took place there (Jackson & Potter 1996, 294).

Average density of Romano-British pottery at Langwood Farm was 37 sherds (282g) per 10m square (Evans 2003b, 185). The highest value recovered from a single 10m square was 232 pieces (1433g; *ibid.*, 187). This compares to an average of 18 sherds (226g) per 10m square at Earith Camp Ground, but as stated above, the maximum amount recovered from a single square was higher, at 248 sherds (2989g). Mean sherd weights at Earith were higher in general, at 12.53g for all Romano-British pottery, compared to 7.7g at Langwood (*ibid.*, 188). The discrepancy may be accounted for by the greater proportions of later wares at Earith (Table 24) which may have proved either more robust, or less prone to disturbance than the earlier Samian wares, for example.

Overall, the field survey offers good indications that the underlying archaeology represents a substantial Romano-British site, with a history stretching probably from the 1st century AD until at least the early decades of the 5th century. The variant distributions, while offering some evidence for localised activities, such as mercantile activity and rubbish disposal, do not seem to indicate that the occupied area shifted substantially over time, with intensity of occupation seen right through, predominantly to the west of the trackway, but also to its east.

Phasing and Settlement Sequence

Phase I (AD 120-190)

Sub-phase I.1 (Fig. 18)

The earliest focus of the Romano-British settlement appears to have been a trackway or road formed by ditches F. 1132/1139 and F. 1118. The track entered the site from the south and arranged around it were a series of enclosures or compounds, some containing evidence of structures.

To the north and west of the track, four enclosures were revealed (Compounds 1–4). **Compound 1** was formed by ditches F. 1339/1357 forming the western and southern sides and ditch F. 1256/1273 the eastern side. The compound contained a small aisled building, Structure 2, this initially consisting of two rectangular bays or rooms.



Figure 18

Compound 2 had ditch F. 1256/1273 as its western boundary with ditches F. 1286 and F. 1077 respectively demarcating its southern and eastern extent. Adjoining this was a small sub-circular paddock, **Compound 4**, formed by gullies F. 80, F. 1066 and F. 1068, these appearing to be contemporary with ditch F. 1077. The pottery from pit F. 1088 suggested that this also belonged to this period.

The eastern and northern extents of **Compound 3** were respectively formed by trackway ditch F. 1132 and ditch F. 1286, with ditch F. 209 forming the western and southern sides. Ditch F. 1302 probably represents a shift in the southern boundary; alternatively both ditches, the southern extent of F. 209 and F. 1302, were contemporary and lay either side of a fence/hedge or bank. Internally, gully F. 1292 represents a paddock sub-division within the compound.

Bounded on the west by trackway ditch F. 1118 was **Compound 5**, with ditches F. 936 and F. 755/F. 1186 respectively forming the eastern and southern sides of this enclosed area. The northern side of Compound 4 may have lain along the line of later ditch F. 655, although equally this northern end of the enclosure may have remained open. It is tentatively suggested here that Compound 5 contained a building, this based on an early alignment of beam-slots (Structure 3). Although this evidence appears ephemeral, a relatively large assemblage of pottery and animal bone was recovered close by, within ditch F. 1118, suggesting that this area was domestically occupied, the remnant beam-slots of Structure 3 being the only possible candidate for a building.

To the east of Compound 5 was **Compound 7**, a square enclosure that appeared partially enclosed by a double ditch. Ditches F. 694 and F. 695 mirror one another and form the southern and eastern sides of the compound, with a possible entrance into the compound along the southern side. Ditch F. 947 formed the western side of the compound with ditch F. 941 demarcating its northern extent. The double ditches along the southern and eastern sides of the compound possibly contained a bank. It can also be postulated, however, that the proximity of ditch F. 947 to ditch F.936 also created a double ditch or bank arrangement on this side, although the gap between the ditches was up to 4m wide, double that of the gap between ditches F. 694 and F. 695.

Compound 6, to the north-east of the early settlement area, contained a single small square building possibly representing a shrine (Structure 1). The eastern side of the compound was formed by ditch F. 587, this mirroring the alignment of Structure 1. The northern boundary to the compound probably lay along the line of later ditch F. 214, suggested by the remnants of an early cut containing 2nd-century pottery located at its eastern end. Within the northern part of the compound, truncated inhumation F. 597 possibly belongs to this period. Small-scale quarrying can be seen in the vicinity of the compound with pits F. 900 and F. 581.

Structure 1 was founded on beams forming a small square enclosed area, with possible entrances in the northern and southern sides (although as the remnant beams were very shallow in nature it is possible these gaps were the result of subsequent truncation). It appears similar to square 'shrines' of Later Iron Age to Earlier Romano-British date from

sites such as Stansted (Havis and Brooks 2004). The dating of the structure is problematic, however, as it contained no pottery, and stratigraphically can only be seen to be earlier than 3rd-century ditches. A silver Late Iron Age coin found nearby may indicate an earlier, pre-Roman date although, if so, this possible shrine sits uncomfortably close to the eaves-gully of an Iron Age building lying to the west.

Compound 8 was bounded on the northern and western sides by ditch F. 775/1186, with gully F. 978 indicating its eastern side. No southern boundary to this compound was evidenced.

Separated from the more rectilinear layout of the compounds immediately surrounding the track was a group of gully ditches forming three western enclosures, **Compounds 9–11**. Forming the eastern side to all three compounds was ditch F. 1307 with gullies F. 1305 and F. 1367 effectively dividing the area west of F.1307 into three. Within Compound 10 gully F. 1366 suggested further subdivision within this area. Little in the way of pottery was found within these enclosures, possibly suggesting that these were not domestically occupied. This may be further evidenced by an apparent separation of these western paddocks or fields by a corridor running between them and the more rectilinear enclosures situated around the trackway (this corridor perhaps allowing the passage of animals between these demarcated areas).

The final enclosure, **Compound 12**, lay at the western edge of the site, its southern boundary formed by ditch F. 1352. It contained a large pit, F. 1342.

The earliest Roman occupants appear to have disregarded many elements of the earlier settlement, with some ditches clearly cutting across Late Iron Age features. Importantly, however, the larger (and perhaps later) Iron Age enclosures appear to be respected by this earliest Romanised layout. This suggests these still existed as earthworks, and while possibly not under occupation, may perhaps have been used for livestock. Indeed Roman pottery from the upper fills of the Iron Age enclosures, while limited in number, suggest the ditches were still partially open and could have been used for such a function. This would explain the relatively ‘open’ appearance of the northern end of the settlement if only purely post-Iron Age features are considered, with just ditches F. 361 and F. 214 appearing as ‘Roman’ northern east-west aligned boundaries.

Sub-phase I.2 (Fig. 19)

The Phase I.1 compounds form the basic framework for several adjustments in the plan of the earlier Romano-British settlement, prior to the major layout changes and expansion seen by the end of the 2nd century.

The expansion of Structure 2 to the west saw the western boundary of **Compound 1** shift to the line of ditch F. 234. A northern boundary to this enclosure was established with ditch F. 1331, while ditch F. 1247 replaced ditch F. 1273 at the east. Several large, but shallow, pits situated within the north of the compound perhaps attest to gravel extraction



Figure 19

during this period (F. 233, F. 232, F. 1337 and F. 1338). To the north of Compound 1, a new enclosure (**Compound 13**) was demarcated by ditches F. 1331 and F. 1325, with a row of pits possibly indicating the line of its north-eastern side, by forming a continuation north of the line of ditch F. 1247. Meanwhile, the eastern boundary of **Compound 2** shifted to ditch F. 1250, possibly a continuation of the road alignment through the settlement.

In the eastern part of the settlement, ditch F. 661 now formed the southern side of **Compound 6**, creating a narrow strip between this compound and Compound 7 to the south; this was in turn subdivided by ditch F. 943. The eastern side of Compound 6 moved east to ditch F. 544, with smaller ditch F. 577 running off it to the east. Ditch F. 852/861 now demarcated the northern boundary of Compound 6, effectively superseding any re-used remnants of the Iron Age enclosure system in this part of the site. Little change is seen within **Compounds 5, 7 and 8**. The division between these compounds and the western area of the site was emphasised by ditch F. 1199, this possibly forming the eastern boundary to radiating field systems.

Phase II (AD 190-270)

Sub-phase II.1 (Fig. 20)

The major change within the settlement occurs with the establishment of a new road-line entering the settlement from the south. The road was demarcated by ditches F. 542 and F. 545, effectively dividing the settlement into western and eastern areas, Areas 1 and 2. As with the track to the east, the road became the focus of enclosure development along its length. This development was particularly apparent along its eastern side, where a whole series of enclosures were established within a previously 'undeveloped' area. To the west of the road a more rectilinear enclosure layout also developed, although in its initial phases this appeared less formal or planned than that to the east of the road, in that existing enclosures and buildings were respected and incorporated within the overall system.

Area 1

Ditch F. 655/F. 1352 separated the western part of the settlement into northern and southern areas. To the north of this line **Compound 1** further developed around Structure 2, with its northern boundary now demarcated by ditch F. 1331. To the north-west of the enclosure two large wells appeared to belong to this phase (F. 1380 and F. 1335). However, a question over the phasing of the wells must remain, as there was an absence of diagnostic pottery from their fills. Three gullies were present to the west of Structure 2, F. 1340, F. 1344 and F. 1384. These were probably for drainage and perhaps to capture roof run-off. To the north of Compound 1, **Compound 13** was now bounded on the west by ditch F. 1382/F. 1375.

The eastern boundary of **Compound 2** shifted to the line of ditch F. 82, while a series of wells or watering holes were excavated within the enclosed area: F. 1264, F. 1282 and F. 1103. Two of the wells utilised the line of the earlier eastern boundary of enclosure ditch F. 1250.

Compound 6 consisted of ditches F. 82, F. 572/F. 1069, F. 604 and F. 655, respectively forming the western, northern, eastern and southern boundaries. The compound also appeared to contain two post-hole buildings in this period, Structures 4 and 5. Small well F. 617 may have serviced Structure 5, although the functions of pits F. 925 and F. 1104 remain obscure. Large but shallow pit F. 891 is possibly a gravel extraction pit, although it may have been utilised for drainage, as gully F. 598 feeds into it.

Compound 14 contained the elements of Structure 12, comprising a rough rectangular layout of posts and beam-slots. A hearth and oven area suggests domestic occupation. This compound was bounded by ditches F. 1471, F.1325, F. 1250 and F. 1232, respectively on the north, west, east and south sides. Two gullies, F. 1242 and F. 1243, run from ditch F. 1232 to the area of Structure 6, these probably representing drainage channels running beneath and away from the building

To the west of Compound 14, an early incarnation of ditch F. 7 and ditches F. 14/847 further divide this northern area of the settlement into **Compounds 15 and 16**. Within Compound 15 an alignment of pits and wells (F. 850, F. 876, F. 1031 and F. 1413) roughly formed two sides of a square or rectangle. The layout of the pits suggested the presence of a sub-enclosure or possible building. However, beyond a grouping of light sand-filled posts, evidence of a structure was limited.

Compound 17 consisted of ditches F. 572 and F. 7 respectively forming the southern and western sides with ditch F. 540 representing the eastern boundary. Compound 18 lay south of Compound 17 and east of Compound 6, sharing the same ditched boundaries, with roadside ditch F. 545 demarcating its eastern side. The compound was further subdivided by ditch F. 634 creating a smaller sub-enclosure or paddock, Compound 18a.

The focus of the enclosure layout west of the road and south of ditch F. 655 was sub-rectangular enclosure **Compound 19**. The compound consisted of an early cutting of ditch F. 50 forming its eastern and southern side, with ditch F. 1294 forming its western side. Internally the compound measured 80m by 30m and may have had entranceways at its south-western and north-eastern corners. The compound probably contained or surrounded Structure 7, occupying the same space as earlier Structure 3, but constructed on a more north-south alignment. Also occupying this northern part of Compound 19 was Structure 8, probably contemporary with Structure 7. Both buildings appear to have been founded on large horizontal timbers, a technique of construction that was much used within the settlement from this period onwards.

Within the southern part of Compound 19, a series of sub-enclosures can be seen. Compound 19a was bounded by ditch F.1136 and F. 1134 and contained well F. 1131 which possibly serviced both Structures 7 and 8. Curving ditch F. 1138 appears to

delineate one side of a circular paddock or working area. If so, it may represent the truncated remains of a possible threshing area, similar to that of Structure 6 within the Romano-British farmstead at Langdale Hale (Regan 2003a).

Three ditches within the southern part of the compound (F. 1142, F. 1160 and F. 1192) further divide it into Compounds 19b–19d. A large catch-water/well, F. 188, also begins to develop along the western ditch of the compound in this period.

Compound 20 lay between Compound 19 and the road bounded on the south by ditch F. 724 and Compound 21. The compound contained Structure 9, surrounded by gullies F. F. 660, F. 670, F. 677, F. 697 and F. 698, these forming sub-enclosure Compound 20a.

At the eastern end of ditch F. 724 was a small gullied enclosure **Compound 21**. This consisted of ditches F. 172, F. 706 and F. 708, respectively the western, northern and southern sides of the enclosure.

Compound 22 was bounded on the north by ditch F. 724 and on the south by ditch F. 810 and the north-eastern corner of Compound 23. This enclosure contained Structure 10 and three sub-enclosures, Compounds 22a–22c. Compound 22a consisted of ditches F. 737, F. 757 and F. 1469. Compounds 22b and 22c are postulated from shallow incomplete gully lengths F. 773, F. 782, F. 801, F. 806 and F. 809.

Compound 23 adjoined the south-east corner of Compound 19, its other boundaries formed by ditches F. 967, F. 825 and presumably an early cutting along the line of ditch F. 28. The north-west of the compound contained small paddock Compound 23a, formed by gully F. 973. The line of ditch F. 41/F. 981 separated the southern part of the enclosure into three smaller paddocks, Compounds 23b–23d. From east to west these are demarcated by north-south ditches F. 131, F. 983 and F. 994. Ditch F. 41 yielded perhaps the most remarkable artefact from the excavations, a limestone bust of Jupiter probably ultimately deriving from a monument, but perhaps re-employed as a grave-marker.

Compound 24 was bounded on the south and west by ditch F. 816 with ditch F. 237 forming its eastern boundary, this quickly replacing the roadside ditch as its eastern extent. A small length of ditch F. 872 suggests the compound may have been subdivided at its southern end.

Compound 25 appeared to have been sub-divided into small paddocks, Compounds 25a–25d, formed by gullies F. 836, F. 1412, F. 1010, F. 1011 and F. 1196. This trend of subdivision into small fields or plots continues within this area of the site from this period. The general lack of artefacts from this area of the site (slightly less than 1% of the excavated total) and the absence of building evidence suggested this part of the settlement was never utilised as ‘domestic’ space. The area was possibly turned over to gardens or small fields from the start.

Although the early road was blocked by the construction of Compound 19 it seems the area immediately west and outside of Compound 19 was still used as an access way into

the settlement, perhaps indicating the reluctance to abandon established tracks. This was further evidenced by the existence of entrance into Compound 19 in its south-west corner, and the later development of a more formalised ditched trackway to the west of Compound 19.

It is difficult to be sure whether Compounds 9-11 were still extant in this period. If not, then the area they previously occupied becomes **Compound 27**. To the south of this compound, two small paddocks are seen, Compounds 27a and 27b, formed by ditches F. 1313, F. 1317 and F. 1318. There is a realignment of the compound to the north with ditch F. 1288 creating **Compound 26**.

Area 2

To the east of the road a series of substantial rectilinear enclosures were laid out. The northernmost of these was **Compound 28**. This enclosure contained large corridor building Structure 11. Founded on timber beams, its eastern wall of the building formed part the eastern side of the enclosed area. The southern boundary of the enclosure was formed by ditch F. 128/F. 439, constantly cut throughout its life span with little of its original extent remaining intact. The range of Structure 11 or the space it occupied remains relatively unaltered until the late phases of the settlement, suggesting that the building remained intact throughout that period. Possibly integral to the building from the start were drainage ditch/channel F. 148 and well F. 126, these effectively channelling any ground water away from under the building.

Traversing Compound 28 is north-west/south-east aligned ditch F. 376, its orientation at odds with the symmetry of the rest of the enclosure layout. It is suggested here that many of the ditches and gullies within the settlement that similarly appear at odds with the general pattern of layout may have been for drainage. These may have originally been covered although no direct evidence for this was found.

The rest of the enclosed area appeared to be subdivided relatively rapidly, with Compound 28a established to the north of Structure 11, bounded by ditches F. 124/F. 139, with ditch F. 1387 demarcating its western side. The south-western corner of Compound 28 contained a rectangular enclosure, **Compound 29**, with ditch F. 389 forming its northern and western sides and ditch F. 390 forming its eastern and southern sides. It is suggested that this enclosure contained a structure, although no physical trace of the building was seen. In later periods this area remains relatively 'blank' while ditches are constantly re-cut around it, indicating that something was contained within the various ditch circuits; this was most probably a structure.

Compound 30 consisted of ditches F. 128/F. 439 forming the northern side, with ditch F. 150 bounding the eastern and southern sides. Centrally placed within the eastern end of this compound was Structure 12, a square timber-footed building. The building itself lay equidistant from the surrounding ditches that made up the enclosed area, and in appearance is not to dissimilar to shrines seen at sites such as Caistor-by-Norwich

(Gregory & Gurney 1986). Apparently contemporary with Structure 12 was ditch F. 124, this running under the building to/from pit F. 439. Both pit and ditch, if contemporary with the building, suggest the collection and drainage of liquid from the building. If a shrine, then this does open up the possibility that this served to collect and drain away the excess blood from sacrifice. West of Structure 12, ditches F. 395, F. 410 and F. 443 formed a rectangular sub-enclosure, Compound 30a.

Compound 31 was another rectangular enclosure lying east of the road. Forming its northern and eastern boundary was ditch F. 109 with ditches F. 110/F. 462 demarcating its southern extent. In this case ditch F. 551 formed the western boundary of the enclosure rather than the road as was the case with most of these eastern roadside enclosures. A gap between the northern and southern boundaries of Compound 31 and both Compounds 30 to the north and 33 to the south suggest the possibility that this enclosure was banked on these sides, although it may also indicate access between compounds along these edges.

The most southerly of the eastern roadside enclosures were **Compound 32 and 33**. These may originally have formed one enclosure, but were quickly sub-divided into two enclosed spaces within this phase. Together Compounds 32 and 33 formed a rectangular space measuring 35m x 40m. The perimeters of the compound were formed by ditches F. 106 and F. 464 on the north, on the east by ditch F. 164 and on the south by ditch F. 490. The reason for the early division of the enclosure was probably the construction of Structure 13. The building was founded on a series of parallel beams, suggestive of 'typical' granary structures. Compound 33 is occupied by a number of curvilinear gullies, F. 1423, F. 427, F. 473 and F. 500, and these may represent drainage gullies. If so, the presence of the gullies suggests the area may have contained a building/s, now no longer apparent. Well F. 467 cut along the line of ditch F. 464 also suggesting that this compound may have been domestically occupied by this phase. A non-domestic function, however, is suggested by the presence of burial F. 558. This, as with the majority of the burials within the settlement, did not appear to have been grouped within a formal burial area or cemetery, with most situated within and around occupied areas or upstanding buildings.

Located at the southern end of the settlement, and outside the enclosures strung along the eastern side of the road but along the road itself, was shallow grave F. 401. While this appeared to be an isolated burial, the severely truncated nature of the remains suggests that other shallower burials could have been destroyed.

Sub-phase II.2 (Fig. 21)

Area 1

This phase sees a few alterations within the enclosure layout of Area 1. Compounds 1 and 2 appeared to be superseded by two ditches, F. 231 and F. 1262. Neither of these ditches formed part of coherent enclosure systems and they may have been primarily for

drainage. Another possibility is that they acted as a funnel for stock control through the site. If so, then gullies F. 209 and F. 1287 may also be seen as part of this system. The eastern end of Structure 2 was also cut by ditch F. 231, which suggested that at least part of the building had gone out of use. However, to the north of Structure 2 a new building appeared, Structure 14. This was possibly an ancillary building and it suggests that at least part of the larger Structure 2 was still in use. This is also suggested by ditch F.1347, which was cut in this period and may be seen as channelling roof water away from the still standing building.

Compound 6 was bisected by ditch F. 73, creating **Compounds 41 and 43**. This ditch suggests the formalising of the intra-site track skirting around the western side of Compound 19 and then heading north-east to the north of the site. The western boundary of Compound 13 shifted to the line of ditches F. 230 and F.1332 in this period. The northern boundary of Compound 15 moved to ditch F. 827. Beyond this the northern part of the settlement Compound 16 appears subdivided into a number of fields by ditches F. 842, F. 856, F. 1012 and F. 1013.

Compound 22 saw a few alterations, with the area subdivided into Compounds 22d–e. Compound 22d lay to the west of Structure 10 and was formed by ditches F. 779 and F. 721. To the south of this was Compound 22g, formed of ditches F. 742 and F. 743, with F. 810 still the southern boundary of the enclosure. Ditch F. 766 divided the area between Compound 22d and 22g into two small paddocks, Compounds 22e and 22f.

Compound 23 was remodelled with ditches F. 975/F. 979 and F. 791 forming a series of paddocks, Compounds 23b, 23e and 23f. Within **Compound 24** well F. 1410 was cut with little other change.

Area 2

The major change within the western area of the site was the development of a series of ditches delineating the western boundary of the settlement. This later developed into a bank and ditch system but initially may have consisted of a series of single ditches. The earliest ditches appear to be F. 154, F. 156, F. 167, F. 264, F. 492 and F. 568. The purpose of this boundary may primarily have been to demarcate the wetter eastern margins of the settlement from the higher, drier western areas. The system's formal appearance perhaps reflects that of the enclosures on the eastern side of the road. The system that developed, however, was a complex one, and must have had some other function other than straightforward demarcation. What is likely is that the system allowed for the flow or control of stock into the larger enclosed area of Compound 34 between the ditched outer boundary and the compounds lining the eastern side of the road.

A few minor alterations occur within the eastern roadside enclosures. In **Compound 35** ditch F. 367 replaced ditch F. 139, with re-cut ditch F. 380 possibly taking ground/roof

water away from Structure 11. A grouping of shallow hollows F. 402 and F. 397 appear to form or are cut beneath/within Structure 11.

Within **Compound 30**, Structure 16 probably appears at this period. This was a post-hole structure sitting within Compound 30a, the western boundary here re-cut as ditch F. 393. Elsewhere within Compound 30, a small drainage gully F. 442 was cut beneath Structure 12. Pit F. 124 also appeared to belong to this period although its function remained unclear.

Within **Compound 31** two small linear beam-slots, F. 446 and F. 465, belonged to this phase and possibly represent the remains of a structure within the south-east corner of the enclosure, while the southern boundary of the compound shifted to the line of F. 436.

Several curvilinear gullies occupy **Compound 33** (F. 419 and F. 498). As in the previous phase, beyond a drainage function it is difficult to assign a purpose to them.

Phase III (AD 270-350)

Sub-phase III.1 (Fig. 22)

The settlement by this phase was separated into three distinct areas by the two intra-site trackways. Area 1 was now effectively divided by the formalisation of the road or trackway running along the western side of Compound 19. Those compounds to the west and north of this track now formed Area 3, and those east and south of the track and west of Area 2 now formed Area 4.

The trackway itself was comprised of ditches, with F. 50, F. 1293, F. 206, F. 75 and F. 573, forming the western side, and the eastern side formed by ditch F. 1196, the western side of Compound 19, along with ditches F. 73 and F. 219.

Area 3

Within the south of this area, **Compound 27** was bounded by ditch F. 50 at the east and F. 1288 at the north. This compound clearly extended to the west and south. The compound appears to have been rapidly occupied by three buildings, Structures 31–33. The main building would appear to have been Structure 31, a long aisled hall, with an eastern wing. Structures 32 and 33 and well F. 1301 appear to have been laid out neatly along the north-eastern side of the compound, possibly facing into an open yard area at the west. A series of drains run from Structure 31 to the south (F. 1441, F. 1291 and F. 1320), surrounding small sub-enclosures 27d and 27e.

If part of Structure 2 did survive into the later Phase II, then by this time it appears to have been abandoned and overlain by ditches. Perhaps with the abandonment of Structure 2, this area of the settlement was remodelled on a more rectilinear pattern. This

was perhaps evidenced within **Compound 36**. Here ditch F. 1255 formed the northern boundary of the enclosure and ditch F.1288 formed its southern extent. The eastern part of the enclosure was bounded partially by the trackway ditches and ditch F. 81. Internally the compound was sub-divided by ditches F. 1286, F. 234, F. 1349, F. 176, F. 1283 and F. 1255. These ditches formed a series of sub-enclosures, Compounds 36a–c. Only Compound 36b appeared to have been occupied by buildings, Structures 34 and 35. Both these buildings were small and may have been non-domestic in nature, although ditch F. 1247 appeared to act as a drain from Structure 35. The rest of Compound 36 seemed relatively empty, although Well F. 1282 was re-cut and Well F. 1275, possibly a replacement, was also cut in this period.

The area lying to the north of Compound 36 was more formally compartmentalised into **Compounds 37–40**, formed by north-south aligned ditches F. 18 and F. 229, along with east-west aligned ditches F. 1213, F. 1255 and F. 1329. Internally, Compounds 37 and 38 remained fairly empty. Within Compound 39, ditches F. 1204 and F. 1213 were the first in a sequence of double ditches that were cut along this part of the site. As the site begins here to drop more steeply to the wet fen to the north, these ditches may have been an attempt at flood control by creating a bank along this edge of the site. Two possibilities present themselves as to the purpose of drains/channels or barriers along the lower wetter margins of the settlement: that they were to make previously wet ground drier, or that they were a response to a rising water table. However, as these ditches extend beyond the limit of excavation to the north, their true function must remain uncertain. Compound 40 was subdivided by ditch F. 1227, while ditch F. 1330 drained into F. 229.

The north-eastern part of Area 3, **Compound 15**, was occupied by Structure 17, a large building founded on horizontal timbers, with upright posts. The compound itself was now delineated by ditch F. 10 at the north, while ditch F. 9 ran parallel to ditch F. 7 from the previous phase. The juxtaposition of ditches F. 9 and F. 7 suggest another track leading from the enclosure to the north-east, perhaps leading to the river. Ditch F. 9 would also have been wide enough, at 3.5–4.0m, to allow access to small craft, but again without knowing what happened further to the north this has to remain speculation. Even if this were not the case the ditch would certainly have acted as an efficient drain. The southern part of Compound 15 was divided into eastern and western areas by gully ditch F. 1047. To the east of this was metalled surface F. 1089, comprising a patch of closely packed gravel, which only survived because of its subsequent slumping into the top of the former Iron Age enclosure ditch. There was no evidence of a surrounding structure to suggest that the surface was internal, although any slightly-founded building could easily have vanished. Lying close by was well F. 1070, and the surface may have been the result of constant passage between the well and Structure 17, although this is only speculative. To the west of the southern area of Compound 15, gullies F. 1045 and F. 1043 also appeared to belong to this phase, although their purpose is uncertain. To the north of Compound 15, Compound 16 appears to have been subdivided into two small paddocks or fields by ditches F. 1015 and F. 1019.

To the south of Compound 15 was a triangular enclosure, **Compound 41**, formed by ditches F. 1069, F. 82 and F. 75. Inserted into this space was a trapezoidal building, Structure 18, founded on a series of large horizontal timbers. Also lying within the compound, to the north of Structure 18, was another building, Structure 51. Although smaller, this was similarly founded on parallel beams or timbers. Possibly servicing both structures in this period was well F. 1082.

Area 4

Structures 7 and 8 continued in use within **Compound 19**, the buildings being provided with well F. 1115. Both buildings and well were separated from the rest of Compound 19 by ditch F. 1130. South of ditch F. 1130 three buildings were laid out, Structures 19–21. Of these, Structure 19 was the largest and was constructed on a series of parallel beams. Whether this represents another granary is open to question, although compares well with other buildings ascribed this function. To the west of Structure 20, Structure 21 appeared to be the truncated remains of the southern end of a small rectangular building, founded on beams. Structure 19, also situated along the western side of the compound, was founded on two parallel rows of posts. These buildings were separated from the southern end of the compound by ditch F. 1170. Gully F. 1188 possibly acted to separate well F. 1184 from the southern part of the compound, the well perhaps servicing the buildings to the north. The southern part of the compound was still sub-divided into Compounds 19c and 19d, the latter now furnished with a well, F. 1193.

Four enclosures now occupied the area immediately to the east of Compound 19; from south to north Compounds 25, 23, 46 and 43. **Compound 25** was delineated by ditches F. 28, F. 826 and F. 1196, these respectively forming the eastern, northern and western sides. Internally the Compound was divided into a series of strip fields or paddocks, Compounds 25d–25g, formed by gullies F. 831, F. 840, F. 1004 and F. 1007.

Compound 23 was also remodelled in this phase, with only ditch F. 41 retained. Ditch F. 30 appeared to demarcate the eastern extent of the compound, while internally ditches F. 790, F. 797, F. 29, F. 36 and F. 991 divided the compound into smaller sub-enclosures, Compounds 23g–23k. Well F. 989 within Compound 23j also appeared to belong to this phase.

Compound 46 was bounded by ditch F. 690 on the east, while to the north ditch F. 955 appeared to delineate its northern extent. The compound was sub-divided by ditches F. 961/968 and F. 962 to form Compounds 46a and 46b.

Compound 43 was delineated by roadside ditch F. 73/F. 219 on the west and north and on the east by ditch F. 652. The compound was occupied in this period by three buildings, Structures 23, 24 and 46. The largest of these, Structure 23, may have been the main building. Attached to the east of this building was a small rectangular annex, Structure 23a. The presence of a burnt area within this sub-structure may possibly suggest that it was a small shrine. The possibility that this area and building had a

religious function is supported by a small cemetery group lying just to the north of this putative shrine. The burial group comprised inhumation F. 618 along with cremations F. 619 and F. 620. Inhumation F. 916 may also be seen as part of this group but belongs in the next phase.

To the south of Compound 43, Structure 24 also appeared to date to this phase and was possibly an ancillary building. Gullies F. 924, F. 932 and F. 1110 appear to have acted as drainage channels for the buildings. An area of middening F. 926 was also forming from this phase, no doubt from refuse from the buildings. Wells F. 937 and F. 946 may have provided the buildings with water. Structure 46 was placed in the north-west of Compound 43, with ditch F. 72 forming a drainage channel at the south of the building.

The line of the road that ran through the centre of the settlement was now replaced by a single drainage ditch F. 98, this for the most part now delineating the eastern extent of Area 4. To the west of the ditch a string of enclosures occupied the eastern part of Area 4. From north to south these are Compounds 42, 20, 44, 21, 45 and 24.

Compound 42 contained Structure 22, another building founded on a series of horizontal timbers. Beyond Structure 22 and its eastern limiting ditch, F. 590, were two discontinuous ditch lengths, F. 584 and F. 576, which are difficult to ascribe function to, beyond creating an oddly-shaped triangular space to the north of ditch F. 219. To the south of Structure 22, wells F. 605 and F. 668 may have provided water for the building. Several ditches and gullies to the south of Compound 42 appeared to divide the area into smaller paddocks (42a): F. 632, F. 636, F. 637, F. 638 and F. 652. Large well/catch-water F. 691 was constructed alongside ditch F. 692.

Compound 20 was reduced in size by ditches F. 91, F. 700 and F. 690; it still contained Structure 9, although the building was also modified at this time. **Compound 21** shared the same eastern boundary as Compound 20, F. 91, and occupied approximately the same space as in the previous phase, with ditches F. 172 and F. 709 respectively forming the western and southern sides.

Compound 44 was occupied by post-hole Structure 25, bounded by ditches F. 690, F. 700, F. 172 and F. 724. **Compound 45** was bounded on the south by ditch F. 25 and contained rectangular building, Structure 26, along its eastern side. Internally the Compound was divided by ditches; F. 742, F. 759, F. 761, F. 758, and F. 767, while well F. 752 may have serviced the building. Within **Compound 24**, ditch F. 559 now formed the western boundary, while gully F. 24 may have been the truncated remains of the northern extent of this enclosure.

Area 2

Several changes were seen within **Compound 28** in this phase. To the west of the enclosure gully, F. 386 formed a small paddock, Compound 28a. The area to the north of Structure 11 was separated by ditch F. 137, this division creating Compound 35.

Compound 35 contained two buildings, Structures 27 and 28. Structure 27 was surrounded by its own enclosure formed by segmented ditch F. 141. An arrangement of slight post-settings and the slumped survival of several floors and two reinforced post-settings provided the evidence for the building.

While Structure 27 may have been domestic in nature, as suggested by its size and the domestic waste within the surrounding ditch fills, Structure 28 was rather more enigmatic. This narrow structure consisted of two rows of posts set down either side of a shallow rectangular cut. Whether the structure itself was sunken or whether it supported a raised superstructure has to remain open to question. Ditch F. 140 appeared also to belong to this phase, possibly to aid drainage around the structures. Gully F. 382 appeared to close off an area around possible well F. 372.

The western side of **Compound 29** was redefined by ditch F. 548. The layout within Compound 30 remained much the same with some slight adjustments and a few additions. A series of pits were established to the north of Structure 12 (F. 127, F. 423–5), although their function is unclear. The southern side of Structure 12 appeared to undergo some modification with the installation of beam-slots F. 433 and F. 440. Drainage gully F. 421 was also cut beneath Structure 12, perhaps because ditch F. 124 from the previous period had partially silted up by this time.

Within **Compound 30**, sub-enclosure 30a was now demarcated on the west by ditch F. 550. This ditch created Compound 30b, bounded on the south by ditch F. 407.

The eastern side of **Compound 31** was realigned on ditch F. 115/F. 454, possibly reflecting the alignment of the developing bank system to the east. A small paddock, Compound 31a, was formed by ditches F. 455 and F. 457, which fed well F. 456.

Within **Compound 32**, Structure 13 was expanded to the north, the extension to the building founded on massive timber footings. **Compound 33** was now occupied by Structure 29, while curvilinear drainage ditches F. 104 and F. 476 continued to be cut within this northern part of the compound. Ditches F. 557 and F. 472 formed a small sub-enclosure, Compound 33b, while well F. 105, fed by gully F. 471, was placed within Compound 33a.

Compound 47 now occupied the southernmost part of Area 2, bounded on the east by ditch F. 261. This enclosure contained a small penannular building, Structure 30. It is possible that this building represented a shrine although other than the horseshoe shape of the structure little evidence of its nature was forthcoming.

The development of the bounding ditch and bank system at the east continued into this period, with the addition of ditches F. 168, F. 157, F. 567, F. 265 and F. 242. The delineating bank on the eastern side of the settlement, as represented by ditch F. 154, appeared to continue north, beyond Compound 35, and then turn at right angles, as seen with the two parallel ditches revealed in the evaluation stage of the project, F. 145 and F.

146. Compound 34 also contained large well F. 259, possibly a watering hole for livestock.

Sub-phase III.2 (Fig. 23)

Area 3

Little can be seen to happen within **Compound 27** during this period, although it may be that the east wing of Structure 31 was added at this time. The major addition to **Compound 36** was the construction of Structure 36, situated in the eastern part of the enclosure and constructed on large horizontal timbers. Two wells, F. 1112 and F. 1285, now serviced the area.

There was a modification of **Compound 38** in this period with the addition of ditch F. 1377, with ditch F. 1323 creating Compound 38a. Within **Compound 39**, ditches F. 1204 and F. 1213 were replaced by ditches F. 1220 and F. 1222. Within Compound 40, the addition of ditch F. 1224 created a small paddock, Compound 40b.

Compound 15 continued to be dominated by Structure 17, which may have been extended south, the remains of this possible building represented by beams F. 1041, F. 1042 and F. 1044. That a building, or extension to Structure 17, existed within this part of the site was suggested by curving ditch F. 1066 that now formed the southern boundary of the compound. Within the northern part of the compound, drainage ditch F. 1030 led to well F. 1024. Another well, F. 1023, was also located nearby, while ditches F. 1021 and F. 1026 appeared to partially enclose this area off from the building. Well F. 886, located in the south-east corner of the enclosure, may also have belonged to this phase.

Structure 18 within **Compound 41** was extended to the north, with additional timber slots, although it was difficult to be sure whether all the components of the building were contemporaneous or represent different buildings, albeit occupying the same plot.

Area 4

Within **Compound 19**, Structure 8 was expanded southwards to the line of beam-slot F.1125, with little change seen elsewhere. To the south, within Compound 19b, some alterations were possibly made to Structure 20, while to the south Structure 44 was constructed. Whether this building was an extension or attached to Structure 20 is not clear, although the structure appeared to be bounded on the west by ditch F. 1171.

Little change was evidenced within **Compound 20** apart from two small ditch sections, F. 678 and F. 673. Compound 21 was provided with a new ditch demarcating its western and northern side, F. 173, the compound containing a group of internal pits and gullies (F. 707, F. 718 and F. 720), although their function remains unclear.



Figure 23

The paddock layout within **Compound 23** was changed in this period, with ditches F. 38, F. 32, F. 34 and F. 996 establishing Compounds 23k–m. Structure 37 appeared to occupy Compound 23m. This building was founded on parallel rows of beams. Ditch F. 563 formed the eastern boundary of **Compound 24**, while ditches F. 23 and F. 823 created new sub-enclosure Compound 24b.

A new paddock layout was seen within **Compound 46** during this period. Ditch F. 187 effectively divided the compound into two halves, Compounds 46 and 46c, with a smaller paddock, Compound 46c, formed by ditch F. 948. This compound was also occupied by well F. 957 and appeared to be open at its northern end.

In fact, the demarcations between the northern end of Compound 46 and **Compounds 42 and 43** appeared to be particularly fluid in this period, perhaps suggesting a period of rapid change within this part of the settlement. For example Structure 40, possibly an addition to Structure 22, straddles the boundary previously separating Compounds 42 and 43. The boundary between Compounds 42 and 43 now appears to have been ditch F. 646, with Compound 42 remaining largely empty, apart from two more discontinuous ditch sections, F. 574 and F. 578. Within the northern part of Compound 43, a small enclosure (Compound 43b) was formed by ditch F. 71 and the eastern extension of ditch F. 72; this contained Structure 46. Gully F. 893 possibly also belongs within this phase.

Structure 23 still occupied the central area of Compound 43, with this building undergoing some structural changes and realignment. Within the south-east of Compound 43, ditches F. 646, F. 664 and F. 654 formed a small paddock, Compound 43a, around a four-post building, Structure 39. Well F. 647, which straddled the boundary between Compounds 42 and 43, may have served both areas.

A small gully, F. 714, within **Compound 44** possibly acted as a drainage channel lying to the north of Structure 25, while well F. 722 may have provided water for the building. Within **Compound 45** a new paddock layout based around two new structures was seen in this period. A series of ditches — F. 749, F. 710, F. 763, F. 802 and F. 731 — formed Compounds 45c–d, with Structure 38 to the north-east of the area and Structure 42 to the south-west.

Area 2

Within **Compound 28** ditches F. 139 and F. 377 defined the areas to the north and west of Structure 11. The cutting of ditches F. 389 and F. 393 within **Compound 29** continued to suggest a building was still present within this space.

Within **Compound 30**, Structure 16 appeared to still be extant although Structure 12 seems to have come to the end of its life, replaced physically if not functionally by Structure 41. Drainage ditch F. 410 replaced ditch F. 407 from the previous phase. Pits F. 422 and F. 427, lying to the east of Structure 41, may also belong to this phase.

Compound 31 retracted to a more rectangular form, its boundaries suggested by an early incarnation of ditch F. 446, along with ditches F. 451 and F. 452. No apparent change is evidenced within the layout of **Compound 32**.

Structure 29 still occupied the south-west area of **Compound 33** and new drainage ditches F. 477 and F. 479 appear to have been cut in this phase. Within **Compound 34** the development of a boundary/field system continued into this phase with additions F. 245 and F. 565 possibly suggesting the development of radiating field systems. The additions of ditch lengths F. 241, F. 569 and double ditches F. 199/F. 243 possibly indicate a system of stock control, while to the south ditch F.494 replaces the line of F. 492 from the previous phase. **Compound 35** still appeared to contain Structures 27 and 28, with pit F. 1397 the only obvious addition to the enclosure within this phase.

The remains of a timber-footed building, Structure 43, are suggested within **Compound 47**, while the shallow remains of ditch F. 518 suggested that the compound may have been divided into eastern and western areas. Pit/well F. 515 also appeared to belong or was backfilled within this phase.

Phase IV (AD 350-410)

Sub-phase IV.1 (Fig. 24)

Area 3

The internal arrangements within **Compound 27** remained much the same in this phase, with the possible addition of ditches F. 1370 and F. 1364, the latter redefining paddock 27c. Within **Compound 36** ditch F. 1351 now formed the western boundary of Compound 36b. In Compound 36a a small segment of ditch, F. 207, may have belonged to this phase. Elsewhere ditches F. 85 and F. 1268 appeared around the north-west of Structure 36 and ditch F. 1254 formed the northern limit of the compound.

A double ditch and bank, F. 1328 and F. 229, defined the eastern side of **Compound 37** in this phase, and perhaps even the western edge of the settlement proper. It is possible, as with the ditches in Compound 39 to the north, that these systems reflect a rising water table, perhaps indicated by their silt/peaty fills. The re-cutting of ditch line F. 1255 by F. 1254 in this period may also evidence the constant need to maintain ditch lines, again perhaps reflecting a propensity for ditches in this area of the site to silt up.

Compound 38 merged with and became **Compound 39** in this phase with a new ditch/bank arrangement of ditches F. 1200/F. 1205, F. 1215, F. 1216, F. 1321 and F. 1322. **Compound 40** was divided by east-west ditch F. 1233 into Compounds 40b and 40c. Gullies F. 1230 and F. 1234 hint at further sub-division. Well F. 1327 was also added in this period and the absence of nearby structures suggests that it may have provided for animal stock.



Figure 24

Within **Compound 16** two ditches, F. 1013 and F. 1015, sub-divided the enclosure into smaller paddock areas. The redefinition of Compound 15 with the cutting of Ditch F. 1036 suggests that Structure 17 was no longer in use, with the area now divided into Compounds 55 and 56.

Compound 55 was occupied by Structure 47, this possibly replacing the redundant Structure 17. A series of drainage gullies were cut to the west of Structure 47 — F. 849, F. 852, F. 862 and F. 864 — although their sequencing is unclear. Ditch/channel F. 9 was also re-cut in this period, the ditch terminating just to the north of Structure 17. As previously, the ditch was still wide enough to allow access to the area/building by small boat.

Compound 56 was bounded by ditches F. 7, F. 1036 and F. 845. Internally only three gullies possibly belong to this phase: F. 1061, F. 1032 and F. 1033.

A small enclosure, **Compound 54**, was created between ditches F. 570 and F. 571. This contained wells F. 346 and F. 1443. To the north-east of Compound 54 was **Compound 41**, the two enclosures being divided by ditch F. 78.

The area to the east of ditch F. 78 and ditch F. 1038, **Compound 48**, was occupied by several small gullies, F. 1065, F. 1038, F. 1038, F. 1078, F. 1084, F. 1092, F. 1106 and F. 1107. These appeared to encroach on the area previously occupied by the trackway through this area of the site, suggesting that access had now been blocked or the line of the track moved (the former seems more likely as the path of a shifted track is not apparent in plan). Within the north-eastern part of the enclosure, midden F. 887 formed in this phase.

Area 4

Within **Compound 19**, the cutting of well F.1127 suggests that Structure 7 had gone out of use. To the south within Compound 19b, Structure 45 appeared to replace Structure 44, while ditches F. 46 and F. 47 suggested the further demarcation of the area to the south and west of the structure.

The northern boundary of **Compound 25** shifted south of the line of ditch F. 1001. To the south of this ditch line, ditch/gullies F. 839, F. 1009 and F.1005 suggest a rearrangement of the elongated paddocks from the previous phase.

The shift of the northern boundary of Compound 25 created a long rectangular space between this and Compound 23 to the north, a space that appears to have been empty. It may be that the blocking off of the through site access to the north, as evidenced within Compound 58, meant that any traffic into the site from the south was now encouraged through this space. This may explain the presence of angled ditch F. 1201 at the western end of this possible through-way, its position perhaps indicating an attempt at partial blockage and stock control into the settlement area. This may be further evidenced by the

fact that several of the compounds to the east of Area 4 had their eastern boundaries re-established (in effect shifted to the west), possibly to accommodate movement along and through the centre of the settlement.

Within **Compound 23** there was the establishment of a different paddock layout with ditches, F. 794, F. 33, F. 977 and F. 984, these creating sub-enclosures Compounds 23p–23u.

