

Excavations at Addenbrooke's
THE HUTCHISON SITE



C. Evans, D. Mackay & L. Webley

**CAMBRIDGE ARCHAEOLOGICAL UNIT
UNIVERSITY OF CAMBRIDGE**



Excavations at Addenbrooke's Hospital, Cambridge
THE HUTCHISON SITE
Assessment Report

Christopher Evans, Duncan Mackay
&
Leo Webley

With contributions by K. Anderson, P. Blinkhorn, S. Boreham,
A. Challands, M. Edmonds, M. Knight, A. Popescu
K. Roberts and