The southern part of **Compound 46** appears relatively empty in this phase, with the northern boundary now F. 942. Located in the north-east of the compound was an ‘open’ curvilinear enclosure, **Compound 57**. This was comprised of ditches F. 945 and F. 959, along with related gully or beam-slot F. 950. It is possible that both curvilinear ditch and possible horizontal timber setting represented a structure, or that a structure was located within this space. That this pattern of gully and ditch is repeated within the next sub-phase also hints that whatever this structure may have been, it had a certain longevity. Well F. 944 also appeared to have been cut in this period and may have acted as a catch-water, perhaps for roof run-off.

The eastern boundary of **Compound 43** was now demarcated by ditch F. 63. Within Compound 43a, Structure 46 had gone out of use and the area was further sub-divided by ditch F. 894.

Within **Compound 49**, Structure 23 was still extant although the eastern part of the building or possible shrine area may have fallen out of use. Small beam-slots F. 1111 and F. 1113 may represent the remains of another building to the south, although too little remains to be sure. If this was a building then gully F. 933 may have been for drainage. Animal burial F. 1440 appears to be late and belongs to this or the next phase.

The southern boundary of **Compound 42** retreated to the line of ditch F. 626, with ditches F. 63, F. 546 and F. 571 forming the other boundaries. Structure 40 may still have been extant, with Structure 48 also occupying the compound. The line of earlier ditch F. 587 was also re-used as a drain in this period, the drain appearing to run from or under Structure 48.

Compound 50 to the south of Compound 42 was subdivided by a series of gullies (F. 689, F. 648, F. 633, F. 659 and F. 643), with ditch F. 645/691 forming the southern limit of the enclosure. The slight remains of the horizontal timber footings of Structure 49 occupied the western part of the compound.

Within **Compound 20**, Structure 9 finally went out of use and was overlain by ditches F. 689 and F. 682, suggesting internal division within the enclosure. This picture of a process of sub-division is further evidenced by gullies F. 667 and F. 668.

Compound 49 replaced previous Compounds 21, 44 and 45b. The southern boundary of this compound was F. 710 with well F. 751 acting as a catch-water. The well may also

have served Compound 52 to the south. Internally ditches F. 726, F. 723 and F. 748 indicated other activity although their purpose remains less clear.

Compound 52 and 52a were divided by ditch F. 753, with Structure 50 occupying the north-eastern area of the enclosure. The north of Compound 50a appeared to have been occupied by a small cemetery, containing burials F. 776, F. 768 and F. 1405, although large well/catch-water F. 769 was situated close by and appears to have been open at this time. To the south of the enclosure a series of linear slots may represent the remains of a building or building (F. 774, F. 1411, F. 807 and F. 745). However, beyond suggesting horizontal timber settings, as a group they do not present a convincing structural pattern.

Compound 53 was bounded by ditch F. 815 at the north, F. 820 and F. 22 at the south and F. 237 at the east. To the south of the compound lay well F.835. Further to the south, **Compound 24** appeared to be divided into eastern and western areas by ditches F. 832, F. 837 and F. 838.

The north-south aligned drain running between Areas 3 and 2, F. 98, was enlarged over time. Increased wetness is perhaps suggested by the creation of a large pond or catch-water at its northern end (F. 19). This increased wetness or indeed the creation of F. 19 as a response to the wetness may have meant a westward shift of any access route through this part of the site. This is perhaps indicated by the establishment of ditches F. 541 and F. 543 at the western side of Compounds 28 and 35. If this was the case, and there was still through-settlement access along the former road line, then drain F. 98 would have to have been bridged at some point. As few earthen causeways were apparent within the site as a whole, the bridging of ditches, perhaps with wood, would probably have been common.

Area 2

Within **Compound 35**, Structure 27 appeared to have survived into this period, but pottery dumps within the sunken part of Structure 28 suggested this had gone out of use by this time. As outlined above, a new access arrangement through this part of the settlement may have given rise to the cutting of ditch F. 541/543, with gully F. 416 feeding into these.

Within **Compound 28** what appeared to be a new drain, F. 368, was cut to the west of Structure 11. If not a drain then this ditch possibly suggests that Structure 11 may have been abandoned, or at least reduced in size. This is perhaps further indicated by ditch F. 133 that also appeared to encroach on the area formerly occupied by the building. It is perhaps significant that ditch F. 133 may have formed a small burial enclosure surrounding inhumation F. 400. Elsewhere, F. 387 and F. 369 appear to have been drainage ditches, while well F.388 was cut towards the centre of the enclosure.

Compound 29 was redefined by ditch F. 391, reconfirming this constantly demarcated space. Within **Compound 30**, Structure 41 appeared to go out of use, while Compound

30a appears to have been redefined with drainage ditch F. 409 and ditch F. 404. Two pits (F. 426 and F. 437) and some post-holes were cut in the eastern area of the enclosure. The post-holes are late and perhaps indicate a building occupying this side of the compound in this phase.

Compound 31 was again remodelled in this phase. The re-cutting of ditch F. 466 now formed the eastern limits to the enclosure, while ditches F. 447, F. 448, F. 453, F. 458 and F. 461 indicate further sub-division into smaller paddocks.

Within **Compound 33**, Structure 29 appears to have gone out of use. Four ditches now occupied the compound (F. 102, F. 469, F. 496 and F. 557) although, apart from the division created by F. 557 and F. 496, these fail to form a coherent pattern. Double ditch or bank system F. 256 and F. 260/495 defined the southern boundary of Compounds 32 and 33. This system also appeared to continue down the eastern side of Compound 47, with ditches F. 262 and F. 261.

Compound 47 in this phase appears to have been occupied by a random, though interconnected, set of gullies (F. 512, F. 530, F. 529, F. 527 and F. 533). It is possible that these were the drains of some unseen building, as they all have dark, ashy, 'domestic'/'industrial' fills. The presence of well F. 532 may also indicate the existence of a structure, as perhaps does the dumping of large amounts of pottery and bone along the length of ditch F. 262. To the east of Compound 47, **Compound 51** was created by ditch F. 514 enclosing the corner of the junction between ditches F. 495 and F. 261.

The eastern boundary of the settlement appeared to shift west in this period, moving to ditches F. 263 and F. 198. Ditch F. 566 may have had the function of controlling stock entering Compound 34 from the east. Double ditch F. 155 may indicate an internal division within Compound 34.

Sub-phase IV.2 (Fig. 25)

Area 3

Only a single change can be seen during this phase in the southern part of Area 3. This was in **Compound 27**, where ditch F. 1315 appeared to be the latest feature cut.

Within **Compound 36** ditch F. 1259 may have been the last feature cut in this area of the settlement. Ditch F. 1225 sub-divided the north of **Compound 40**, while gully F. 1244 sub-divided the southern area.

To the north of this there was again a realignment of the ditch/bank system, with ditches F. 1202, F. 1205 and F. 1217. Within **Compound 16** ditch F. 1018 was cut, along with a row of pits, F. 843, F. 858, F. 859 and F. 857; both ditch and pits perhaps indicating the remains of a field/paddock division.

The eastern side of **Compound 41**, ditch F. 78, was extended north in this phase. To the north of the compound and possibly linked to Structure 47, midden F. 1048 appeared. Its contents were similar in nature to the upper domestic fills of ditch F. 7 enclosing this building.

Area 4

The latest features within **Compound 19** appear to have been a series of small rectangular slots, F. 1172, F. 1173, F. 1175 and F. 1176. These are possibly the truncated remains of timber settings and, if so, may have represented a building. Within **Compound 25** the last in a series of paddock divisions appears to have been ditch F. 1003.

The northern boundary of **Compound 42** shifted north to the line of ditch F. 537. Internally pit F. 58 was cut, although this possibly represents an underpinning to Structure 22. To the south of the enclosure, a series of interconnected ditches formed a number of small paddocks — F. 1472, F. 635, F. 640 and F. 641.

Within **Compound 43** this sub-phase saw the final rebuilding or re-alignment of Structure 23. Overall the area was perhaps divided into three paddocks by ditches F. 919, F. 934, F. 935 and F. 1086. Gullies F. 904/905 appeared to be drains, possibly feeding from or beneath Structure 23.

Between **Compounds 47 and 52**, well F. 750 replaced well F. 751. Within **Compound 53**, ditch F. 821 replaced ditch F. 820. As mentioned above, the southern side of **Compound 57** was re-cut in this late period, with F. 960 and, in turn, possible horizontal timber gully F. 951, replacing F. 950.

Area 2

Ditches F. 135, F. 383, F. 375, F. 547, F. 370 and F. 394 within **Compound 28** all appear to have been late drainage ditches and/or paddock sub-divisions. F. 399 and F. 129 seem to have created a small sub-enclosure while shallow pitting, F. 396, within the area previously occupied by Structure 11, suggested that the building had definitely gone out of use by this late phase.

Ditch F. 547 formed a shared western boundary for **Compounds 29 and 30**. The latest features within Compound 30 appear to have been ditch F. 406 and ditch F. 125. Ditch F. 406 seems to have respected Structure 16, which may therefore have still been in existence. **Compound 33** was divided into a new arrangement of sub-enclosures in this period by ditches F. 502, F. 103, F. 478 and F. 56.

Structures

As detailed in Table 25 (see also Figs. 26 & 27), the settlement's buildings show a variety of types and construction techniques, although in all cases timber was the primary material used. While stone and tile were employed, these were only used for stabilising the timber elements within the structures, providing pads and packing around posts. Few nails were recovered from the site, suggesting that wooden pegs were used for jointing.

Only eleven of the buildings were obviously residential units, with the others probably having an ancillary and/or specialist function. On the one hand, post-built structures were present including both 'moderate' and large, long range-type settings (respectively e.g. Structures 5 & 6 and 23 & 31) and there were also square-set variants (e.g. Structure 44). On the other hand, 'mass-timber' construction techniques were also employed in which full trunks were set in horizontal trenches. This would seem to derive from raised floor granary-type buildings, of which a number were evident (e.g. Structures 8, 13 & 47), with Structure 18 being an unusual sub-triangular version of this form. Yet, ground-fast bulk-timber construction was also used for other building styles at the Camp Ground. This would include Structures 20 and 17, with the latter having a square interior setting indicating a raised central clerestory, its plan suggestive of a shrine (possibly replacing the earlier Structure 1 shrine). Also employing mass-timber construction, as mentioned above, was a series of quite distinct buildings within the northernmost compound of the civic 'quarter'/side (Compound 28/30). This included the largest building on site, a great rectangular-plan range, 16.5m wide and 39m long, that may have been the settlement's official 'overseer's' residence, offices and/or a warehouse (Structure 11). Associated with it were three large square buildings (Structures, 12, 27 and 'Compound' 29) whose function is not as yet clear. The discovery of a lock and key at the entrance to Structure 27 does, however, suggest a concern to control access to this building and its contents.

Further discussed by Darrah below, these mass-timber buildings appear to have involved the setting of only roughly trimmed trunks up to 10m long into the ground; at least in one instance the troughs had been packed with stones, *etc.* to support the horizontal element. This clearly attests access to major (and mature) woodland. A crucial issue to consider is whether this derived from the site's hinterland or was shipped in and, if the latter, was this a regular supply? In other words, the records of these structures will need to be closely scrutinised to determine whether their ground beams rotted *in situ* or had been removed and subsequently re-used. Equally, as opposed to those structures where only the walls were carried on such mass-bulks, it will have to be considered whether those structures where there was evidence of raised floor support (lattices of internal cross-interior slots) were, in fact, all granaries or if this extended to other storage facilities and functions, and if this elevation of the interiors related to a risk of flooding.

The 52 identified structures from the Camp Ground can be classified on the basis of their structural elements, as follows:

- a) Buildings represented by a series of parallel beam-slots, at right angles to the long axis of the structure. These are generally rectangular or sub-rectangular, although Structure 18 has a wedge-shaped plan.

- b) Long rectangular buildings with wall sill-beams, and internal beam-slots parallel to the long axis of the structure.
- c) Buildings represented by wall sill-beams, sometimes also with a few internal beam-slots that may mark room partitions.
- d) Aisled buildings, certain or possible, mainly represented by rows of post-holes although beam-slots marking the wall-line or internal partitions may also be present.
- e) Four-post (Str. 39) or six-post (Str. 14, 19, 35 & 42) buildings. Such structures are generally interpreted as raised granaries.
- f) Small sub-circular building Str. 30, 3m in diameter, presumably an ancillary structure.
- g) Rectangular 'sunken-floored' building Str. 28, of uncertain function.

In addition, there are four structures of uncertain overall form (Str. 20, 36, 46 & 50).

Structure	Type	Max. Dimensions (m)	Internal features
1	c	6.5 x 6.5	
2	a	24 x 15	
3	c	9 x 7	
4	d	9 x 5	
5	d	13 x 6	
6	d	15 x 8	Hearth/oven
7	c	17 x 8	
8	a	8 x 7	
9	c	9 x 8.5	
10	c	6 x 6	
11	b	39 x 16.5	
12	c	11 x 10	
13	a	24 x 9	
14	e	4 x 3	
15	c	7 x 5	
16	d	12 x 7.5	
17	d	16 x 10.5	
18	a	15 x 5.5-11	
19	e	2.5 x 2.5	
20	?	15 x 9	
21	c	4.25 x 4	
22	a	12 x 7	
23	a	24 x 11	Possible 'cellar'
23a	a	5 x 4	Hearth
24	c	8.5 x 6.5	
25	d	8 x 8	
26	b	22 x 7.5	
27	d	6 x 9	Hearth
28	g	10 x 2.9	
29	c	18 x 8.5	
30	f	3 x 3	
31	d	26+ x 8	
32	a	8.3 x 5.5-7.5	
33	a	7-8 x 4.4	
34	a	4 x 3	
35	e	4 x 3	
36	?	12-14 x 10-12	
37	a	9 x 3	

38	a	4.5 x 3.3-4.4	
39	e	2.7 x 2.7	
40	a	8 x 7.7	
41	a	9 x 5.5-10.5	
42	c	5.5 x 5	
43	c	15 x 7.5	
44	c	10 x 5.5	
45	a	6.5 x 2.7-5	
46	c	6-6.5 x 6-6.5	
47	a	8 x 5.5-6	
48	a	10 x 5.5	
49	a	3.4 x 2.7	
50	?	7.5-8 x 6	
51	a	5-5.5 x 4	
52	a	2.5 x 2.5	

Table 25. Summary of Romano-British structures

Gazetteer of Structures

Structure 1

This consisted of a square discontinuous gully F. 627 with possible entrances in the northern and southern sides. The gully suggested the remnants of beams forming four sides of a building measuring 6.5m wide with the beams measuring from 0.31–0.36m wide and 0.08–0.14m deep.

Structure 2

The building appeared as a range and in its final form may have consisted of three rectangular units/rooms or bays. The range may have initially consisted of a building measuring 13.5m by 6.5m, founded on a layout of horizontal base plate timbers and 17 upright posts. The western wall was founded on timber slot F. 1460 and six posts [11219], [11183], [11190], [11460], [11465] and [11456]. The southern wall consisted of timber slot F. 1461 and post-holes [11458], [11450], [11452], [10510], [11446] and [11439]. The northern wall line was comprised of three timber slots F. 1457, F. 1458 and F. 1459, along which were ranged posts [11432], [9963], [9961], [10183], [9959], [9957] and [9478]. The eastern wall line was probably partially disturbed by later features, with shallow timber slot F. 1463 possibly a surviving element. Situated within this southern bay was a rectangular arrangement of larger posts, [9977], [10479], [10143] and [11415], these creating an internal rectangle measuring 4m by 3.5m. As these posts lay 1.5m from the external northern and southern wall lines it is suggestive that this room was aisled. Eleven other posts lay internally, although other than suggesting various structural supports their positioning is difficult to interpret structurally. Little differentiation within the fills of the beam-slots suggested that the sizes of timbers used corresponded closely to the size of the beam-slots revealed, this varying from 0.23–0.53m in width and 0.07–0.38m in depth. Several of the remnant post positions, however, contained post-pipes while a few contained post-pads, in one instance (post-hole [9977]) reused quern stone fragments. The post-holes varied in size and shape, their dimensions falling between 0.15–1.65m wide and 0.08–0.70m deep, although the surviving post-pipes suggest that the actual upright timbers used in construction varied in width from 0.25–0.32m.

Several gaps in the wall lines, especially on the northern and eastern sides, may suggest entrance positions, although given the shallow nature of some of the remnant timber slots these gaps may be the result of subsequent truncation. Timber slot F. 1456 extends from the north-east corner of the southern bay, suggesting another room or bay extended to the north or that the building was larger in its primary conception and was subsequently divided. Two narrow lengths of timber, F. 1465 and F. 1466, along with

post-hole [10421] suggested a northern wall line giving this northern bay a width of 5m. This bay contained 11 internal posts and, as with the southern room, these are not particularly indicative of structural function.

The structure, as suggested by the northern and southern bays, may have originally been demarcated by ditch F. 1339 running along its western side; however, the extension of beam-slot F. 1464 to the south-west and a grouping of posts lying over and beyond this ditch indicates a further, probably later, extension to the building. The 11 posts lay in a rectangular grouping and can possibly be seen as forming three rows. The western row consisting of the pairing of [10540] and [11208], the central row of [11204], [11161], [11159] and [11157], with the easternmost row formed by the pairing of [11473] and [11472]. Three other posts lay within this grouping but form no cohesive pattern. Taken together, post-holes and beam-slot would indicate a third bay or room measuring 7m by 8m.

Structure 3

The structure is based on the alignment of two badly truncated beam-slots — F. 1121 representing the north wall line and F. 1122/1123 the western wall. No opposing sides of this structure were seen but, as mentioned, this may be due to truncation. This, of course, limited the scope for indicating structural dimensions, although the timbers slots varied from 0.26–0.56m in width. If a building, then the beam-slots appear to be aligned with the early road as represented by ditches F. 1118 and F. 1132 and this possibly places the structure within the earliest Roman phase.

Structure 4

This building consisted of a rectangular post alignment, although the southern half of the building was truncated by later features. The northern wall was comprised of a line of 15 posts ([7481] – [7489], [7495] – [7515]) suggesting that the building's width was 5m. The western wall consisted of a line of ten posts indicating that the length of the building was 9m ([7491], [7493], [7619] – [7625], [7563] – [7569] and [7595]). Both the southern and eastern walls of the building were cut away by a later large pit, the remaining posts [7366], [7517] and [7519] comprising the eastern wall with [7573] and [7577] representing the southern wall.

Structure 5

Thirty-six post holes have been included within this grouping, although their structural integrity beyond forming a rough rectangular alignment is open to question. However, as a relatively large number of posts are located within this area of the site, the posts presumably did belong to part of a structure or structures. Taken together, the posts encompass an area measuring 6m by 13m, the size of posts ranging from 0.13–0.77m wide and 0.02–0.49m deep. The excavated posts were: [7841], [8079], [8081], [8084], [8086], [8149] – [8161], [8166] – [8172], F. 897/[8259], [8358] – [8364], [8511] – [8518], [8525], [8588] – [8592], [8611] – [8619], [8674], [8676] and [8689]. One post (F. 897) included the remains of an infant burial, possibly representing a foundation deposit.

Structure 6

This building was comprised of a group of somewhat disparate features that possibly constituted a single building, or group of contemporary structural remains within the same area of the site. The main structural elements are here divided into two groups. The western group consisted of two beam-slots, F. 1235 and F. 1236, lying respectively east and south of a hearth/oven area. To the south of the oven/s were two post holes, [11550] and [11049]. These post-holes had substantial rubble packing at their bases suggesting that the posts were intended to carry some weight. The posts, however, had no matching pair although the position of the posts suggested that any such matching pair, if it existed, had not been truncated or masked

by later features. Another post ([2272]) lying to the north-west of the oven area may also represent part of the structure. Close to this post were the heavily truncated remains of an infant burial, F. 1253, which may represent a related foundation placement. Three successive floors of clay-lined ovens or hearths had survived due to their subsequent slumping into the top of earlier pit/well F. 1239. All floors showed signs of burning or scorching and the blue-grey clay that constituted them had consequently become reddened. The possible western part of the building consisted of 17 post settings, lying in a roughly rectangular alignment. While these in themselves may not be particularly convincing as a building layout, the fact that these were grouped and of similar appearance certainly hinted that they constituted a structure of some sort. Two of the excavated posts located at the north-east of the grouping contained infant burials (F. 1240 and F. 1241), and, as with F. 1253, these may be foundation deposits. If all the above grouped features are taken together they give tentative dimensions for the structure of 15m by 8m. The posts included within this grouping varied from circular to oval in shape, their sizes ranging from 0.33–0.70m in width and 0.11–0.51m in depth.

Structure 7

The argument that a building or buildings must have occupied this part of the site in a sense relies on negative evidence. Although this part of the site appears heavily truncated it is argued that the largely 'empty' appearance of the area is because it was occupied by a building or building. Indeed the few features that occupied this part of the site and ultimately the north-east corner of Compound 19 were largely structural footings.

The structure occupies the same area as Structure 1 and may have replaced it. The building was founded on timber slots F. 1120, F. 190/F. 1126 and F. 1128, respectively the northern, western and southern walls. The surviving timber slots suggest that large wooden blocks were used in its construction, at least in part. These range in size from 0.63–1.29m in width and 2.20–7.00m in length. Several post-settings may also belong to this phase of building: [6914], [7006], [7008], [7038], [7040] and [7092]. The posts were oval to circular in shape with dimensions from 0.48–0.90m in width and 0.13–0.49m in depth. If these structural elements indeed represent a structure then the length of the building would have been between 16.5 and 17m.

Structure 8

This building consisted of a row of five parallel timber or beam-slots (F. 190, F. 191, F. 193–5), with a further east-west aligned beam forming the southern side, F. 192 and possibly another F. 1135 suggesting the northern side. In all these form a trapezoidal structure that was 7m in width at the east and 4m in width at the west, with an overall length of 8m. From east to west the spacing between the first three slots was 1.5m apart, while the spacing of F. 193–195 was 2m. With the exception of F. 190 the timbers used in the foundation measured from 4–6m in length and from 0.33–0.51m in width. The non-rectilinear appearance in plan of F.1135 suggested the possible use of more than one beam to form this side of the structure. The parallel beams indicated that these formed the foundation for upright posts, these in turn possibly supporting a raised timber floor. To the south of the structure, parallel beam-slot F. 1125 perhaps hints that the building also extended in this direction.

The exceptional size of timber foundation slot F. 190 is intriguing, being far larger in size than the other structural elements already mentioned, at 7m long and 1.54m wide. However, if F.190 is viewed as also forming part of putative building Structure 44 to the east then it possibly makes more sense as it may also have formed part of a western wall of this range.

Structure 9

This was a difficult building to untangle, given the disparate nature of the structural elements present. Because of the overlying nature of several of the timber slots two possible layouts belonging to different

phases are postulated here. The primary layout of the building probably included timber slots F. 680, F. 681, F. 687 and F. 684, respectively forming the northern, western, southern and eastern walls, making this a slightly trapezoidal structure measuring 7–9m by 8.5m. A suggestion that the building extended to the east is seen with the continuation of F. 680 beyond F. 684 alongside timber slot F. 697. A later realignment of the building may be seen with timber slot F. 683 probably replacing the northern wall and an extension south to the line of F. 698 and F. 696 giving a north-south width of 9.5m. The line of the eastern wall may also have been extended/moved to F. 675/F. 676. Internally nine post-holes suggest some form of internal support although what phase these belong to is difficult to determine. The excavated posts are [4799], [4801], [4804], [4728] and [4730] – [4734]. Later additions to the structure may also be seen with timber slots F. 685 and F. 671 and post-hole F. 1409. A row of four posts located to the west of the main structure ([5864], [5866], [5868] and [5870]) along with the relatively ‘clean’ nature of this area of the site suggested the building or part of this structure probably covered this area. The timber slots within the building ranged in size from 1.55–8.00m long and 0.28–1.10m wide. Mainly circular/sub-circular in shape, the posts varied in size from 0.28–1.60m in width and 0.21–0.73m in depth.

Structure 10

The southern wall of this building was represented by two beam-slots (F. 729 and F. 730) suggesting that the width of the building was 6m. An internal division is suggested by a second parallel row of two further beams F. 1445 and F. 713, the latter with an associated post-hole; an unexcavated post at the east may also have formed part of the original structure. Beam-slot F. 712 indicated a continuation of the eastern wall northwards, suggesting that the building was at least 6m long. Post-hole [4200] may also have been part of the northern wall line. The beam slots ranged from 0.17–0.60m in width and 1.50–2.85m in length.

Structure 11

Possibly representing the largest structure at the site was a substantial north-south aligned range founded on timber slots, in total measuring 39m by 16.5m. The eastern side of the building consisted of ditch/timber slot F. 1452, while the western wall of the structure was founded on truncated beam-slot alignment F. 134. F. 1452 also formed the eastern side of a corridor-like structure along with F. 149, lying parallel 3.5m to the west and running down the length of the building. At the northern end of the corridor was a rectangular room measuring 8m x 5m. This was founded on beam-slots F. 1447, F. 1448 and F. 1449, respectively forming the northern, western and southern walls, the eastern wall being formed by F. 1452. From the north-western corner of the room timber slot F. 1453 could be traced, this possibly forming the line of the northern wall of the overall range, the line west of this being disturbed by later features. Lying centrally between walls F. 149 and F. 134, 6m from each, was a line of timber slots possibly forming an internal division within the overall structure. From north to south these were F. 385, F. 147 and F. 389. The southern wall line could be traced along the northern edge of ditch F. 128 as a steep-sided flat-based gully running along that side of the ditch, although there appeared to be no difference between any of the fills within the ditch itself. East-west aligned timber slot F. 129 may also have formed part of the overall structure, although without an opposing side this has to remain speculative. Differences in fill colour and consistency were observed along lengths of wall line F. 149, suggesting that more than one timber was used in the foundation, which one might expect given the overall length of these footings. The discrete timber slots that were identified suggested that the timbers used varied from 4.50–7.70m in length and 0.40–1.80m in width.

Structure 12

This was a square timber structure formed by three timber foundation trenches on its northern, southern and eastern sides, all recorded as F. 121. Post-pit F. 436 may also have formed part of the southern wall line, making the overall dimensions of the structure 10–11m in width. No equivalent/comparable western side existed to this structure; in terms of substantial foundation trenches, however, north-south aligned beam-slot F. 430 may have partially enclosed this side of the building. The building itself lay equidistant from

the surrounding enclosure ditches F. 128 and F. 150 at a distance of 5m. With this double ditch patterning it is tempting to see this structure as a shrine. With this in mind, pit F. 439 may be seen alternatively as a water source or acting as a soak-away fed by or connected to ditch F. 124 that runs away from the centre of the building to the west. The foundation slot suggested the use of large timbers ranging from 10.5–12.0m in length and 0.90–1.40m wide.

Structure 13

This structure was comprised of two interlinked parts. The northern range of the building was founded on three substantial timber foundations, from north to south, F. 481, F. 482 and F. 483, with a respective spacing between the centre of each timber of 5m and 6.5m. The full extent of this part of the building is hard to gauge, but if the assumption is made that the surrounding ditch F. 106/F. 490 also acted as the eaves-gully then the building was 12.0–13.5m in width and up to 19m in length. The timbers used in this part of the building ranged from 7.50–8.00m in length and 1.02–1.72m in width. The southern range of the structure was comprised of six rows of parallel timber slots. From north to south these were F. 160, F. 485, F. 486, F. 487, F. 488 and F. 489, the spacing between each being 2.5m, 2.5m, 2.0m, 2.0m and 3.0m respectively. The timbers used ranged from 7.25–8.10m long and 0.40–0.58m wide. The width of the building probably lay between 11 and 12m with the length between 14 and 16.5m. The parallel beams of the southern range certainly suggest that the building had a raised floor and may represent a granary. Two very shallow parallel timber slots, F. 1454 and F. 1455, located between the northern and southern ranges of the building possibly indicate footings for a stair or perhaps a cross passageway between the two parts of the structure. Perhaps pointing towards the former suggestion is the presence of pig burial lying close by, this perhaps representing a threshold or foundation deposit.

Structure 14

This building was comprised of six posts set in a rectangular formation measuring 3.0m by 3.5–4.0m. The posts forming the southern side of the building were [11225], [11229] and [11471], and those on the northern side were [11223], [11221], and [11231]. The post-holes were circular or sub-circular in shape and varied from 0.60–1.10m wide and 0.19–0.25m deep.

Structure 15

Truncated on its western side, this building was comprised of three very shallow beams, F. 613, F. 614 and F. 615, respectively forming the northern, eastern and southern walls. The beams varied from 0.25–0.35m in width and up to 3.75m in length although no full length was seen due to later truncation. The surviving slots suggest a rectangular building measuring 7m by c. 5m.

Structure 16

This structure was comprised of a grouping of shallow posts F. 405, set within an enclosure formed by ditches F. 550, F. 128, F. 415 and F. 404 or F. 406, respectively forming the western, northern, southern and eastern sides, giving an internal space of 12m by 7.5m. Founded on 16 surviving posts the building probably occupied this space, although the pattern of posts failed to provide a cohesive structural arrangement. The 16 posts were [2510], [2512], [2514], [2518], [2520], [2522], [2524], [2526], [2619], [2621], [2645], [2681], [2683], [2685], [2687] and [2689]. All posts were circular or sub-circular in shape and varied in size from 0.17–0.80m wide and 0.06–0.40m deep. Two depressions, [2474] and [2720], lying along the south side of ditch F. 128, possibly indicated roof run-off into the ditch itself.

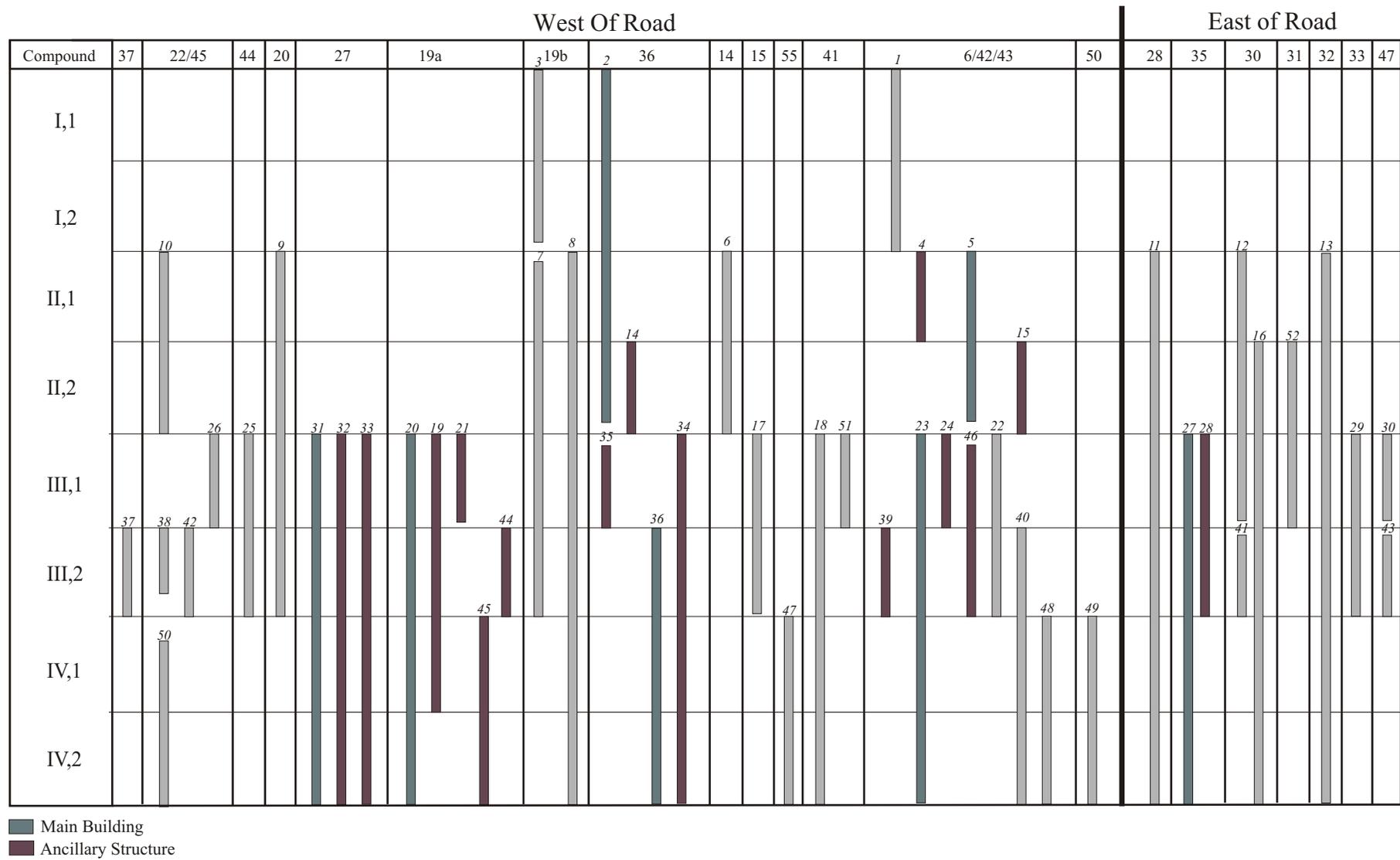


Figure 26

Structure Number

1 2 3 4 5 6 7&8 9 10 11 12 13 52 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32 33 34 35 46 51 36 37 38 39 40 41 42 43 44 45 47 48 49 50

Phase

I.1

I.2

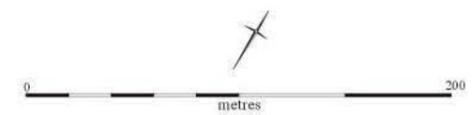


Figure 27

Structure 17

This building was a rectangular range measuring 16m by 10.5m. The northern wall of the structure was founded on timber slot F. 1052, the southern wall similarly resting on large timber base-plate F. 1059 and possibly post-pits [8422] and [8902]. Although not fully enclosing the gap between the western ends of the north and south walls, timber slot F. 1051 appeared to demarcate the western extent of the building. The eastern wall is similarly indicated by timber slot F. 1055, although in this case this has been severely truncated by a later ditch. Internally, there was a square 7m by 7m alignment of 23 posts; clockwise from the north-east corner these were: [8749], [8747], [8743], [8741], [8739], [8737], [8735], [8733], [8782], [8788], [8790], [8786], [8320], [8316], [8416], [8778]/[8776], [8772], [8775], [8753] and [8751]. It is possible that these posts represented an early phase of the structure, or possibly even an earlier structure altogether. However, the posts were placed central to the main outer wall alignments as represented by the large timber slots, lying 2m from the northern and southern walls and 5m from the western and eastern wall. Within the central post setting was another offset alignment of four posts forming a 5m-square ([8311], [8313], [8088] and [8731]). The internal post settings may ultimately have been replaced by timber slots F. 1053 and F. 1054, or these added to provide additional support. The placement of the internal post-settings and subsequently the horizontal beams suggest these either represented aisle posts or more likely supported a raised wooden floor. Providing extra support for a raised floor may also explain timber slots F. 1056, F. 1057 and F. 1058, the latter two perhaps necessary to counteract structural slumping into an earlier backfilled Iron Age ditch. Similarly, ten other internally placed posts may have served the same function: [6762], [8418], [8420], [8541], [8745], [8764], [8770], [8774], [8784] and F. 1050. Large timber blocks appear to have been used in the foundations, these ranging from 2.00–13.25m in length and 0.50–1.10m in width. Posts appeared both driven and placed within pits, the dimensions of which varied between 0.12–1.50m in width and 0.06–0.34m in depth. Centrally placed along the northern wall of the structure was gully F. 1030, this appearing to act as a drain, perhaps flowing away from the wall and into pit/well F. 1024. Several limestone blocks were placed at the mouth of the drain; these were either used to line the drain or more likely acted as support for the timber base-plate forming the northern wall of the structure.

Structure 18

This building in its ultimate form was trapezoidal in shape and measured 15m in length, varying in width from 11m at the north tapering to 5.5m at the south. In its original form the building may have constituted three rows of timber lying 2m apart, slots F. 1097–F. 1099, although timber F. 1100, lying 4m to the south, may also have been part of the original build. On a slightly different alignment timbers F. 1094 and F. 1096 are probably contemporary and suggested the building was later extended to the north. These ultimately may have been replaced by F. 1093 and F. 1095, although as no timber slot cuts another, placing the timbers in a definitive chronological sequence is difficult. The timbers used, as suggested by the surviving slots, indicate dimensions of 5.00–6.90m in length and 0.83–1.70m in width.

Structure 19

This building was comprised of two parallel rows of three posts, with [6698], [6700] and [6702] forming the northern side and [6704], [6706] and [6708] the southern side. The posts formed a square structure measuring 2.5m by 2.5m. The circular posts or post-pits ranged in size from 0.39–0.66m in width and 0.14–0.28m in depth.

Structure 20

This structure consisted of a range primarily founded on north-south and east-west aligned beam-slots F. 1143–F. 1155 and F. 1163–F. 1167, while several posts may also have been integral to the building. The best preserved part of the building consisted of three rows of timber slots, from north to south F. 1151/F. 1161, F. 1152/F. 1162 and F. 1153, along with posts [6144] and [6146]. The deeper western half of F.

1153 suggested that this slot contained two timbers. The spacing between each of these rows was 1.5m. Smaller slots F. 1154 and F. 1163/F. 1164 lying 1m to the south of F. 1153 may also be seen as part of this 'core' structure. The original western limit to the building was suggested by north-south beam-slot F. 1147, probably replaced by three rows of north/south aligned timber slots; from east to west these were F. 1146 and post-hole [6189], F. 1148 and F. 1145, spaced 2m apart.

If east-west beam-slots F. 1143, F. 1144, F. 1166 and F. 1167 represent the northern and western extent of the building then the overall dimensions of the building may have been some 15m in length with a width of 9m. The width can be increased to 10.5m if an alignment of post-holes and beam-slots is seen as representing the southern extent of the building. This alignment was from west to east formed of F. 1149, [6279], F. 1155, [6129] and [6204]. Other probably related posts were [5354], [5888], [5928], [5992] and [5999]. The timbers used within the foundation slots varied from 0.80–6.54m in length and 0.31–0.67m in width. The post dimensions varied from 0.30–0.85m in width and 0.09–0.20m in depth.

Structure 21

This was the remains of the southern end of a rectangular building founded on horizontal timbers F. 1169. The width of the foundation slot varied between 0.20–0.45m with the longest surviving length being 4m. The overall width of the building was slightly larger at 4.25m.

Structure 22

The building appeared to have been founded on five (possibly six) north-south aligned timber slots, F. 591–595, with a 1.5m gap between each timber element. The building may have been extended to the south and west with timber slot F. 601 forming the western wall and timber slot F. 602 forming the south wall. If taken together these elements constitute a building 12m by 7m, with the timber slots ranging in size from 4.50–9.20m in length and 0.53–1.30m wide.

Structure 23

This area of the site proved problematic in that it may ultimately prove impossible to untangle the 137 post holes and 18 timber slots thought to be Roman. The number of structural elements located within this area of the site certainly suggests that more than one building was present, or at least more than one phase of a building. Gaining a clear structural picture, however, of what features represented a particular building at any one time was difficult, as any number of structural alignments can be postulated, especially given the numbers of post-holes.

Beyond the multitude of posts, however, certain elements may be grouped together as representing parts of the same structure or phase of structure. The earliest part of the building may be represented by a series of east-west and north-south beam-slots, these filled with light brown silty sand, as opposed to the darker fills of the later phase/s of the building. Structure 23a (below) can also be seen as being part of this building, but representing a single discrete unit or room within it, hence the separation here. The building may be divided into two rectangular ranges, the west range represented by beam slots F. 915, F. 930/931 and F. 1450, respectively the northern, southern and western wall lines, giving an internal space of 11.50–12.20m by 7.00m. Beam F. 1451 may represent an internal division, while lying parallel to it was rectangular cut/pit F. 619. Although shallow, the steep sides and flat base of this pit suggested it may have originally been timber lined, perhaps some form of sunken cellar or cold store. The eastern range of the building is represented by timber slots F. 622 and F. 922, this creating an internal space of 7.5m by 8m. Lying internally to this space was Structure 23a, although it is impossible to be sure whether it was a later addition or whether it preceded the range and was later incorporated into it.

Probably representing a later range or an expansion of the building to the west were timber slots F. 914 and F. 918, these possibly forming northern and southern wall lines. F. 903 and F. 902 may respectively represent the eastern wall and western walls to this range, giving an internal space of 7.5m by 6.0m.

Beyond this later 'core' range other dark-filled and similarly aligned timber slots suggested the building was continually added to. Timber slot F. 901 mirrors F. 902 and possibly indicates the north-western extent of the building. North-south aligned timbers F. 913, F. 910 and F. 920 suggest wall lines or partitions, as do east-west slots F. 661, F. 909 and F. 907. These, as with the post-holes, are structural in nature and, while they form no coherent structural pattern, must be seen as surviving elements of a substantial building. The horizontal timber elements ranged in size from 2.5–7.4m in length and 0.15–1.10m in width.

The post-holes took on an array of differing forms from small stake-holes to large post-pits, the largest measuring 1.30m wide and 0.67m deep. The majority of posts appeared to have been driven, in that no post-pipes were apparent, although several, as mentioned above, were placed within pits and packed in with clay, gravel or cobbles. Another form of post setting used was posts resting on pads. This latter form for the most part consisted of an excavated pit filled with a successive series of hard packed sand/gravel and blue-grey clay layers topped with cobbles and occasionally quern fragments. More of this type of post-setting may have existed than was apparent, as if the upper fills of clay or cobbles fail to survive then the lower packed gravel fills give the appearance of an 'ordinary' post-hole and are subsequently described as such by the excavator. The excavated posts were: [6315] – [6355], [6516], [6541], [6814], [6618], [6944], [7224], [7290], [7292], [7296] – [7300], [7306], [7208], [7354]-[7366], [7479] – [7525], [7551], [7553], [7557] – [7581], [7593] – [7625], [7629],[7633], [7637] – [7645], [7657] – [7667] and [7822].

Structure 23a

This building may be seen as part of Structure 23 although it was a discrete structural unit. The rectangular building measured 4m by 5m and consisted of 24 posts and the remains of three shallow beam slots, these (possibly) originally running the full length of the wall lines. The west wall consisted of timber slot [9830], double posts [10624], [10610] and [6518]/[6520], and post [6522]. The southern wall line was formed by posts [10633], [10631], [10629], [10627] and [10618]. The eastern wall line consisted of posts [10625], [10623] and [10621] and double posts [10619] and [10617]. The north-east corner of the building was comprised of post and beam-slot/s [10615], while the northern wall consisted of timber slot F. 622, which had the trace of three post impressions in its base. Aside from F. 622 the greatest surviving length of timber in the structure was 3.0m long and 0.25m wide. The posts were mainly circular and ranged from 0.20–0.50m wide to 0.08–0.40m deep.

Internally three features appeared to be integral to the building. Situated in the south-east corner of the building was pit F. 626; while its function remains unknown, the thin silt bands within its lower fills suggested it once held water. More intriguing perhaps was a circular area of burning, F. 624, located at the north-west of the structure, which appeared to be related to a circular alignment of 11 stake holes, suggesting a small screen or baffle. No burnt industrial/agricultural residues were present that may have suggested a function of this burnt area, although it is tempting to see this small building as a shrine. This is possibly borne out by the presence of a small cemetery lying to the north containing two inhumations and two cremations.

Structure 24

Only the northern and eastern sides of this building survived, with no evidence of opposing southern and western walls. The north wall was comprised of three post-pits and a beam-slot, from east to west, [2739], [7337], F. 1444 and [6766], the latter also forming part of the eastern wall. Along with [6766] the east wall consisted of beam slot F. 927 and post-hole [6763]. The walls did not lie at right angles to one another and it is just conceivable that they do not represent the same structure. However, suggesting that they are elements of the same building is that both posts and beam-slots were lined with small rounded pebbles and

occasionally quern stone fragments, the pebbles effectively acting as packing or consolidation for the structural timbers. Despite having no southern or western walls the surviving elements of the structure suggest a building measuring approximately 6.0–6.5m by 8.0–8.5m. The timber slots ranged in size from 2.6–6.0m long and 0.69–0.75m wide, while the post pits varied from 0.60–1.45m wide and 0.35–1.30m deep.

Structure 25

This building consisted of a tight group of 59 post holes lying within a rough square alignment covering 8m by 8m. Within this grouping it is possible to discern five lines of posts, although it has to be admitted other patterns can be discerned from this post assemblage. The excavated group consisted of posts [4544], [4546], [4550], [4647], [[4649], [4670], F.1400/[5287], F. 1404/[5297], F. 1386/[5299], [5321] – [5327], [5333], [5335], [5485], [5620], [5622], [5686], [5688], [5690], [5693], [5740], [5742], [5743], [5746], [[5776], [5778], [5780], [5810], [5836]-[5846], [5944] – [5966] and [6817]. The posts ranged in size from 0.13–0.87m wide and 0.06–0.62m deep. Three of the posts, F. 1386, F. 1400 and F. 1404, contained the remains of infants, possibly indicating foundation ritual.

Structure 26

The main elements that constituted this north-south range were four timber beam-slots. The eastern wall of the building was founded on timber slot F. 554, with the western wall set on parallel slot F. 740, these lying 7.5m apart. Between the two outer walls and lying 3.5–4.0m from them, were two internal timber slots F. 555 and F. 783, these possibly indicating an internal divide and/or cross-support for a raised timber floor. The central timbers were 6.73m and 7.30m long respectively and up to 0.67m wide. The two outer walls at up to 22m in length must have consisted of more than one timber laid horizontally with a range of width from 0.40–0.47m. The overall dimensions for the structure are 22m by 7.5m.

Structure 27

The building consisted of a rectangular alignment of 14 post-holes, pads and impressions. Clockwise these were: [1775], [11467], [11468], [11469], [1816], [1822], [2604], [1733], [1874], [1931], [11471], [1769], [1707] and [1773]. The posts suggested a supporting timber frame measuring 6m by 9m. Two other post positions lay internally to this arrangement ([1814] and [11470]). The post impressions ranged in size from 0.25–0.70m wide and 0.04–0.40m deep. Nine of the posts rested on in situ post pads, these in the main consisting of limestone blocks. The largest blocks were situated within opposing post-holes [1707] and [1822] with the maximum size used being 0.40m x 0.35m x 0.14m. The relatively large blocks and amount of blocks used within these post-settings possibly indicate that these bore the major weight of the structure. However, the blocks may also have been used to counteract the subsidence caused by the posts being placed over earlier peat-filled ditch F.1371. Indeed the construction of the building and its surrounding ditch F. 141 may have caused the peat fill within the underlying ditch to dry out, hence the shrinkage and compression, this in turn causing the slumping of overlying deposits along its length. In this case this process meant the survival of floor deposits otherwise mainly absent across the rest of the site. The floor sequence represents a series of levelling, preparation and floor surfaces and within the sequence five episodes of activity were recognised. The primary levelling deposit was a pale yellow grey sandy silt, [1884]/[2232]. With a maximum thickness of 0.07m this deposit was spread over much of the area of the building, possibly deriving from the excavation of the surrounding segmented ditch F. 141. Above this, pale yellow-brown clay deposit [1777]/[2231] represented the first floor, maximum thickness 0.08m. Sealing this primary floor deposit was levelling layer [1778]/[2230], a pale to mid orange silt-sand up to 0.12m thick. Above this preparation was floor deposit [1714]/[2229], a pale grey clay with periodic lenses of dark grey ash banding, up to 0.09m thick. The ash suggests the proximity of a hearth or oven (or some other ash producing structure), although no evidence of burning was seen on the floor itself. This floor in turn was sealed by levelling deposit [1713]/[2228], a pale grey silt sand up to 0.11m thick. Sealing this levelling deposit was floor/hearth [1712]/[2227], a brown/yellow clay showing distinct signs of reddening

caused by burning or scorching. While the surviving deposit was up to 0.11m thick, much of the hearth/floor area had been disturbed and had become incorporated in the next levelling deposit. This preparation [1636]/[1712] was a mixed deposit of ash and burnt clay up to 0.08m thick. This levelling deposit was possibly the result of the previous floor deposits having been 'turned'; basically dug up and re-levelled in preparation for the next floor, rather than importing fresh material for this purpose. The last recognised floor deposit was [1634]/[1715], the small surviving remnant of which was up to 0.06m thick and consisted of a pale brown clay-silt. Above this was final levelling/preparation deposit [1634]/[1709] consisting of a pale brown sand up to 0.07m thick. The latest recorded deposit seen sealing the floor episodes was layer [1626], a dark grey ashy deposit, similar in nature to the midden-type deposits seen filling the surrounding ditches. This possibly represents the final phase of occupation or more likely a mixture of post-use dumping and subsequent ploughing, given the relatively 'clean' nature of the floor sequence until this latter phase. Other surface deposits located around the building were gravel surface/s [593]/[594], concentrated around the entrance to the south-east of the structure. This gravel spread was well compacted, although no more than 0.04m thick, and may be part of a threshold area leading into an outside yard.

The surrounding ditch F. 141 had been dug in three separate lengths along the north, west and east sides, and appeared to be the product of piecemeal excavation rather than an attempt at a coherent drainage solution, given the differing depths, widths and segmented nature along its length. The surrounding ditch, however, suggested that the roof of the building expanded this far, further indicated by a shallow depression or eaves-drip gully at the south-east corner of the building, forming the eastern side of the presumed threshold. If so, the roof span of the building would have been 11–12m by 12–13m. The eastern side of the ditch also contained infant burial F. 1402. The burial was possibly associated with a crossing of 'stepping stones' across this eastern side of the ditch, consisting of large and what appeared to be deliberately placed limestone blocks, possibly indicating another entranceway into the building. Located close to each other and near the threshold of the building was a key and lock.

Structure 28

This curious structure took the form of a rectangular sunken-featured building, measuring 2.70–2.90m wide and 10m in length, although its northern edge ran beyond the edge of excavation. The rectangular cut was almost vertically sided and flat based with a maximum depth of 0.18m. Eighteen small post or stake-holes lined the eastern and western edges of the building, respectively seven (689) – [685]) and eleven ([127] – [133], [679] – [687]) in number, these varying from 0.20–0.44m wide and 0.15–0.28m deep. It is possible that these stakes supported a raised floor or even revetted the sides of a wood-lined tank, however the function of the structure remains something of an enigma.

Structure 29

The surviving remains of this building suggest a large rectangular range founded on horizontal timbers and upright posts measuring 18.0m by 8.5m. The southern wall of the building was best preserved, being founded on two substantial timbers F. 504 and F. 505, with further timber slot F. 507 and post-pit F. 507 providing additional support along this wall line. The western wall of the structure was seen with timber slot F. 560, while the eastern wall was represented by a line of three post-pits, F. 509–F. 511. The northern wall was represented by the very truncated remains of a timber slot F. 1474. Internally, timber slot F. 501 and post pit F. 503 lay in the centre of the building, while timber slot F. 499 may represent further subdivision of the structure and/or provided support for a raised floor. The timber slots ranged from 4.4–8.0m in length and (discontinuing severely truncated slot F. 1474) 0.40–1.26m in width. The post-pits were irregular or sub-oval in shape ranging from 1.00–1.66m in width.

Structure 30

This building was represented by small pennanular gully F. 517 with three internal post holes, [3094], [3099] and [3101]. The internal area encompassed by gully F. 517 was 3m in diameter, the gully being up to 0.82m in width. The circular posts varied in size from 0.20-0.45m in width.

Structure 31

The building appeared to consist of a divided east-west aligned aisled range with a wing attached to the eastern end. The main east-west range was constructed using earth-fast posts, 67 in number, with beams used in the northern (F. 1369) and southern walls (F. 51, F. 52, F. 53, F. 1310 and F. 1312). The western extent of the building was unseen, but the revealed section suggested that the east-west range was separated into three units, the layout perhaps suggesting two aisled rooms lying either side of a passageway or perhaps a tower. The eastern room of the range was a rectangular outline of posts measuring 12m by 8m. The northern wall consisted of nine posts, from west to east: [11350], [10297], [10293], [10291], [10292], [10246], [10236], [11368] and [10275]. The west wall consisted of six posts from north to south: [10275], [10223], double post [10220] and double post [10212]. The western wall similarly consisted of six posts, [11350], [11348], [11346], [11344], [11342] and [11340]. Unlike the other walls the southern wall of the building appeared to have been founded on beams, mainly F. 1310, while north/south aligned beams F. 51, F. 52, F. 53, F. 1310 would also have supported uprights for the southern wall of this room and the northern wall of the eastern wing. Internal to the outer wall was another rectangular pattern of posts measuring 6.5m by 9m (or 7.5m), this alignment perhaps suggesting an aisled structure. Clockwise from the north-west corner the posts were: [10211], [10202], [10205], [10208], [11366], [11364], [11362], [11360], [10595], [11358], [11352], [11354], [11370], [11226] and [10244]. The internal post alignment lay 2.5m from the eastern outer wall and 1.5m from both the northern and southern outer walls. The western alignment of the aisle posts could be seen as lying either 1.5m or 2.5m from the outer western wall if the variations between posts [10249] and [11356]/[10228] are taken into consideration, although both positions may be correct at different periods if the building underwent internal change.

Only the eastern part of the western room was seen, while the shallow nature of the features suggested this had severely suffered from plough damage. Beam-slot F. 1369 probably indicated the line of the northern wall. The eastern wall consists of posts [11308], [11310], [11312], [11476] and [11314]. The southern wall appeared to be badly truncated but its line is possibly indicated by single post [6680]. Two differing but parallel post alignments could be seen as alternatively forming an eastern aisle wall of this room and can be envisaged as a movement over time of an internal aisle, mirroring the patterning seen in the eastern room. The eastern row comprised of posts [11302], [11300], [11298], [11296], [11294] and [11242]. The western row was made up of posts [11304], [10597], [10599], [10601], [10606], [10608] and [11290]. Two posts lying 1.5m to the south of [1190] may be the remnants of an internal aisle alignment, [11288] and [11286], while a remnant of a northern aisle was possibly represented by post [11306].

The two rooms of this range were connected by beam-slot F. 1310 forming part of the southern side of the range, although both aisled rooms appear separated by a central four-post setting, [11475], [11326], [11324] and [11320] (post [11322] may also be part of this arrangement). The posts form a near square measuring 4m by 4m and may represent a through-corridor or passageway between the two aisled rooms, or more tentatively perhaps supported a tower or loft.

To the south-east of the east-west range was a large beam-founded rectangular wing. Overall this enclosed an internal space of 11m by 10m. The northern wall, as already mentioned above, was shared with the eastern room of the range. A gap within the wall here between beams F. 52 and F. 53 perhaps suggests an entrance between these two rooms. The short north/south alignment of these beams was reflected in beam F. 1310 and these may represent the footings of a stair, although this has to remain a very cautious suggestion. The western, eastern and southern walls of the wing were respectively comprised of beams F. 1441, F. 51 and F. 131. In the absence of any other features only a single post [6412] could be said to be part of any internal structure within this wing.

The horizontal beams used in the construction ranged from 2.5–12.0m in length and 0.40–0.85m in width. The post holes vary from oval to circular in shape, with their sizes ranging from 0.30–1.00m wide and 0.07–0.52m in depth.

Other features possibly associated with the overall structure were gullies F. 1291 and F. 1314. As these ran from the base of the walls of the structure they could represent drainage channels. A small pit or post-hole, [10603], was situated within the north-eastern extent of the building. This contained animal remains and may represent a foundation deposit.

Structure 32

The building was founded on six timber slots, three aligned east-west (F. 1295, F. 1297 and F. 1299) and three aligned north-south (F. 1296, F. 1298 and F. 1300). As F. 1298 is later than F. 1299 then it is possible the two different alignments represent different structures, however with this in mind they are described here as representing one building, albeit of different phases. Overall the timber foundations indicate a trapezoidal building measuring 8.3m north to south and 7.5m to 5.5m from east to west. The size of timbers used varied from 2.35–5.70m in length and 0.54–1.29m in width.

Structure 33

This structure consisted of three large east-west aligned timber slots F. 1303, F. 1304 and F. 1306. The timbers were set in a parallel north to south alignment with the smaller F. 1305 possibly suggesting a related timber slot. The building covers an area measuring 7–8m by 4.40m. The spacing between the centres of the surviving slots is 1.5m (F. 1303/F. 1304) and 5m (F. 1304/F. 1306). The three larger timbers were cut to similar lengths, 4.18–4.40m, their widths varying from 0.90–1.21m. F. 1305 measured 0.90m by 0.60m.

Structure 34

This structure consisted of two timber slots aligned east-west (F. 1358 and F. 1539). The beams lay roughly parallel to each other and 3m apart. The beams measure 4m in length, with the northern timber 0.65m in width and the southern 0.25m. The timber slots appeared to form two sides of a small rectangular structure measuring 3m by 4m. Post-hole [11183] lying to the south-east of F. 1358 may also be related.

Structure 35

This structure was formed of seven posts forming a rectangular pattern, measuring 4m by 3m. The western side of the structure consisted of post-holes [10430], [10432] and [10434], and the eastern side of [10426], [10428] and [11000]. A further post [10466] may also be related. All posts were slightly oval in shape varying in size from 0.25–0.46m wide and 0.12–0.30m deep.

Structure 36

This structure consisted of a group of seven timber slots and 24 possibly related post-holes. The layout of the major structural features suggested that the building had at least two phases. The western wall of both phases appeared to consist of timber slot F. 1247, although no corresponding eastern wall was apparent for this and the next phase. The northern wall line was formed of timber slots F. 1267 and F. 1269, with the southern wall indicated by F. 1279. Later both north and south walls appear to have shifted to timber slot F. 84 and F. 1278/F. 1280 respectively. Taken as a group the major surviving elements suggest a building 12–14m in length and 10–12m in width. The timber slots suggest the use of massive timbers up to 12.5m in length and 1.1m in width. Internally, timber slot F. 1270 may have provided footings for structural

support. The related post group consisted of posts [8043], [8048], [8124], [8894], [8896], [8898], [8920], [8987], [8991], [8993], [8997], [9071], [9075], [9077], [9081], [9106], [9180], [9182], [9184], [9186], [9233], [9472], [9703] and [11477]. These varied in shape and size, their dimensions ranging from 0.16–0.68m wide and 0.10–0.37m deep.

Structure 37

This timber building appeared to be founded on three parallel rows of east-west aligned beam-slots and a single post hole. The northernmost row consisted of two shallow/truncated beam lengths F. 985 and F. 988, the central row F. 986, F. 990 and posthole/beam F. 995/1000, with the southern row of F. 987 and F. 992. The maximum length of surviving beam-slot was 4.0m while the widths varied in size from 0.24–0.55m. Circular post F. 995 measured 1.00m in diameter and was 0.18m deep. In all the surviving remnants suggested a structure measuring 9m by 3m, with a 1.5m spacing between the rows.

Structure 38

This building consisted of three rows of parallel timber slots, from east to west F. 100, F. 734 and F. 735, respectively lying 1.5m and 2.5m apart. There was also an indication of a fourth, similarly aligned slot, F. 1436, lying 3.5m to the east that may belong to this structure. The building may have been slightly trapezoidal in shape measuring 3.30m–4.40m wide and 4–5m in length. If F. 1446 is included the length increases to 8–8.5m. The timber slots ranged in size from 3.50–4.40m in length and 0.72–0.79m wide.

Structure 39

This was a small square building represented by four post-settings lying 2.7m apart ([6730], [6983], [6633] and [7036]). All post-pits were circular and all contained limestone pads at the base. The post-pits ranged in size from 0.40–0.75m in width and 0.40–0.59m in depth. Possibly related was an infant burial, F. 1427, located to the west just outside the western side of the building.

Structure 40

This building consisted of four parallel timber slots and appeared to partly overlie Structure 23, although it is possible that these structures were contemporary, or even elements of the same building. The timbers from east to west were F. 603, F. 60, F. 61 and F. 62 with respectively a 3m, 2m and 1.5m spacing between the centre of each timber. The structural elements cover a rectangular area of 7.7m by 8m, the timber slots ranging in size from 3.30–6.80m long and 0.70–1.20m wide.

Structure 41

This appeared to be a trapezoidal building founded on five parallel timber slots. From west to east the timber slots were F. 411, F. 416, F. 417, F. 418 and F. 120, the spacing between the centre of each timber element being 1.5m, 2.5m, 1.5m and 2.5m respectively. The width of the building varies from 10.5m at the east to 5.5m at the west, with the overall length 9m. The timber slots varied from 5.90–10.65m in length and 0.34–1.00m in width.

Structure 42

This was a square building founded on horizontal timbers F. 800, F. 802, F. 803 and F. 805, these representing the west, north, east and south walls respectively. The overall dimensions of the building as

suggested by the surviving timber slots were 5.0m by 5.5m, with the timbers measuring from 0.30–0.45m in width and 3.50–5.30m in length.

Structure 43

The remains of this building were suggested by a series of timber slots, probably originally forming a rectangular range. The western wall line was indicated by timber slot F. 519 with the eastern wall based on timber slot F. 1473. Centrally placed and parallel to these walls was timber slot F. 528, possibly representing an internal division. The northern wall line is suggested alternatively by timber slots F. 521 and F. 522. Overall the dimensions of the building were 15m by 7.0–7.5m. The timber slots varied in size from 3.5–7.0m in length and 0.55–1.40m in width.

Structure 44

This building was represented by three parallel beam-slots, from north to south F. 1183, F. 1185 and F. 1187, these respectively spaced at 2m and 3m apart. A western extension to this structure appeared to be represented by north-south beam-slot alignments F. 1177 and F. 1181. Taken together this gives the overall dimensions for the building as 10m by 5.5m. The beams vary in size from 1.55–5.00m in length and 0.25–0.60m in width.

Structure 45

This building appears to be trapezoidal in shape as suggested by four rows of near-parallel beam slots, F. 1189, F. 1190, F. 1191 and F. 1439, spaced at distances of 1.5m, 2m and 3m apart. The suggested dimensions of the building were 2.7–5.0m wide and 6.5m in length. The timber slots varied in size between 1.7–3.8m in length and 0.37–0.65m in width.

Structure 46

A building here is suggested by a roughly square formation of 24 post-holes and post impressions measuring 6–6.5m across. The excavated pots were [7386] – [7404], [7828] – [7832], [7899] – [7905], [8021] – [8033], [8063], [8137] – [8147], [8226] and [8396]. The posts varied in size between 0.16 and 0.86m wide and 0.04m–0.33m deep. Three shallow but parallel gullies ran from the southern side of the building, F. 894–F. 896, suggesting these may have had some drainage function within the structure.

Structure 47

This was a horizontal timber-founded building that probably shows two phases. The southern and probably earlier part of the structure consisted of five parallel rows of timber slots lying at 1.5m intervals. From north to south the rows are represented by F. 866, F. 868, F. 869–70, F. 873–5 and F. 877. Overall these give a rectangular layout measuring 8m by 5.5m–6m.

Later the building appears to have been extended northwards, suggested by beam-slot F. 865, this forming part of the western side of the extension along with timber slot F853 and post-setting F. 854. The eastern side of the extended building was comprised of the alignment of timber slots F. 867 and F. 855, giving the overall dimensions for this extension as 9.5m by 6.5. Post-hole F. 872 may also have been added to the southern part of the building at this time. The original building may also have been extended to the south as suggested with timber slots F. 878 and F. 879. The timbers used throughout varied in size from 1.10–6.90m in length and 0.29–1.30m in width. Other related structural elements may also be seen with several post holes/pits [9401], [9403], [9405] [9223] and [10438], these ranging in size from 0.21–1.80m wide and 0.08–0.72m deep.

Structure 48

This building was founded on five horizontal beams, the northern, eastern and western walls respectively F. 1475, F. 588 and F. 590. Large timber slots F. 609 and F. 606 were probably also part of this structure, possibly footings for a raised floor and/or internal divisions. With no apparent southern wall line the dimensions of the building were 10m by 5.5m. The timbers used varied in size from 4.5m–10.0m in length and 0.50–1.70m in width.

Structure 49

This was the remnants of a small building founded on three parallel beam slots. These from north to south were F. 633, F. 657 and F. 658, lying 1.3m and 1.2m apart respectively. Overall the building forms a structure measuring 2.70m by 3.40m. The longest surviving timber slot was 3.40m with a width of 0.24m.

Structure 50

This structure appeared to represent two phases of building or indeed two superimposed buildings. The northern wall is represented alternatively by beam-slots F. 743 and F. 1445 or a row of five posts ([3946], [3942], [5025], [5022] and [5019]). The southern wall was represented by beams F. 756 and two post-holes ([4243] and [4126]), or again alternatively a line of three posts ([3848], [4099] and [3676]). Taking both alternative northern and southern alignments the building would measure 7.5–8m by 6m. Several posts lie within the two walls ([5068], [[4350], [3682], [4234]) and these may represent an internal division down the centre of the structure. The timber slot dimensions ranged from 1.70–2.50m long and 0.60–0.83m deep. The posts/post-pits were mainly circular and varied from 0.16–0.83m wide and 0.11–0.37m deep.

Structure 51

The building consisted of four parallel timber slots, from east to west F. 1076, F. 1075, F. 1074 and F. 1073, lying apart respectively 3m, 1m and 1m. These give a rectangular ground plan of 4m by 5–5.5m. A further timber F. 1072, lying to the west, appeared to be related although this lay at a different angle from the others. If included within the overall building the east-west measurement increases from 7 to 8m. The timber slots ranged in size from 3.40–4.10m in length and 0.44–0.81m in width.

Structure 52

A small building consisting of two parallel, east-west aligned beam-slots, F. 449 and F. 450. The beam-slots were at least 2.50m long, being truncated on their western side by ditch F. 448, and were placed 2.00m apart. Each was 0.30m wide and up to 0.16m deep. A single posthole, [2366], lay between the two slots but may not have been related.

Tree trunk sill-beam construction Richard Darrah

This assessment of the potential of the timber remains from Camp Ground, Earith, is based on a site visit on 30th April 2002 and the recording of the timber ‘ghosts’ of Structures 17 and 47 and their plans.

The horizontal slots in the ground had contained long trunk lengths that were presumably sill-beams. Two of these timbers were over 10m long with a mid length diameter of over 0.5m; most of these sill-beams were made up of shorter trunk lengths placed end to end. Upright round posts 0.4m diameter were also noted in Structure 47. No timber remains survived in the sandy ground, so we do not know either the growth rate of these timbers or their species.

Timber exploitation in Roman Britain

Timber use in Roman Britain started with the exploiting of slow-grown high forest trees in the 1st century. The growth and use of fast-grown timber from the 2nd century suggests that the supply of large trees had been squandered by the end of the 1st century in lowland Britain.

At the Camp Ground we cannot discuss the growth pattern of the trees from this site without tree-ring evidence, but the use of long trunk lengths in the Late Roman phases suggests that the timber use on this site was unusual as these should have been in short supply in the heavily exploited landscape.

The use of these long trunks as sill-beams means that the builders of these structures had access to oversized trees. These could have come from several sources;

- The existence of woodland on fen islands that had not been exploited earlier because of difficulty of access, which were becoming available as a result of the draining of the fens.
- The importing of timber by boat from abroad.
- The existence of more timber in the landscape than the above model suggests.

Understanding the availability and exploitation of timber in the Roman landscape enhances our understanding of resources available. The final report should include a brief note on the timber evidence from the site, as this demonstrates the use of long timbers weighing over two tonnes each.

Roman Pottery Katie Anderson

A total of 71,575 sherds of Romano-British pottery were recovered. This is a preliminary report describing the findings of the spot dating as well as discussing future areas of analysis. Pottery from each context was studied separately and at this stage remains separate and not considered in their wider role as part of features.

Methodology

Due to the size of this assemblage it would not have been practical to attempt to record all of the pottery in detail. Therefore it was decided to initially only spot date each context. This involved looking individually at all of the pottery and then selecting any sherds that could be given a more precise date than 'Romano-British'.

The best sherds to use for spot dating are those with a recognisable fabric type and/or form. However not all vessel forms and fabrics can be accurately dated since many were common throughout long periods and thus distinguishing an early type from a later may be unfeasible.

For each context a spot date was given based on the latest dated sherd(s), but most sherds with a specific date were recorded with details of forms and fabrics. This would therefore make it possible to see if any contexts contained residual material, which would be useful when trying to understand the nature of a specific context and later, feature.

At this stage it is possible to use the information that has been gathered to look firstly at the date ranges on the site, including which phase saw pottery usage peak. Also it can be used to identify contexts of 'particular interest'. These include contexts which contain large quantities of pottery, unusual vessels and/or those with much residual material. This information can then be used in the next stage of analysis to help select a percentage of the assemblage to be studied in detail.

Results

Generally the pottery was in good condition with many context assemblages appearing to be in their primary location rather than secondary deposits. This is reflected by the number of complete and near-complete vessels excavated on the site.

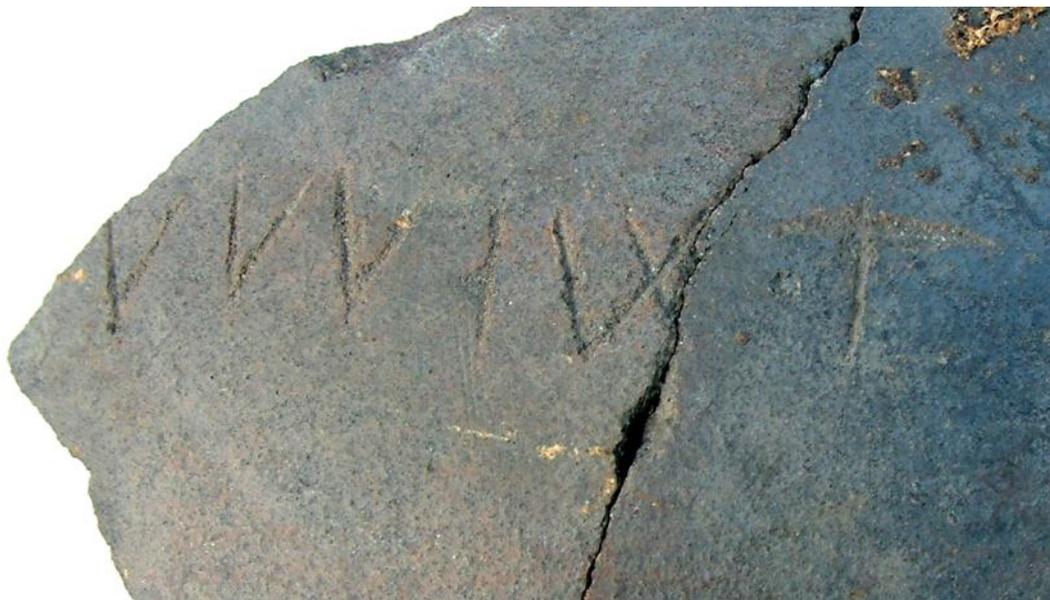
As with the fieldwalking pottery, there was not a great deal of pottery from the early Roman period at Earith that was not residual. However, this may have been partly because, with the exception of established wares and imports, early pottery (especially local wares) is difficult to distinguish from later material.

The best examples of early Roman pottery were Verulamium white wares which included several examples of the reeded bowls that are dated mid 1st to mid 2nd century AD. There were also a number of reeded bowls made in other fabrics that are dated AD50–160. These vessels were found in many different contexts, but they were usually residual, with fewer than twenty cases where this pottery was contemporary with the spot date of the context.

There was one sherd, from context [7123], which had very similar decoration to Cherry Hinton wares with ring and dot painted decoration, although of a different fabric. However, its decoration indicates that this sherd was made in the 1st century AD.



A. Late Roman Wares from the Camp Ground



B Graffiti

The majority of features contained pottery that post-dated AD150, largely a result of the large quantity of Nene Valley colour coats found on the site (Plate II). This, in turn, is probably at least partly due to the relatively close proximity of the Nene Valley production site to Earith.

There were several contexts that contained a black colour coat which had a very glossy finish. This fabric has yet to be identified but it is thought to be an imported ware, thus making it potentially significant.

One other imported ware that occurred in several contexts was Late Baetican amphorae. This fabric is dated to the 3rd century and although it is not one of the latest pottery groups it does represent one of the only types of continental import to the site and appears to be the latest dated import type to arrive at Earith.

One final fabric of interest is the 'British Late grog-tempered ware'. There were many examples of this fabric found in a number of different contexts. This fabric is dated from the late 3rd century to the end of the Roman period making it another good indicator of late occupation.

Contexts of Interest

This is a list of contexts which might be considered for further analysis, or recognised as being potentially significant. Below are four examples of such contexts with brief descriptions of why they have been given their specific spot dates and why they might be worthy of further investigation.

[3464] F. 260 This context contained 641 sherds of pottery weighing 18.127 kg. It has been dated to the 4th century because of the presence of Nene Valley jars, beaded flanged bowls, and shallow dishes; as well an Oxfordshire red slipped imitation Dr38 and one Dr45. This context also contained a relatively high proportion of residual material including Central Gaulish Samian.

[3854] F. 480 There were a total of 888 sherds weighing 25.444 kg. This context is also dated to the 4th century because of the Nene Valley imitation Dr31 and Dr38, three globular beaded bowls with white painted decoration and convex dog dishes and one Oxfordshire beaded bowl. This context also contained a large amount of residual pottery including 32 sherds of Samian (mostly Central Gaulish, with some Eastern and Southern), as well as beaded bowls and flanged bowls in different fabrics.

[9783] F. 7 This context contained 402 sherds of pottery weighing 11.530 kg. This context has been dated to the 4th century because it contained one Nene Valley globular beaded bowl with white painted decoration and four sherds of Oxfordshire red slipped ware including one imitation Dr36. This context contained a relatively large quantity of residual pottery including 17 sherds of Samian (mostly Central Gaulish), as well as beaded bowls and flanged bowls.

[3776] F. 532 There were 496 sherds of pottery weighing 14.965 kg in this context. This is another 4th-century context dated by two Nene Valley wide mouth jars and two beaded flanged bowls. There is a noteworthy amount of residual material such as grey ware beaded flanged bowls and nine sherds of Samian including three central Gaulish Dr18/31s.

The following are examples of contexts that contained more than 200 sherds. All of the contexts were dated either 3rd-4th or 4th century AD and they all contained some residual material including Samian:

[070], [1109], [1112], [1114], [1607], [1624], [2273], [2612], [2727], [2733], [3128], [3601], [3778], [6591] and [7461].

There are 19 contexts which have been dated 4th to early 5th century AD and are therefore evidence of the latest Roman period. Five of these contained sherds of what is known as 'Romano-Saxon' ware: [449], [1176], [1152] and [2667]. The remaining contexts contained either late Nene Valley forms or Oxfordshire red slipped wares.

It may also be worthwhile to fully analyse the 'early' features of the site, so that different periods of the site can be looked at closely. There are only three contexts marked as being 1st century AD, though it is probable that a number of the contexts dated 'Romano-British' are also of this date, although without recognisable fabrics or forms this could not be proven. Any other 1st-century pottery occurred as residual material in later contexts. There are 24 contexts which have been dated 1st-2nd century AD, generally because of the presence of Verulamium white wares. The next contexts in chronological order are those with non-residual Samian, which suggest a period of post-AD150.

Another aspect worth investigating is the level of preservation of the pottery, in particular looking at those contexts which contain one or more complete or near complete vessels, i.e. vessels which could have gone into the ground complete rather than discarded due to breakage. There are several contexts where this appears to be the case, including [7186], [2058] and [7729] which also contained other broken sherds and [8400] and [8657] which contained no other pottery.

When all the contexts are correlated as parts of features it is hoped that a number of the contexts which could only be dated as 'Romano-British' may be able to be more accurately dated. For example if a 'Romano-British' context lay above a second century context, it may be assumed that the context can now be dated at least '2nd AD +?'.

Residuality

As briefly discussed above, a significant number of the latest dated contexts contained residual material often consisting of Samian, but also including earlier vessel forms such as beaded rim bowls and reeded bowls. Over half of the 19 contexts dated 4th to early 5th century contained residual material in varying quantities.

Almost half of all 4th-century contexts contained residual pottery from the 2nd and 3rd centuries AD. Context [3854] for example contained 32 sherds of Samian as well as other residual material, which represented more than 5% of all pottery from that context.

However it should be noted that not all the residual pottery is of a significantly earlier date, with many vessel forms dating to the late 3rd century AD. Therefore it seems more

than likely that there were contexts where rather than being residual, the slightly earlier vessels continued to be used for longer time, for example late 3rd century vessels could easily have been used well into the 4th century AD. This view may be supported by looking at the levels of abrasion of the earlier pottery, as it seems likely that 'true' residual pottery would be more abraded and generally smaller than material that was contemporary with the date of the context. Although this was the case with a large number of the contexts, there was also a significant number of contexts where the earlier pottery was in as good a condition as the latest material, suggesting that it was deposited at the same time and was not, in fact, residual.

Further evidence for the apparent longevity of some of the earlier pottery comes from several examples of Samian ware vessels that have repair rivets, a number of which were still in situ (e.g. one from context [9783]). This evidence suggests that, rather than being discarded when broken, efforts were made to repair certain vessels thus increasing their use life.

Therefore this evidence suggests that not all 2nd and 3rd century pottery found in 4th century contexts was necessarily residual; rather, it is possible that some of the earlier pottery was in use for much longer and was deposited at the same time as material manufactured at a later date.

However although this appears to be the case in a number of contexts, there are more which contain true residual pottery and these need to be looked at in detail. When considering residual material it is vital that the nature of the context is understood as this may explain the occurrence of the earlier pottery (Evans and Millett 1992). In particular, one might focus on features that could have been backfilled in one episode or alternatively those which accumulated their fills over a relatively long period of time. In the first example, residual pottery could become part of the context if it was a secondary deposit and had been specifically removed from its original place of deposition; a context which formed part of a gradually-filled feature may have had less residual pottery, unless pottery from different layers became mixed.

To initially assess the nature of the features, some of the significant contexts were briefly looked at to see if the pottery could reflect on the nature of the deposits.

Firstly, six of the later dated contexts that did contain residual pottery were examined: [3776], [3464], [3854], [7461], [9783] and [11277], which all included Samian (in particular central and southern Gaulish) because these are dated approximately 150 years before the latest pottery from their contexts. Of the six contexts listed, two were from ditches, two were from pits, one was from a midden and the last was from a bank/levelling. Of course, until the remaining contexts from each feature are looked at no conclusions can be drawn, but from the general context and feature descriptions residual pottery would not be unexpected in any of the six features because they all have been subject to a solitary episode of backfilling.

Four contexts containing no residual pottery (at least none that pre-dated the latest pottery by more than 50 years) were studied; these were [455], [449], [1176] and [4593]. Three of these contexts were from ditches and one [455] from a pit. Again, further investigation into each feature will be necessary in order to draw definite conclusions, but because no residual pottery was found in these contexts it might be assumed that they were filled in one go with recently broken/discarded material.

Overall, from a brief study of some of the latest and some of the biggest features in terms of quantity of pottery, it appears that there was a high level of residuality at Earith and this needs to be investigated further. There are many possibilities as to why earlier pottery was found in so many contexts with much later pottery, but these questions cannot be answered until the features involved have been analysed in full at a later stage.

Excavation versus Fieldwalking

It is necessary to compare the results of the spot dating with the findings from the fieldwalking analysis to see if they are correlated or whether they show different results in terms of dating activity in different areas of the site.

In general terms, the pottery from both fieldwalking and excavation showed similar trends in the proportion of material from different periods. In both cases there were only small quantities of pottery that pre-dated AD150 and in both instances the earlier contexts were usually dated by the presence of Samian ware. In the fieldwalking analysis, Nene Valley wares had been noticed to be very common. This was also the case with the excavated material, thus showing that its frequency in the fieldwalked group was not simply because it was easier to spot.

Due to the very large number of contexts containing pottery from the excavation, at this stage it was unrealistic to attempt to plot all finds on the plan of the site. Therefore only a small number of contexts were selected and plotted, but they still gave some idea as to the distribution of the excavated pottery.

The first contexts plotted were those dated 4th–early 5th century AD, although it should be noted that as it was their slot number which was used rather than individual context number, those without slot numbers could not be marked. The 15 contexts that were marked were fairly spread out, but do show a concentration in two areas. The first is the central northern area of the site where four late contexts were situated. There are two further cases immediately to the south. This evidence thus supports the fieldwalking evidence because it is in this area of the site that large quantities of Nene Valley pottery and Samian were found; this suggesting it to have been a key area of the site either in terms of settlement or as a dumping area for broken pot and other rubbish. Full feature analysis will help determine which is more probable.

The second cluster was in the south-east corner of the site. This also supports the fieldwalking evidence which showed small clusters of both Samian and Nene Valley ware in this area of the site.

To get a better idea of where the earliest evidence of occupation is on the site, two of the contexts which were dated to the 1st century were plotted. The low numbers of 1st century contexts mean that it is difficult to try to prove anything concerning areas of occupation from the pottery evidence alone. However the two contexts that were plotted were situated relatively close to one another in the south-east corner of the site. This evidence is somewhat supported by the evidence from the fieldwalking (Fig. 15).

Although only a very small number of contexts have been plotted on a site map, they do support the fieldwalking evidence and highlight key areas of the site that were in use at certain times. Comparing the two groups of pottery has also shown that the fieldwalking pottery apparently suffered from minimum lateral movement since the clusters that showed up when the fieldwalked pottery was plotted were also apparent in some of the excavated contexts. Of course in order to prove this was the case many more of the excavated contexts would need to be plotted, and this is an issue to be considered later in the analytical process.

Conclusion

This report has aimed to discuss the major findings of the spot dating process as well as to point out areas for future investigation. Only a small percentage of contexts were discussed in any detail, but those that were had been specifically chosen because they had the potential to provide the most information. The contexts with the latest possible dates were studied because these are potentially some of the most significant areas of the site in regards to what was happening towards the end of occupation on the site.

Residuality at the site was high, with a significant number of contexts containing both 2nd and 4th century pottery. In particular, Samian wares occurred in many later contexts. However, explanations for the residual pottery cannot be put forward until the contexts have been amalgamated into their feature groups and the features analysed in full.

Some of the areas that produced the earliest pottery on site were also examined. These are important because they have the potential, along with other forms of evidence, to show which areas of the site may have been the first to be used.

The spot dating has also provided a list of contexts which should be studied again but in more detail. These include the large contexts and those which contain interesting and/or residual pottery.

The next stage in the process will involve the detailed study of a percentage of the pottery from the site. This information can then be used to answer more targeted questions about particular areas of the site as well as to provide more detailed information about the

specific nature of the pottery assemblage from the site in terms of fabrics, forms and usage. This in turn will give important details as to what was happening on the site during different periods of time and may even help answer questions regarding the end of the settlement.

Small Finds

The Jupiter Bust Martin Henig

The relief consists of a block of Upwell limestone, 42.5cm in height, 48cm in width and 19.5cm thick (Plate III). Its front face is carved with the facing bust, neatly bearded, with long locks flanking the face and a coif of hair above the forehead. The eyes are prominent, being emphasised by drilled pupils 0.5cm across and 0.5cm deep which would once have been filled with coloured paste, as can be seen for example in limestone carvings of goddesses found at Gloucester and Cirencester (Henig 1993, 10 & 29, nos. 20 and 84). The shoulders appear to have been bare, without any trace of a garment, though on the figure's right side the shoulder has been lost through damage and abrasion. The head juts forward slightly and in fact rests on a moulded cornice. On the top of this was the free-standing figure of a feline (a lion, sphinx or griffin) though all that remains are the two front paws and, at the back of the top face, a scar where the underbelly was attached to the matrix. The sides of the block were simply shaved down, though the right side has been damaged a little towards the rear, and it is evident that there were once contiguous blocks to left and right and presumably below. It was thus part of a larger monument.

The bearded head can be compared with others which are thought to portray Jupiter, amongst them a head from Chipping Norton, Oxfordshire (Henig 1993, 18, no. 46) and more particularly a bust from Great Chesterford, Essex. The latter was carved on a large block of stone, originally octagonal, portraying the gods of the week (Huskinson 1994, 2–3, no. 5). Jupiter would here represent Thursday. Series of figures of gods are often to be seen on religious monuments (*Viergotterstein*), notably Jupiter columns, like the famous Neronian example in Mainz in which a facing figure of Jupiter with similar physiognomy appears in relief on the base as well as, presumably, a free-standing figure above (Bauchhenss and Noelke 1981, 162–3, nos. 272–5, Taf. 31,1). Perhaps a closer parallel existed among the series of busts (from which, unfortunately, Jupiter is now lost) arranged as a frieze upon the monumental arch partly recovered from the Riverside Wall in London (Blagg 1980, 152, block 26).

But a feline would be very much out of place in any such religious dedication. Lions and sphinxes were invariably tomb guardians from Archaic Greek times onwards. In eastern Britain, the famous Colchester sphinx (Huskinson 1994, 30, no. 63) comes at once to mind. This was possibly originally flanked by lions crowning a built tomb, the arrangement found on the Longinus stele, likewise from Colchester (*ibid.*, 23–4, no. 48). However, the Colchester sphinx is quite separate from any lower blocks which might have existed and the creature is perhaps twice the size of what the Earith sphinx may



Plate III The Jupiter Bust

have been. Funerary lions are common as grave markers and, to confine examples to the Cambridgeshire region, examples from Water Newton and Girton may be noted (*ibid.*, 31–2, nos. 65–6).

Blocks depicting heads in relief, evidently from tombs, one of them a tragic mask and another a river god, come from Bonn (Bauchhenss 1979, 54–5, nos. 65–6) and there appears to be a similar river god head in relief on a block from Stanwick, Northamptonshire (see below; pers. comm. D. Neal). A head of a river god carved in the round from Great Dover Street, Southwark (Henig 2000, 66, fig. 5.3) and the clean-shaven mask from a funerary monument at Towcester (Huskinson 1994, 32, no. 67), likewise had a free-standing element on the top or by the side of the tomb, and presumably had apotropaic functions. Admittedly the Earith bust does not look like a river god but, despite its resemblance to Jupiter, could be intended for his brother Pluto, who presided over the underworld.

The lack of clear comparanda to the composition is partly a consequence of the paucity of surviving sculpture here, though there are no very obvious parallels from the continent either. However, in a wider sense it does not stand alone for it is yet another example of evidence for a large-scale sculptured mausoleum from eastern Britain, presumably associated with villa estates and comparable with structures like the Igel monument in eastern Gaul (Wightman 1970, 150 and 241–2, pl. 11). It is possible that the presence of such tombs in this region demonstrates a particular link with northern and eastern Gaul and Germany. Apart from the Towcester mask, mentioned above, clearly attached to other blocks, there is an architectural relief preserving part of a nude youthful figure from St Michael’s Church, Stow Nine Churches, Northamptonshire (Huskinson 1994, 42 no. 90), best explained as part of a sculptured mausoleum. Most significant of all are a large number of pieces of sculpted stone from what looks like more than one dismantled monument, excavated at Stanwick, Northamptonshire where they had been reused in post-packing. Subjects include a Neptune head and another mask, presumably to judge by a contiguous horse hoof, a defeated giant, as well as depictions in relief of Minerva with a figure of ?Jupiter next to her (D. Neal, pers. comm; cf. notice of discovery in Frere 1991, 253).

Coins

A total of 1631 Roman coins were recovered from the CAU investigations, as follows:

Metal-detecting, ground surface	277
Metal-detecting, lower ploughsoil in three grid squares	21
Metal-detecting, stripped surface	891
Stratified	341
Evaluation, stratified	49
Evaluation, unstratified	52

Table 26: Coins from the Camp Ground investigations

In addition, a further 377 coins were previously recovered from the site by local amateur archaeologist Paul Haylett through metal-detecting (Haylett 1997), giving an overall total of 2008 coins. All of the coins are to be examined and identified by Adrian Challands. Analysis of the pattern of coin loss in comparison to other Romano-British sites will then be carried out by Richard Reece.

The coins from the evaluation have been listed elsewhere (Challands in Regan 2001). At the time of writing, 289 coins from the main phase of fieldwork have been identified so far. These overwhelmingly date to the late 3rd and 4th centuries AD, with just two from the 2nd century (Table 27).

Cat. No.	Context	Location	S.F. No.	Minting Date	Condition
554	354	179E/294N	355	c. AD 270	Badly corroded
555	354	181E/294N	358	c. last 2/3rds of the 3rd Cent. AD	Badly corroded
560	354	176E/287N	366	c. last 2/3rds of the 3rd Cent. AD	Slightly corroded / worn
556	355	175E/267N	360	AD 330-335	Badly corroded
558	355	175E/267N	362	c. last 2/3rds of the 4th Cent. AD	Badly corroded
565	355	175E/275N	373	AD 117-138	Slight. corroded/very worn
425	730	220E/145N	159	AD 335-337	Slightly corroded / unworn
427	940	220E/280N	172	c. last 2/3rds of the 3rd Cent. AD	Badly corroded
428	950	220E/280N	175	AD 287-293	Badly corroded
429	953	228E/143N	176	AD 367-373	Badly corroded
1529	1105	***/**	****	AD 320-324	Slight.corrod./slightly worn
1144	1112	***/**	1142	AD 346-354	Corroded/slightly worn
430	1473	220E/130N	181	AD 320-324	Slightly corroded / unworn
431	1473	220E/130N	182	AD 357-367	Slightly corroded / unworn
432	1476	220E/130N	183	AD 330-335	Slightly corroded / unworn
433	1563	200E/280N	184	AD 357-367	Corroded
436	1564	200E/280N	187	AD 346-361	Corroded
437	1601	***/**	189	AD 330-335	Corrode/unworn
1258	1838	***/**	1371	AD 287-293	Slight.corrod./slightly worn
927	2059	200E/280N	850	c. AD 270-273	Badly corrod./slightly worn
1530	2400	***/**	****	AD 293-295	Very corroded/slightly worn
1021	2615	***/**	969	c. last 2/3rds of the 4th Cent. AD	Badly corroded
1022	2615	***/**	970	c. last 1/4 of 3rd / fst. 1/4 4th CAD	Very worn/illegible
1023	2727	***/**	971	AD 293-296	Very corroded/slightly worn
1025A	2727	***/**	975	AD 351-353	Corroded/unworn
1025B	2727	***/**	975	AD 353-354	Corroded/slightly worn
1025C	2727	***/**	975	AD 330-335	Slight. corrod./slightly worn
1025D	2727	***/**	975	c. last 2/3rds of the 3rd Cent. AD	Corroded/slightly worn
1025E	2727	***/**	925	AD 330-335	Slight.corrod./slightly worn
1026	2733	***/**	977	AD 287-293	Very corroded/slightly worn
1043A	2733	***/**	1014	c. last 2/3rds 3rd C. to end 4th. C	Badly corroded/illegible

1043B	2733	***/**	1014	AD 330-335	Very corroded/slightly worn
1027	2869	220E/290N	980	AD 351-353	Very corroded
1045	3087	***/**	1021	AD 307 - 324	Very corroded/slightly worn
1044	3128	***/**	1020	AD 324 -330	Badly corrod./slightly worn
1098	3128	***/**	1090	c.last 2/3rds 3rd C. to end 4th. C.	Very corroded/illegible
1106	3453	***/**	1099	AD 341-346	Very corroded
1063	3601	***/**	1047	c.last 2/3rds 3rd C. to end 4th. C.	Very worn/illegible
1095	3601	***/**	1086	c. AD 270-273	Corroded/slightly worn
1096	3601	***/**	1088	c. AD 260-273	Very corroded
1097	3601	***/**	1089	c.last 2/3rds of the 3rd Cent. AD	Very corroded
1089	3776	***/**	1079	c.last 2/3rds 3rd C. to end 4th. C.	Very worn/illegible
1090	3776	***/**	1050	c.last 2/3rds of the 3rd Cent. AD	Badly corroded
1091	3776	***/**	1081	c.last 2/3rds of the 3rd Cent. AD	Badly corroded
1092	3776	***/**	1082	c.last 2/3rds of the 3rd Cent. AD	Badly corroded
1093	3776	***/**	1083	c.last 2/3rds of the 3rd Cent. AD	Badly corrod./slightly worn
1094	3776	***/**	1084	AD 268-270	Corroded/slightly worn
1099	3776	***/**	1092	c. AD 260-273	Very corroded
1100	3776	***/**	1093	AD 293-296	Very corroded/slightly worn
1101	3776	***/**	1094	c.last 2/3rds of the 3rd Cent. AD	Very corroded
1102	3776	***/**	1095	c.last 2/3rds 3rd C. to end 4th. C.	Very corroded/illegible
1103	3776	***/**	1096	c.last 2/3rds of the 3rd Cent. AD	Very corroded
1104	3776	***/**	1097	AD 330-341	Very corroded/slightly worn
1138	3776	***/**	1136	c.last 2/3rds of the 3rd Cent. AD	Very corroded
1139	3776	***/**	1137	c.last 2/3rds of the 3rd Cent. AD	Very corroded
1140	3776	***/**	1138	c.last 2/3rds of the 3rd Cent. AD	Very corroded
1141	3776	***/**	1139	c.last 2/3rds 3rd C. to end 4th. C.	Very corroded/illegible
1142	3776	***/**	1140	c.last 2/3rds of the 3rd Cent. AD	Corroded/slightly worn
1143	3776	***/**	1141	c.last 2/3rds of the 3rd Cent. AD	Corroded/slightly worn
1187	3778	180E/720N	1223	c.last 2/3rds of the 3rd Cent. AD	Very corroded
1137	3854	***/**	1135	c.last 2/3rds of the 3rd Cent. AD	Very corroded
1232	3854	***/**	1309	c.last 2/3rds of the 3rd Cent. AD	Very corroded
1233	3854	***/**	1310	c. AD 270	Corroded/worn
1234	3854	***/**	1311	c.last 2/3rds of the 3rd Cent. AD	Corroded/slightly worn
1235	3854	***/**	1312	Last 2/3rds of the 3rd century AD	Very corroded
1298	3854	210E/120N	1445	AD 287-293	Slight. corrod./slightly worn
1299	3854	210E/120N	1446	c.last 2/3rds of the 3rd cent. AD	Very corroded/slightly worn
1300	3854	210E/120N	1447	Last 2/3rds of the 3rd century AD	Very corroded/slightly worn
1301	3854	210E/120N	1448	c.last 2/3rds 3rd C. to end 4th. C.	Very corroded/illegible
1302	3854	210E/120N	1449	c.last 2/3rds 3rd C. to end 4th. C.	Very corroded/illegible
1303	3854	210E/120N	1450	AD 341-346	Corroded/slightly worn
1304	3854	210E/120N	1451	c. AD 270-273	Very corroded
1305	3854	210E/120N	1452	c.last 2/3rds 3rd C. to end 4th. C.	Very corrod./illegib./broken
1306	3854	210E/120N	1454	c.last 2/3rds of the 3rd Cent. AD	Very corroded
1307	3854	210E/120N	1455	c.last 2/3rds of the 3rd Cent. AD	Very corroded
1308	3854	210E/120N	1456	c.last 2/3rds 3rd C. to end 4th. C.	Very corroded
1309	3854	210E/120N	1457	Last 2/3rds of the 3rd century AD	Very corroded
1310	3854	210E/120N	1458	c.last 2/3rds 3rd C. to end 4th. C.	Very corrod./illegib./broken
1311	3854	210E/120N	1459	c. AD 270-273	Corroded/slightly worn

1312	3854	210E/120N	1460	Last 2/3rds of the 4th century AD	Very corroded
1313	3854	210E/120N	1461	Last 2/3rds of the 3rd century AD	Very corroded/slightly worn
1314	3854	210E/120N	1462	AD 287-293	Very corroded/broken
1315	3854	210E/120N	1463	Last 2/3rds of the 3rd century AD	Corroded/slightly worn
1316	3854	210E/120N	1464	c.last 2/3rds 3rd C. to end 4th. C.	Very corroded./illegib./broken
1317	3854	210E/120N	1465	c.last 2/3rds of the 3rd Cent. AD	Very corroded/worn
1318	3854	210E/120N	1466	c.last 2/3rds 3rd C. to end 4th. C.	Very corroded./illegib./broken
1319	3854	210E/120N	1467	c.last 2/3rds of the 3rd Cent. AD	Very corroded
1320	3854	210E/120N	1468	AD 268-270	Corroded/slightly worn
1321	3854	210E/120N	1469	AD 287-293	Very corroded
1322	3854	210E/120N	1470	c.last 2/3rds 3rd C. to end 4th. C.	Very corroded/broken
1323	3854	210E/120N	1471	AD 341-346	Corroded/slightly worn
1324	3854	210E/120N	1472	c.last 2/3rds 3rd C. to end 4th. C.	Very corroded/illegible
1325	3854	210E/120N	1473	Last 2/3rds of the 3rd century AD	Very corroded
1326	3854	210E/120N	1474	c.last 2/3rds of the 3rd Cent. AD	Very corroded
1327	3854	210E/120N	1475	Last 2/3rds of the 3rd century AD	Very corroded
1328	3854	210E/120N	1476	c.last 2/3rds of the 3rd Cent. AD	Very corroded
1329	3854	210E/120N	1477	AD 341-346	Corroded/slightly worn
1330	3854	210E/120N	1478	Unidentifiable (Silver)	Corroded and crystalline
1331	3854	210E/120N	1482	c.last 2/3rds 3rd C. to end 4th. C.	Very corroded./illegib./broken
539	4053	****	1144	AD 293-296	Very corroded/broken
1145	4339	****	1146	AD 335-341	Very corroded
1146	4339	150E/140N	1147	AD 330-337	Corroded/slightly worn
1147	4339	150E/140N	1148	AD 330-337	Corroded/slightly worn
1148	4339	150E/140N	1149	AD 330-337	Slight.corrod./slightly worn
1175	4339	150E/140N	1184	AD 330-337	Corroded/slightly worn
1216	4392	****	1280	AD 330-335	Slight.corrod./slightly worn
1176	4503	****	1186	AD 367-375	Corroded/slightly worn
1182	4564	****	1206	c.last 2/3rds of the 3rd Cent. AD	Very corroded
1183	4564	****	1207	AD 364-367	Corroded/slightly worn
1184	4564	****	1208	AD 364-378	Very corroded
1185	4564	****	1209	AD 364-378	Very corroded
1186	4564	****	1210	AD 392-394	Weakly struck/corroded
1188	5117	200E/130N	1224	c.last 2/3rds of 4th Century AD	Very corroded
1189	5117	200E/130N	1225	AD 367-375	Corroded/slightly worn
1133	5306	****	1130	AD 330-335	Corroded/slightly worn
1191	5377	120E/170N	1232	AD 350-351	Corroded/slightly worn
1192	5433	120E/180N	1242	AD 330-337	Very corroded
1193	5433	120E/180N	1243	c.last 2/3rds of the 3rd Cent. AD	Very corroded
1194	5433	120E/180N	1244	AD 364-378	Corroded/slightly worn
1195	5584	200E/130N	1245	c.last 3/4 of the 4th Century AD	Slight.corrod./slightly worn
1196	5584	200E/130N	1246	c.last 2/3rds of 3rd Century AD	Very corroded
1197	5684	690E/180N	1248	AD 259-267	Very corroded
1214	5850	****	1277	AD 268-270	Corroded/slightly worn
1215	5850	****	1278	AD 351-353	Slight.corrod./slightly worn
1210	5851	****	1273	AD 341-346	Slight.corrod./slightly worn
1211	5851	****	1274	AD 364-378	Corroded/slightly worn
1212	5851	****	1275	Last 1/2 of 4th Century AD	Very corroded./mostly illegible

1213	5851	***/**	1276	Last 3/4 of 4th Century AD	Very corroded./mostly illegible
1198	5854	***/**	1249	c.last 2/3rds of 3rd Century AD	Very Corroded
1199	5854	***/**	1250	c.last 2/3rds 3rd C. to end 4th. C.	Very corroded
1200	5854	***/**	1251	c.last 2/3rds of 3rd Century AD	Corroded/slightly worn
1204	5862	200E/130N	1264	AD 337-341	Slight.corroded./slightly worn
1205	5862	200E/130N	1266	c.last 2/3rds of 3rd Century AD	Very corroded
1206	5862	200E/130N	1268	c. AD 270	Slight.corroded./slightly worn
1207	5862	200E/130N	1270	c.last 2/3rds of 3rd Century AD	Very corroded
1208	5862	200E/130N	1271	AD 330-335	Corroded/slightly worn
1209	5862	200E/130N	1272	c. AD 270-273	Corroded/slightly worn
1220	5862	200E/130N	1292	c. AD 346-360	Corroded/slightly worn
1221	5862	200E/130N	1293	AD 367-375	Slight.corroded./slightly worn
1222	5862	200E/130N	1294	Last 2/3rds of the 3rd century AD	Very corroded/worn
1223	5862	200E/130N	1295	AD 335-341	Very corroded
1224	5862	200E/130N	1296	c.last 2/3rds of the 3rd Cent. AD	Slight.corroded./slightly worn
1217	5934	110E/180N	1285	Last 2/3rds of the 3rd century AD	Very corroded
1218	5934	110E/180N	1286	AD 335-341	Corroded/worn
1219	6100	130E/240N	1290	AD 330-335	Slight.corroded./slightly worn
1225	6187	190E/130N	1297	c.last 2/3rds of the 3rd Cent. AD	Very corroded
1226	6187	190E/130N	1298	AD 341-346	Slight.corroded./slightly worn
1227	6187	190E/130N	1299	c.last2/3rds 3rd C to end of 4th C	Very corroded
1228	6187	190E/130N	1300	AD 353-360	Slight.corroded./slightly worn
1229	6187	190E/130N	1302	AD 341-346	Very corroded/broken
1230	6187	190E/130N	1303	Last 2/3rds of the 3rd century AD	Very corroded
1231	6443	120E/170N	1307	AD 346-361	Very corroded
1236	6443	120E/170N	1317	Last 2/3rds of the 3rd century AD	Very corroded/slightly worn
1237	6443	120E/170N	1318	Last 2/3rds of the 3rd century AD	Corroded/worn
1238B	6534	090E/200N	1320	c.last 2/3rds of the 3rd Cent. AD	Very corroded
1238A	6564	090E/200N	1320	c.last 2/3rds of the 3rd Cent. AD	Very corroded
1239	6591	190E/130N	1322	c. AD 335-341	Very corroded/slightly worn
1240	6591	190E/130N	1323	AD 253-268	Corroded/slightly worn
1241	6591	***/**	1324	AD 367-375	Very corroded/slightly worn
1242	6591	***/**	1325	AD 330-337	Slight.corroded./slightly worn
1243	6591	***/**	1335	AD 287-293	Very corroded/broken
1244	6591	***/**	1336	AD 337-341	Slight.corroded./slightly worn
1245	6591	***/**	1337	c.last 2/3rds of the 3rd Cent. AD	Very corroded
1246	6591	***/**	1338	c.last 2/3rds 3rd C. to end 4th. C.	Very corroded/illegible
1247	6591	***/**	1339	AD 330-335	Slight.corroded./slightly worn
1248	6976	***/**	1341	AD 341-346	Slight.corroded./slightly worn
1249	6976	***/**	1342	AD 330-335	Corroded/slightly worn
1250	7461	***/**	1350	c. AD 270	Slight.corroded./slightly worn
1256	7461	***/**	1364	Last 2/3rds of the 3rd century AD	Very corroded
1255	7700	***/**	1363	c. AD 270	Very corroded/slightly worn
1251	7702	***/**	1356	AD 388-402	Very corroded
1252	7702	***/**	1357	AD 364-375	Slight.corroded./slightly worn
1253	7702	***/**	1358	Last 2/3rds of the 3rd century AD	Very corroded./mostly illegible
1254	7704	***/**	1361	2nd Century AD	Very corroded/very worn

1257A	7838	***/**	1370	Last 2/3rds of the 3rd century AD	Very corroded
1257B	7838	***/**	1370	Last 2/3rds of the 3rd century AD	Very corroded
1257C	7838	***/**	1370	Last 2/3rds of the 3rd century AD	Very corroded
1260	8066	***/**	1378	Last 1/4 of the 3rd century AD	Slight.corroded/very worn
1262	8070	***/**	1380	AD 364-378	Very corroded
1270	8070	130E/270N	1389	AD 364-367	Very corroded
1271	8070	130E/270N	1390	AD 364-378	Very corroded
1263	8071	130E/270N	1381	AD 287-293	Very corroded/broken
1264	8071	130E/270N	1382	Last 2/3rds of the 3rd century AD	Very corroded
1265	8071	130E/270N	1383	AD 365-378	Very corroded
1266	8071	130E/270N	1384	AD 307-324	Corroded/slightly worn
1267	8073	130E/270N	1386	c.last 2/3rds of the 3rd Cent. AD	Very corroded
1268	8073	130E/270N	1387	AD 364-375	Corroded/slightly worn
1269	8073	130E/270N	1388	AD 364-378	Very corroded/slightly worn
1273	8121	100E/280N	1392	c. AD 346-361	Slight.corrod./slightly worn
1272	8122	100E/280N	1391	Last 2/3rds of the 3rd century AD	Very corroded/slightly worn
1274A	8254	100E/260N	1397	AD 378-402	Very corroded
1274B	8254	100E/260N	1397	AD 378-402	Very corroded
1274C	8254	100E/260N	1397	AD 388-408	Very corroded
1337	8262	130E/290N	1495	c.last 2/3rds of the 3rd Cent. AD	Corroded/slightly worn
1338	8262	130E/290N	1496	c.last 2/3rds 3rd C. to end 4th. C.	Very corroded/illegible
1339	8262	130E/290N	1497	c.last 2/3rds 3rd C. to end 4th. C.	Very corrod./illegib./broken
1276	8336	120E/270N	1401	Unidentifiable	Very corroded fragments
1277	8336	120E/270N	1402	AD 364-378	Very corroded/very worn
1275	8386	120E/300N	1398	AD 330-335	Slight.corrod./slightly worn
1278	8562	***/**	1408	c. last 1/2 of the 4th century AD	Very corroded
1279	8562	***/**	1409	AD 364-378	Very corroded
1280	8562	***/**	1410	c.last 2/3rds 3rd C. to end 4th. C.	Very corroded/broken
1281	8562	***/**	1411	AD 364-378	Very corroded/broken
1286	8792	110E/280N	1423	c.last 2/3rds of the 3rd cent. AD	Corroded/slightly worn
1287	8792	110E/280N	1425	AD 330-337	Corroded/slightly worn
1288	8792	110E/280N	1427	c. AD 346-361	Slight. corrod./slightly worn
1289	8792	110E/280N	1428	AD 330-335	Corroded/slightly worn
1290	8792	110E/280N	1429	AD 330-335	Corroded/slightly worn
1291	8792	110E/280N	1430	AD 330-341	Very corroded/slightly worn
1292	8792	110E/280N	1431	c. AD 346-361	Very corroded
1293	8792	110E/280N	1433	c.last 2/3rds of the 3rd cent. AD	Very corroded
1297	8858	110E/280N	1444	AD 335-341	Very corroded/broken
1352	8874	130E/290N	1528	Last 2/3rd of the 3rd century AD	Very corroded/mostly illegib
1353	8874	130E/290N	1529	AD 335-341	Very corroded/slightly worn
1354	8874	130E/290N	1530	c.last 2/3rds 3rd C. to end 4th. C.	Very corroded/illegible
1355	8874	130E/290N	1531	AD 388-402	Very corroded/mostly illegib
1356	8874	130E/290N	1533	c. AD 270	Corroded/slightly worn
1357	8874	130E/290N	1537	AD 287-293	Corroded/worn
1332	8950	110E/300N	1487	AD 335-341	Corroded/slightly worn

1333	8950	110E/300N	1488	c. AD 346-361	Corroded/slightly worn
1334	8950	110E/300N	1489	AD 317-326	Very corroded/slightly worn
1335	8951	110E/300N	1490	AD 353-354	Corroded/slightly worn
1336	8951	110E/300N	1491	AD 330-335	Corroded/slightly worn
1361	9016	***/**	****	AD 330-335	Corroded/slightly worn
1358	9367	130E/290N	1538	c.last 1/2 of the 4th century AD	Very corroded/mostly illegib
1359	9367	130E/290N	1539	c.last 2/3rds of the 3rd Cent. AD	Slight. corrod./slightly worn
1460	9367	130E/290N	1540	c.last 2/3rds of the 4th cent. AD	Very corroded/mostly illegib
1461	9367	130E/290N	1541	c.last 2/3rds 3rd C. to end 4th. C.	Very corroded/illegible
1462	9367	130E/290N	1542	c.last 2/3rds 3rd C. to end 4th. C.	Very corroded/illegible
1463	9367	130E/290N	1543	c.last 2/3rds 3rd C. to end 4th. C.	Very corroded/illegible
1464	9367	130E/290N	1544	AD 330-337	Very corroded
1465	9367	130E/290N	1545	AD 293-317	Very corroded
1466	9367	130E/290N	1546	AD 268-270	Slight.corrod./slightly worn
1467	9367	130E/290N	1547	AD 287-293	Very corrod./slightly worn
1345	9647	***/**	1515	AD 346-361	Very corroded
1346	9648	***/**	1516	AD 346-361	Slight. corrod./slightly worn
1348	9651	***/**	1519	AD 346-361	Very corroded/slightly worn
1342	9652	***/**	1505	AD 346-361	Very corroded
1349	9654	***/**	1520	c.last 2/3rds 3rd C. to end 4th. C.	Very corroded
1351	9656	***/**	1522	AD 346-360	Very corroded/worn
1350	9669	***/**	1521	AD 341-346	Slight. corrod./slightly worn
1341	9670	***/**	1504	Mid. 1/3rd of 4th. Century AD	Very corroded/virtually illeg
1343	9670	***/**	1506	AD 363-364	Corroded/slightly worn
1344	9670	***/**	1507	AD 367-375	Corroded/slightly worn
1347	9670	***/**	1518	AD 346-361	Slight.corrod./slightly worn
1481	9783	130E/290N	1574	c.last 2/3rds 3rd C. to end 4th. C.	Very corrod./illegib./broken
1482	9783	130E/290N	1575	c.last 2/3rds 3rd C. to end 4th. C.	Very corroded/illegible
1483	9783	130E/290N	1576	c. AD 346-361	Corroded/broken
1484	9783	130E/290N	1577	c. AD 346-361	Corroded/slightly worn
1485	9783	130E/290N	1578	c.last 2/3rds 3rd C.to end 4th. C.	Very corroded
1486	9783	130E/290N	1579	c.last 3/4s of the 4th century AD	Very corroded
1487	9783	130E/290N	1580	AD 365-378	Very corroded/slightly worn
1488	9783	130E/290N	1581	AD 364-378	Very corroded/broken
1489	9783	130E/290N	1582	AD 282-283	Very corrod./slightly worn
1490	9783	130E/290N	1583	c. AD 296-330	Very corroded
1491	9783	130E/290N	1585	c.last 2/3rds 3rd C. to end 4th. C.	Very corroded/illegible
1498	10001	110E/290N	1601	AD 365-378	Very corroded/worn
1500	10005	110E/290N	1607	c.last 2/3rds 3rd C. to end 4th. C.	Very corroded
1501	10008	110E/280N	1608	AD 335-341	Very corrod./slightly worn
1502	10008	110E/280N	1609	AD 351-353	Very corrod./slightly worn
1499	10049	110E/290N	1605	AD 335-341	Very corrod./slightly worn
1528	10049	***/**	1604	Unidentifiable	Very corroded/small frags.
1504	10050	120E/290N	1611	c.last 3/4s of the 4th century AD	Very corroded/worn
1505	10050	120E/290N	1612	c.last 2/3rds 3rd C. to end 4th. C.	Very corroded/illegible
1506	10050	120E/290N	1613	c.last 3/4s of the 4th century AD	Very corroded
1507	10077	120E/290N	1615	AD 315-320	Slight.corrod./slightly worn
1516	10100	110E/290N	1630	c.last 2/3rds 3rd C. to end 4th. C.	Very corrod./illegib./broken

1517	10100	110E/290N	1631	AD 335-341	Corroded/worn
1518	10100	110E/290N	1632	AD 320-324	Corroded/slightly worn
1512	10102	110E/290N	1625	AD 355-360	Slight.corrod./slightly worn
1513	10102	110E/290N	1626	AD 330-335	Corroded/slightly worn
1514	10102	110E/290N	1627	AD 364-375	Slight.corrod./slightly worn
1526A	10260	***/**	1651	AD 265-270	Very corrod./slightly worn
1526B	10260	***/**	1651	AD 341-346	Very corroded
1526C	10260	***/**	1652	AD 346-361	Slight.corrod./slightly worn
1519	10581	***/**	1635	AD 335-337	Slight.corrod./slightly worn
1520	10586	***/**	1637	Last 2/3rds of the 3rd century AD	Very corroded
1521	10588	***/**	1643	AD 337-341	Slight.corrod./slightly worn
1522	10589	***/**	1644	c.last 2/3rds of the 3rd Cent. AD	Very corroded
1523	10589	***/**	1645	c. AD 270	Very corroded
1492	11196	***/**	1590	c. AD 260-273	Very corroded
1493	11277	130E/290N	1592	AD 388-402	Very corroded
1494	11277	130E/290N	1593	c. 4th century AD	Very corroded
1495	11277	130E/290N	1594	c.last 2/3rds of the 3rd cent. AD	Very corroded
1496	11277	130E/290N	1595	c. AD 346-361	Slightly corroded/worn
1497	11277	130E/290N	1596	c.last 2/3rds 3rd C. to end 4th. C.	Very corroded
1360	11413	110E/280N	1653	Last 2/3rds of the 3rd century AD	Very corroded/slightly worn
1527	11418	***/**	1660	AD 341-346	Corroded/worn

Table 27: Coin list (identification by Adrian Challands)

Metalwork

Copper Alloy

Other than coins, 198 objects of copper alloy were recovered. A total of 121 of the Roman artefacts have been selected for further analysis, of which 115 will be drawn.

There are 20 brooches, all but two of which were recovered through metal-detecting. Some comments can be made as to their probable attribution, although these must be considered provisional until full study has taken place. Fourteen of the brooches are fibulae. The earliest of these seems to be a Nauheim derivative (1st centuries BC/AD). Three fibulae — an Aucissa, a Langton Down and a Colchester type — can be best placed in the 1st century AD, while one probable Colchester derivative most likely dates to the later 1st–earlier 2nd century AD. There are two possible Dolphin fibulae which probably date to the 2nd century AD. Six further fibula fragments cannot be closely dated at this stage. The remaining seven brooches probably date to the 2nd–4th centuries. These include three penannular brooches, two disc brooches, one zoomorphic brooch (boar or horse) and one oval brooch with a blue glass centre boss.

Other dress accessories include 32 bracelets, seven finger rings (including one key-ring), three earrings, ten dress or hair pins, and part of a possible diadem. Also relating to personal appearance are eight pairs of tweezers and a nail cleaner. Among the most

interesting of the remaining artefacts are several possible fragments from hanging bowls. There is no certain military equipment, although an eyelet and a decorated flap, possibly part of a horse fitting, will be further researched for potential military associations. Other artefacts include up to four stylus fragments, a steelyard arm, a thimble and a possible bell. There is also a small quantity of casting waste.

Cat. No.	Context	Feature	Phase	Num.	Small find no.	Notes	Wt(g)	More work	Draw
257	001		I.1<IV.2	1		Fibula brooch frag?	5	Yes	Yes
1919	001	field walking		1		Fibula brooch	1	Yes	Yes
1920	001	field walking		1		Herringbone pattern bracelet	1	Yes	Yes
1921	001	field walking		1		Top of brooch fibula	1	Yes	Yes
1922	001	field walking		1		Unidentifiable Cu	1	No	No
1923	001	field walking		1		Fibula brooch	1	Yes	Yes
1924	001	field walking		1		Decorative stud for furniture	1	Yes	Yes
1925	001	field walking		1		Sheet Cu scrap	1	No	No
1926	001	field walking		1		Decorative plate for leather	2	No	No
1927	001	field walking		1		Decorated bracelet - terminal?	3	Yes	Yes
1928	001	field walking		1		Spiral twist	4	Yes	Yes
1929	001	field walking		1		Notched bracelet	3	Yes	Yes
1930	001	field walking		1		Earring? Notched internally	12	Yes	Yes
1931	001	field walking		1		Lozenge-shaped small pellet	2	No	No
1932	001	field walking		1		Slash decorated bracelet frag.	3	Yes	Yes
1933	001	field walking		1		tear-shaped artefact frag.	1	No	No
1934	001	field walking		1		Ferrule fragment	3	No	No
1935	001	field walking		1		Post-medieval button	3	No	No
1936	001	field walking		1		Post-medieval decor. strap-end?	4	No	No
1937	001	field walking		1		Fibula brooch	29	Yes	Yes
1938	001	field walking		1		Unidentifiable fragment	1	No	No

1939	001	field walking		1		Thin sheet fragment	1	No	No
1940	001	field walking		1		Post-medieval	4	No	No
1941	001	field walking		1		disc brooch with enamel	5	Yes	Yes
2043	001	field walking		17		Roman knife, steelyard arm, ring and dot decorated belt fitting, penannular brooch, disc brooch and 8 post-medieval items	114	Yes	Yes
20	002	19	IV.1	1		Cu alloy strip	1	No	Yes
2601	226		IA	1		Small fragment of Cu	2	No	No
2913	725		II.1<IV.2	1		Small fragment of Cu	1	No	No
597	970	125	IV.2	1	177	Bracelet with frags of textile and wood	33		
2373	3007	395	II.1	1		Small tool?	3	Yes	Yes
1829	3128	19	IV.1	1	1017	Disc perforated for nail attached to timber	5	Yes	Yes
1830	3128	19	IV.1	1	1018	Casting droplet	7	No	No
1827	3464	260	IV.1	1	982	tweezers, complete	8	Yes	Yes
1915	3464	260	IV.1	1		Plain bracelet frag.	4	Yes	Yes
1916	3705	570	IV.1	5		Very small stud	2	No	No
1835	3776	532	IV.1	1	1091	Plain stud or flat-headed nail	4	Yes	Yes
1886	3854	532	IV.1	3	1453	Scrap sheet	2	No	No
1887	3854	532	IV.1	1	1479	Scrap sheet	8	No	No
1888	3854	532	IV.1	1	1481	Scrap sheet	12	No	No
1889	3854	532	IV.1	1	1483	Bent pin	2	No	No
1891	3854	532	IV.1	5	1485	links of chain	5	Yes	No
1837	4000	19	IV.1	1	1134	Post-medieval	3	No	No
2483	5008	830	II.1<IV.2	2		Scrap sheet Cu	6	No	No
1845	5126	751	IV.1	1	1227	Snake-headed bracelet, chevron decoration	4	Yes	Yes
2273	5351	54	II.2	12	1231	glass beads with Cu alloy ?fastening frags	1	Yes	Yes
1846	5377	54	II.2	4	1233	Plain strip	2	No	No
1847	5377	54	II.2	1	1234	Eyelet - check for military use?	7	Yes	Yes
1848	5377	54	II.2	1	1235	Casting waste	29	No	No
1849	5378	54	II.2	1	1240	decor. bracelet frag.	6	Yes	Yes
1850	5684		I.1<IV.2	1	1253	Dress pin	6	Yes	Yes
1851	5721	54	II.2	1	1256	Dress ring - clean to see intaglio	4	Yes	Yes
1852	5828	1161	III.1	1	1259	tweezers	3	Yes	Yes
1853	5862	260	IV.1	1	1262	tweezers	9	Yes	Yes
1854	5862	260	IV.1	5	1263	Dress pin	3	Yes	No
1855	5862	260	IV.1	3	1265	Bracelet	6	Yes	Yes
1856	5862	260	IV.1	1	1269	Dress pin shaft	1	No	No
1857	6068	1198	II.1	3	1287	tweezers frags; 3=1	2	Yes	No
1858	6100	919	IV.2	1	1289	Twisted Cu ear-ring	2	Yes	Yes
1859	6203	1165	III.1	1	1304	snake-headed bracelet frag.	8	Yes	Yes
1861	6443	1184	III.1	1	1308	bracelet frag.	1	Yes	Yes
1863	6443	1184	III.1	1	1319	finger ring, key	3	Yes	Yes
2274	6461	921	IV.2	1	1314	Cu alloy pin with WD handle	3	Yes	Yes
1864	6735		I.1<IV.2	2	1328	Strap fitting	9	Yes	Yes

1865	6760	919	IV.2	1	1331	?Ring-money IA	5	Yes	Yes
1866	6764	927	III.1	1	1332	earring	1	No	No
1867	6940	72	IV.1	1	1340	Bracelet or ring-money?	3	Yes	Yes
1868	7184	1101	IV.1	1	1343	Bracelet fragment	2	No	No
1918	7256	650	IV.1	1		Tubular necklet	1	Yes	No
1869	7451	72	IV.1	1	1349	Finger ring	1	Yes	Yes
1870	7461	1048	IV.2	1	1351	Stylus binding?	2	No	No
1876	7461	1048	IV.2	1	1368	lump	2	No	No
1871	7465	571	IV.1	1	1353	tweezers	5	Yes	Yes
1872	7702	7	IV.1	1	1355	pin frag.	2	No	No
1873	7702	7	IV.1	1	1359	Ring money?	11	Yes	Yes
1874	7702	7	IV.1	2	1360	Scrap sheet	3	No	No
1875	7704	7	IV.1	2	1362	v. small wire frags.	1	No	No
1877	8071	887	IV.1	1	1385	strip frag.	3	No	No
1878	8233	78	IV.2	1	1394	Scrap strip	3	No	No
2275	8233	78	IV.2	2	1393	2=1; glass bead with Cu alloy mount	1	Yes	Yes
1894	8262	7	IV.1	1	1494	Scrap sheet ?vessel fragment	3	No	No
1895	8262	7	IV.1	23	1498	Fragments of hanging bowl	11	Yes	No
1879	8336	1070	III.1	1	1402	Wire - modern?	3	No	No
1882	8561	7	IV.1	1	1415	Bracelet terminal	1	No	No
1881	8562	7	IV.1	3	1412	Ring fragments	3	No	No
1884	8792	1036	IV.1	1	1424	Pin	2	No	No
1885	8792	1036	IV.1	2	1426	tweezers; 2=1	7	Yes	Yes
1901	8874	7	IV.1	1	1536	Plain finger ring	4	No	No
1892	9126		I.1<IV.2	1	1492	Notched finger ring	2	Yes	Yes
1902	9367	7	IV.1	2	1550	Finger ring small (plain)	2	No	No
1903	9367	7	IV.1	2	1552	Twisted Cu wire	5	No	No
1896	9477	1274	I.1<I.2	2	1500	Fragments of fibula	5	Yes	Yes
1898	9646	54	II.2	1	1523	Bracelet	6	Yes	Yes
1897	9648	54	II.2	1	1510	Rim of hanging bowl?	4	Yes	Yes
1900	9648	54	II.2	1	1527	Tapered pipe tuyere modern?	105	Yes	Yes
1995	9648	54	II.2	1	1511	sheet frag	13		
1906	9783	7	IV.1	1	1584	Unidentifiable fragment	2	No	No
1907	9783	7	IV.1	1	1586	Very thin sheet Cu Hanging bowl?	3	No	No
1910	10001	7	IV.1	1	1600	Bracelet fragment notched	10	Yes	Yes
1911	10001	7	IV.1	3	1602	Bracelet with notched decoration	10	Yes	Yes
1912	10571	1369	III.1	2	1634	Nail cleaner	3	Yes	Yes
1908	11196	1063	IV.1	1	1591	Ring fragment	2	Yes	Yes
1909	11277	7	IV.1	1	1597	Bracelet fragment notched	1	Yes	Yes
2047	001a			1		Post-medieval button	3	No	No
19		19	IV.1	1		Cu alloy object	13	No	Yes
243		19	IV.1	1		Ring + dot decorated fragment of necklet	10	No	Yes
1756				1	16	Cu spike	9	No	No
1757				1	19	Stylus fragment	5	No	No
1758				1	28	Stud	2	No	No
1759				1	30	Thin sheet fragment	2	No	No
1760				6	58	Padlock (modern?)	23	Yes?	Yes?
1761				2	69	tweezers; 2=1	5	No	Yes
1762				1	74	Fibula brooch possibly IA	10	Yes	Yes
1763				1	96	Perforated sheet binding?	2	No	No

1765				1	106	Cu strip, wood grain impressions	8	No	No
1766				1	150	Cu key - Roman	9	Yes	Yes
1767				2	171	finger ring with groove decoration	4	Yes	Yes
1768				1	173	brooch pin	3	Yes	Yes
1769				2	180	bracelet, groove and dot decoration	5	Yes	Yes
1770				4	188	bracelet, cross-hatch decoration	10	Yes	Yes
1771				3	191	Modern	10	No	No
1772				1	204	Fibula	25	Yes	Yes
1773				1	211	Decorative frag. Machined? Modern?	1	Yes	No
1774				1	216	Plain bracelet frag.	5	Yes	Yes
1776				1	249	snake-headed bracelet frag.	4	Yes	Yes
1777				1	275	spoon bowl - Roman?	13	Yes	No
1778				1	291	Stylus fragment?	3	Yes	Yes
1779				1	307	?decor. clasp	7	Yes	Yes
1780				1	312	snake-headed bracelet frag.	6	Yes	Yes
1781				1	319	Rilled decoration necklet	5	Yes	Yes
1782				2	336	Post-Med buckle; 2=1	12	No	No
1783				1	346	Small stylus	14	Yes	Yes
1784				1	350	thimble, Roman?	4	Yes	Yes
1785				1	354	Fibula	41	Yes	Yes
1786				1	357	zoomorphic brooch frag. (wild boar)	6	Yes	Yes
1787				1	372	Sheet Cu	4	No	No
1789				1	403	sheet frag	2	No	No
1790				1	408	Curtain ring? Modern	4	No	No
1791				1	413	One rounded edge frag of vessel	2	No	No
1792				1	422	Casting droplet	12	No	No
1794				1	452	Handle for metal vessel	11	Yes	Yes
1795				1	500	Sheet cast Cu	6	No	No
1796				1	507	Plain ring fragment	5	No	No
1797				1	510	Stylus fragment	5	Yes	Yes
1798				1	518	Chisel-ended fragment	5	No	No
1799				1	527	Heavy plain ring (not dress ring)	21	No	No
1800				1	529	Sheet fragment	2	No	No
1801				1	570	Could be a bell or ? For furniture. Needs cleaning	80	Yes	Yes
1802				1	573	Folded Cu sheet - needs cleaning	34	Yes	No
1803				2	593	Grooved + punched dots	4	Yes	Yes
1804				1	601	Cu washer	4	No	No
1805				4	657	Plate brooch or small mirror	3	Yes	Yes
1806				1	728	Plain finger ring	2	No	No
1807				3	735	bracelet, snake-headed; 3=1	16	Yes	Yes
1808				1	738	Dress pin head	2	Yes	Yes
1809				2	744	Fibula perforated catchplate and spring	11	Yes	Yes
1810				1	766	gilded folded sheet	5	Yes	No
1811				1	778	Toilet item or stylus	6	Yes	Yes
1812				1	796	finger ring	3	Yes	Yes
1813				1	805	Snake-headed bracelet frag.	4	Yes	Yes
1814				1	807	Dress pin head and part of shaft	5	Yes	Yes
1815				1	819	Suspension attachment for bowl?	41	Yes	Yes

1816				1	829	Strap fitting	3	Yes	Yes
1817				1	845	Decorated flap (horse fitting check military)	11	Yes	Yes
1818				2	868	Strap fitting with leather sandwich between	10	Yes	Yes
1819				1	872	Plain bracelet	9	Yes	Yes
1820				1	881	sheet frag.	1	No	No
1821				1	891	ring - modern	6	No	No
1822				1	892	Bracelet - rilled decoration	3	Yes	Yes
1823				1	912	Scrap	2	No	No
1824				1	915	Scrap	2	No	No
1825				1	950	Bracelet frag. - notched decoration	1	Yes	Yes
1826				1	955	Ferrule fragment	3	No	No
1828				2	984	Forked implement	16	Yes	Yes
1831				1	1030	Post-medieval button	7	No	No
1832				1	1031	Fibula	9	Yes	Yes
1833				1	1032	Fibula	1	Yes	Yes
1834				1	1078	Dress pin	3	Yes	Yes
1836				1	1115	Bracelet frag. - dot decoration	1	Yes	Yes
1838				1	1150	leaf-shaped artefact, possibly part of diadem	4	Yes	Yes
1839				1	1160	Belt fittings	1	Yes	Yes
1840				1	1161	Perforated Roman coin?	1	Yes	No
1841				1	1185	Penannular brooch	3	Yes	Yes
1842				1	1194	Rectangular section ring	1	Yes	Yes
1843				1	1195	Rolled Cu scrap	4	Yes	No
1860				2	1306	Possible stylus	6	Yes	Yes
1862				2	1315	Fibula	8	Yes	Yes
1880				1	1403	pen-annular brooch	5	Yes	Yes
1883				2	1419	tweezers; 2=1	9	Yes	Yes
1893				1	1493	Stylus	4	No	No
1904				2	1561	Hanging bowl rim frags?	5	Yes	Yes
1905				1	1570	Bracelet fragment	7	Yes	Yes
1913				2	1649	Small plain bracelet	8	Yes	Yes
1914				1	1650	Hanging bowl fragment?	2	Yes	Yes
2078				1	119	Brooch fragment (fibula)	4	Yes	Yes
2272				1	851	brooch with glass decor	9	Yes	Yes
1844				1	1199	silver coated spoon bowl	4	Yes	Yes
1899	9648	54	II.2	1	1526	bracelet frag. - twisted decoration	12	Yes	Yes

Table 28: Copper alloy finds

Iron

A total of 188 objects of iron were recovered. Some 62 of the Roman artefacts have been selected for further analysis, of which 56 have been x-rayed and 11 will be drawn. Unfortunately, many of the objects are heavily corroded, and the x-raying produced generally poor results. Recognisable artefacts include five knives (of which three have remains of bone handles) an axe head, chain loops, a possible chisel, a possible key and a

possible wheel hub. There are also at least 60 nails, although not all of these need be Roman.

Cat. No.	Context	Feature	Phase	Num.	Small find no.	Notes	Wt(g)	More work	Draw	Xray
246	001		I.1<IV.2	4		Fe nails and bill hook. Modern?	502	No	No	No
249	001		I.1<IV.2	5		Fe boot heel plus nails. Post-medieval	176	No	No	No
254	001		I.1<IV.2	2		Fe nail and lump	45	No	No	No
259	001		I.1<IV.2	3		Fe nails and lumps	32	No	No	No
261	001			3		Fe nail plus lumps	51	No	No	No
2039	001	field walking		1		hook + chain links; ?part of steelyard	227	Yes	Yes	Yes
20	002	19	IV.1	1		Fe tack	1	No	No	No
2005	052	263	mod?	1		Large nail	19	No	No	No
2466	392	141	III.1	2		Fe - nail shank frags.	1	No	No	No
2801	588	124	II.1	1		iron	14	No	No	No
2271	704	516	II.1	1	160	Knife: BN handle - decor + Fe blade	16	Yes	Yes	No
2924	739	256	III.1	1			1	No	No	No
2006	885		II.1<IV.2	8		nail frags	51	No	No	No
2998	885		II.1<IV.2	2			1	Yes	?	Yes
2007	1113	19	IV.1	1		Nail	8	No	No	No
2346	1391	140	III.1	2		2=1 nail frags	10	No	No	No
1944	1450	262	IV.1	4	179	?bracelet frags; ring frags	12	No	No	No
2008	1453	262	IV.1	1		Very corroded heavy nail	15	No	No	No
2347	1499	368	IV.1	1		blade frag	34	Yes	?	Yes
2348	1537	141	III.1	1		? nail frag	14	No	No	No
2349	1540	141	III.1	7		frags.	28	No	No	No
2009	1543	541	IV.1	1		nail	13	No	No	No
2350	1563	141	IV.1<IV.2	3		artefact frags	14	No	No	No
2010	1564	141	III.1	2		Nail	5	No	No	No
2351	1616	140	IV.1<IV.2	1		blade frag	6	No	No	No
2352	1664	98	III.1	1		Ferrule	6	No	No	No
2353	1708	141	III.1	2		2=1 nail	28	No	No	No
2354	1823	141	III.1	1		Just Fe corrosion	46	No	No	No
2355	1894	413	III.2	2		sq sectioned obj.	4	No	No	No
2356	1898	124	II.1	3		Rectangular section bar fragment	10	No	No	No
2357	1899	406	IV.2	1		lump	62	Yes	?	Yes
2012	1908	446	IV.1	1		horseshoe	265	No	No	No
2358	1913	311	IA	5		?	116	Yes	No	Yes
2359	2023	140	IV.1<IV.2	1		sheet frag	4	No	No	No
2361	2153	369	IV.1	4		frags	10	No	No	No
2362	2257	102	IV.1	14		Mostly Fe oxides	36	No	No	No
2363	2338	500	II.1	1		nail	6	No	No	No
2364	2413	98	III.1	1		Blade fragment	80	Yes	Yes	Yes
2365	2483	395	II.1	1		lump	122	Yes	?	Yes
2366	2603	141	III.1	3		Scale arm?	41	Yes	?	Yes
2367	2701	260	IV.1	1		frag	26	Yes	No	Yes
2368	2727	19	IV.1	1		blade frag	20	No	No	No
2369	2768	538	IV.1	1		nail and wood	37	No	No	No

2013	2791	464	II.1	7		Horseshoe fragments	234	No	No	No
2370	2821	393	III.2	1		frag	2821	No	No	No
1970	2869	141	III.1	1	981	?key	6	Yes	?	No
2371	2869	141	III.1	1		folded sheet frag	16	No	No	No
2372	2941	550	III.1	1		Or heavy bar	214	Yes	?	Yes
2014	3067	525	IV.1	1		Or hook	40	Yes	?	Yes
2374	3128	19	IV.1	1		Weight?	10	Yes	?	Yes
	3128	19	IV.1	1		Fe object	11	No	No	No
	3194		II.1<IV.2	1		shotgun cartridge - discarded	8	No	No	No
2015	3460	260	IV.1	4		?barbed wire	6	No	No	No
2016	3464	260	IV.1	1		nail + ?wood	22	No	No	No
2330	3464	260	IV.1	2	1050	found with Pt complete handle frags	12	Yes	?	Yes
	3464	260	IV.1	2	1050	Fe deposit with PT	73			
2017	3601	532	IV.1	1		Possible chisel	87	Yes	?	Yes
2018	3673	746	IV.1	2		Nails	4	No	No	No
2019	3776	532	IV.1	1		Possible tool	67	Yes	?	Yes
2375	3810	499	III.1	3		Mostly Fe oxides	18	No	No	No
1890	3854	532	IV.1	2	1484	Scrap fragments	4	No	No	No
1987	3854	532	IV.1	1	1313	?large nail	87	Yes	?	Yes
2376	3854	532	IV.1	4		2 knife frags; 2 ? nail frags	47	Yes	No	Yes
2377	3950	780	III.1	1		lump	22	Yes	No	Yes
2378	3971	342	IA	6		sheet frags	6	No	No	No
1973	4053		I.2<IV.2	11	1145	Cart hub?	706	Yes	?	No
2380	4076	1410	II.2	1		nail shank	1	No	No	No
2381	4146	743	II.2	3		2 sheet? blade frags; 1 nail shank	11	No	No	No
1983	4624	776	IV.1	1	1221	sm frags. ;?end of nail from SK 4622	1	No	No	No
2020	4857	791	II.2	4		Square section artefact frags	144	Yes	?	Yes
2021	5076	813	IV.1	1		knife	51	Yes	?	Yes
2484	5115	998	III.1	1		Fe - nail?	7	No	No	No
2022	5257	753	IV.1	1		Cleaver	68	Yes	?	Yes
2482	5306	54	II.2	1	1129	Fe - plate frag.	20	No	No	No
2485	5317	54	II.2	1		Fe - nail	11	No	No	No
1984	5377	54	II.2	1	1236	nail	41	Yes	No	Yes
2486	5383	294	pre	10		Fe? - frags.	43	No	No	No
2023	5794	47	IV.1	4		Nail fragments	24	No	No	No
1985	5834	1145	III.1	1	1261	nail shank	1	No	No	No
2487	5857	700	III.1	1		Fe - nail shank frag.	6	No	No	No
1458	5862	260	IV.1	1		lrg. sq-headed nail	40	?	?	Yes
1986	5909	1176	IV.2	2	1282	2=1; blade	29	No	No	No
2493	6158	940	III.2	2		Fe - blade frags.	18	Yes	No	Yes
2488	6215	917	III.1	1		Fe - sheet frag.	5	No	No	No
2489	6232	942	IV.1	1		Fe - large nail/chisel	84	Yes	?	Yes
2024	6311	1147	III.1	1		?blade frag	53	Yes	No	Yes
2494	6368	691	III.1	2		Fe - 2=1 oval section artefact	107	Yes	?	Yes
2495	6416	919	IV.2	2		Fe - frags.	15	No	No	No
1988	6443	1184	III.1	1	1316	bar frag.	60	Yes	?	Yes
2025	6459	920	III.2	3		Binding strips	239	Yes	No	Yes
1459	6591	260	IV.1	1		sheet frag	11	?	?	Yes
2490	6591	260	IV.1	1		Fe - nail head	6	No	No	No
2038	6601	927	III.1	1		artefact frag	15	Yes	No	Yes

1989	6735		I.1<IV.2	1	1329	Arrowhead?	104	Yes	?	Yes
1990	6735		I.1<IV.2	1	1330	Arrowhead?	40	Yes	?	Yes
2496	6824	725	II.2	1		Fe - nail (+WD?)	24	No	No	No
2497	6830	659	IV.1	1		Fe (?)	24	No	No	No
2040	6970	926	III.1	1		sq-sectioned bar	35	Yes	?	Yes
2041	7051	634	II.2	9		artefact frags.	233	Yes	?	Yes
2042	7085	916	I.1	20		coffin nails	85	No	No	No
2491	7136	702	II.1	1		Fe - blade frag?, with socket?	46	Yes	Yes	Yes
2492	7156	609	IV.1	1		Fe - nail frag(?)	8	No	No	No
2044	7197	73	II.2	2		flat bar artefact ?blade frags	180	Yes	?	Yes
2045	7215	908	II.2	2		nail frags	19	No	No	No
2046	7219	908	II.2	2		nail frags	6	No	No	No
2048	7305		III.1<IV.1	2		?nail frags	4	No	No	No
1991	7461	1048	IV.2	4	1352	?nails	58	No	No	No
	7533	894	III.1	1		?Blade frag	6	No	No	No
2049	7729	868	IV.1	2		blade frags	33	Yes	Yes	Yes
1992	7838	7	II.1	2	1369	?blade frags	53	No	No	No
2050	7838	7	II.1	6		sq-sectioned ?nail frags	95	No	No	No
	8273	585	III.1	2		frags	7	No	No	No
2026	8336	1070	III.1	4		Binding strips	30	Yes	No	Yes
2027	8337	1070	III.1	3		Nail fragments	14	Yes	No	Yes
	8432	1250	I.2	1		lump	52	Yes	No	Yes
2028	8473	1079	III.1	4		blade frags	98	Yes	?	Yes
1993	8562	7	IV.1	7	1414	artefact frags	274	Yes	?	Yes
	8869	354	IA	1		frag	18	Yes	No	Yes
	8874	7	IV.1	1		?blade/tang frag	26	Yes	No	Yes
2051	8937	229	III.1	6		artefact frags	96	Yes	?	Yes
2029	9141	1227	III.1	2		?blade frags	41	Yes	?	Yes
	9152	354	IA	3		frags	16	No	No	No
2000	9367	7	IV.1	1	1548	nail	14	No	No	No
	9367	7	IV.1	2		Nail frags	5	No	No	No
2031	9597	908	II.2	2		axe head + ?blade frag/lump	707	Yes	Yes	Yes
1998	9634	54	II.2	1	1517	hobnail	2	No	No	No
1997	9640	54	II.2	2	1514	artefact frag	28	Yes	No	Yes
1994	9648	54	II.2	1	1508	Hammerscale?	100	No	No	No
1996	9648	54	II.2	1	1513	Artefact fragment	9	Yes	No	Yes
1999	9648	54	II.2	3	1525	artefact frags	81	Yes	No	Yes
2030	9661	54	II.2	1		Nail fragment	10	No	No	No
2037	9917	1361	II.2<IV.2	3		Nail heads	2	No	No	No
2032	9958	1274	I.1<I.2	5		Looks like Fe oxide	26	No	No	No
	10285	1364	IV.1	1		?nail frag	6	No	No	No
	10436	1359	III.1	1		frag	7	No	No	No
2004	10498		III.1<IV.2	4	1656	?plate frags	28	No	No	No
2033	10561	867	IV.1	1		blade frag	27	Yes	?	Yes
2003	10586	7	IV.1	2	1636	2 ?nail frags	26	No	No	No
2034	11196	1063	IV.1	1		artefact	27	Yes	?	Yes
2035	11413	1036	IV.1	4		rod frags; ?nail frags	91	Yes	?	Yes
2036	11416	1036	IV.1	1		artefact frag	7	Yes	?	Yes
2052	11416	1036	IV.1	3	1658	artefact frags	100	Yes	?	Yes

2011	1876/ 1877/ 1879	541	IV.1	1		Staple - joiner's dog Manning R53	5	Yes	Yes	No
44	EAR99 37	38	III.2	2		Hollow, square section	53	?	?	x
76		145	II.1<IV.2	1		Modern half round file	117	No	No	No
1788				1	374	Ring	4	No	No	No
1942				3	135	bar	11	No	No	No
1943				1	139	large rivet	29	No	No	No
1945				1	252	nail	10	No	No	No
1946				1	309	artefact	11	No	No	No
1947				1	365	lump	165	No	No	No
1948				1	384	horseshoe	143	No	No	No
1949				1	390	hook; ?horseshoe	283	No	No	No
1950				1	399	lump with organics adhering	6	No	No	No
1951				1	416	nail	10	No	No	No
1952				2	441	sm lumps	2	No	No	No
1954				1	448/	lump	9	No	No	No
1955				1	464	horseshoe	233	No	No	No
1956				2	502	artefact	153	No	No	No
1957				1	555	3 chain links + 1 with loop for hanging	301	No	No	No
1958				1	545	horseshoe	561	No	No	No
1959				1	575	strip frag.	99	No	No	No
1960				1	593	nail	4	No	No	No
1961				1	685	nail	20	No	No	No
1962				2	686	2=1; nail	18	No	No	No
1963				1	692	nail	26	No	No	No
1964				10	716	strip + bar frags + desiccated wood	52	No	No	No
1965				1	726	nail with adhering Fe frag	13	No	No	No
1966				1	749	horseshoe	219	No	No	No
1967				1	832	large nail or rivet	38	No	No	No
1968				2	839	2=1; large rivet	54	No	No	No
1969				9	964	Roman chain loop	276	Yes	Yes	Yes
1971				2	1028	chain links	23	No	No	No
1972				1	1035	rectangular plate object	116	No	No	No
1974				1	1159	large rivet head	34	No	No	No
1975				1	1165	strip frag	6	No	No	No
1976				2	1188	horseshoe; 2=1	314	No	No	No
1977				1	1189	horseshoe	284	No	No	No
1978				1	1190	lump	110	No	No	No
1979				2	1204	horseshoe frag.; 2=1	119	No	No	No
1980				5	1211	Roman chain loop	489	Yes	Yes	Yes
1981				1	1213	horseshoe	287	No	No	No
1982				1	1214	cast frag.; ?plough share	219	No	No	No
2001				3	1563	2 nails + frag	27	No	No	No
2002				3	1564	2 nails + ?1/2 chain link	24	No	No	No
2270				1	85	Knife: BN handle - decor + Fe blade	12	Yes	Yes	No
2321				1	243	Fe - nail frag?	4	No	No	No

Table 29: Iron artefacts

Lead and Pewter

Some 257 lead and pewter objects were recovered. A significant proportion of these were simply pieces of scrap or casting waste. However, there were also a large number of weights, including 61 line-weights and 50 weights of other kinds, many of conical or biconical form. Pewter artefacts include a finger ring, a fragmented dish and pieces of other possible vessels.

Cat. No.	Context	Feature	Phase	Num.	Small find no.	Notes	Wt(g)	More work	Draw
250	001		I.1<IV.2	3		Pb poss pewter scales weight?	18	No	No
252	001		I.1<IV.2	1		Pb steelyard weight	17	No	No
253	001		I.1<IV.2	1		Folded lead or pewter scrap	7	No	No
256	001		I.1<IV.2	1		Scrap lead strip	12	No	No
258	001		I.1<IV.2	4		Pb droplets	106	No	No
2242	001	field walking		36		14 weights; + 22 frags of Pb	1083	No	No
2246	001	field walking		1		pewter sheet frag	25	No	No
2247	001	field walking		1		?weight	28	No	No
2248	001	field walking		1		?line weight frag	6	No	No
2249	001	field walking		1		scrap	14	No	No
2250	001	field walking		1		?fitting; ?repair	16	No	No
2251	001	field walking		1		weight	14	No	No
2252	001	field walking		1		line weight	11	No	No
2253	001	field walking		1		line weight	8	No	No
2254	001	field walking		1		line weight	4	No	No
2255	001	field walking		1		weight	11	No	No
2256	001	field walking		1		rolled sheet	91	No	No
2257	001	field walking		1		repair plug	47	No	No
2258	001	field walking		1		weight	23	No	No
2259	001	field walking		1		repair plug	20	No	No
2260	001	field walking		1		weight	27	No	No
2261	001	field walking		1		weight	168	No	No
2509	001		I.1<IV.2	1		Lead	4	No	No
20	002	19	IV.1	2		5 Pb lumps	3	No	No

2080	941	140	III.1	1	174	Folded sheet	5	No	No
2243	1108	128	IV.1	1		sheet frag	9	No	No
2244	1554	141	III.1	1		spilt frag	6	No	No
2360	2023	140	IV.1<IV.2	1		rolled sheet	16	No	No
2209	3854	532	IV.1	3	1252	3=1; pewter finger ring	5	No	Yes
2192	4000	19	IV.1	1	1134	lump (+1 Cu alloy decor. pendant <1837>)	4	No	No
2379	4055	573	III.1	1		curved sheet frag.	5	No	No
2198	4503	722	III.2	1	1187	weight	40	No	No
2197	5033	786	IV.1	1	1183	folded sheet; 2=1	11	No	No
2193	5306	54	II.2	2	1247	lumps; ?slag	8	No	No
2206	5378	54	II.2	1	1237	weight	33	No	No
2207	5378	54	II.2	1	1238	weight	19	No	No
2208	5378	54	II.2	1	1239	lump of pewter	8	No	No
2210	5850	28	III.1	1	1279	repair plug	27	No	No
2265	6443	1184	III.1	1		lump	84	No	No
2211	7168	1113	IV.1	1	1346	pewter vessel rim frag	7	No	Yes
2245	7837	7	IV.1	1		artefact	8	No	No
2212	7838	7	II.1	1	1373	lump	10	No	No
2213	7838	7	II.1	1	1374	spilt frag	2	No	No
2215	8116	9	III.1	1	1395	weight	340	No	No
2216	8233	78	IV.2	1	1396	weight	29	No	No
2220	8791	1036	IV.1	1	1434	line weight	11	No	No
2219	8792	1036	IV.1	1	1432	?fitting; ?repair	13	No	No
2225	8874	7	IV.1	1	1532	lump	3	No	No
2226	9367	7	IV.1	2	1549	sheet frags; 1 perforated	17	No	No
2227	9367	7	IV.1	1	1551	sheet frag	1	No	No
2224	9648	54	II.2	1	1504	pewter sheet frag ?vessel frag	11	No	No
2230	10027	852	IV.1	1	1621	pewter lump	6	No	No
2229	10071	7	IV.1	1	1614	spilt frag	6	No	No
2231	10102	1036	IV.1	1	1628	rolled sheet frag; ?line weight	12	No	No
2238	10498		III.1<IV.2	1	1654	weight with Fe frag	115	No	No
2239	10498		III.1<IV.2	1	1655	?pewter lump	15	No	No
2232	10588	1036	IV.1	1	1638	line weight	7	No	No
2233	10588	1036	IV.1	1	1639	line weight	9	No	No
2234	10588	1036	IV.1	1	1640	line weight	8	No	No
2235	10588	1036	IV.1	1	1641	line weight	12	No	No
2236	10588	1036	IV.1	1	1642	line weight	7	No	No
2237	10589	1036	IV.1	1	1646	line weight	8	No	No
2228	11277	7	IV.1	1	1598	?seal	3	No	No
2240	11417	1036	IV.1	1	1659	line weight	8	No	No
2241	11418	1036	IV.1	1	1661	line weight	10	No	No
2262	001a			1		line weight	32	No	No
2263	001a			1		weight	17	No	No
242		19	IV.1	1		Pb poss pewter vessel	42	No	No
1793				1	432	spherical object; ?coin	2	No	No
2053		141	III.1	1	2	Plate?	57	Yes	Yes
2054		141	III.1	1	5	Repair rivet	6	Yes	Yes
2055				1	8	sheet frag	6	No	No
2056				1	9	small wedge-shaped object	12	No	No
2057		1387	II.1	1	11	lump	8	No	No

2058				1	12	tubular weight	14	Yes	Yes
2059				1	13	lump	7	No	No
2060				1	16	Repair plug	15	Yes	Yes
2061				1	20	Repair plug	29	Yes	Yes
2062				1	25	Casting waste	23	No	No
2063				2	27	Pewter - undiagnostic	92	No	No
2064				1	36	Conical weight	44	Yes	Yes
2066				1	55	Folded sheet	13	No	No
2067				1	56	Conical	48	Yes	Yes
2068				1	67	Folded sheet	18	No	No
2069				1	78	Waste fragment	6	No	No
2070				1	84	Repair plug	22	No	No
2071				1	98	Strip	10	No	No
2072				1	100	Foot	3	No	No
2073				1	101	Pewter	11	Yes	Yes
2074				1	105	Scrap	68	No	No
2075				1	114	Scrap	15	No	No
2076				1	115	Scrap	6	No	No
2077				1	116	Conical weight	26	Yes	Yes
2079				1	136	Post-medieval pistol ball	3	No	No
2081				1	192	Tally	42	Yes	Yes
2082				1	202	Biconical weight	61	Yes	Yes
2083				1	213	Cut waste	76	No	No
2084				1	214	Molten waste	11	No	No
2085				2	235	Waste fragment	7	No	No
2086				1	250	Very small fragments	2	No	No
2087				1	255	Waste fragment	31	No	No
2088				1	261	Conical weight	18	Yes	Yes
2089				1	276	Spill waste	113	No	No
2090				1	282	Waste	10	No	No
2091				1	292	Plug	10	Yes	Yes
2092				1	304	Conical weight	27	Yes	Yes
2093				1	316	Spill waste	7	No	No
2094				1	317	Conical weight	17	Yes	Yes
2095				1	318	Ferrule	24	Yes	Yes
2096				1	320	Conical weight	71	Yes	Yes
2097				1	328	Waste	9	No	No
2098				1	334	Folded sheet	7	No	No
2099				1	339	Waste lump	3	No	No
2100				1	340	Seal	3	Yes	Yes
2101				1	349	Waste lump	6	Yes	Yes
2102				1	351	Bullet	4	No	No
2103				1	353	Casting waste	6	No	No
2104				1	356	Pewter waste	11	No	No
2105				1	359	Pb waste	29	No	No
2106				1	364	Pb waste	12	No	No
2107				1	371	Conical weight	25	Yes	Yes
2108				1	380	Waste fragment	3	No	No
2109				2	391	Folded waste sheet	2	No	No
2110				1	406	Repair plug	9	Yes	Yes
2111				1	409	Waste sheet	2	No	No

2112				4	426	Pewter vessel fragments	6	No	Yes
2113				1	427	Fragment	6	No	No
2114				1	428A	weight	28	No	No
2115				1	429	sheet frag	10	No	No
2116				1	430	spilt frag	18	No	No
2117				1	442	pewter vessel frag - rim	18	No	No
2118				1	443	lump; ?repair frag	15	No	No
2119				1	447	tubular frag; ?weight frag	26	No	No
2120				1	449	line weight	7	No	No
2121				1	453	rifle bullet	5	No	No
2122				1	475	spilt frag	13	No	No
2123				1	486	weight	22	No	No
2124				1	496	repair frag	10	No	No
2125				1	498	weight	39	No	No
2126				1	511	spilt frag	4	No	No
2127				1	514	?pewter ?repair frag	33	No	No
2128				1	516	?off cut; folded sheet frag with grooves	58	No	No
2129				1	517	spilt frag	48	No	No
2130				1	522	weight	28	No	No
2131				1	523	spilt frag	6	No	No
2132				1	525	spilt frag	14	No	No
2133				1	526	?repair frag	28	No	No
2134				1	528	weight	32	No	No
2135				1	538	repair	10	No	No
2136				1	542	?pewter; sheet frag; ?spilt frag	58	No	No
2137				1	572	spilt frag	21	No	No
2138				1	574	sheet frag	11	No	No
2139				1	583	lump	11	No	No
2140				1	596	spilt frag	7	No	No
2141				1	600	lump	5	No	No
2142				1	613	lump	16	No	No
2143				1	614	artefact frag	31	No	No
2144				2	617	tubular frags	10	No	No
2145				2	622	?line weights	14	No	No
2146				1	630	rolled frag; ?line weight	11	No	No
2147				1	661	sheet frag	3	No	No
2148				1	681	spilt frag	10	No	No
2149				1	683	folded sheet frag.; ?artefact frag	33	No	No
2150				1	684	?decor. line weight	16	No	Yes
2151				1	705	spilt frag	7	No	No
2152				1	707	weight	129	No	No
2153				1	710	?pewter ?vessel frag	35	No	No
2154				1	732	rolled sheet	17	No	No
2155				1	733	pewter ?plate frag	4	No	No
2156				1	743	?pewter ?sheet frag	33	No	No
2157				1	747	spilt frag	11	No	No
2158				1	748	weight	20	No	No
2159				1	757	line weight	8	No	No
2160				1	776	rolled sheet; ?line weight	8	No	No
2161				1	777	line weight	6	No	No
2162				1	787	line weight	10	No	No

2163				1	789	weight	12	No	No
2164				19	790	line weights	136	No	No
2165				2	818	sheet frags	4	No	No
2166				3	825	sheet frags	26	No	No
2167				1	831	?pewter lump	11	No	No
2168				1	841	pellet frag; bullet	2	No	No
2169				41	859	vessel frag - support/foot	7	No	No
2170				1	865	strip frag; ?off cut	3	No	No
2171				1	888	folded sheet frag.; ?line weight	5	No	No
2172				1	889	weight	13	No	No
2173				1	901	weight	12	No	No
2174				1	930	scrap	2	No	No
2175				1	932	moulded frag	30	No	No
2176				1	943	spilt frag	5	No	No
2177				1	952	lump	4	No	No
2178				1	954	folded sheet frag	17	No	No
2179				1	960	?weight	42	No	No
2180				1	961	perforated folded sheet	14	No	No
2181				1	987	folded sheet frags	9	No	No
2182				1	1005	line weight	9	No	No
2183				1	1006	line weight	10	No	No
2184				1	1009	line weight	12	No	No
2185				1	1022	artefact; ?fitting; ?repair	11	No	No
2186				1	1025	weight	22	No	No
2187				1	1065	spilt frag	7	No	No
2188				2	1071	?pewter sheet frags	18	No	No
2189				4	1107	sheet frags	29	No	No
2190				1	1118	?repair; lump	24	No	No
2191				1	1129	folded sheet frag	2	No	No
2194				1	1158	?pewter ?artefact frag	19	No	No
2195				1	1170	spilt frag	5	No	No
2196				1	1181	repair plug	5	No	No
2199				2	1192	pewter lumps	4	No	No
2200				1	1196	spilt frag	12	No	No
2201				1	1201	sm lump	1	No	No
2202				1	1202	?pewter ?vessel frag ?foot	34	No	No
2203				1	1203	lump	5	No	No
2204				1	1205	line weight	13	No	No
2205				5	1216	line weights	28	No	No
2214				1	1375	line weight	8	No	No
2217				2	1416	1 sheet frag - seal?/mount?; 1 pewter frag	12	No	No
2218				1	1417	line weight	4	No	No
2221				5	1436	line weights	21	No	No
2222				1	1437	line weight	6	No	No
2223				1	1499	wedge-shaped artefact	10	No	No
2264				2	1 + 2	sheet frags	19	No	No
2266				74	90	vessel frags	264	No	No
2267				1	222	small jar	175	No	No
2268				92	1044	pewter dish in frags	240	No	Yes

Table 30: Lead and pewter artefacts

Worked Bone

The assemblage of worked bone comprises 30 objects. The most numerous are hairpins, of which 15 are present. The following objects are also worthy of fuller study and illustration:

[1613]	Tool handle
[3601]	Peg
[5909]	Large tool handle, with stub of iron tool
[6947–50]	Tool with perforation
[7220]	Awl
[8336]	Point
[8336]	Toggle or handle
[9648]	Perforated bar fastener/toggle
[9648]	Triangular weaving plate
[9648]	Small long bone marked with notches and ring-and-dot decoration – tool handle?
SF 704	Decorated knife handle

Other Finds

Glass

Assemblage: 37 pieces of glass have been provisionally identified as Roman. These are mostly vessel fragments although there are also seven beads.

Further work: Full analysis by a glass specialist (Professor Jennifer Price), and illustration of all diagnostic pieces.

Shale

Assemblage: One spindle whorl, one lathe-turned decorative object and fragments of eight bracelets.

Further work: Full analysis of all objects; illustration of the spindle whorl, decorative object and a representative selection of the bracelets.

Baked Clay

Assemblage: 1227 pieces (22,203g). While much of the material consists of amorphous lumps, there are some identifiable artefacts including loomweight fragments, a crucible and possible kiln furniture.

Further work: Fuller inspection to identify the function of as much of the material as possible, e.g. as daub, oven lining, etc. Macroscopic scanning to quantify the material by (broad) fabric group. Illustration of crucible and a selection of the possible kiln furniture.

Ceramic Building Materials

Assemblage: 743 pieces of tile and 22 pieces of brick. Tegulae, imbrices and box-flue tiles are all present.

Further work: Quantification of different functional categories of brick and tile. Illustration of any unusual types.

Worked Stone

Assemblage: Quern fragments were recovered from 152 different contexts. This includes both saddle and rotary querns, and a variety of stone sources can be seen including puddingstone, Millstone Grit and lava stone. There are also 20 whetstones or hones, and 11 fragments of possible Collyweston stone tile.

Further work: Full quantification of the stone types represented, to elucidate aspects of trade. Illustration of a small number of representative artefacts.

Slag

Assemblage: 1500g of slag of various kinds.

Further work: Identification of the different types of slag in order to elucidate the industrial activities taking place (e.g. smelting vs. smithing).

Oyster Shell

Assemblage: 169 oyster shells (1573g).

Further work: None.

Human Bone Natasha Dodwell

Deposits of cremated bone, inhumation burials and disarticulated skeletal elements dating to the Romano-British period were identified across the site (Fig. 28). None of the inhumation or cremation burials would appear to have been part of a formal cemetery. Both urned and unurned cremation burials were identified. The methods used to excavate the deposits of cremated bone and to record the osteology are identical to those described for the prehistoric material (see Dodwell above).

Cremation Burials

Five features containing cremated human bone have been identified. All are described as burials although it is possible that burials 1 and 3 are not true burials but are deposits of pyre material.

Cremation Burial 1 (F. 270)

A small pit, 0.60 x 0.65 x 0.20m, located between two linear ditches which run NE-SW across the eastern periphery of the site. The charcoal-stained silty fill contained frequent charcoal fragments and 154g of cremated bone. The bone fragments were a mixture of white and blue-black although the majority are the latter, i.e. poorly fired. Identifiable elements include skull, long bone shafts, tarsals and carpals. The largest fragment is 51mm long. Below this a fill of redeposited natural with occasional charcoal flecks and <1g of well calcined bone. Fragments of pottery were mixed within the main cremation fill and appeared to be inclusions rather than enclosing the cremation.

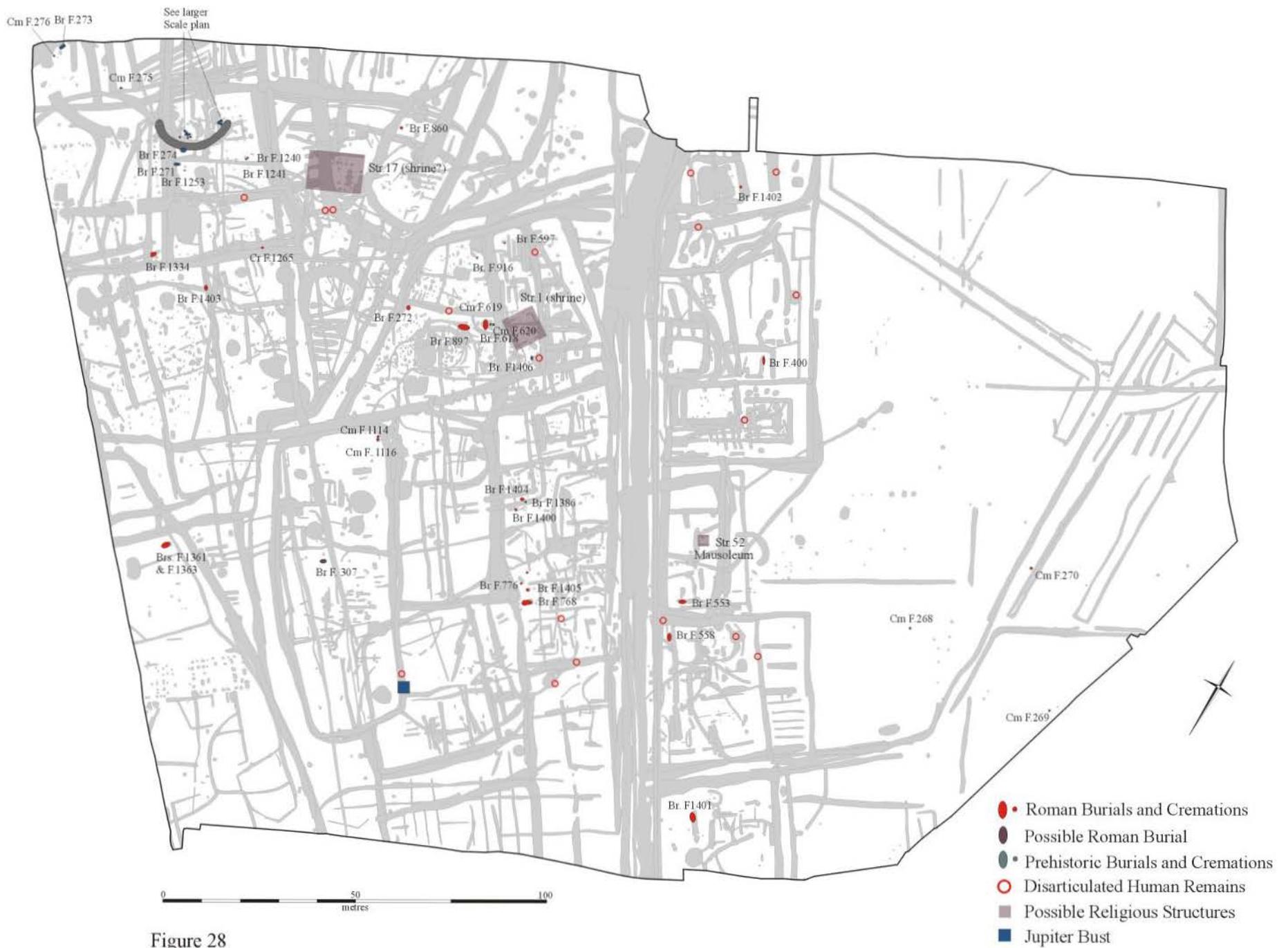


Figure 28

Cremation Burial 2 (F. 619)

A truncated greyware jar/flagon containing 442g of relatively large fragments of calcined bone. The majority of fragments are white although there are some blue-black fragments, and identifiable elements include acetabulum, vertebrae, scapula, clavicle, skull, ribs, long bone shafts and epiphyseal ends. The fill surrounding vessel is a mid brown, sandy silt with a small quantity (23g) of cremated bone; it is unclear whether this originally derived from the vessel.

Cremation Burial 3 (F. 1114)

A shallow hollow in the buried soil, *c.* 0.20m from cremation burial F. 1116 containing 301g of cremated bone with occasional fragments of charcoal. The majority of fragments are small and well calcined although there are several blue-white fragments. A total of 301g of bone was analysed and identifiable fragments include maxilla, mandible, molars, skull, vertebral facets and limb shafts.

Cremation Burial 4 (F. 1116)

Two vessels were recorded in an irregular hollow *c.* 0.2m from F. 1114. It is possible that they are associated with each other, and even the same individual, as there are no duplicated elements in the two features. The large truncated pot contained 'ash' and cremated bone. A total of 747g of bone was analysed; the fragments were relatively large and most were buff-white with several blue-black fragments. Identifiable elements include skull, teeth, cervical vertebrae, lower and upper limb shafts, clavicle and phalanges. The small pot also contained 'ash' and bone.

Cremation Burial 5 (F. 1265)

A small quantity (33g) of buff-white cremated bone was recovered from a shallow circular cut between two intercutting ditches. Identifiable elements included long bone shafts, vertebrae and ribs. Fragments of pottery were recovered with the bone indicating that it may originally have been urned.

Feature	Context	Type	Age/Sex	Weight (g)	Colour
270	214 & 216	Unurned	Adult	154	Mixed
619	6711 & 6712	Urned	Adult	465	Mixed
1114	5695	Unurned	Adult	301	White
1116	5706 & 5707	Urned	Adult	747+ ?	Mainly blue-black
1265	7886	?Urned	Adult	33	White

Table 31: Summary of Romano-British features containing cremated human bone

Within the Romano-British cremations as a whole, bone fragment size ranges from 1–78mm, with most falling between 2–4mm. As with the prehistoric burials the fragment size is generally larger when the bone is contained within, and therefore protected by, a vessel. The bone that was analysed ranged in colour from buff-white (indicative of full oxidation) to a blue-black colour. There were more blue-black bone fragments in the Roman cremation burials than in the prehistoric ones and this has been noted elsewhere (McKinley 1997, 66). Full oxidation of bone may not always have been considered necessary.

Adult Inhumation Burials

Fourteen adult inhumation burials dating to the Roman period were identified across the site. Although these graves are seemingly isolated and do not cluster in small burial groups or a formal cemetery, none has the appearance of being casual burials. All appear laid out, several are interred in coffins, and some are accompanied by grave goods. Four possible coffins were identified (F. 618, F. 768, F. 916 and F. 1363), either through linear staining around the body or the presence of nails. These coffin burials were not clustered, were on differing alignments and included both males and females. One of the coffined burials, F. 1363, had been decapitated.

Burial 1

F. 400 [1460] (Older middle/mature adult female)

Poorly preserved skeleton; the legs in particular have been badly disturbed and none of the long bones are complete. The body is supine, with head to the north. Periostitis, indicative of a non-specific infection, was observed on the lateral aspect of the distal left fibula. The bodies of the cervical vertebrae exhibit increased porosity and marginal osteophytes, and two of the cervical vertebrae (C3 and 4) are fused (at the bodies and the left facet) which is probably congenital. Of the dentition which could be examined four teeth had been lost ante mortem.

-	-	6	5	4	3	/	/	/	/	/	X	/	-	-	-
-	X	X	/	/	3	2	/	1	2	3	4	/	X	-	-

Burial 2

F. 553 [3960] (Mature adult female)

Moderately preserved skeleton; none of the long bones are complete, the surviving bones are fragmentary, and the face including the maxilla is missing. The body is supine and extended with the head to the east and the right arm flexed across the body. Osteoarthritis was recorded in the spine, the left hip and the right foot. There were heavy deposits of calculus on the surviving teeth and four teeth had been lost ante mortem.

-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
/	7	6	/	X	X	/	/	1	2	/	/	5	X	X	8

Burial 3

F. 558 [3700] (Older middle/mature adult female)

A poorly preserved skeleton; the right arm, femur and pelvis are missing, much of it truncated by a later ditch and the surviving bones are fragmentary. The body was supine and extended with the head to the south of the grave. Eburnation and osteophytes were recorded on one of the surviving ribs and on one of the cervical vertebrae. An external draining abscess was recorded above the right maxillary 2nd molar, and of the surviving dentition three teeth had been lost ante mortem

-	/	/	/	X	/	/	1	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	/	/	/	/	/	X	X	NP

Burial 4

F. 597 [8100] (Mature adult female)

Severely truncated skeleton; only the left femur, lowest five vertebrae, left ribs, left pelvis, left hand and both lower arms are present. The body lay on its left side, flexed, and the head would have been in the west of the grave. Marginal osteophytes were recorded on the bodies of the lumbar vertebrae.

Burial 5

F. 618 [6732] (Middle adult male)

Well-preserved skeleton with very robust muscle attachments on the upper arms. The body was extended with the head in the north-west of the grave, and dark staining around the body might suggest interment in a coffin. Extensive periostitis was recorded on the legs and lower arms, a mixture of lamellar but in particular woven bone indicating that the infective reaction was fairly long standing but was still active at death. A plaque of woven bone was also recorded on the left 5th metatarsal and erosive lesions on the distal end of the right 1st distal phalanx. Porosity and osteophytes were recorded on the interphalangeal joints of both feet and marginal osteophytes and Schmorl's nodes were noted on several of the lumbar and thoracic

vertebrae. These changes are indicative of osteoarthritis. Although no teeth had been lost antemortem, the left 2nd and 3rd maxillary molars are loose and there were no sockets in the jaw suggesting that they were close to being lost. Deposits of calculus were recorded on many of the surviving teeth and three large caries were recorded on the molars. There is an interesting concretion, which merits further investigation, on the back of the skull; it is possibly mineralised hair. A small pot was placed by the head.

8	/	6	5	4	3	2	1	1	/	3	4	5	6	7	8
NP	7	6	5	4	3	2	1	1	2	3	4	5	6	7	8

Burial 6

F. 768 [4887] Mature adult female

A moderately preserved but fragmentary skeleton; the vertebrae and ribs survive only as scraps, there are few epiphyseal ends and the long bones are incomplete. The body is extended, with the head to the south-west and there are traces of a possible coffin. Changes indicative of osteoarthritis were observed on an articulating vertebral facet and carpals of both hands. Five teeth had been lost post-mortem and the surviving dentition exhibited severe wear and heavy deposits of calculus.

-	X	X	/	4	3	2	1	/	2	3	/	/	6	-	-
NP	7	X	5	4	3	2	1	1	2	3	4	5	X	X	NP

Burial 7

F. 776 [4622] (Middle adult male)

A well preserved skeleton damaged both by ploughing and machine stripping; the skull is fragmentary, the feet are missing and the long bones have suffered post-mortem breaks. The body is extended, the arms flexed so that hands rest together over the pelvis and the head was in the north-west of the grave. Marginal osteophytes and Schmorl's nodes were recorded on several of the lumbar and thoracic vertebrae. The right clavicle exhibits a well healed fracture. One tooth had been lost post-mortem and a further two teeth, the right mandibular 2nd premolar and 1st molar, are rotten. The muscle attachments on the humeri are very robust and pronounced.

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

Burial 8

F. 860 [8837]

A very disturbed burial; only fragments of the skull, ribs and pelvis survive. The body is disarticulated.

Burial 9

F. 916 [7086] (Middle adult male)

A well preserved skeleton, although the pelvis and facial area were damaged by the machine. The body was extended with right arm tight against the body, feet together and head in the east of the grave. The position of the body and the presence of nails suggest interment in a coffin. The left 3rd maxillary molar was found loose in the grave. Three teeth had been lost prior to death and a small caries was recorded on the right 1st maxillary premolar.

8	7	/	X	4	3	2	1	-	-	-	-	-	-	-	-
8	7	X	X	4	3	2	1	1	2	/	-	-	6	-	-

Burial 10

F. 1334 [9759]

An extremely poorly preserved and disturbed skeleton, which has been almost completely ploughed out and then machined. What remains of the body suggests that the head would have been in the south-east of the grave.

Burial 11

F.1361 [9918] (Mature male)

This grave lay above Burial 12. An extremely poorly preserved and fragmentary skeleton; only the long bone shafts, fragmentary skull and torso and fragments of pelvis and scapula could be analysed. The skeleton had been disturbed by the machine but also by animal activity. The body was extended with the head to the west, arms tight against the torso, flexed, with the left lower arm crossing the right. New bone, characteristic of a non-specific infection that was in the process of remodelling at death was recorded on the shaft of the right tibia. Three additional teeth could be analysed; the right maxillary incisors and left canine were loose. Four teeth had been lost prior to death and the right mandibular 2nd molar and maxillary 1st molar survive only as roots. Moderate to heavy deposits of calculus were recorded on the surviving dentition.

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

Burial 12

F. 1363 [11242] (Middle adult female)

This grave lay directly below Burial 11. Moderately preserved but fragmentary skeleton; none of the long bones are complete, the skull has been badly crushed and the legs have been disturbed, possibly by animal activity. There are deposits of iron panning on the bones and many of the surfaces are abraded. This is a decapitated burial and the skull had been placed over the left foot. The body was extended, the hands rest beneath the pelvis and the head end of the body was in the south-west of the grave. The body had been interred in a coffin and a small vessel had been placed at the head end of the grave within the coffin. The number of vertebrae still articulating with the decapitated skull was not noted on site. There is possibly a cut mark on one of the lower cervical vertebrae but lower vertebrae (including four thoracic) are bagged up with these. The mandible was not articulating with the skull but it may have been disturbed by animal burrowing. Four additional teeth could be analysed; the maxillary central incisors and both right 2nd premolars.

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

Burial 13

F. 1401 [3679] (Young/middle adult ? female)

The skeleton was truncated by the machine; the skull, the left lower arm and most of the vertebrae and ribs are missing and the remaining elements are extremely fragmentary. The body was extended and the head would have been in the NNE of the grave. No pathology was observed.

Burial 14

F. 1403 [8663] (Mature adult female)

Moderately preserved skeleton; the pelvis and skull are fragmentary, none of the long bones are complete and many of the surviving bones were concreted with iron pan. The body lay on its right side, flexed with the head in the north of the grave. Schmorl's nodes and marginal osteophytes were observed on several of the lumbar and thoracic vertebrae.

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

Disarticulated Adult Bone

Disarticulated adult human bone was recovered from the following contexts:

Feature	Feature type	Context	Skeletal element	Pathology
54	Enclosure ditch fill	[9648]	l. talus, calcaneus, navicular, 1 st , 2 nd , 3 rd & 5 th metatarsals, r.talus, 1 st cuniform, 1 st , 2 nd , 3 rd metatarsals	
126	pit?/pond?	[1406]	l. femur shaft	
354	surface find	[1114]	l. humerus shaft	
464	ditch fill	[3683]	r. femur shaft	ostophytes on distal margins
1410	pit fill	[4076]	refitting skull fragments-mainly parietal	

Table 32: Disarticulated adult human bone from Romano-British features

Infant Burials

Eight articulated neonate/infant burials were identified across the site in a variety of features; most were recovered from post-holes, but shallow scoops, gullies and ditches also contained articulated remains.

Feature	Context	Age	Location
1402	393	neonate	ditch fill
1400	5288	neonate	post-hole
1404	5298	neonate	post-hole
897	8260	neonate	post-hole
604	8409	neonate	Gully
1241	9005	neonate	? scoop
1240	9007	neonate	post-hole
1253	9435	infant	?scoop

Table 33: Articulated immature individuals from Romano-British features

Disarticulated immature remains were recovered from a further 15 contexts. In many of these cases it is probable that a complete body was originally interred and that the burial was subsequently disturbed or truncated, or that some elements did not survive, or that they were not recognised on site. For instance, the disarticulated bones recovered from three inter-cutting features in grid square 160/240 ([6920], [6923] and [7082]) are likely to derive from the grave of a child aged *c.* 5–6.5 years old. The foot end of the original grave may have been cut [7082] and the body may have been aligned with its head to the north. Of the 15 contexts containing disarticulated immature bones, five features contained a single disarticulated element. Again these may derive from disturbed graves and be accidental inclusions, although they were predominantly found in gullies and post-holes and their deposition may have been more ‘placed’.

Introduction

A large assemblage of animal bone was recovered from the site during the normal course of hand-excavation. The total quantity of bone recovered is 42,254 fragments (or *c.* 649kg); this is a raw fragment count and does not take into account any of the methods of quantification employed by zooarchaeological analysis. A 30% sub-sample (12,416 fragments) of the assemblage was selected for detailed analysis; the sub-sample includes all bone from Roman contexts within Areas A and B (Fig. 29), and all mandibles and loose lower teeth from Roman contexts within the rest of the site. The material from Areas A and B forms *c.* 25.5% of the sub-sample and will be referred to as the complete detailed sample. The material from the rest of the site (*c.* 4.5%), which comprises only mandibles and loose teeth, will be referred to as the partial detailed sample. Soil samples were taken from some deposits and processed by wet-sieving but the residues from only one sample were included in the detailed sample.

The total quantity of identified bone is 1,759 fragments; this comes from all phases and phases of Roman occupation at the site, and ditch deposits produced some of the largest collections of bone. Between 37% and 68% of bone from each phase was recovered from ditches (Table 34). In order to keep the size of stratified samples relatively large for the purposes of comparison the assemblage has been subdivided by phase rather than sub-phase. The date and size of stratified samples in terms of identified bones (or NISP) are as follows: Phase I (120 AD–190 AD) 2%; Phase II (190 AD–270 AD) 20%; Phase III (270 AD–350 AD) 31% and Phase IV (350 AD–410 AD) 42%. The remaining 5% of fragments are from broadly dated Roman contexts and a small number of Prehistoric, Iron Age and modern contexts. These have been quantified in some tables but do not merit further consideration. The following report concentrates on the Roman assemblage, in particular the large samples from Phases II–IV and attempts to address the following points; the relative frequency of livestock species, the type of pastoral economy practised, the utilisation of carcasses, the size/shape conformation of livestock species and the exploitation of Fenland resources. Comparison of the results is then attempted between phases at the intra-site level and between other contemporary sites at that the intra-regional level.

Methods

Identification

Identification was carried out using the author's own reference collection and the reference collection of the Sub-department of Ornithology, Natural History Museum, Tring. Most, but not all, caprine (sheep and goat) bones are difficult to identify to species however, using the criteria of Boessneck (1969) and Payne (1985) it was possible to identify a selective suite of elements as sheep or goat from the assemblage. Of the small



Figure 29

Table 34. Number and percentage of identified bone (POSACs) by phase and feature type for Camp Ground, Earith.

Feature type	Phase							
	N	I %	N	II %	N	III %	N	IV %
beamslot	2	6.2	14	4	75	14	34	4.6
ditch	21	66	239	68.4	203	37.3	501	68.3
grave			1	0.2			3	0.4
gully	3	9.3	4	1	21	4	7	0.9
gully/ditch	1	3	4	1	16	2.9	22	3
midden					13	2.3	13	1.7
pit	4	12.5	71	20.4	92	17	79	11
pit/posthole					4	0.7	1	0.1
posthole					35	6.4		
quarry	1	3						
well					11	2		
other			16	5	73	13.4	73	10
Total	32	100	349	100	543	100	733	100

Table 35. Preservation condition of bone by phase for Camp Ground, Earith. Where 1 = excellent and 5 = very poor.

Preservation condition	Phase							
	I	II	III	IV	Roman	Other	Total	%
1	26	301	434	633	64	18	1476	77.6
2	5	62	108	138	16	4	333	17.5
3	1	15	31	9	4	2	62	3.3
4		5	9	9	1		24	1.3
5		1	3	2			6	0.3
Total	32	384	585	791	85	24	1901	100

number of caprine bones that could be identified to species, all were sheep and it is therefore assumed that most caprine bones belong to sheep. Thus the term 'sheep' will be used throughout this report to refer to all undifferentiated caprine bones. The shape of enamel folds was used to distinguish between equid species following Davis (1987); only horses were positively identified. All post-cranial bones were simply recorded as equid. Equid remains will be referred to throughout this report as horse, although it cannot be discounted that other equid species may be included in this category. The Gallus/Numida/Phasianus group of closely related galliformes are also difficult to distinguish (see MacDonald, 1992) however, no guinea fowl or pheasant bones were positively identified, and it is therefore assumed that fowl-like bones belong to chicken.

Quantification

Analysis of the Camp Ground assemblage was carried out following Davis (1992). In summary, a selective suite of mammalian skeletal elements were recorded as standard and used in counts, termed 'parts of the skeleton always counted' (or POSACs). In addition to the POSACs selected by Davis the following elements were also counted: horncores and antlers with a complete transverse section and the zygomatic arch (part of the skull). Bones were only recorded if at least 50% of a given part was present and Dobney and Reilly's (1988) zonal recording method was incorporated for this purpose. Single condyles of cattle, caprine and cervid metapodials were counted as halves, as were the central pig metapodials. The recording of avian bones was limited to bones from the wing and leg but these were only recorded if they retained one complete articular surface. Avian bones were also recorded using a zonal method following Cohen and Serjeantson (1996). The above methods of quantification reduce the over-recording of fragmented material to give a truer indication of species proportions. The number of specimens identified to species (or NISP) was calculated for all taxa but the minimum numbers of individuals (or MNI) were only calculated for the most common taxa. The MNI was calculated by simply dividing the total number of fragments of each skeletal element by the number present in the body. However, due to the sub-sampling method the relative frequency of individual elements was calculated separately for mandibles and teeth, and for all post-cranial elements.

Any non-countable elements from less common species or elements displaying butchery marks, pathological changes or of anomalous size were also recorded but not used in counts. Vertebrae (centra) were recorded to general size categories (e.g. cattle-sized or sheep-sized); this information was collected in order to take account of epiphyseal fusion but again this information was not used in counts. Non-countable bones are shown in parenthesis in Table 38.

Preservation, modification and pathology

Preservation was recorded using a modified version of Behrensmeyer's (1978) weathering stages; that is, each POSAC was graded on a scale of 1 to 5 with 1

representing excellent and 5 very poor preservation. Characteristics that define these categories are as follows:

- 1 represents bones exhibiting very little or no weathering or attrition;
- 2 represents bones exhibiting a slight degree of weathering, usually small areas of flaking (or exfoliation) on the outer surface (or cortex). This category also includes teeth that have broken or cracked occlusal surfaces;
- 3 represents bones exhibiting a moderate degree of weathering, usually exfoliation over most of the cortical surface and shallow, longitudinal cracks. This category also includes teeth that have cracked apart as a result of deterioration of the underlying dentine and cementum;
- 4 represents bones exhibiting more severe exfoliation involving the entire cortical surface as well as deep cracks and abraded edges. Bone in this category has a fibrous, brittle texture;
- 5 represents bones that have lost large areas of cortical bone due to exfoliation and has rounded edges due to abrasion. Bones in this category are extremely fragile with a fibrous, brittle texture.

Information on gnawing, butchery and pathology was recorded where present. Butchery was recorded by type (i.e. chop, knife cut, sawn), position and orientation (using standard anatomical terms and orientation). Pathological conditions were categorised where possible and detailed descriptions made as to form and location. The following non-metric traits were also recorded where possible: reduction/absence hypoconulid; presence/absence of p2; presence of premolar foramina and characteristics of the mental foramina.

Ageing and sexing

The ageing data of Silver (1969) was used to assess epiphyseal fusion of the post-cranial skeleton and fusion categories follow O'Connor (1989). Epiphyses are recorded as 'fused' when the epiphyseal plate joining epiphysis to metaphysis is closed; 'fusing' once spicules of bone have formed across the epiphyseal plate and 'unfused' if none of these changes had taken place. Bird bones with 'spongy' ends were recorded as 'juvenile'. Tooth eruption/wear and mandible wear stages were recorded following Payne (1973 and 1987) for sheep/goat, and Grant (1982) and O'Connor (1989) for cattle and pigs. A complete list of tooth wear and mandible wear stages for mandibles retaining two or more cheek teeth (i.e. dp4/p4–m3) with recordable wear are given in Appendix 4 (see Volume II).

Sexing using morphological characteristics was only undertaken for pig canines and their alveoli. Boar canines can be differentiated from sow canines on the bases of their size, shape and root morphology (Schmid 1972, 80–81).

Biometry

In general measurements follow Von den Driesch (1976) with the following exceptions: measurements taken on the humerus and cattle and caprine metapodials follow Davis (1992); shaft diameter (or SD) on caprine tibiae was taken in the anterior-posterior plane; measurements of horncores are the largest (Wmax) and smallest (Wmin) diameters at the base; measurements on pig teeth follow Payne and Bull (1988) with the addition of the width of the central (or second) cusp of the third molar (or m3); width measurements of cattle and caprine teeth were taken across both cusps; and measurement of equid cheek teeth follow Davis (1987). Withers height calculations for the main domesticates follows the conversion factors of Kiesewalter for horse, Matolcsi for cattle, and Teichert for sheep and pig (see Von den Driesch and Boessneck 1974). Individual measurements are presented in Appendix 5; detailed analysis of this information is limited by small sample size but descriptive statistics of the most common measurements, that is those with five or more cases per phase, have been calculated.

Results

Recovery, preservation, fragmentation and taphonomy

All of the assemblage was recovered by hand, with the exception of two bone fragments from sample 33. Hand-recovered assemblages are typically biased in favour of large, easily observed fragments and therefore the bones from larger species, whilst small fragments and therefore the bones from smaller species tend to be overlooked (Payne 1992). The Camp Ground assemblage is no exception with a high proportion of bones from common domestic species, few bird and fish bones, and a complete absence of small mammals and amphibians. A brief assessment of post-cranial elements for livestock species from the complete detailed sample suggests that whilst some small bones, such as astragali, calcanea and phalanges, are either entirely absent or under-represented, particularly those from small livestock species (i.e. sheep and pig), others such as cattle astragali and calanea are actually quite common. In other words, recovery methods have skewed the assemblage both in terms of species and skeletal element representation, and this should be kept in mind throughout the following discussion.

There are a number of factors that affect bone preservation and fragmentation (Binford 1981; Lyman 1994), and any single assemblage will have been subjected to a combination of these factors. Disentangling the individual effects and interpreting the results can be very difficult but is necessary in the interpretation of any assemblage. For this reason each recorded bone (both POSACs and non-countable bones) was assigned to one of the preservation categories outlined above and the results summarised in Table 35.

Overall the assemblage is reasonably well preserved with the majority of fragments assigned to categories 1 (c. 78%) and 2 (c. 18%), of the remaining 4% most display only moderate degrees of weathering (category 3). Very poorly preserved fragments are scarce and most are from later phases suggesting that these may be residual, having been reworked from earlier deposits.

The ratio between isolated teeth and mandibles can be used to give a gross indication of the fragmentation state of an assemblage; these have been calculated for the main livestock species and the results have been quantified by zone of excavation, a subdivision of excavation areas (Table 36). There is no clear pattern of fragmentation between zones, however the ratio of loose teeth to mandibles was consistently lower for later phases, indicating less fragmentation possibly due to less disturbance of deposits.

Other taphonomic factors that need to be taken into account are butchery and canid gnawing (Table 37). Butchery marks were recorded on only c. 7% of all post-cranial bones in the sub-sample; the majority are chop marks and were recorded on cattle bones. This probably reflects size-related butchery techniques and is further discussed below. Canid gnaw marks were recorded on only c. 5% of post-cranial bones, however the bone chewing habit of carnivores can completely obliterate bones from the archaeological record, in particular the bones of immature individuals; therefore, the low incidence of gnaw marks may not reflect the true extent of the problem. Alternatively this result could suggest that bone refuse was rapidly buried after disposal or that dogs were unable to access the material.

Occurrence and relative importance of species

A complete list of the species identified from all phases is given in Table 38. In common with most archaeologically recovered animal bone assemblages from Britain, the majority of identified fragments from Camp Ground belong to the three main livestock species. Cattle, sheep and pig together account for c. 81% of the total number of specimens identified to species (or NISP). Horse, dog, cat, chicken, and possibly goose and duck are the only other domestic species identified and together account for c. 15% of NISP. Wild species such as deer, hare, otter, pike and at least eight different species of bird are less common, forming only 4% of NISP.

Looking more specifically at the relative importance of the three main livestock species, by NISP and minimum number of individuals (or MNI) for the assemblage as a whole, cattle is the most abundant species accounting for 65% of NISP and 54% of MNI, followed by sheep at 30% NISP and 41% MNI, and then pig at 5% NISP and MNI. The relative frequency of these three species for the three main phases (II–IV) displays a consistent pattern when NISP is considered (Figure 30) but when MNI is considered the pattern of relative frequency is more complex (Figure 31).

Cattle is by far the most common species in all phases by NISP (Figure 30); in Phase II the proportion is 71%, and there is then a slight decline over subsequent phases to 63% in

Table 36. Fragmentation state of assemblage from Camp Ground, Earith by zone of excavation area. Based upon the ratio of loose teeth to mandibles. Includes only loose teeth and mandibles from main livestock species (i.e. cattle, sheep and pig).

Zone of excavation Area	Phase											
	I			II			III			IV		
	N mandibles	N loose teeth	% loose teeth	N mandibles	N loose teeth	% loose teeth	N mandibles	N loose teeth	% loose teeth	N mandibles	N loose teeth	% loose teeth
1	1	1	50	4	3	43	15	12	44	3	4	57
2	4			8	1	11	3	10	77	7	4	36
3		1	100	2			22	13	37	63	59	48
4	4	2	33	8	10	56	23	7	23	39	43	52
5	3	2	40	25	15	38	8	7	47	3	2	40
6	1	1	50	16	19	54	21	8	28	18	13	42
7				27	24	47	57	47	45	109	51	32
8				1	5	83	1	3	75			
Total	13	7		91	77		150	107		242	176	

Table 37. Quantity of gnawed and butchery bones from the Camp Ground, Earith assemblage by

	Phase							
	II		III		IV		Total	
	N	%	N	%	N	%	N	%
Gnawed	18	56	34	6	35	4.4	87	4.5
Chop mark	12	37.5	32	5.4	23	3	67	3.5
Cut mark	7	22	18	3	15	2	40	2.1
Other	3	9	8	1.3	6	1	17	1

Table 38. Number of specimens identified to species (or NISP) by phase from the Camp Ground, Earith. Figures in parenthesis are 'non-countable' bones after Davis (1992). The abbreviation n.f.i. denotes that a specimen was or could not be further identified. *Asterisk denotes partial dog skeleton from (6123) includes 24 bones but counted as one specimen.

Taxon	Phase										Total	
	Preh	Iron Age I	II	III	IV	I-IV	II-III	II-IV	III-IV	Modern		
cattle	1	7	14	185 (6)	301 (7)	375 (4)	8	1	24 (2)	3	1	920 (19)
sheep/goat		5	10	59	123	151 (1)	5	1	6	13		373 (1)
sheep			2	9 (1)	12	32 (1)						55 (2)
pig		2		8	15 (4)	40 (1)	1		2	7		75 (5)
horse		4	2	53 (4)	37 (4)	40 (4)	3		1 (1)	2		142 (13)
dog		3 (1)	3	13 (2)	19* (6)	17 (1)	1		1			57 (10)
dog/fox				(1)								(1)
cat					2 (1)	2						4 (1)
red deer					2 (2)	1 (3)						3 (5)
roe deer				1								1
hare						1						1
otter			1	9	6 (3)	20 (18)						36 (21)
domestic fowl				7	3	20						30
duck (mallard)				2	10	14						26
goose (domestic)					2							2
goose (c.f. greylag)						1						1
teal					1							1
coot					4	6						10
moorhen					1							1
curlew					1	1						2
Lapwing						5						5
common crane				1								1
pelican sp.					1	1						2
fowl-sized bird n.f.i.				1								1
crane/mute swan sized				(1)	(2)	(1)						(4)
pike				1	3	5						9
fish n.f.i.					(1)	1						1 (1)
cattle-sized				(18)	(10)	(22)	(1)		(2)			(53)
sheep-sized				(2)	(2)	(2)						(6)
Total	1	21 (1)	32	349 (35)	543 (42)	733 (58)	18 (1)	2	34 (5)	25	1	1759 (142)

Phase IV. The proportion of sheep is relatively low in all phases, forming only 26% in Phase II, 30% in Phase III and declining to *c.* 20% in Phase IV. Pig bones are present in low frequencies in all phases but the proportion increases overtime from 3% in Phase II to *c.* 6% in Phase IV. The basic pattern that emerges is therefore a decline in the frequency of sheep and a slight increase in the frequency of pig, with cattle of prime importance overall. The importance of cattle in the Romano-British economy and diet is well known (King 1978, 1984 and 1999; Grant 1989) and the results from analysis of the Camp Ground assemblage fit very well with this view. It has been suggested that the dietary preference for beef may have been imported to Britain by central European legions of the Roman army (King 1978). King (1999, 180) suggests that military sites, which are likely to be more Romanised, would have higher proportions of cattle and to a lesser extent pig than rural civilian sites, which are more likely to continue the native Iron Age tradition. The high proportion of cattle from all phases of the Camp Ground assemblage therefore suggests that the settlement was Romanised and the process of Romanisation can be seen in the decline in the proportion of sheep, which is coupled with an increase in the proportion of pig. Preliminary analysis of the Roman assemblage from Langdale Hale, Colne Fen (Clarke 2003) suggests that this basic pattern is repeated. The results from both assemblages do not, however, mark a considerable change from the preceding local Iron Age economy (Higbee 2000; Swaysland this vol.) although the proportion of sheep is higher, at 36%, than that recorded for any of the Roman phases. At Orton Hall Farm (King 1996) cattle are also the most common species in the Roman phase and there appears to be a slight change from the preceding Iron Age economy at the site; however, at Stonea (Stallibrass 1996) and Haddon (Baxter 2003) sheep are more numerous in the Roman period, indicating that some local sites remained unaffected by Roman influences and maintained a more native economy.

The pattern of relative frequency is a little more complicated when MNI is considered (Figure 31). Cattle is the most common species in Phase II accounting for 66% of MNI, followed by sheep at 30% and then pig at 4%. The proportion of cattle then shows a decline (to 45%), relative to an increase in sheep (to 51%) during Phase III, whilst the proportion of pig remains unchanged. This pattern is reversed in Phase IV and the basic pattern is characteristically more Roman with 56% cattle, 37% sheep and 7% pig. The precise reasons for the discrepancy between the results obtained from the different quantification methods is uncertain but it is generally accepted that MNI is more likely to reflect the true proportions of livestock species since it is less affected by taphonomic and recovery biases. With this in mind it would seem that there was a return to a more native economy during Phase III, perhaps due to market forces (i.e. demand for mutton or wool). It is interesting to note that in Phase IV when the economy reverts to a more Roman-style economy, the proportion of sheep remains relatively high, a strategy of diversification which would make the economy less vulnerable to market fluctuations. This point is particularly relevant given the evidence from other local sites for a preference amongst the native population for mutton and in particular the suggestion that lamb and mutton was a highly marketable commodity for the inhabitants at Stonea (Stallibrass 1996, 605).

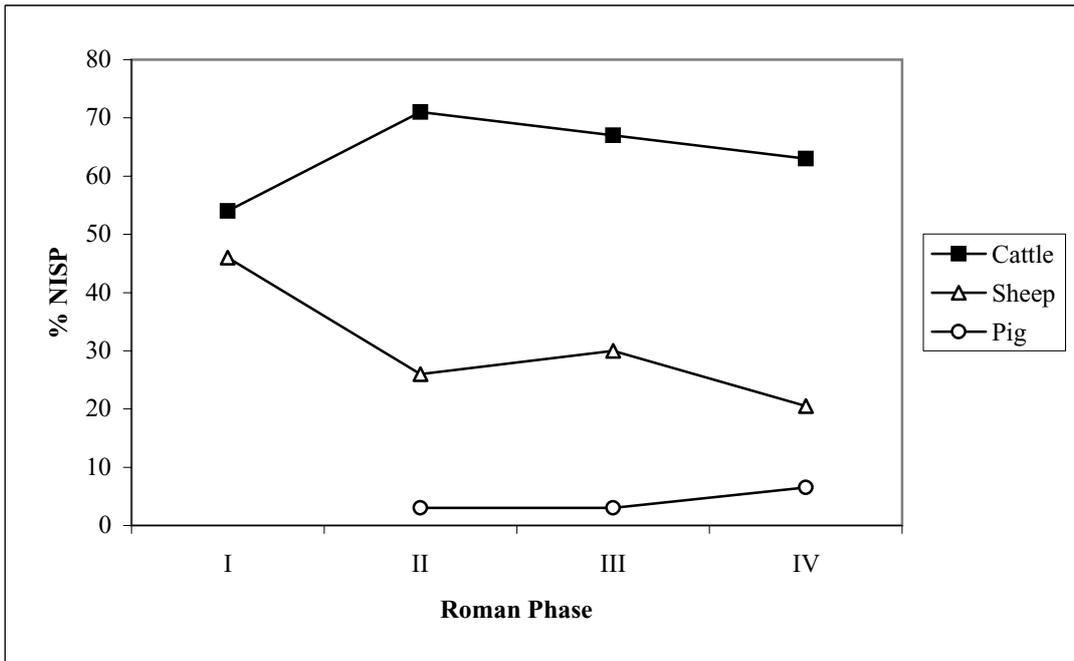


Figure 30. Relative frequency of main livestock species by number of identified specimens (or NISP) and phase for the Camp Ground assemblage.

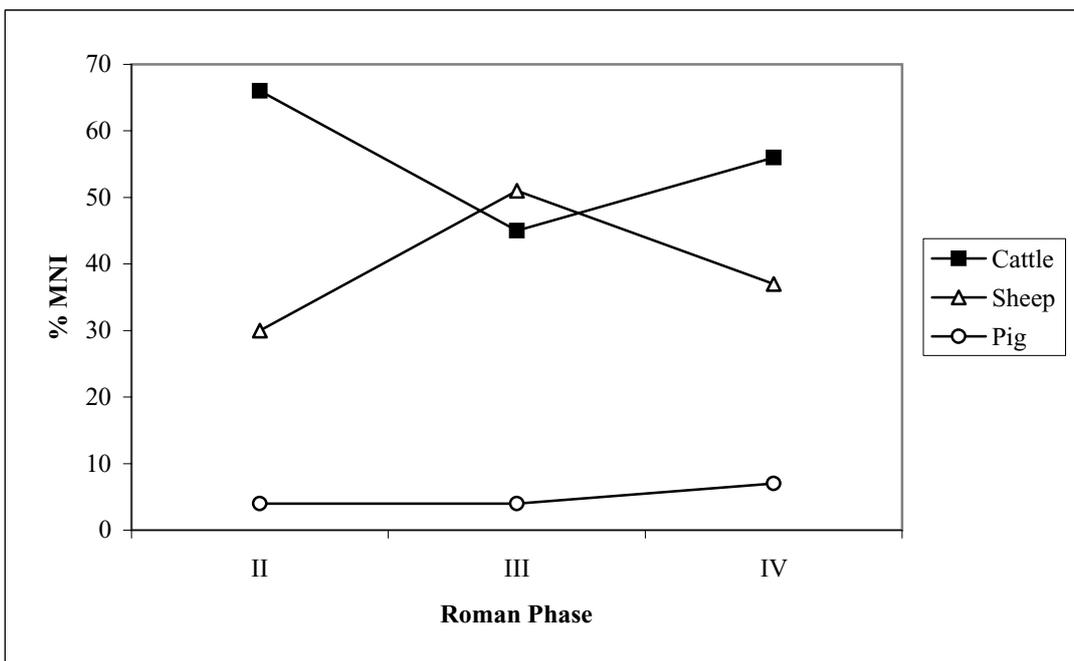


Figure 31. Relative frequency of main livestock species by minimum number of individuals (or MNI) and phase for the Camp Ground assemblage. MNI based upon mandibles and loose teeth only.

Cattle

Body part distribution

All parts of the beef carcass are represented from all of the main phases (II–IV) suggesting local slaughter and consumption (Table 39). Mandibles or loose teeth are by far the most common skeletal elements overall, however this is a product of the sub-sampling method applied to the assemblage. The most common post-cranial elements by phase are scapulae (Phases II and IV) and astragali (Phase III). The relative frequency of these elements to the most common cranial element (i.e. mandibles or loose teeth) ranges from 12%–16% NISP or 13%–32% MNI. The most common post-cranial elements are therefore grossly under-represented in all phases. If the quantity of mandibles and loose teeth is halved in order to take account of the sub-sampling strategy then the relative frequency of the most common post-cranial elements is 13%–32% NISP or 26%–65% MNI. These figures illustrate that even once the figures are adjusted the most common post-cranial elements are still grossly under-represented by the NISP results. However, the MNI figures for some phases, notably Phases II and III, are considerably better, the most common post-cranial elements from these phases are equivalent to 65% of mandibles or loose teeth. If the relative frequency of less common post-cranial elements is considered in relation to the most common post-cranial element then it is clear that although all body parts are represented, most are grossly under-represented. In Phase II humeri are relatively common, whilst in Phase III the second most common element is the scapula, and bones from the lower hind limb (i.e. the distal tibia) and ankle are more common in Phase IV. All of these skeletal elements generally show a good survival and recovery rate in most archaeological assemblages, however aspects of the butchery pattern (see below) suggest that certain processes may have had more to do with the relative frequency of skeletal elements than can be accounted for by survival and recovery alone. Further it is possible that beef was exported from the site after initial dismemberment of the carcass; this would account for the high frequency of cranial fragments and bones from the lower limb, and the under-representation of bones considered to represent joints of high meat value. If beef was exported from the site then it is likely that these were dress joints given the relatively high frequency of distal tibia and ankle bones from some phases (i.e. III and IV). However, small bones from the hoof, which would have been discarded as primary butchery waste, are under-represented, but this could reflect recovery bias.

Butchery

Butchery marks were recorded on *c.* 12% of cattle bones; chop marks are more common than cut marks and this probably reflects size-related butchery techniques. The general pattern is fairly consistent between phases and is in many respects typically Roman, being similar to the butchery recorded on cattle bones from a number of large urban centres such as Lincoln (Dobney *et al.* 1996), Colchester (Luff 1993), Exeter (Maltby 1979) and Chichester (Levitan 1989) to name but a few.

Table 39. Cattle: skeletal elements by number of fragments identified to species (or NISP) and minimum number of individuals (or MNI) by phase for Camp Ground, Earith. Unfused epiphyses are not counted and each individual tooth with a root has been counted, hence the total is greater than the total NISP in table 5. Due to sub-sampling (see methods) the MNI for some elements has been calculated separately for teeth and mandibles (in italics), and post-cranial. The MNI has been calculated as follows: Incisors and phalanges have been divided by 8, deciduous and permanent premolars by 6, M1/2 by 4, and metapodia, by 2. Metacarpus = (MC1 + MC2/2 + MP1/2 + MP2/4) / 2 and Metatarsus = (MT1 + MT2/2 + MP1/2 + MP2/4) / 2. Where: MC1 = complete distal metacarpus; MC2 = half distal metacarpus; MT1 = complete distal metatarsus; MP1 = complete distal metapodium; MP2 = half distal metapodium. % = frequency of an element in relation to the most common one (by MNI).

Skeletal element	Phase									
	I			II			III			
	NISP	MNI	%	NISP	MNI	%	NISP	MNI	%	NISP
<i>Deciduous & permanent incisors</i>				9	2	6.4	6	1	2.9	20
<i>Deciduous & permanent premolars</i>	2	1	50	47	8	25.8	64	11	32.3	127
<i>M1/2</i>	8	2	100	121	31	100	133	34	100	248
<i>M3</i>	4	2	100	36	18	58	54	27	79.4	96
Skull				2	1	10	4	2	18	4
Horncore				2	1	10	6	3	27	2
<i>Mandible</i>	3	2	100	60	30	96.7	66	33	97	135
Scapula				19	10	100	19	10	91	18
Humerus	1	1	100	11	6	60	9	5	45	8
Radius	1	1	100	3	2	20	6	3	27	5
Metacarpus				3.5	2	20	4.75	3	27	3
Pelvis				2	1	10	8	4	36	5
Femur				3	2	20	2	1	9	2
Tibia	2	1	100	2	1	10	8	4	36	11
Astragalus				5	3	30	21	11	100	14
Calcaneus				7	4	40	13	7	64	16
Metatarsus				2.5	2	20	7.25	4	36	3.5
Phalanx 1	1	1	100	5	1	10	28	4	36	18
Phalanx 2				1	1	10	14	2	18	14
Phalanx 3				1	1	10	3	1	9	8
Total	22	11		342	127		476	170		757.5

ber of individuals
 in mandibles has
 the frequency of
 been calculated as
 all other elements,
 IT2/2 + MP1/2 +
 metatarsus; MT2 =
 element expressed

IV	
MNI	%
3	4.4
22	32.3
62	91.1
48	70.5
2	22.2
1	11.2
68	100
9	100
4	44.4
3	33.3
2	22.2
3	33.3
1	11.1
6	66.6
7	77.7
8	88.8
2	22.2
3	33.3
2	22.2
1	11.1
<hr/> 257 <hr/>	

Some aspects of the butchery are also similar to that recorded on cattle bones from local rural sites such as, for example, Haddon (Baxter 2003), however information on butchery has not been so extensively reported on these types of sites. General points include: chop and cut marks on the diastema and ascending ramus of mandibles which can be attributed to disarticulation from the skull; chop, and in some cases cut marks at major joints, such as the shoulder, elbow, hip, knee and ankle, which can be attributed to primary dismemberment; and a more random series of other chop and cut marks, and shallow scoops located on long bone shafts — these marks can generally be related to the reduction of individual joints and filleting meat off the bone. Notable points of interest in the butchery pattern include the evidence for cured shoulder joints and processing of long bones for marrowfat.

A number of scapulae from each of the three main phases were recorded with the characteristic butchery marks indicative of the curing process (Dobney 2001). These marks include removal of the processes coracoideus and spina, and cut or nick marks on the dorsal aspect of the neck and on the margo thoracalis and/or cranial border. A small number were also noted with the characteristic damage caused by a butchers hook (Plate IV). Differences in the combination of butchery marks have been used to suggest that different curing processes have been employed (Dobney *et al.* 1996, 27). For example, scapulae with trimmed glenoid cavities and spinae are thought to represent cold-smoked (i.e. brined) joints, whilst scapulae with little or no evidence for trimming of these areas are thought to represent hot-smoked joints. It is unclear whether scapulae from the Camp Ground assemblage represent cold- or hot-smoked joints; no trimmed glenoid cavities were recorded (although this area of the scapula was frequently damaged by canid gnawing), however trimming or removal of the spina was common. Cold-smoking preserves the meat for long-term storage, whilst hot-smoked joints have a shorter shelf life. Whatever process of curing is employed, meat would have been filleted off the bone resulting in numerous fine cut and nick marks across the bones' surface. This type of butchery has been noted at a wide variety of Roman sites up and down the country (Maltby 1985 and 1989) as well as on the continent (Lauwerier 1988), many of which have a military connection. It has been suggested (Grant 1987; Maltby 1989) that the establishment of a standard butchery practice may have originated in response to military food requirements and the presence of processed scapulae in non-military contexts suggests that professional butchers supplying the domestic market also took up this tradition.

Large collections of axially (or longitudinally) split long bone shaft fragments were recovered from three Phase III.1 postholes ([2734], [7334] and [7337]) forming part of Structure 24 within Compound 43. The excavator has interpreted the structure as a possible shrine but the association of this type of bone waste with a religious structure is not what one would expect. None of the material is included in the NISP totals since it includes only extensively butchered shaft fragments (Plate V). Shaft fragments were identified to element were possible; tibiae and radii are common, forming from 58%–72% of shaft fragments per feature.

Plate IV. Cattle scapula with damage caused by butchers hook (scale 15cm).



Plate V. Large collection of axially split cattle long bones from Structure 24 Period III.



Humeri, femora and ulnae were also present but metapodial fragments were entirely absent. As well as having been split axially, most shaft fragments have cut or nick marks, usually shallow scoops, on their surfaces suggesting that meat was filleted off the bone prior to the shaft being split open. Similar large concentrations of this type of bone waste have been recovered from a number of large urban settlements around the country including Carlisle (Rackham 1991), York (O'Connor 1988) and Lincoln (Dobney *et al.* 1996) and it has been suggested that bone collects of this type represent waste from the processing of bones for marrow, marrow products, fats and products such as leather dressing, cosmetics and soap, and are not simply the waste from a soup kitchen (Stokes 2000).

In addition to butchery marks, a small number of cattle-sized fragments, two long bones and a rib had been worked. Both of the long bone shaft fragments had been modified to form basic points and have polished surfaces from use. The rib fragment also has a highly polished surface on one side and this as noticeably flattened the profile of the bone.

Ageing

Epiphyseal fusion data for cattle is presented in Table 40. This indicates that the majority of cattle in all phases were culled as adult animals with only a small proportion culled as immature and sub-adult individuals. It is interesting to note that the proportion of cattle culled before 2–2½ years (intermediate fusion category) and 3½–4 years (late fusion category) is highest in those phases which MNI values suggest have a more Romanised economy. The available age data from mandibles retaining two or more teeth is presented in Table 41. This data shows that from 30%–41% of all cattle in each phase were culled as adult animals. The proportion of sub-adult cattle is also fairly high in all phases, accounting for 23%–27% of mandibles, and the proportion of elderly cattle is relatively high in Phases II and III but in Phase IV there are more immature and juvenile cattle than elderly cattle. A similar kill-off pattern emerges if the information from loose teeth is amalgamated with that from teeth retained within mandibles (Table 42). A gross indication of the basic proportions of cattle within each age class can be gleaned from the ratio of deciduous fourth premolars (or dp4s) and permanent premolars (or p4s). The dp4 is usually lost and replaced by the p4 at around 28–36 months (Silver 1969, 286) and the proportion of cattle below this age is estimated to be 51% in Phase II, 56% in Phase III and 65% in Phase IV. It would therefore seem that the majority of cattle in all phases were managed primarily for beef and that the demand for prime beef intensified throughout the Roman phase. The presence of elderly cattle also suggests that breeding stock were maintained and probably utilised for milk or traction.

Table 40. Cattle: number and percentage of fused epiphyses by phase for Camp Ground, Earith. Fusion categories categories after O'Connor (1989). Fused and fusing epiphyses are amalgamated. Only unfused diaphyses, not epiphyses are counted. F = total number of fused/ing epiphyses; % = percentage of fused/ing epiphyses out of the total number of fused/ing epiphyses and unfused diaphyses (U).

Fusion category	Phase											
	I			II			III			IV		
	F	U	% F	F	U	% F	F	U	% F	F	U	% F
Early	2		100	29		100	57	6	90	50	1	98
Intermediate	2		100	11	7	61	26	4	87	15	8	65
Late	1	1	50	5		100	6	2	75	5	3	63
Final				13	5	100	5	5	50	11	9	55

Table 41. Cattle: mandibular wear stages (categories after O'Connor 1989) by period for Camp Ground, Earith. See appendix 4 for complete list of individual mandibles. Only mandibles with two or more teeth (with recordable wear) in the dp4/p4-M3 row are considered

Mandibular wear stage	Phase							
	I		II		III		IV	
	N	%	N	%	N	%	N	%
Juvenile			1	2	5	8	12	10
Immature			2	4	3	5	12	10
Immature/Subadult	1	33	5	9	1	1.5	3	2.5
Subadult	2	67	13	25	16	27	27	23
Subadult/Adult					1	1.5		
Adult			16	30	22	37	49	41
Adult/Elderly			1	2			1	1
Elderly			15	28	12	20	15	12.5

Table 42. Cattle: wear stages of individual teeth (following Grant 1982) by phase from Camp Ground, Earith. Both teeth in mandibles and isolated teeth are included. Grant's stage "U" is considered equivalent to stage "a". Unworn isolated teeth which could have been in one of the eruption stages (C, V, E, H) are coded as "a".

	Phase	C	V	E	H	a	b	c	d	e	f	g	h	j	k	l	m	n	o	p	*
dp4	I													2							
	II					2	1		1		1			13	4	2					
	III					1	2		3		4		2	9	5	3		1			6
	IV					1	7	1	6		9		3	31	15	1					
p4	I																				
	II					1		2		4	4	8	2	2							
	III					1		1	2	5	7	5	5	1	1						
	IV		1				1	8	4	6	7	7	8	1							
M1	I						1					1									
	II			3			4	1			6	5	1	4	10	7	3	3	1		2
	III			3		2	2		3		1	14		6	9	8	5				2
	IV		1	4		9	2	1	3		9	22	1	16	27	12	4				1
M1/2	I						1								1	1					
	II					2	5	1	1	1	3	3		1	3	4	1		1		2
	III					6	8		1			5	1		3	1	2	1			2
	IV		1			5	6	1	1		2	8		4	2	3					
M2	I						1		1		1										
	II	3				1	6		2	2		6		3	12	3	3	1			1
	III	1					7		1	3	8	2		7	10	7			1		1
	IV	4	3			3	13		6	2	12	15	2	14	16	8					
M3	I	2				1								1							
	II	5		3		1	1		2		1	6	1	4	4	6	2				
	III	6		3		3	8		1		3	12		5	8	4					1
	IV	15	5	4		3	11		1		9	29		8	5	1					

Pathology and non-metric traits

Pathological changes were noted on a small proportion of cattle bones (0.7% of the total). Two cases of spavin were noted on metatarsals, one from the Phase II assemblage and the other from Phase III. Other cases of joint disease include two instances of eburnation on the acetabulum, or socket joint, of pelvises from Phase III and IV. The evidence for joint disease, particularly the two cases of spavin, supports the notion that some cattle may have been used for traction.

Dental pathologies were also noted and include ante-mortem loss of the second molar (or m2) recorded on a mandible from Phase II and recession of the alveoli (or tooth sockets) around the premolar teeth of a mandible from Phase IV. An incisor tooth, also from Phase IV, was recorded with a marked V-shaped groove located at the junction between the crown and the root. Grooves of this type are thought to relate to the animal having to pull long grass between its teeth during grazing and perhaps indicates the lush nature of Fenland pasture during the Roman period.

Non-metric traits are few and of those recorded, the reduction or absence of the hypoconulid (or 3rd cusp) of the third molar (or m3) was the most common and the proportion of affected teeth from each phase is fairly constant, at 5%–8% of all m3s. Absence of the second premolar (or p2) was noted for one out of 11 mandibles from Phase II where it was possible to assess this part of the jaw. The presence of a premolar foramina and abnormalities to the mental foramina (i.e. double foramina) were noted on separate mandibles from the Phase IV assemblage; the ratio of each of these traits was 1 in 50. All of these non-metric traits are thought to have a genetic origin but their significance at present is little understood.

Biometry

Summary descriptive statistics of all cattle bone and teeth measurements with five or more cases per phase are given in Table 43. Limited statistical analysis, using a student's t-test and assuming equal variance between samples, was carried out where possible to reveal any significant changes in the size or conformation of cattle between phases. Significant differences were noted between the greatest lateral length (Gli: $t = 1.86$ and $P = 0.04$) and distal breadth (Bd: $t = 3.49$ and $P = 0.00$) of astragali from Phases III and IV; these differences were significant at the 5% and 1% probability levels respectively and mark a significant reduction in the size of astragali overtime. Similar analysis of the length (L) and width (Wa) of the third molar (or m3) failed to reveal any significant differences between Phases II and III but the differences between Phases III and IV were significant at the 5% probability level for both these measurements (L: $t = 2.26$ and $P = 0.01$; Wa: $t = 1.60$ and $P = 0.05$), and once again mark a significant reduction in the size of the m3 over time. Comparison of these measurements with data from contemporary local sites such as Haddon (Baxter 2003), Stonea (Stallibrass 1996) and Orton Hall Farm (King 1996) indicates that post-cranial elements generally fall within expected ranges; however m3s from all phases are consistently smaller than at other sites. If withers (or

Table 43. Cattle: Summary descriptive statistics of common measurements (over 5 cases) for Camp Ground, Earith. Where N = number; Min = minimum; Max = maximum; M = mean; SD = standard deviation and CV = coefficient of variance.

Phase	Skeletal element	Measurement	N	Min	Max	M	SD	CV
III	Astragalus	Gli	10	613	698	641	26.1	4
IV	Astragalus	Gli	8	558	645	617	29.1	4.7
III	Astragalus	Di	9	316	369	332	15.7	4.7
IV	Astragalus	Di	8	307	347	326	15.1	4.6
III	Astragalus	Bd	13	365	419	399	15.5	3.8
IV	Astragalus	Bd	10	360	396	378	12.9	3.4
II	Humerus	SD	5	260	341	304	32.1	10.5
II	Humerus	BT	5	657	767	699	44	6.2
II	Humerus	HTC	8	275	325	301	17.1	5.6
III	Metacarpal	Gl	6	1775	1865	1818	31.2	1.7
III	Metacarpal	SD	6	263	351	295	33.4	11.3
III	Metacarpal	BatF	6	420	563	486	47.2	9.7
III	Metacarpal	BFd	6	456	623	535	54	10
III	Metacarpal	A	6	207	300	253	30.6	12.1
III	Metacarpal	B	6	223	285	253	21.4	8.4
III	Metacarpal	1	5	219	265	237	17	7.1
III	Metacarpal	2	6	197	248	213	18.1	8.4
III	Metatarsal	Gl	9	2055	2185	2096	37.1	1.7
III	Metatarsal	SD	9	233	276	255	15.2	5.9
III	Metatarsal	BatF	9	430	494	469	18.7	3.9
III	Metatarsal	BFd	9	478	533	501	18.6	3.7
III	Metatarsal	A	8	228	254	236	8.9	3.7
III	Metatarsal	B	9	209	244	227	9.8	4.3
III	Metatarsal	1	8	216	252	230	10.4	4.5
III	Metatarsal	2	9	199	231	210	10	4.7
IV	Tibia	Bd	6	512	625	567	40.7	7.1
II	M3	Wa	29	107	173	143	17.2	12
III	M3	Wa	39	92	164	138	16.9	12.2
IV	M3	Wa	66	103	159	130	14.8	11.3
II	M3	L	29	269	378	339	32.9	9.7
III	M3	L	37	286	390	345	22.8	6.6
IV	M3	L	63	238	391	335	32.5	9.6

shoulder) height estimates are taken into account (see Table 57) then there is little overall size increase over time or in comparison to cattle from other local sites. However, the lower end of the size range in later phases (II and IV) is outside the range of measurements recorded elsewhere. The Camp Ground cattle have a mean withers height estimate of between 110cm–111.8cm.

Sheep/Goat

Body part distribution

Most parts of the mutton carcass are represented in the assemblage with one or two exceptions (Table 44); however, all post-cranial elements are grossly under-represented and this is not simply a reflection of the sub-sampling method. Post-cranial bones together account for only 5%–7% NISP and if the number of mandibles and loose teeth is halved to counteract the sub-sampling strategy then this rises slightly to 11%–15%. This suggests that the majority of sheep raised, slaughtered and butchered at the site were not consumed locally, but exported from the site as undressed carcasses. Stallibrass (1996) came to a similar conclusion based upon the body part distribution of sheep from Stonea.

Butchery

Chop and cut marks were only observed on five sheep bones and this is thought to reflect the fact that sheep carcasses are likely to have been dismembered with a sharp knife, a practice which if carried out by a skilled butcher leaves very few marks on bone.

One metacarpal from a Phase IV ditch fill was recorded with a circular hole through the medial proximal articular surface. The bone was otherwise unmodified and its precise function is uncertain.

Ageing

The limited age information available from epiphyseal fusion of the post-cranial skeleton is given in Table 45. Due to the small sample size from all phases the age information available from tooth eruption and wear is considered to be more useful. A summary of mandibular wear stage data for mandibles retaining two or more teeth is given in Table 46 and the mortality profiles obtained from this data are illustrated in Figure 32a-c. The data indicates that although sheep from a wide range of ages are represented, most sheep were killed as lambs aged 6–12 months or as 1–2 year olds; no foetal or neonatal lamb bones were recovered. In fact, almost a third of sheep in Phase II were killed as lambs (wear stage C after Payne 1973); in Phase III this falls to 22% and rises to 26% in Phase IV. The proportion culled during their first or second year (i.e. wear stage D) ranges from 47%–60%. This general pattern is repeated when the wear data from isolated teeth is amalgamated with the data from mandibles (Tables 47 and 48).

Table 44. Sheep/Goat: skeletal elements by number of fragments identified to species (or NISP) and minimum individuals (or MNI) by phase for Camp Ground, Earith. Unfused epiphyses are not counted and each individual mandible has been counted, hence the total is greater than the total NISP in table 5. Due to sub-sampling (frequency of elements has been calculated separately for teeth and mandibles (in italics), and post-cranial. Total calculated as follows: Incisors and phalanges have been divided by 8, deciduous and permanent premolars by other elements, except metapodia, by 2. Metacarpus = (MC1 + MC2/2 + MP1/2 + MP2/4) / 2 and Metatarsus = (MT1 + MT2 + MP1/2 + MP2/4) / 2. Where: MC1 = complete distal metacarpus; MC2 = half distal metacarpus; MT1 = complete distal metatarsus; MT2 = half distal metatarsus; MP1 = complete distal metapodium; MP2 = half distal metapodium. Total an element expressed in relation to the most common one (by MNI).

Skeletal element	Phase									
	I			II			III			NISP
	NISP	MNI	%	NISP	MNI	%	NISP	MNI	%	
<i>Deciduous & permanent incisors</i>				6	1	7	6	1	3	3
<i>Deciduous & permanent premolars</i>	10	2	40	28	5	36	90	15	38	77
<i>M1/2</i>	17	5	100	53	14	100	140	35	90	179
<i>M3</i>	7	4	80	19	10	71	51	16	41	68
Skull							1	1	33.3	2
Horncore							1	1	33.3	
<i>Mandible</i>	10	5	100	27	14	100	77	39	100	87
Scapula	1	1	100	2	1	100	1	1	33.3	1
Humerus				1	1	100	1	1	33.3	4
Radius										1
Metacarpus				1	1	100	1.5	2	66.6	2
Pelvis				1	1	100	1	1	33.3	1
Femur							5	3	100	
Tibia				2	1	100	4	2	66.6	6
Astragalus							1	1	33.3	2
Calcaneus							1	1	33.3	
Metatarsus				1	1	100				2.5
Phalanx 1				2	1	100	2	1	33.3	1
Phalanx 2										
Phalanx 3										
Total	45	17		143	51		384	121		436.5

imum number of
 dual tooth within
 (see methods) the
 he MNI has been
 6, M1/2 by 4, all
 = $(MT1 + MT2)/2$
 = complete distal
 % = frequency of

IV	
MNI	%
<i>1</i>	<i>2</i>
<i>13</i>	<i>29</i>
<i>45</i>	<i>100</i>
<i>34</i>	<i>76</i>
<i>1</i>	<i>33.3</i>
<i>44</i>	<i>98</i>
<i>1</i>	<i>33.3</i>
<i>2</i>	<i>66.6</i>
<i>1</i>	<i>33.3</i>
<i>1</i>	<i>33.3</i>
<i>1</i>	<i>33.3</i>
<i>3</i>	<i>100</i>
<i>1</i>	<i>33.3</i>
<i>2</i>	<i>66.6</i>
<i>1</i>	<i>33.3</i>

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Table 45. Sheep/Goat: number and percentage of fused epiphyses by phase for Camp Ground, Earith. Fusion categories categories after O'Connor (1989). Fused and fusing epiphyses are amalgamated. Only unfused diaphyses, not epiphyses are counted. F = total number of fused/ing epiphyses; % = percentage of fused/ing epiphyses out of the total number of fused/ing epiphyses and unfused diaphyses (U).

Fusion category	Phase								
	II			III			IV		
	F	U	% F	F	U	% F	F	U	% F
Early	2	1	67	2		100	6		100
Intermediate I	3		100	5	1	83	5	1	83
Intermediate II	2	2	50	4	1	80	11	1	92
Late				3	2	60	1		100
Final	1	1	50	1	1	50	1	1	50

Table 46. Sheep/Goat: mandibular wear stages (categories after Payne 1973) by phase for Camp Ground, Earith. See Appendix 4 for complete list of individual mandibles. Only mandibles with two or more teeth (with recordable wear) in the dp4/p4-m3 row are considered.

Mandibular wear stage	Phase							
	I		II		III		IV	
	N	%	N	%	N	%	N	%
C	1	11.1	8	30.5	13	18	19	23
D	1	11.1	7	27	15	21	17	20.4
D/E					2	2.8	1	1.2
D-F					7	9.8	2	2.4
E	3	33.3			9	13	11	13.2
E/F			1	4	1	1.4	2	2.4
E-G					1	1.4	2	2.4
F	2	22.2	5	19	9	13	12	14.4
F-G					1	1.4	3	3.6
G	1	11.1	1	4	10	14	12	14.4
H	1	11.1	3	11.5	1	1.4	2	2.4
H/I								
I			1	4	2	2.8		

led.

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Table 48. Sheep/Goat: kill-off pattern based upon single teeth (dp4/p4 and m3) and teeth (dp4/p4 and m3) in mandibles (following Payne 1973 and 1988) by phase for Camp Ground, Earith.

Phase	Age range	Tooth	Wear stage	% killed within age range	cumulative % killed	Age
I	0-2 years	3 dp4		30	30	c. 2 years
	>2 years	7 p4		70		
	2-3 years	1 m3	2-4	10	40	c. 3 years
	3-5 years	4 m3	5-10	40	80	c. 5 years
	6-10 years	2 m3	11G	20	100	c. 10 years
	>10 years	m3	>11G			
II	0-2 years	17 dp4		61	61	c. 2 years
	>2 years	11 p4		39		
	2-3 years	1 m3	2-4	3	64	c. 3 years
	3-5 years	5 m3	5-10	15	79	c. 5 years
	6-10 years	6 m3	11G	18	97	c. 10 years
	>10 years	1 m3	>11G	3	100	
III	0-2 years	28 dp4		45.2	45.2	c. 2 years
	>2 years	34 p4		54.8		
	2-3 years	4 m3	2-4	6.1	51.3	c. 3 years
	3-5 years	18 m3	5-10	27.4	78.7	c. 5 years
	6-10 years	12 m3	11G	18.3	97	c. 10 years
	>10 years	2 m3	>11G	3	100	
IV	0-2 years	38 dp4		48.7	48.7	c. 2 years
	>2 years	40 p4		51.3		
	2-3 years	4 m3	2-4	4.2	52.9	c. 3 years
	3-5 years	23 m3	5-10	24.6	77.5	c. 5 years
	6-10 years	21 m3	11G	22.5	100	c. 10 years
	>10 years	m3	>11G			

Table 49. Sheep/Goat: Summary descriptive statistics of common measurements (over 5 cases) for Camp Ground, Earith. Where N = number; Min = minimum; Max = maximum; M = mean; SD = standard deviation and CV = coefficient of variance.

Phase	Skeletal element	Measurement	N	Min	Max	M	SD	CV
I	M1	Wa	8	61	81	66.8	6.1	9.1
II	M1	Wa	20	56	81	67.7	6.3	9.3
III	M1	Wa	62	56	81	70.5	5.1	7.2
IV	M1	Wa	76	56	81	70.6	5.7	8
II	M1/2	Wa	10	63	89	75.6	8.8	11.6
III	M1/2	Wa	12	63	85	73.4	6.7	9.1
IV	M1/2	Wa	30	62	81	73	4.8	6.5
I	M2	Wa	7	59	80	71.7	6.8	9.4
II	M2	Wa	16	64	85	75.6	6.5	8.5
III	M2	Wa	50	64	86	74.6	5.8	7.7
IV	M2	Wa	59	63	90	76.6	4.8	6.2
I	M3	Wa	6	67	89	73.5	8.5	11.5
II	M3	Wa	16	66	88	77.7	5.8	7.4
III	M3	Wa	36	66	91	75.8	5.7	7.5
IV	M3	Wa	53	66	92	76.9	5.5	7.1

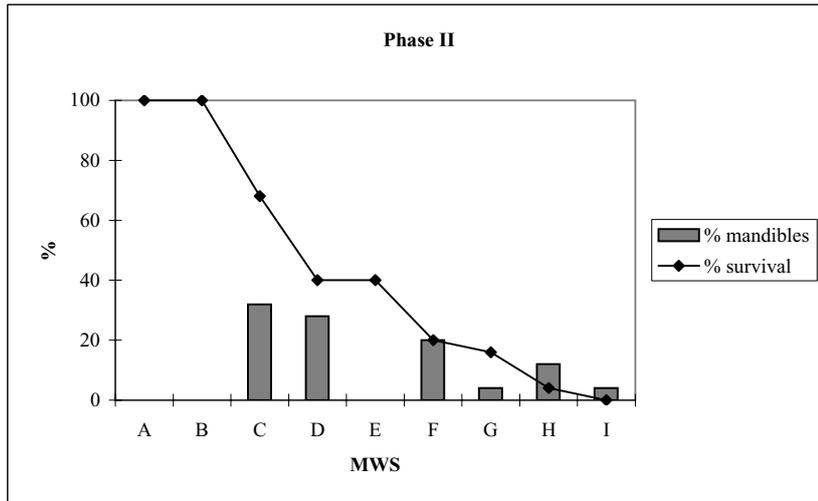


Figure 32a. Mortality profile of sheep population from Phase II Camp Ground, Earith.

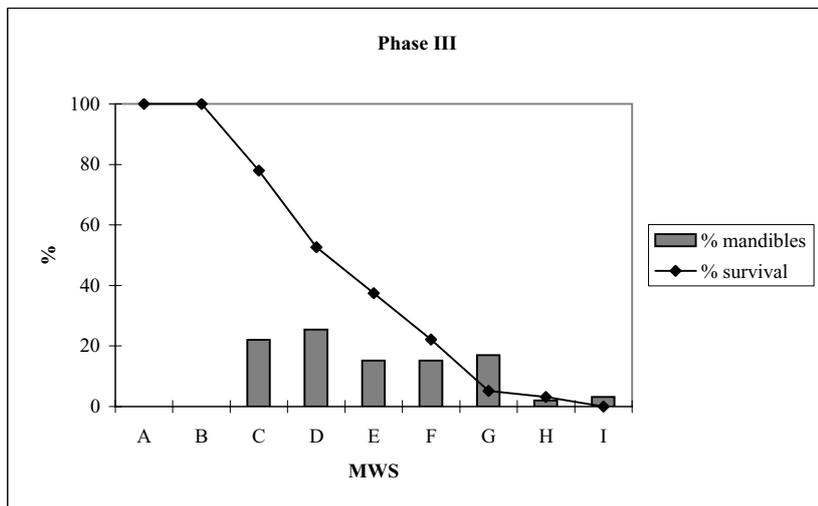


Figure 32b. Mortality profile of sheep population from Phase III Camp Ground, Earith.

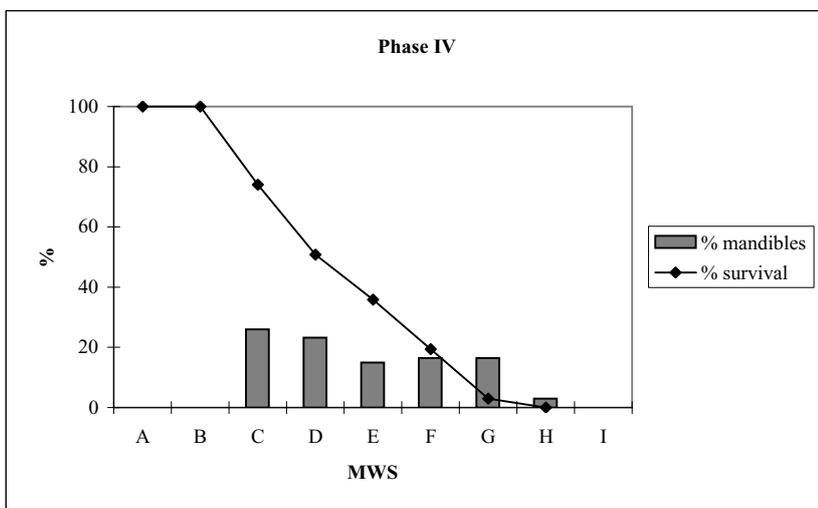


Figure 32c. Mortality profile of sheep population from Phase IV Camp Ground, Earith.

The kill-off pattern suggests that sheep were primarily managed for meat in all phases and this interpretation is supported by comparison of the Camp Ground data with Payne's (1973) mortality profiles for specialised meat production. The interpretation also fits well with the evidence from skeletal element distribution for the export of lamb and prime mutton from the site.

Pathology and non-metric traits

No pathological conditions were noted on any sheep bones but a significant number of mandibles from each of the main phases were recorded with over-crowded teeth. In all cases, only teeth in the anterior part of the mandible were affected, typically the p3–m1, or just the p4–m1. Over-crowding results in inter-dental attrition and in one case the distal cusp of the deciduous fourth premolar (or dp4) was retained in position between the permanent p4 and m1. The instance of this aberrant condition varied from one in 14 mandibles in Phase II, five in 39 in Phase III and 11 in 44 in Phase IV. Thus the condition appears to have become more prevalent overtime and probably reflects genetic characteristics and/or a susceptibility to environmental stress (e.g. malnutrition). The condition has not been systematically recorded on archaeological material and may therefore have been more common than published sources suggest. Roman sheep mandibles with the condition have been recorded from Middleton Stoney, Oxfordshire (Levitan 1984) and more recently from Kilverstone, Norfolk (Higbee in prep.).

Non-metric traits are rare but include one instance each from all three of the main phases of the presence of a premolar foramina and one instance of a double mental foramina from the Phase III assemblage; a prevalence of 1 in 14 (II), 1 in 36 (III) and 1 in 38 (IV) of mandibles where it was possible to assess this area.

Biometry

Summary descriptive statistics of common measurements with five or more cases per phase are given in Table 49. Comparison of these measurements between phases is limited to tooth widths and a few statistically significant differences were noted. The width (or W_a) of the first molar (or m1) was significantly different between Phases II and III ($t = -2.01$; $P = 0.02$); whilst the width of the second molar (or m2) was significantly different between Phases III and IV ($t = -1.91$; $P = 0.02$) and the width of the third molar (or m3) was significantly different between Phases I and II ($t = -1.33$; $P = 0.09$), all with a less than 5% probability that the differences are due to chance. Mean values and ranges were comparable to those recorded for Haddon (Baxter 2003).

Withers height estimates are given in Table 57 and do not indicate any significant increase in stature over time, although the sample is extremely small. The Camp Ground sheep are of similar stature, at *c.* 63cm–64cm, to those from other local sites such as Haddon (Baxter 2003), Orton Hall Farm (King 1996) and Stonea (Stallibrass 1996).

Table 50. Pig: skeletal elements by number of fragments identified to species (or NISP) and minimum number of individuals (or MNI) by phase for Camp Ground, Earith. Unfused epiphyses are not counted and each individual tooth within mandibles has been counted, hence the total is greater than the total NISP in table 38. Due to sub-sampling (see methods) the frequency of elements has been calculated separately for teeth and mandibles (in italics), and post-cranial. The MNI has been calculated as follows: Incisors and phalanges have been divided by 8, deciduous and permanent premolars by 6, M1/2 by 4, all other elements, except metapodia, by 2. Metacarpus = $(MC1 + MC2/2 + MP1/2 + MP2/4) / 2$ and Metatarsus = $(MT1 + MT2/2 + MP1/2 + MP2/4) / 2$. Where: MC1 = complete distal metacarpus; MC2 = half distal metacarpus; MT1 = complete distal metatarsus; MT2 = half distal metatarsus; MP1 = complete distal metapodium; MP2 = half dist metapodium. % = frequency of an element expressed in relation to the most common one (by MNI).

Skeletal element	Phase								
	II			III			IV		
	NISP	MNI	%	NISP	MNI	%	NISP	MNI	%
<i>Deciduous & permanent incisors</i>	3	1	50	4	1	33	8	1	12.5
<i>Deciduous & permanent premolars</i>	1	1	50	3	1	33	13	3	37.5
<i>M1/2</i>	3	1	50	5	1	33	15	4	50
<i>M3</i>	1	1	50	1	1	33	1	1	12.5
Skull									
<i>Mandible</i>	3	2	100	5	3	100	15	8	100
Scapula	1	1	100				2	1	100
Humerus							1	1	100
Radius									
Metacarpus				1	1	100	2	1	100
Pelvis									
Femur				1	1	100	1	1	100
Tibia							1	1	100
Astragalus									
Calcaneus							1	1	100
Metatarsus									
Phalanx 1									
Phalanx 2									
Phalanx 3									
Total	12	7		20	9		60	23	

Table 51. Pig: number and percentage of fused epiphyses by phase for Camp Ground, Earith. Fusion categories after O'Connor (1989). Fused and fusing epiphyses are amalgamated. Only unfused diaphyses, not epiphyses are counted. F = total number of fused/ing epiphyses; % = percentage of fused/ing epiphyses out of the total number of fused/ing epiphyses and unfused diaphyses (U). D =distal, a = acetabulum.

Fusion category	Phase					
	F	III		F	IV	
		U	% F		U	% F
Early				2		100
Intermediate I		1	0	1	2	33
Intermediate II					1	0
Late		1	0		1	0

Table 52. Pig: mandibular wear stages (categories after O'Connor 1989) by phase for Camp Ground, Earith. See appendix 4 for complete list of individual mandibles. Only mandibles with two or more teeth (with recordable wear) in the dp4/p4-m3 row are considered.

Mandibular wear stage	Phase					
	II		III		IV	
	N	%	N	%	N	%
Juvenile			1	25	2	25
Immature			1	25	2	25
Subadult	1	50	1	25	4	40
Adult	1	50	1	25		

Table 54. Pig: Summary descriptive statistics of common measurements (over 5 cases) for Camp Ground, Earith. Where N = number; Min = minimum; Max = maximum; M = mean; SD = standard deviation and CV = coefficient of variance.

Phase	Skeletal element	Measurement	N	Min	Max	M	SD	CV
IV	M1	Wa	6	89	107	96.6	7.2	7.4
IV	M1	Wp	6	99	110	102.5	4.2	4
IV	M1	L	6	156	183	167.3	11.4	6.8
IV	M2	Wa	5	103	130	117	10.8	9.2
IV	M2	Wp	5	109	131	119.8	8.9	7.4
IV	M2	L	5	161	232	208.4	28.5	7.3

Pig

Body part distribution and butchery

Despite taking into account the bias created by the sub-sampling method there are too few post-cranial bones to assess body part distribution (Table 50). This might indicate that pork was also exported from the site but given the overall low frequency of pig remains from each phase it is better to be cautious with the available evidence.

Given the low incidence of post-cranial bones and the probability that pig carcasses were dismembered in much the same way as sheep, it is not too surprising that no butchery marks were observed on any post-cranial elements.

Ageing and sexing

The information available from epiphyseal fusion of the post-cranial skeleton, and tooth eruption and wear is given in Tables 51–53 but is of limited analytical value. The majority of pig bones and teeth from all phases are from juvenile, immature and sub-adult animals. Pigs are primarily meat animals and are usually killed at a relatively young age in most societies.

Both sexes are represented in Phases III and IV although there are more females than males. In phase III the ratio is 3:1, whilst in Phase IV it is 4:3, and only one male was recorded for Phase II.

Pathology, non-metric traits and biometry

No pathological conditions or non-metric traits were recorded on any pig bones. Summary descriptive statistics of common measurements are presented in Table 54 and are only available for the first and second molars (or m1 and m2) from Phase IV.

Horse

Horse bones are more abundant in the assemblage than pig bones, accounting for 8% of the total NISP (Table 38), a similar abundance was noted for the Langdale Hale (Clarke 2003) and Haddon assemblages (Baxter 2003). There is a decline in the relative frequency of horses over time from 15% NISP in Phase II to 5.4% in Phase IV. King (1978) in his survey of animal bone assemblages from Roman sites in Britain, noted that sites in the Fenlands tend to have higher percentages of horse and suggested that this might be a result of ranching. Relatively high percentages of horse, including bones from foals and juveniles, have been recorded from Iron Age sites located in Colne Fen (Higbee 2000) and could indicate that the ranching tradition seen in the Roman phase had its roots

in the preceding Iron Age. Therefore, although many aspects of the assemblage are characteristically Roman, some economic traditions may have continued.

Body part distribution

Most horse bones occur as isolated finds from individual contexts but some groups of associated bones, that is bones which could potentially be from the same individual, or collections of bones from two or more individuals, were noted from all phases, and these tended to be from ditches. Body part distribution and MNI values are presented in Table 55. The MNI values indicate the same decline in frequency reflected by NISP; there are at least four individuals in Phase II, and three from Phases III and IV. Mandibles and loose teeth are common and when the figures are adjusted to reflect the sub-sampling strategy, the relative frequency of post-cranial elements shows a better ratio than that recorded for livestock species. In fact post-cranial elements account for 80% NISP in Phase II, 55% in Phase III and 68% in Phase IV. This suggests that if horse carcasses were utilised, then they were processed on site.

Butchery

The apparently random scattering of horse bones across the site suggests that horse carcasses were probably utilised; however only one bone, a radius from Phase III, was recorded with butchery marks. Chop marks consistent with disarticulation from the humerus and ulna were recorded on the proximal articulation and shaft. A relatively high incidence of butchery marks was noted on horse bones from the Langdale Hale site, which Clarke (2003) suggests is clear evidence for the consumption of horsemeat.

Ageing

Information from epiphyseal fusion of post-cranial elements is summarised in Table 56; this shows that both immature and adult horses are represented in the assemblage. The information from tooth eruption and wear supports this and indicates that immature horses are represented in all phases. The age of horses ranges from newborn foals through to mature adults. An unworn deciduous tooth was recorded from the Phase IV assemblage and the mandible from a 7–14 month old foal was recorded from the Phase II assemblage. This is reasonable evidence that the breeding and rearing of horses was taking place on site during these phases. A number of mandibles from juvenile animals, aged *c.* 2½ or 3½–4½ years, were also recorded from each of the main phases, although the majority are from Phase II. It is unlikely that these animals would have been put to work although training would almost certainly have been initiated at a young age in order to weed out animals with less favourable temperaments. The adult horses also range in age and tooth wear suggests that some may be up to *c.* 15 or 20 years of age (Levine 1982). Both immature and adult horses have been recorded from other local sites, such as Haddon, Orton Hall Farm and Stonea; however no newborn foals were recorded for any of these sites, although a 9–12 month old horse was identified from Haddon but Baxter (2003) does not state that this is sufficient evidence for local breeding.

Table 55. Horse: skeletal elements by number of fragments identified to species (or NISP) and minimum number of individuals (or MNI) by phase for Camp Ground, Earith. Unfused epiphyses are not counted and each individual tooth within mandibles has been counted, hence the total is greater than the total NISP in table 4. Due to sub-sampling (see methods) the frequency of elements has been calculated separately for teeth and mandibles (in italics), and post-cranial. The MNI has been calculated as follows: Incisors have been divided by 8, deciduous and permanent premolars by 6, M1/2 and phalanges by 4, all other elements by 2. % = frequency of an element expressed in relation to the most common one (by MNI).

Skeletal element	Phase											
	I			II			III			IV		
	NISP	MNI	%	NISP	MNI	%	NISP	MNI	%	NISP	MNI	%
<i>Deciduous & permanent incisors</i>				14	2	50	21	3	100	7	1	33.3
<i>Deciduous & permanent premolars</i>				22	4	100	18	3	100	18	3	100
<i>M1/2</i>				5	2	50	8	2	66.6	7	2	66.6
<i>M3</i>				6	3	75	5	3	100	3	2	66.6
Skull							1	1	50			
<i>Mandible</i>				8	4	100	6	3	100	6	3	100
Scapula							2	1	50	1	1	100
Humerus				3	2	66.6	1	1	50			
Radius	1	1	100				1	1	50	1	1	100
Metacarpus				2	1	33.3	1	1	50	2	1	100
Pelvis				3	2	66.6	3	2	100	1	1	100
Femur												
Tibia	1	1	100	5	3	100	1	1	50			
Astragalus				2	1	33.3				1	1	100
Calcaneus				3	2	66.6				1	1	100
Metatarsus				1	1	33.3	1	1	50	2	1	100
Phalanx 1				2	1	33.3	2	1	50	2	1	100
Phalanx 2				1	1	33.3	1	1	50			
Phalanx 3							2	1	50	3	1	100
Total	2	2		77	29		74	26		55	20	

Pathology and biometry

No pathological conditions were noted on any horse bones. Measurements of horse bones and teeth are presented in Appendix 5 and withers height estimates are presented in Table 57. All of the equid bones from the Camp Ground would be classified as pony by modern standards; they range in stature from 11–13hh and there is little evidence for any size improvement over time. The size range is comparable to other local sites; however, larger animals have also been recorded, for example horses up to 15.2hh were recorded at Haddon (Baxter 2003, 125). It has been suggested that larger horses, of the size recorded from Haddon, were more likely to have been used as mounts rather than more general pack animals (Hyland 1990).

Dog

Dog bones were recovered from all of the main phases; together they account for *c.* 3.2% NISP. Small groups of related skeletal elements are common, most typically skull and mandible fragments in the partial detailed sample, and a partial skeleton from Phase III Structure 20. No butchery marks were noted on any dog bones but one femur shaft fragment from Phase III Structure 28 F1396 had been modified to form a possible knife handle. Both puppies and adult dogs are represented in all phases; some are as young as only 5–8 weeks, suggesting that there was a breeding dog population present at the site in all phases. A number of mandibles from each phase were recorded with dental abnormalities, and the incidence is fairly high with *c.* 27% of all mandibles affected by one or other of the following: overcrowding, tooth rotation, ante-mortem tooth loss or congenital absence of teeth (most typically the second premolar or third molar), and in one instance the presence of an extra tooth. This last example from Phase II affects the left mandible of an adult animal; the extra tooth was located between the canine and first premolar, and congenital absence of the third molar was also recorded for this specimen. If the tooth had been present then the alveolus had completely healed, however there was very little wear on the teeth to suggest that this tooth could have been lost due to old age or bad health. The precise cause of these abnormalities is little understood but it is generally accepted that they result from diminution of the mandible (Clark 2000, 165). Most of the dog bones recovered from each phase are rather small and gracile; analysis of the more complete skulls suggests that most have a pronounced sagittal crest with the exception of a skull from Phase IV, which had a domed head and no sagittal crest, and can therefore be likened to a Pomeranian-type lap dog. Only a small number of bones were complete enough to allow shoulder heights to be estimated (Table 57); these indicate that the Phase II dogs were 44.6cm at the shoulder, whilst the Phase III dogs ranged in size from 32.1cm–51.6cm with a mean value of 39.5cm. These estimates are within the known stature range of Romano-British dogs (Harcourt 1974, 166).

Table 57. Estimated withers (or shoulder) height of various taxa by phase for Camp Ground, Earith. Measurements are in cm with the exception of horse which is in mm.

Phase	Taxon	N	Min	Max	M	SD	CV
II	cattle	9	103.4	118.5	111.2	5.6	5
III	cattle	18	87.5	133.5	110	8.2	7.4
IV	cattle	10	93.9	124.9	111.8	8.3	7.4
II	sheep/goat	1		63.1			
III	sheep/goat	1		64.6			
IV	sheep/goat	5	57.2	67.5	63.5	4	6.2
II	horse	2	1195.4	1332.5	1263.9	96.9	7.6
III	horse	1		1263.2			
IV	horse	3	1124.6	1260.7	1176.4	73.5	6.2
II	dog	1		44.6			
III	dog	3	32.1	51.6	39.5	10.5	26.5

Cat

A small number of cat bones were recovered from Phase III and IV; all are mandibles from adult animals and come from the partial detailed sample. They are all of a similar size to domestic cats and as such probably represent semi-feral pets, valued for their hunting of commensal pests.

Deer

A small number of deer bones were also recovered; roe deer (*Capreolus capreolus*) was identified from the Phase II assemblage whilst red deer (*Cervus elaphus*) was identified from Phases III and IV. Both cranial and post-cranial elements were recovered, although only one piece of unworked antler was recorded. Butchery marks were observed on red deer bones and include chop marks on the shaft of a femur and cut marks on two metatarsals. The metatarsals, one each from Phases III and IV, are similar in size and conformation to modern comparative material (see Noodle 1982); indeed, it would seem that both sexes are represented in the assemblage.

Other wild mammals

A single pelvis from a hare (*Lepus sp.*) was identified from the Phase IV assemblage. Hare has been identified from Orton Hall Farm (King 1996) and Stonea (Stallibrass 1996). It is likely that it was hunted and eaten.

The only other wild mammal species identified from the assemblage is otter (*Lutra lutra*); this species accounts for 2% of the total NISP, and has been identified from all of the Roman phases, even Phase I. Both juvenile and adult animals are represented, and both cranial and post-cranial elements were recovered. No butchery marks were observed on any of the bones, although it seems likely that they were hunted for their pelts and also because they represented competition for river fish. A small number of otter bones have recently been recorded from Iron Age contexts at Wardy Hill near Ely (Davis 2003, 126). Organised otter hunts are known from historic times; the first specialised packs of otter-hounds are thought to have been formed towards the end of the 18th century and by the 1930s there were 23 otter hunts killing an estimated 400 otters per year (Hart-Davis 2002, 55). The bones from another semi-aquatic mammal, the beaver (*Castor fiber*), have been recorded from Iron Age sites in the Fenlands, notably Haddenham V (Evans and Serjeantson 1988) and Earith site I (Higbee 1998, 2000). The presence of beaver at Haddenham V and the high frequency of butchery marks on their bones is compelling evidence that beavers were hunted for their pelts during this phase. In this regard the evidence from the Camp Ground suggests that some local Iron Age practices, that is the hunting and skinning of semi-aquatic mammals, continued into the Roman period but that the quarry changed to otters perhaps because the numbers of beavers had dwindled.

Birds

Domestic birds

All three common domestic bird species have been recorded; they account for 3% of the total NISP or 71% of all identified bird bones. Domestic fowl and duck (*c.f. mallard*) bones, are relatively common, and are present in all three main phases but goose bones were only identified from Phase III. Both juvenile and adult domestic fowl are represented from all phases; the juvenile bones may represent males whilst the adult bones probably come from females that have been killed once they became less productive egg layers. All of the geese and the majority of the duck bones are from adult birds. Fowl, duck and goose have all been recorded from a number of Roman sites in the Fenlands, and at Stonea (Stallibrass 1996) and Orton Hall Farm (Harman 1996) the relative frequencies of these three species is similar to that from Camp Ground.

Wild birds

The bones of wild bird species account for only 1.3% of the total NISP but at least eight different species are represented. These include greylag goose, teal, coot, moorhen, curlew, lapwing, common crane, and pelican; the occurrence of individual species by phase is given in Table 38. Some mute swan or crane-size shaft fragments were also recorded but have not been used in counts. All of the listed birds are wetland species; many are fairly common all year round in East Anglia, whilst some, such as the crane and pelican were summer visitors whose range no longer extends to Britain.

Crane has been identified from Roman deposits at Stonea (Stallibrass 1996), as well as a number of Iron Age sites in the Fenlands, including Haddenham V (Evans and Serjeantson 1988) and Wardy Hill (Davis 2003).

The two pelican bones, a fragment of proximal radius and distal humerus, one each from Phase III and IV, are very interesting since they indicate that pelicans were seasonal visitors to Britain up to the 4th century when previously they have only been recorded from Iron Age contexts (Serjeantson pers. comm.). Pelicans have previously been recorded from Haddenham, in the Cambridgeshire Fens, where the dalmation pelican (*Pelecanus crispus*) has been identified (Evans and Serjeantson 1988), and Glastonbury Lake Village in Somerset, where both the dalmation and white pelican (*P. onocrotalus*) have been identified (Andrews 1917; Darvill and Coy 1985). It is uncertain at present which pelican species is represented in the Camp Ground assemblage, however preliminary comparisons with published biometric data (Andrews 1917) suggests that at least one of the bones, the distal fragment of humerus, which has a distal breadth of 53.4mm, might be *P. crispus*, the larger of the two species.

Fish

A small number of pike mandibles were identified from all three main phases in the partial detailed sample. They prefer slow-flowing, muddy waters and are reasonably common in lowland rivers in England¹.

Summary and Conclusions

The Camp Ground assemblage is dominated by the bones of cattle, which account for 63%–71% of all livestock (by NISP) from each of the Roman phases. Sheep account for less than a third of NISP and pig only a small percentage. This basic pattern is fairly consistent from one phase to the next although with minor fluctuations in the relative proportions, the proportion of sheep decreases slightly through the Roman phase and this is matched by a slight increase in the proportion of pig, whilst cattle remain of prime importance overall. The importance of cattle in the Romano-British economy and diet has been outlined above and the results from the Camp Ground assemblage reflect this. On this basis the settlement's economy is essentially Roman and the process of Romanisation can be seen in the relative frequencies of livestock species over time (King 1978, 1984 and 1999). When viewed against the local economy of the preceding Iron Age (Higbee 2000; Swaysland this vol.) Roman influences become more apparent, and a similar shift in the pastoral economy was noted at Orton Hall Farm (King 1996). However, other contemporary sites in the Fenlands did not respond in the same way and appear to have carried on with a more native Iron Age economy based primarily upon sheep farming (Baxter 2003; Stallibrass 1996). The emphasis on a sheep-based economy at Stonea is particularly surprising given its proximity to the Fenland Causeway, a fairly major route-way during the Roman phase and one that would almost certainly have brought the inhabitants of Stonea into contact with Roman ways of life (*ibid.*, 591).

The MNI method of quantifying the relative frequency of livestock species produced slightly different results. The results from this method indicate a slight shift in the economy from a Romanised form in Phase II to a more native form, based on sheep farming, in Phase III and then a return to a more diverse but nevertheless Romanised form in Phase IV. It has been suggested above that this pattern could reflect a deliberate strategy to meet the demands of the local market; after embracing Roman influences and then attempting to corner the local market with lamb and mutton, the inhabitants of Camp Ground then appear to have diversified slightly, perhaps in order to buffer themselves against fluctuations in demand. This hypothesis is to some extent supported by evidence from the age structure of livestock species and the relative frequency of different body parts. This information suggests that the majority of livestock were slaughtered to produce prime beef, lamb, prime mutton and pork, and that this meat was exported from the site, most probably as undressed joints. Similar evidence has been put forward by Stallibrass (1996) to support the view that lamb and prime mutton was exported from Stonea.

¹ In the environmental sample residues, large quantities of freshwater fish bone are present; these will be formally studied as part of the forthcoming analytical programme.

In addition to the relative frequency of livestock species, other aspects of the assemblage are also characteristically Roman, most notably the butchery evidence recorded on cattle bones. The basic pattern of dismemberment is similar to that recorded from a number of sites and has been outlined above. The pattern is consistent between phases suggesting that a standard butchery technique was used and indicating the existence of professional butchers. Butchery noted on some scapulae indicates that some joints were preserved by curing; a process that is thought to have its origins in the military but here is further proof for the existence of professional butchers. Given the above evidence for the processing of beef carcasses on site it is little surprise to find evidence for the utilisation of the resulting bone waste. The large collections of axially split long bones from the Phase III assemblage indicate that bones were processed for marrowfat and other by-products that could be used for a variety of uses (see Stokes 2000). Similar types of waste have been recovered from a number of sites, mostly urban, and in some instances processing is on an industrial scale, as for example at Lincoln (Dobney 1996).

Many aspects of the Camp Ground assemblage have been characterised as distinctly Roman, however there are certain other aspects of the assemblage that suggest a continuation of more native traditions which have been recorded from some local Iron Age sites. These include the breeding of horses and the exploitation of Fenland resources, such as otter, crane, pelican and pike. In this respect the Camp Ground assemblage demonstrates a truly 'Fenland character' similar to Haddenham V (Evans and Serjeantson 1988).

Plant Remains Rachel Ballantyne

Methodology

This report examines 49 contexts from a wide variety of feature types. All were sampled in bulk, and the soil processed using a flotation tank. Flots were collected within a 300µm sieve, and the heavy residue washed over 1mm. The flots were then dried and examined under a low-power binocular microscope. Plant taxonomy in this report follows Stace (1997).

Preservation

Despite the proximity of the settlement to the ancient Fen-edge, only limited indications of waterlogging are present. Low quantities of silica-rich duckweed seeds (*Lemna* sp.) occur in the bases of roadside ditches F. 551, F. 98, F. 311 and in the base of large pit F. 532, indicating that water once stood in these features. However, no survival of identifiable waterlogged (organic) remains is evident. Whilst it remains possible that occasional waterlogged contexts may exist within some deeper sampled features, the currently examined assemblage suggests that this is unlikely.

Charring has preserved all other identified plant remains. The quality of preservation varies between ‘poor’ and ‘moderate’. Puffing and distortion of seeds is common, particularly with more starchy items such as grain and pulses. As noted for the Iron Age plant remains at this site (Ballantyne this vol.) frequent uncharred, and clearly intrusive, seeds of *Chenopodium album*, *Atriplex patula/prostrata*, *Hypericum* cf. *perforatum*, *Picris echioides* and *Carduus/Cirsium* sp. are also present. Such items are consistent, and appear to have entered during excavation or storage of the samples.

Results

Beam-slot structures

Three groups of beam-slots were examined: from the areas of 100E/180N, 110E/280N and 130E/290N. The results (Table 58) are variable, with those from the 100E/180N structure richest; they compare well to the material identified from midden F. 926. Grain, usually of hulled wheat (*Triticum spelta/dicocum*), predominates with very low amounts of cereal chaff. The wild seeds are a mixture of probable arable weeds, such as sheep’s sorrel (*Rumex acetosella*), vetches/tares (*Vicia/Lathyrus* spp.) and brome grass (*Bromus* sp.), and of wetland plants probably associated with charred reeds (cf. *Phragmites australis*). One fill, [6019] F. 1148, contains a particularly high number of seeds of common spike-rush (*Eleocharis palustris*) and many fine, charred stems suggest that this is a charred wetland resource.

The other two sampled structures, 110E/280N and 130E/290N are much less rich in charred plants, although the types present are similar to those listed above. Two additional samples from the possible ‘granary’ beam-slots F. 485 and F. 486 compare particularly well to the remains from the first discussed structure.

The charred remains are probable surface debris; associated with food preparation through the cleaned grain, and the possible use of reeds with wood as a fuel. The frequent uncharred fish-scale is also likely to be from food preparation.

Midden F.926

As noted above, the remains from three contexts — [6419], [6420], [6421] — appear to represent a more concentrated example of those from many of the beam-slot structures. The majority of the grain is of spelt wheat (*Triticum spelta*), although low amounts of barley (*Hordeum vulgare sensu lato*) and a free-threshing wheat (*Triticum aestivum sensu lato*) also occur (Table 59).

It may be suggested that the charred remains in F. 926 represent waste contemporary with, or derived from, the beam-slot structures.

Ash-filled gullies F. 806, F. 813, F. 753, F. 770 and F. 773

The ash fills sampled are extremely variable in their representation of charred plant remains. This pattern may be due to differences in the heat of combustion, and thus quality of preservation, or differences in the original material exposed to the fire. Wood charcoal is consistently rich, but is also the most robust item in charring conditions (Table 59).

Two features are of note: flax and grain rich F. 770, and chaff-rich F. 773. The 220 flax seeds recovered from F. 770 are the only good example so far identified at this site. One seed has also been recovered from the base of pit F. 532. Flax may be used for oil or fibre; so much linseed charred with some grain suggests a culinary use.

Post-built structures

A number of samples from post-built structures were examined, and these are summarised in Table 60. In all cases very few charred remains were present within the small volumes of soil collected. Post-built structure F. 1309 is not quantified here, but scanning of the samples revealed a similar pattern.

Road ditches F. 98, F. 311, F. 551

Both the outer ditches are virtually devoid of all charred remains, including wood charcoal (Table 61). In contrast, the central ditch [3086] F. 98 contains much charcoal, with a few grains and wild seeds. All three samples include mineralised duckweed seeds, indicating that these ditches once held standing water. However, the marked difference in charcoal content between the outer and inner ditches may indicate a temporal disjuncture between the formation of the basal fills (and thus the initial cuts).

Large pit F. 532

A small sample of basal fill [3990] has revealed that, whilst iron pan is present, no organic preservation survives (Table 61). Low numbers of duckweed seeds indicate that standing water once occurred. One charred flax seed provides the only other evidence for use of this plant, other than within ash-filled gully F. 770. The middle, artefact-rich fill [3854] contained numerous charcoal and fish scales, with low amounts of possible reed stem fragments — similar to the midden F. 926 and a number of beam-slot fills.

Early enclosure F. 54

Four samples from lower fills [5271], [5715], [5592] and [5618] contained only low amounts of heavily fragmented charcoal, and occasional grain or seeds (Table 61).

Possible temple F. 141

Thirty-two samples were collected from layers and post-holes associated with this square structure. Although not quantified here, scanning has indicated that these contexts are entirely, or almost entirely, devoid of charred remains (including wood charcoal) and of most small artefacts.

Conclusions

A very high proportion of the charred plant remains represents wood and reed stems, with uncharred fish scales. The reeds may have been a specific fuel, thatching, or perhaps both; their presence indicates the collection of fen resources, in addition to agricultural products. Low quantities of cereal grain, usually spelt wheat and hulled six-row barley, indicate food preparation. The one rich context of linseed may be from oil making, although the plant could also have been grown for its fibre.

The charred plant remains provide a useful contrast to nearby, smaller, Langdale Hale (Regan 2003a), where sampled contexts from Phases 1 and 2 contain the same common arable weeds (*Rumex acetosella*, *Vicia/Lathyrus* spp. and *Bromus* sp.) to those at the Camp Ground. This pattern suggests that the crops at both sites had been grown in a

similar manner, on similar soils. However, throughout all phases at Langdale Hale, particularly 2 and 3, there are frequent, good remains of hulled wheat chaff — from the later dehusking stages. With the exception of ashy gully F. 773, this activity appears absent at the Camp Ground, and charred grain associated with cooking is instead predominant. This suggests the possibility that cleaned grain was brought to the Camp Ground from nearby smaller settlements, such as Langdale Hale.

Recommendations

Although there is a limited range of plant remains within the site, many of the remaining 400 samples are being examined as part of a PhD investigation by this report's author. The aim (in addition to identifying the species present) is to reveal the charred plant distribution in contrast to other small artefacts, and to examine the implications for settlement characterisation. As noted in the conclusions above, the relationship between this settlement and nearby Langdale Hale will be of interest to understanding the economy of the densely occupied Roman Fen-edge. More results from this investigation will arise in the very near future, and they will be accessible to the CAU.

Although not discussed above, all the heavy residues from the *c.*450 bulk samples have now been sorted for artefacts; including fish scale, fish bone, and other small vertebrates, which are sometimes numerous. It is strongly recommended that specialists address the fish and small vertebrate aspects of the assemblage should the site go to full publication, particularly in light of the findings of the zooarchaeological assessment (Higbee, this vol.).

Results Tables

KEY: ‘-’ 1 or 2 items, ‘+’ <10 items, ‘++’ 10-50 items, ‘+++’ > 50 items

sample number		<24>	<29>	<438>	<439>	<440>	<442>	<450>	<451>
context		[1019]	[1029]	[6000]	[6017]	[6019]	[6123]	[6160]	[6188]
feature		F.486	F.485	F.1164	F.1149	F.1148	F.1146	F.1172	-
description		?granary	?granary						
feature type		beam-slot	beam-slot	beamslot	beamslot	beamslot	beamslot	beamslot	beamslot
grid location		220/150	220/150	110/180	110/180	100/180	110/180	110/180	110/180
sample volume/ litres		12	14	14	13	12	10	12	8
flot fraction examined		1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1
<i>Hordeum vulgare sensu lato</i> grain	barley grain		1	3			2	2	1
<i>Triticum c.f. spelta</i> L. grain	spelt wheat grain	1		2				2	
<i>Triticum spelta/dicoccum</i> grain	spelt/emmer wheat grain		4				3	4	
<i>Triticum aestivum sensu lato</i> grain	free-threshing wheat grain				1				
<i>Triticum</i> sp. grain	wheat grain	2				2			1
<i>Triticum/Hordeum</i> sp. grain	wheat/barley grain			1			3		1
cereal grain indet.		3			1	1	1	1	1
germinated cereal embryo sp.		1							
tail grain indet.						1			
<i>Triticum spelta</i> L. glume base	spelt wheat chaff	5				2	1	2	
<i>Triticum dicoccum/spelta</i> spikelet fork	wheat chaff	2							
<i>Triticum dicoccum/spelta</i> glume base	spelt/emmer chaff	6	1		1				1
<i>Spergula arvensis</i> L.	corn spurrey					1			
<i>Rumex sanguineus/conglomeratus/obtusifolius</i>	small-seeded dock	1							
<i>Vicia cf. tetrasperma</i> (L.) Schreb.	smooth tare	1							
medium <i>Vicia/Lathyrus/Pisum</i> sp. (3-4mm)	vetch/tares/pea	1							
small <i>Vicia/Lathyrus</i> sp. (<3mm)	vetch/tares	2			3	1		1	1
large <i>Trifolium/Medicago</i> spp. (2-3mm)	medium-seeded clover/medick					2			
<i>Odontites vernus</i> (Bellardi) Dumort.	red bartsia					2			
<i>Juncus</i> spp.	rushes					2			
<i>Eleocharis c.f. palustris</i> (L.) Roem. & Schult.	common spike-rush					50		1	6
<i>Cladium mariscus</i> (L.) Pohl	great fen sedge	1							
oval flat <i>Carex</i> sp.	sedge								1
medium trilete <i>Carex</i> sp.	sedge					6			
<i>Phleum</i> sp.	cat's tail	1							1
<i>Bromus</i> spp.	brome					2			
<i>Hordeum murinum</i> L.	wall barley					1			
large Poaceae indet. (>4mm)	large Grass Family seed	1							
small Poaceae indet. (c.2mm)	small Grass Family seed					1			
<i>Sparganium erectum</i> L.	branched bur-reed					1			
small seed indet. (<3mm)						2			
cf. <i>Phragmites australis</i> L. culm node	common reed, stem joint	-		-	-	+	-	-	-
large Monocot. culm fragment	probable reed stems	-	+			+	+	+	+
siliceous, fine Monocot. culms	heavily charred stems - grass or sedge					+++			
parenchyma fragment						1			
large charcoal (>4mm)		+	+	++	++	++	+	++	+
med. charcoal (2-4mm)		++	++	+++	+++	+++	++	+++	+++
small charcoal (<2mm)		+++	+++	+++	+++	+++	+++	+++	+++
fired clay		+							
fish scale				++	++	++	+	++	+
bone fragments		-			+	+		+	-
small bone				- bird, eel		++	+	+ amph, ee	++

sample number	<625>	<626>	<627>	<628>	<629>	<651>	<654>	<655>
context	8722/8724	[8066]	[8419]	[8192]	[8761]	[7810]	[7786]	[7790]
feature	F.1059	F.1041	-	F.1052	-	F.868	F.871	F.874
description								
feature type	beamslot	beamslot	posthole	beamslot	posthole	beamslot	beamslot	beamslot
grid location	110/280	100/280	100/290	110/290	110/290	130/290	130/290	130/290
sample volume/ litres	10	14	8	12	5	8	4	14
flot fraction examined	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1
<i>Triticum spelta/dicoccum</i> grain				1				
<i>Triticum aestivum sensu lato</i> grain								1
<i>Triticum</i> sp. grain		2						2
cereal grain indet.				1				1
<i>Triticum spelta</i> L. glume base			1					
<i>Urtica dioica</i> L.						2		
<i>Lychnis flos-cuculi</i> L.						5		
<i>Rumex acetosella</i> L.				1				
<i>Tripleurospermum inodorum</i> (L.) Sch. Bip.			1					
<i>Juncus</i> spp.						1		
<i>Poa</i> spp.						2		
<i>Phleum</i> sp.						1		
large seed indet. (>3mm)						2		
large charcoal (>4mm)								
med. charcoal (2-4mm)		+		+		+	-	-
small charcoal (<2mm)	-	+	+	+	-	+	+	+
charred concretion						-		
fish scale		+						

Table 58: beam-slot fills

sample number		<252>	<253>	<254>	<255>	<256>	<266>	<461>	<462>	<463>
context		[4389]	[4377]	[5076]	[4494]	[4394-4398]	[5231]	[6419]	[6420]	[6421]
feature		F.806	F.806	F.813	F.753	F.770	F.773	F.926	F.926	F.926
description		ashy	ashy	ashy	ashy	ashy	ashy	grid square	grid square	grid square
feature type		gully	gully	gully	gully	gully	gully	midden	midden	midden
grid location		160/170	160/170	160/170	160/170	160/180	170/170	130/240	130/240	130/240
sample volume/ litres		10	12	8	8	10	14	20	17	25
flot fraction examined		1/1	1/1	1/1	1/1	1/1	1/4	1/1	1/1	1/1
twisted, hulled <i>Hordeum vulgare</i> grain	6-row hulled barley grain	1								
hulled <i>Hordeum vulgare s.l.</i> grain	hulled barley grain						5	2		2
<i>Hordeum vulgare sensu lato</i> grain	barley grain	2				42	5			3
<i>Triticum c.f. spelta</i> L. grain	spelt wheat grain				1		3		3	70
<i>Triticum c.f. dicoccum</i> Schubl. grain	emmer wheat grain									1
<i>Triticum spelta/dicoccum</i> grain	spelt/emmer wheat grain				1	7	26	23	9	31
<i>Triticum aestivum sensu lato</i> grain	free-threshing wheat grain					1	2			5
<i>Triticum</i> sp. grain	wheat grain	1						5		
<i>Triticum/Hordeum</i> sp. grain	wheat/barley grain						15	8	5	
<i>Avena/Hordeum/Triticum</i> sp. grain	oat/barley/wheat grain					15				
cereal grain indet.						30	31	5	4	10
tail grain indet.							1			
lax <i>Hordeum vulgare</i> L. rachis internode	barley chaff - loosely eared type					2	12			
dense <i>Hordeum vulgare</i> L. rachis internode	barley chaff - densely eared type					3	3			
<i>Hordeum vulgare sensu lato</i> rachis internode	barley chaff						1		1	
<i>Triticum dicoccum</i> Schubl. spikelet fork	emmer wheat chaff						3			
<i>Triticum dicoccum</i> Schubl. glume base	emmer wheat chaff						1			
<i>Triticum spelta</i> L. spikelet fork	spelt wheat chaff					1				
<i>Triticum spelta</i> L. glume base	spelt wheat chaff				1		78	3	6	5
<i>Triticum dicoccum/spelta</i> spikelet fork	wheat chaff						2	1	1	
<i>Triticum dicoccum/spelta</i> glume base	spelt/emmer chaff				1	1	11		9	2
<i>Triticum</i> sp. glume base	wheat chaff						42			
<i>Triticum spelta/dicoccum</i> rachis internode	hulled wheat chaff	1							1	
cf. <i>Avena fatua</i> L. floret base	wild oat chaff						2			
cereal indet. culm node	straw joint	1								
cf. <i>Taxus baccata</i> L.	yew				1					
<i>Ranunculus flammula</i> L.	lesser spearwort							1		
<i>Fumaria officinalis</i> L.	common fumitory					1				
small <i>Stellaria</i> sp.	small-seeded chickweed					1				
<i>Persicaria maculosa</i> Gray	redshank			1			2			
<i>Polygonum aviculare</i> L.	knotgrass					2			1	
<i>Rumex acetosella</i> L.	sheep's sorrel					7	2			
<i>Rumex sanguineus/conglomeratus/obstusifolius</i>	small-seeded dock				1	16	3	3	4	2
<i>Rumex c.f. crispus</i> L.	curled dock					2	4			
<i>Raphanus raphanistrum</i> L. seed-case	wild radish					15				
cf. <i>Pisum sativum</i> L.	garden pea	1								
medium <i>Vicia/Lathyrus/Pisum</i> sp. (3-4mm)	vetch/wild pea/pea					3	2			
small <i>Vicia/Lathyrus</i> sp. (<3mm)	vetch/wild pea			1		4		1		1
small <i>Trifolium</i> spp. (<1mm)	small-seeded clover						1	1		
<i>Linum usitatissimum</i> L.	flax					202				
<i>Odontites vernus</i> L.	red bartsia								1	
small <i>Galium</i> sp. (<2mm)	small-seeded goosegrass						1			
<i>Eleocharis c.f. palustris</i> (L.) Roem. & Schult.	common spike-rush					5	2	2	1	1
<i>Cladium mariscus</i> (L.) Pohl	great fen sedge					5				1
small flat <i>Carex</i> sp.	sedge							1		
medium trilete <i>Carex</i> sp.	sedge								1	
small trilete <i>Carex</i> sp.	sedge					1				1
<i>Briza</i> sp.	quaking-grass						1		1	
<i>Bromus</i> spp.	brome							1		9
large Poaceae indet. (>4mm)	large Grass Family seed					3		4		
medium Poaceae indet. (c. 4mm)	medium Grass Family seed						1			
Unidentified TYPE seed						10				
small seed indet. (<3mm)						10	2		1	
cf. <i>Phragmites australis</i> L. culm node	common reed, stem joint	-					+	+		
large Monocot. culm fragment	probable reed stems	-		-		+++	+			+
small Monocot culm fragment	probable grass or sedge stems			-		+				
siliceous, fine Monocot. culms	heavily charred stems - grass or sedge	+++				+++				
parenchyma fragment				1						
large charcoal (>4mm)		++	++	++	+	++	+	++	+	+
med. charcoal (2-4mm)		+++	+++	+++	++	+++	+++	++	++	++
small charcoal (<2mm)		+++	+++	+++	+++	+++	+++	+++	+++	+++
charred concretion						-				
fish scale				++	+		++	++		+
small bone		++ (+ burnt)	++ amph	+	+		+ burnt	-		-
avian egg shell							+			

Table 59: ash-filled gullies and midden F.926

sample number		<148>	<149>	<150>	<151>	<152>	<153>	<178>	<485>	<486>
context		[2646]	[2682]	[2684]	[2686]	[2688]	[2690]	[1767]	[6699]	[6705]
feature		F.405	F.405	F.405	F.405	F.405	F.405	F.415	F.1137	F.1137
description		posthole	posthole	posthole	posthole	posthole	posthole	western	posthole	posthole
feature type		structure	structure	structure	structure	structure	structure	layer	structure	structure
grid location		200/230	200/230	200/230	200/230	200/230	200/230	200/230	100/190	100/190
sample volume/ litres		10	3	3	2.5	3	3	14	17	12
flot fraction examined		1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1
<i>Hordeum vulgare sensu lato</i> grain	barley grain								1	
<i>Triticum c.f. spelta</i> L. grain	spelt wheat grain			1						
<i>Triticum spelta/dicoccum</i> grain	spelt/emmer wheat grain								3	1
<i>Triticum</i> sp. grain	wheat grain			1						
cereal grain indet.			1					1	4	1
<i>Hordeum vulgare sensu lato</i> rachis internode	barley chaff							1		
<i>Triticum spelta</i> L. glume base	spelt wheat chaff								1	
<i>Triticum dicoccum/spelta</i> glume base	spelt/emmer chaff									
small <i>Stellaria</i> sp.	small-seeded chickweed							1		
<i>Spergula arvensis</i> L.	corn spurrey								1	
<i>Panicum maculosum</i> Gray	redshank		1							
<i>Polygonum aviculare</i> L.	knotgrass									
<i>Rumex acetosella</i> L.	sheep's sorrel									
<i>Rumex sanguineus/conglomeratus/obstusifolius</i>	small-seeded dock								1	
<i>Salix</i> sp. bract	willow flower fragment						1			
medium <i>Lathyrus</i> sp. (3-4mm)	wild pea									1
small <i>Vicia/Lathyrus</i> sp. (<3mm)	vetch/wild pea			1						
small <i>Trifolium</i> spp. (<1mm)	small-seeded clover							1		
small <i>Galium</i> sp. (<2mm)	small-seeded goosegrass								1	
<i>Bromus</i> spp.	brome							1		
small Poaceae culm node	grass stem joint								1	
small seed indet. (<3mm)									1	
parenchyma fragment						1				
large charcoal (>4mm)		-	-							
med. charcoal (2-4mm)		+	+	-	-	-	-	-	-	-
small charcoal (<2mm)		+	+	-	-	-	+	++	+	+

Table 60: post-built structures

sample number		<233>	<234>	<235>	<236>	<237>	<469>	<470>	<570>	<571>
context		[3990]	[3854]	[3362]	[3086]	[3368]	[4973]	[4967]	[5271]	[5715]
feature		F.532	F.532	F.551	F.98	F.311	F.671	F.682	F.54	F.54
description		basal silts	middle	west road	central road	east road	ditch	ditch	enclosure	enclosure
feature type		pit	pit	ditch	ditch	ditch	structure	structure	ditch base	ditch base
grid location		200/110	200/110	200/190	190/200	190/200	170/220	170/230	110/150	90/200
sample volume/ litres		1	15	8	10	12	14	15	7	8
flot fraction examined		1/2	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1
hulled <i>Hordeum vulgare sensu lato</i> grain	hulled barley grain									
<i>Hordeum vulgare sensu lato</i> grain	barley grain						1			
<i>Triticum spelta/dicoccum</i> grain	spelt/emmer wheat grain				3		3			
<i>Triticum/Hordeum</i> sp. grain	wheat/barley grain				1		3			
cereal grain indet.										1
<i>Triticum dicoccum/spelta</i> glume base	spelt/emmer chaff							1		
<i>Chenopodium</i> sp.	goosefoot							1		
<i>Rumex sanguineus/conglomeratus/obstusifolius</i>	small-seeded dock							1		
<i>Rumex c.f. crispus</i> L.	curled dock	1								
medium <i>Vicia/Lathyrus/Pisum</i> sp. (3-4mm)	vetch/wild pea/pea						1	2		
<i>Linum usitatissimum</i> L.	flax	1								
<i>Lemna</i> sp. seed	duckweed	+++		+	+	++				
<i>Eleocharis c.f. palustris</i> (L.) Roem. & Schult.	common spike-rush						1			
<i>Cladium mariscus</i> (L.) Pohl	great fen sedge				2					
<i>Poa</i> spp.	meadow-grass									
<i>Bromus/Avena</i> sp.	brome/oat							1		
small seed indet. (<3mm)										
cf. <i>Phragmites australis</i> L. culm node	common reed, stem joint		-				-	-		
large Monocot. culm fragment	probable reed stems		+				+	-		
small Monocot culm fragment	probable grass or sedge stems		-		+		-	-		
parenchyma fragment							1			
large charcoal (>4mm)			++		++		++	++	-	
med. charcoal (2-4mm)		-	+++		+++		+++	+++	+	
small charcoal (<2mm)		+	+++	-	+++	-	+++	+++	++	+
fish scale			+++							
bone fragments					-		-			
small bone			++							
land mollusc shell fragments									+	

Table 61: all other examined features

Discussion

The major issues posed by the Camp Ground's sequence do not seem to be those of continuous long-term 'place-value'. There seems no question of the site's Bronze Age fieldsystem or 'C'-ring monument being somehow directly ancestral to the Iron Age or Roman settlements, and rather their implications largely relate to larger scale landscape usage — the Holme Farm and Rhee Lakeside fieldsystems and the Site IV ring-ditch (respectively Evans & Patten 2003, Patten 2004 and Regan & Evans 2000). As emphasised below, the detailed interrelationship within the site's sequences — in other words, matters demanding precise chronological relationship — are confined to its Iron Age and Roman components.

Where the 'long-term' is crucial is as regards environmental change. Starting with the Bronze Age fieldsystem, this must reflect a landscape with substantial woodland clearance. However, ending with the Late Roman, the use then of huge, only roughly trimmed trunks in the mass-timber construction of buildings attests to access to extensive forest resources. A major question here then will be whether this timber was present in the site's hinterland environment or if had to have been imported (and, if so, was this a sustained access or a one-off supply thereby implying the re-utilisation of these logs in the site's later buildings). What all this certainly highlights is how imperative it will be to obtain a series of deep column samples from the palaeochannel north of the site in order to scrutinise the long-term pollen record of the locale.

Such an obviously complex site as the Camp Ground raises many crucial issues and its analysis is still only at a preliminary stage. Accordingly, this discussion allows us the opportunity to rehearse some of its major themes and to suggest future lines of study that have thus far arisen concerning its multi-faceted character. It cannot, nor does it claim to, be any manner of masterful overview and its approach must necessarily be 'broad-brushed'.

Iron Age

Whereas the site's sub-square Iron Age enclosures (2 & 3) are entirely typical of both the Colne Fen and also the Haddenham compounds of the period, the larger sub-circular Enclosure 1 — and with it the conjoining and potentially earlier Enclosure 2 — is not. This raises issues of settlement hierarchies and social status within the local landscape. Unfortunately, due however to later truncation their excavation was, by necessity, too coarse-grained and limited to be able to seriously address such questions in this instance.

As has been previously mentioned, what will require further analytical study is the interrelationship between the Iron Age occupation and the earliest Roman phases: was there a hiatus during the latter half of the 1st century AD or was there any direct settlement continuity? The main point here is that while there were sufficient earlier 1st century AD, distinctly Late Iron Age attributes to suggest that the Iron Age enclosures continued to function probably up to the time of the Roman Conquest, there was little

evidence of immediate continuity thereafter (i.e. lack of distinctly Romanising wares). Though above it has been postulated that the Iron Age occupation may have ceased with the aftermath of the Icenian revolt of AD 47, essentially based on affiliation through the recovery of one Icenian silver coin alone, such a quasi-historical scenario seems difficult to sustain. There are 'pointers' of a mid-later 1st century AD presence, including the frequency of early Gaulish Samian and also fibulae-type brooches of the period. Moreover, the evidence of the spatial relationship between the Iron Age enclosures and the earliest phase of Roman settlement on the site would also hint of continuity (by 'respect'). That they are mutually discrete could suggest their direct chronological succession, as could also the recovery of Roman wares from the upper profiles of the Iron Age ditches and equally the ambiguous attribution of the Structure 1 shrine (?Late Iron Age or Roman). There do, therefore, seem to be sufficient 'markers' and evidence to suggest that an element of Conquest period and later 1st century AD settlement may have so far escaped attention and that the Phase I occupation may actually date substantially earlier than its 2nd century assignment. This issue will warrant detailed study in the site's ensuing analytical programme.

Roman

The Camp Ground Roman settlement is difficult to tie down and readily characterise. The challenge is how to tackle such an 'intense' settlement with such contrastive evidence as the extraordinary Jupiter bust against the 'rough-hewn' quality of many of its buildings. Whatever went on there was clearly multi-faceted and will require sophisticated explanation.

The settlement was clearly nucleated and seems to reflect more than just a farming community. In at least the later phases its main or core network of compounds would seem to lack sufficient access to serve as stock paddocks, suggesting that these are not just farms *per se* (though animals could have been penned communally in the great polygonal-enclosed space on its eastern side). Moreover, the number of relatively substantial houses within the settlement would indicate that it is unlikely, for example, to have been some manner of hamlet for labourers associated with the known villa across the Cranbrook Drain. There is equally the evidence of its putative 'official' or administrative quarter along the east side of the main track from Phase II.1 onwards, including the formally laid-out mausoleum setting that may have housed the Jupiter relief panel. Finally, whilst the site's prolific coinage would suggest trading activities (along with also the steelyard balance and weights), there is little indication that crafts were practised in a specialised manner. Given these many factors, one avenue of interpretation relates to the adjacent canal system and the possibility that this was a home-port for its bargemen (and associated labour gangs) and, too, a centre of transshipment — perhaps involving the trade of Nene Valley wares into the hinterland — and included the abode of traders. This range of activities could well have necessitated official state overseeing, as indeed there must also have been some form of navigational authority to operate and maintain the regional canal network. Yet, while perhaps of predominantly specialised function, there can be no doubt that this was equally a place of domestic familial

residence. The site's small finds and burial evidence indicates the presence of both children and women, and there is no question of any gender exclusivity (e.g. barge-men and traders alone).

Regardless of whatever issues of detail there are concerning the dating of the settlement's earlier Roman phases, given the evidence there can be no doubt that it was essentially a Late Roman centre and saw its flourish in the 3rd and 4th centuries. This is in contrast to Stonea as *the* putative regional centre and the idea that it was linked to the development of the Fens as an Imperial Estate and which had its hey-day during the 2nd and earlier 3rd centuries AD (Jackson & Potter 1996). Given Stonea's 3rd century demise it is surely relevant that the Camp Ground's rise seems linked to the continual functioning of the canal system and with it can be inferred at least some degree of official regulation.

Accepting that the Camp Ground's Compound 28/30's structures (11, 12 & 27) related to civic/administrative facilities, and that Structure 17 was possibly a shrine, then in total up to 15 of the settlement's buildings may have been residential units, with remainder being of ancillary status (granaries, *etc.*). Of the identified residential buildings, only three/four could ever have been considered major or 'aspiring' households (Structures 2, 23 & 31 and possibly 29). Otherwise the maximum number of strictly residential buildings that are thought to contemporary were the eleven present in Phase III.2. Adding to this the presumed familial occupancy of the main Structure 11 administrative building, this would suggest a resident population of between some 50 and 120 individuals, which can only be considered modest — a settlement bigger than a hamlet and smaller than a town.

In terms of the settlement's structure there is evidence of some degree of formal layout and organisational principles. From Phase II.1 there is the central trackway, seemingly separating off the civic quarter on its east side from 'life' on the west. Equally, from Phase II.2/III.1 there was the polygonal perimeter demarcating its core. Arguably on its eastern side this was defined by a series of embankments and, to the west, a 'circa' hollow-way/track which, as suggested by Tebbutt's earthwork plan, would have also been continuously embanked on its sides. Therefore, if not perhaps warranting to be termed 'defended', the settlement core was heavily enclosed. Yet, beyond this, there is little sense of obviously organisation of its central space and otherwise it seems to have consisted of interconnected paddocks. Unlike towns *per se*, there seems to have been no internal street or regular tracks apart from the 'through-' and 'circa-ways'.

As was first noted in the original 1997 Desktop study (Regan & Evans 1997), taken as a whole the Camp Ground complex would, in terms of its overall area (and the plan of their perimeters), be broadly comparable to that of Roman Cambridge. Yet there is no evidence that it was some manner of small town. Such distinctions and conceptual categories are difficult to define with any absolutism or conviction (and the status of Roman Cambridge could itself be questioned). Yet one aspect in which they differ markedly is that there is no evidence of the build-up of horizontal strata at the Camp Ground, which the 'town' has from its early, pre-walled phases. (The Camp Ground's later features are, moreover, of comparable, if not greater depth, than those from its early phases, as would have been the case had its surface levels substantially risen over time).



Figure 33

This is particularly noteworthy at the site given the inferred elevation of its building floors — as can be postulated by the widespread use of mass-timber construction — could indicate that this was a response to the perceived risk of flooding.

One of the problems of tackling the Camp Ground's sequences and buildings is that there has been only little investigation of the Late Roman settlements within the region. There are hints, however, at least beyond areas of villa-controlled lands, of some degree of village-type nucleation. In this regard the closest parallel to the Camp Ground would seem to be the huge cropmark complex known on the north-eastern side of Longstanton, which has thus far only been subject to assessment investigation (Evans 1991; Evans & Mackay 2004). This extends over some 5ha and also seems arranged around a central through-site drove/track and, largely of later Roman date, also includes a shrine and intra-settlement inhumations (Fig. 33). More telling, is that the Longstanton site was also bounded by a straight, two-/three-ditch parallel perimeter on at least two of its rectangular-plan sides. As at the Camp Ground, this indicates that 'heavy' enclosure was a major concern; if demarcating a system of embankments capped with hedges this could even indicate a rudimentary defence — perhaps amounting to a 'rustic' version of Roman Cambridge's late walled perimeter.

The disposal of refuse on such a large settlement as the Camp Ground would have been a problem, and here it is relevant that the location of three localised midden-areas were identified. Yet surely there would have been more, and this is an issue that directly reflects upon the character of the site's abandonment. It will be in this context that the site's fieldwalking data — both coinage and pottery — will be particularly insightful. There are hints that local high-value zones within the latter show greater date 'admixture' of material than their immediately underlying excavation sequences. This is exactly the kind of 'signature' that might be expected of ploughed-out midden deposits.

One rather surprising facet of the settlement's record is the representation of fenland species (see Higbee above). Harking back to the Upper Delphs, Haddenham Roman shrine (Evans & Hodder in press), a wide variety of wetland birds are represented, including pelican. Equally noteworthy is the occurrence of otter; present in all of the Roman phases, they account for 2% of the total bone assemblage. While their remains may attest to trade in pelts, no characteristic butchery or skinning cuts have been identified. Another, and perhaps more likely possibility is that they were taken in an effort to curtail competition for fish resources, as quantities of freshwater fish bone are present in the site's flotation residues and many line-/net-weights were also recovered. In this case, the otter carcasses may have been brought into the settlement as feed for dogs; alternatively they may have been taken when attacking fish ponds which may have perhaps located along the water's edge along the site's northern margins (i.e. unexcavated/-exposed).

As discussed by Ballantyne, the site's plant remains also indicate that Fenland resources were drawn upon, particularly reeds. Equally noteworthy, however, is the paucity of cereal chaff within the samples. This suggests that the settlement's grain was processed elsewhere — perhaps the Langdale Hale 'state farm' — and, again, that its inhabitants

were not primarily farmers. Both strands of the site's economic evidence indicates what remarkable detailing Ballantyne's intensive bulk sampling programme (450 samples) will provide of the settlement's subsistence, (micro-) occupation matrix and character.

The site's ceramics and coins clearly indicate that the settlement continued to be occupied until at least the early 5th century. Given this and the absence of any subsequent Saxon occupation (again, in contrast to Stonea), the chronology of the site's abandonment will be an issue requiring detailed study and analysis (and absolute dating), and here it is relevant that no distinctly post-Roman 5th century wares have been identified. The character of its abandonment is a question we will need to 'think' ourselves into — was it a matter of slow deterioration and hanging-on in the face of the inevitable or a rapid decision? As regards the latter, while there is no sign of a catastrophic end, 'fear' may have been a motivation. Thus far, the evidence would suggest that the former scenario is the most likely. In this case the results of the excavations must be carefully scrutinised in order to identify any potential evidence of settlement contraction and the repair of 'things' — both buildings and pots — after their sources of original supply had ceased. In this regard, what will be particularly important will be how long the site's 'official' civic offices were maintained and whether occupation nevertheless continued thereafter. (Another means of addressing the 'late-ness' of the sequence will obviously be the absolute dating of the site's Late Roman human burials, particularly that associated with the displaced Jupiter bust.)

In this capacity Phase IV does seem to mark the deterioration of the formal structure of the settlement. There is the lack maintenance of its polygonal perimeter, at least along its western aspect. However and perhaps more crucially, there also appears to have been the closure of both the south-western 'circa-' and the central through-trackway systems. The south-western route became blocked by paddocks to the north and, moreover, the central way was transgressed at its northern end; the later process arguably beginning in Phase IV with the siting of Structure 26 across it.

References

a) CAU Colne Fen Reports

Evans, C. and R. Patten 2003. *Excavations at Colne Fen, Earith. The Holme Fieldsystem*. CAU Report 527.

Garrow, D. and C. Evans 2000. *The Archaeology of Colne Fen II. A Desktop Study*. CAU Report 378.

Knight, M. and L. McFadyen 1998. *Excavations at Colne Fen, Earith. Site II and Evaluation Fieldwork*. CAU Report 274.

Patten, R. 2004. *The Rhee Lakeside Investigations. An Archaeological Evaluation at Hanson Quarry, Colne Fen, Earith*. CAU Report 644.

Regan, R. 1998. *Excavations at Colne Fen, Earith. Site I*. CAU Report 273.

Regan, R. 1999. *An Archaeological Evaluation at Colne Fen, Earith. Site VI*. CAU Report 308.

Regan, R. 2001. *An Archaeological Evaluation at Colne Fen, Earith. The Camp Ground (Site VIII)*. CAU Report 430.

Regan, R. 2003a. *An Archaeological Excavation at Colne Fen, Earith, Sites V & VI*. CAU Report 537.

Regan, R. 2003b. *Colne Fen, Earith: An Archaeological Watching Brief*. CAU Report 576.

Regan, R. and C. Evans 1997. *The Archaeology of Colne Fen. A Desktop Study*. CAU Report 238.

Regan, R. and C. Evans 2000. *Excavations at Colne Fen, Earith. Sites III and IV*. CAU Report 398.

Webley, L. 2004. *The Archaeology of Colne Fen III. A Desktop Assessment of the Proposed Eastern and Western Quarry Extensions*. CAU Report 593.

b) Other References

Alexander, S., 1976. *An Iron Age Settlement at Somersham, Cambs*. Unpublished: Department of the Environment Archaeological Excavations 53.

Amorosi, T., 1989. *A Postcranial Guide to Domestic Neo-Natal and Juvenile Mammals*. BAR International Series 533.

Andrews, C. W., 1917. 'Report on the remains of birds found at the Glastonbury Lake Village', in A. Bulleid and H. S. G. Gray, *The Glastonbury Lake Village*. Glastonbury, Antiquarian Society. II: 631-637.

Bass, W. M., 1992. *Human Osteology: A Laboratory and Field Manual*. Columbia: Missouri Archaeological Society, Inc.

Bauchhenss, G., 1979. *Corpus Signorum Imperii Romani. Deutschland III.2. Germania Inferior: Bonn und Umgebung. Zivile Grabdenkmäler*. Bonn.

Bauchhenss, G. and Noelke, P., 1981. *Die Jupitersäulen in den Germanischen Provinzen*. Köln and Bonn.

Baxter, I. L., 2003. 'The mammal and bird bones', in M. Hinman, *A Late Iron Age farmstead and Romano-British site at Haddon, Peterborough*. Brit. Archaeol. Rep. Brit. Ser. 358: 119-132.

Behrensmeyer, A. K., 1978. 'Taphonomic and ecological information from bone weathering', *Paleobiology* 4: 150-162.

Binford, L. R., 1981. *Bones: ancient man and modern myths*. New York: Academic Press.

Blagg, T., 1980. 'The sculptured stone', in C. Hill, M. Millett and T. Blagg *The Roman Riverside Wall and Monumental Arch in London*, 125-93. London and Middlesex Archaeological Society, Special Paper No. 3.

Boessneck, J., 1969. 'Osteological differences between sheep (*Ovis aries*) and goat (*Capra hircus*)', in D. Brothwell and E. S. Higgs (eds.), *Science in Archaeology*, 2nd edition: 331-358. London: Thames and Hudson.

Brooks, S. and Suchey, J., 1990. 'Skeletal age determination based on the Os Pubis: A comparison of the Acsádi-Nemeskéri and Suchey-Brooks methods'. *Human Evolution* 5, 227-38.

Brothwell, D., 1981. *Digging Up Bones*. London: British Museum (Natural History).

Buikstra, J. E. and Ubelaker, D. H. 1994. *Standards for Data Collection from Human Skeletal Remains*, Arkansas Archaeological Survey Research Series No. 44.

Challands, A., 2001. *Report on the magnetic susceptibility survey at the Hanson Quarry, Earith, Cambridgeshire. August 2001*. Unpublished Report No. AC/01/05.

Challands, A., 2001. *Report on the magnetic susceptibility survey at the Hanson Quarry, Earith, Cambridgeshire. February 2002*. Unpublished Report No. AC/02/01.

Clark, K. M., 2000. 'Dogged persistence: the phenomenon of canine skeletal uniformity in British prehistory', In S. J. Crockford (ed.), *Dogs through time: an archaeological perspective*. Brit. Achaeol. Rep. Int. Ser. 889: 163-170.

- Clarke, A., 2003. 'Faunal remains', in R. Regan, *An archaeological excavation at Colne Fen, Earith: Langdale Hale sites V and VI*. Cambridge Archaeological Unit Rep. 537: 95-98.
- Cohen, A. and Serjeantson, D., 1996. *A manual for the identification of bird bones from archaeological sites, revised edition*. London: Archetype Publications Ltd.
- Darvill, T. C. and Coy, J. P., 1985. 'Report on the faunal remains from the Mound, Glastonbury', *Proc. Somerset Archaeol. Nat. Hist. Soc.* 129: 56-60.
- Davis, S., 1987. *The Archaeology of Animals*. London: Routledge.
- Davis, S. J. M., 1992. *A rapid method for recording information about mammal bones from archaeological sites*. Ancient Monuments Laboratory Report No. 19/92.
- Davis, S. J. M., 2003. 'Animal bone', in E. Evans, *Power and island communities' excavations at the Wardy Hill ringwork, Coveney, Ely*. East Anglian Archaeology 103: 122-131.
- Davis, S., 1987. 'The dentition of an Iron Age pony', in P. Ashbee, Warsash, Hampshire excavations, 1954', *Proc. Hampshire Fld Club Archaeol. Soc.* 43: 52-55.
- Dick, W. A. and Tabatabai, M. A., 1977. 'An alkaline oxidation method for the determination of total phosphorus in soils'. *J. Soil Science of America* 41, 511-4.
- Dobney, K., 2001. 'A place at the table: the role of vertebrate zooarchaeology within a Roman research agenda for Britain', in S. James and M. Millet (eds.), *Britons and Romans: advancing an archaeological agenda*. Counc. Brit. Archaeol. Res. Rep. 125: 36-45.
- Dobney, K. and Reilly, K., 1988. 'A method for recording archaeological animal bones: the use of diagnostic zones', *Circaea* 5 (2): 79-96.
- Dobney, K., Jacques, D. and Irving, B., 1996. *Of Butchery and breeds: report on the vertebrate remains from various sites in the City of Lincoln*. Lincoln Archaeological Studies 5.
- Edmonds, M., Evans, C. and Gibson, D., 1999. 'Assembly and Collection: Lithic complexes in the Cambridgeshire Fenlands'. *Proceedings of the Prehistoric Society* 65, 47-82.
- Evans, C., 2002. 'Metalwork and 'Cold Claylands': Pre-Iron Age occupation on the Isle of Ely'. In T. Lane and J. Coles (eds.), *Through Wet and Dry: Proceedings of a Conference in Honour of David Hall*: 33-53. Lincolnshire Archaeology and Heritage Reports Series No. 5 and WARP Occasional Paper 17.
- Evans, C., 2003a *Power and Island Communities: Excavations of the Wardy Hill Ringwork, Coveney, Ely*. East Anglian Archaeology Series Report 103.

Evans, C., 2003b. 'Britons and Romans at Chatteris: Investigations at Langwood Farm, Chatteris'. *Britannia* 34, 175-264.

Evans C. and I. Hodder forthcoming. *Marshland Communities and Cultural Landscape: The Haddenham Project 1981-87* (II). Cambridge: McDonald Institute Research Series.

Evans, C. and Knight, M., 1998. *The Butcher's Rise Ring-ditches: Excavations at Barleycroft Farm, Cambridgeshire, 1996*. Cambridge Archaeological Unit, Barleycroft Farm/ARC Paper 6.

Evans, C. and M. Knight 2000. 'A Fenland Delta: Later Prehistoric land-use in the lower Ouse Reaches'. In M. Dawson (ed.), *Prehistoric, Roman and Saxon landscape studies in the Great Ouse Valley*. Council for British Archaeology.

Evans, C. and Knight, M., 2001. The 'Community of Builders': The Barleycroft Post Alignments. In Bruck, J. (ed.), *Bronze Age Landscapes: Tradition and Transformation*, 83-98, Oxbow Books.

Evans, C. and Serjeantson, D., 1988. 'The backwater economy of a Fen-edge community in the Iron Age: the Upper Delphs, Haddenham', *Antiquity* 62 (235): 360-70.

Evans, C., Knight, M. and Webley, L., forthcoming. 'An Island Prehistory: Iron Age Settlement, 'Poverty' and Romanization on the Isle of Ely'. *Proceedings of the Cambridge Antiquarian Society*.

Frere, S.S., 1991. 'Roman Britain in 1990'. *Britannia* 21, 222-92.

Grant A., 1982. 'The use of tooth wear as a guide to the age of domestic animals', in B. Wilson, C. Grigson and S. Payne, (eds.), *Ageing and sexing animal bones from archaeological sites*. Oxford: Brit. Archaeol. Rep. Brit. Ser. 109: 91-108.

Grant, A., 1987. 'Some observations on butchery in England from the Iron Age to the medieval phase', *Anthropozoologica*, Premier Numéro Spécial: 53-58

Grant, A., 1989. 'Animals in Roman Britain', in M. Todd (ed.), *Research on Roman Britain: 1960-98*. Britannia Monograph Series 11: 135-146.

Gregory, T. and Gurney, D., 1986. *Excavations at Thornham, Warham, Wighton and Caistor St. Edmund, Norfolk*. East Anglian Archaeology 30.

Grigson, C., 1982. 'Sex and age determination of some bones and teeth of domestic cattle: review of the literature' in Wilson, B. Grigson, C. and Payne, S. (eds.) *Ageing and Sexing Animal Bones from Archaeological Sites* BAR British Series 109. Oxford.

Hall, D., 1992. *The Fenland Project No. 6. The South-western Cambridgeshire Fenlands*, East Anglian Archaeology 56.

Harcourt, R. A., 1974. 'The dog in prehistoric and early historic Britain', *J. Archaeol. Sci.* 1: 151-75.

- Harman, M., 1996. 'The animal bones', in D. F. Mackreath, *Orton Hall Farm: a Roman and Early Anglo-Saxon farmstead*. East Anglian Archaeology Rep. 76: 216-218.
- Hart-Davis, D., 2003. *Fauna Britannica: the practical guide to wild and domestic creatures of Britain*. Weidenfeld and Nicolson.
- Havis, R. and Brooks, H., 2004. *Excavations at Stansted Airport, 1986-91*. East Anglian Archaeology 107.
- Haylett, P., 1997. *Finds from Earith Quarry Colne Fen*, Unpublished Notes.
- Henig, M., 1993. *Corpus Signorum Imperii Romani. Great Britain I.7. Roman Sculpture from the Cotswold Region*. Oxford: British Academy.
- Henig, M., 2000. 'Art in Roman London', in I. Haynes, H. Sheldon and L. Hannigan, *London Under Ground. The Archaeology of a City*, 62-84. Oxford: Oxbow.
- Higbee, L., 1998. 'Animal bone' in R. Regan, *Excavations at Colne Fen, Earith. Site I*. CAU Report 273.
- Higbee, L., 2000. 'Animal bone' in R. Regan and C. Evans, *Excavations at Colne Fen, Earith: sites III and IV*. Cambridge Archaeological Unit Rep. 398.
- Higbee, L., in prep. 'The animal bone', in D. Garrow, S. Lucy and D. Gibson, *The Roman and Early Saxon Settlement at Norwich Road, Kilverstone, Norfolk*. East Anglian Archaeology.
- Hill, J.D. forthcoming. 'Iron Age pottery', in C. Evans and I. Hodder *Marshland Communities and Cultural Landscape: The Haddenham Project 1981-87*. Cambridge: McDonald Institute Research Series.
- Huskinson, J., 1994. *Corpus Signorum Imperii Romani. Great Britain I.8. Roman Sculpture from Eastern England*. Oxford: British Academy.
- Hyland, A., 1990. *Equus: the horse in the Roman world*. London: Batsford.
- Jackson, R. P. J. and Potter, T. W., 1996. *Excavations at Stonea, Cambridgeshire 1980-1985*. British Museum Press.
- King, A., 1978. 'A comparative survey of bone assemblages from Roman sites in Britain', *Bulletin of the Institute of Archaeology* 15: 207-232.
- King, A., 1984. 'Animal bones and the dietary identity of military and civilian groups in Roman Britain, Germany and Gaul', In T. F. C. Blagg and A. King (eds.), *Military and civilian in Roman Britain: cultural relationships in a frontier province*. Brit. Archaeol. Rep. Brit. Ser. 136: 187-218.

- King, A., 1999. 'Diet in the Roman world: a regional inter-site comparison of the mammal bones', *J. Roman Archaeol.* 12: 168-202
- King, J., 1996. 'The animal bones', in D. F. Mackreath, *Orton Hall Farm: a Roman and Early Anglo-Saxon farmstead*. East Anglian Archaeology Rep. 76: 216-218.
- Lauwerier, R. C. G. M., 1988. Animals in Roman times in the Dutch eastern river area. *Nederlandse Oudheden 12/Project Oostelijk Rivierengebied 1*, Amersfoort.
- Levine, M., 1982. 'The use of crown height measurements and eruption wear sequences to age horse teeth' in B. Wilson, C. Grigson and S. Payne (eds.), *Ageing and sexing animal bones from archaeological sites*. Brit. Archaeol. Rep. Brit. Ser. 109: 223-250.
- Levitan, B., 1984. 'The vertebrate remains', In S. Rahtz and T. Rowley, *Middleton Stoney: Excavation and survey in a North Oxfordshire Parish 1970-1982*: 108-152. Oxford: University of Oxford, Dept. for External Studies.
- Levitan, B., 1989. 'The vertebrate remains from Chichester cattle market', in A. Down, *Chichester excavations 6*: 242-276. Chichester: Chichester Civic Society Excavations Committee.
- Lovejoy, C.O., Meindl, R. S., Pryzbeck, T. R. and Mensforth, R. P., 1985. 'Chronological metamorphosis of the auricular surface of the illium: A new method for the determination of age at death'. *American Journal of Physical Anthropology* 68, 15-28.
- Luff, R., 1993. Animal bones from excavations in Colchester, 1971-85. *Colchester Archaeol. Rep.* 12. Colchester Archaeological Trust Ltd.
- Lyman, R. L., 1994. *Vertebrate Taphonomy*. Cambridge University Press.
- MacDonald, K. C., 1992. 'The domestic chicken (*Gallus gallus*) in sub-Saharan Africa: a background to its introduction and its osteological differentiation from indigenous fowls (*Numidinea* and *Francolinus* sp.)', *J. Archaeol. Sci.* 19: 303-318.
- Maltby, J. M., 1979. Faunal studies on urban sites: The animal bones from Exeter 1971-1975. *Exeter Archaeol. Rep.* 2.
- Maltby, M., 1985. 'Assessing variations in Iron Age and Roman butchery practices: the need for quantification', in N. J. R. Fieller, D. D. Gilbertson and N. G. A. Ralph, *Palaeobiological investigations: research design, methods and data analysis*. Brit. Archaeol. Rep. Int. Ser. 266: 19-32.
- Maltby, M., 1989. 'Urban-rural variations in the butchery of cattle in Romano-British Hampshire', in D. Serjeantson and T. Waldron (eds.), *Diet and Crafts in Towns*. Brit. Archaeol. Rep. Brit. Ser. 199: 75-106.
- McKinley, J.I., 1997. 'The cremated human bone from burial and cremation-related contexts', in A.P. Fitzpatrick *Archaeological Excavations on the Route of the A27*

Westhampnett Bypass, West Sussex, 1992 Volume 2: The Cemeteries, 55-73. Wessex Archaeology Report No.12.

Murphy, P., 2003. 'Plant macrofossils and molluscs', in Evans, C., *Power and Island Communities: Excavations at the Wardy Hill Ringwork, Coveney, Ely*, 84-114 (East Anglian Archaeology Report 103). Cambridge: Cambridge Archaeological Unit.

Murphy, J. and Riley, J. P., 1962. 'A modified single solution method for the determination of phosphate in natural waters'. *Anal. Chim. Acta* 27, 31-6.

Noodle, B., 1982. 'The size of red deer in Britain – past and present, with some reference to fallow deer', in M. Bell and S. Limbrey (eds.), *Archaeological aspects of woodland ecology*. Brit. Archaeol. Rep. Int. Ser. 146: 315-333.

O'Connor, T. P., 1988. The animal bones from the General Accident site, Tanners Row. *The Archaeology of York* 15/2: 63-136.

O'Connor, T. P., 1989. Bones from Anglo-Scandinavian Levels at 16-22 Coppergate. *The Archaeology of York* 15 (3): 137-207. London: Counc. Brit. Archaeol.

Payne, S., 1973. 'Kill-off patterns in sheep and goats: the mandibles from Asvan Kale', *Anatolian Studies* 23: 281-303.

Payne, S., 1985. 'Morphological distinction between the mandibular teeth of young sheep *Ovis* and goats *Capra*', *J. Archaeol. Sci.* 12: 139-147.

Payne, S., 1987. 'Reference codes for wear states in the mandibular cheek teeth of sheep and goats', *J. Archaeol. Sci.* 14: 609-614.

Payne, S., 1992. *Some notes on sampling and sieving for animal bones*, Ancient Monuments Laboratory Report No. 55/92.

Payne, S. and Bull, G., 1988. 'Components of variation in measurements of pig bones and teeth, and the use of measurements to distinguish wild from domestic pig remains', *Archaeozoologia* 2: 27-65.

Phillips, C.W., (ed.) 1970. *The Fenland in Roman Times*. London: Royal Geographic Society. Research Series 5.

Piggott, S., 1962. 'Heads and hoofs'. *Antiquity* 36, 110-18.

Rackham, D. J., 1991. 'The animal bone from post-Roman context', in M. R. McCarthy, *The structural sequence and environmental remains from Castle Street, Carlisle. Excavations 1981-2 Fascicule 1*: 85-88. Cumberland and Westmorland Archaeological and Architectural Society Research Series 5. Kendal.

Royal Commission on Historical Monuments 1926. *The Monuments of Huntingdonshire*. London.

Salway, P., 1984. *Oxford History of Roman Britain*. Oxford: University Press.

Schmid, E., (1972) *Atlas of Animal Bones for Prehistorians, Archaeologists and Quaternary Geologists*. Elsevier. Amsterdam, London, New York.

Silver I. A., 1969. 'The ageing of domestic animals', in D. Brothwell and E. Higgs (eds.), *Science in archaeology*, 2nd edition: 283-301. London: Thames and Hudson.

St. Clair, L.E., 1975. 'Teeth'. In R. Getty Sisson and Grossman's *The Anatomy of Domestic Animals*. Philadelphia, London, Toronto: W.B Saunders and Company.

Stace, C., 1997 *New Flora of the British Isles* (second edition). Cambridge: Cambridge University Press.

Stallibrass, S., 1996. 'Animal bone', in R. P. Jackson and T. W. Potter, *Excavations at Stonea, Cambridgeshire 1980-85*: 587-611. London.

Steele, D. G. and Bramblett, C. A., 1988. *The Anatomy and Biology of the Human Skeleton*, Texas: A&M University Press.

Stokes, P. R. G., 2000. 'The butcher, the cook and the archaeologist', in J. P. Huntley and S. Stallibrass, *Taphonomy and interpretation, symposia of the Association for Environmental Archaeology No. 14*: 65-70. Oxbow Books: Oxford.

Tebbutt, C.F., 1926. Romano-British village near Somersham, Hunts. *Antiquaries Journal* 6, 190-1.

Ubelaker, D.H., 1989. *Human Skeletal Remains: Excavation, Analysis and Interpretation* Washington DC: Taraxacum Press.

Von den Dreisch, A., 1976. A Guide to the Measurement of Animal Bones from Archaeological Sites. (*Peabody Museum Bulletin* 1) Cambridge, MA: Harvard University Press.

Von den Driesch, A. and Boessneck, J., 1974. 'Kritische anmerkungen zur Widerristhöhenberechnung aus Längenmaßen vor und frühgeschichtlicher Tierknochen', *Saugetierkundliche Mitteilungen* 22: 325-348.

Wightman, E.M., 1970. *Roman Trier and the Treveri*. London.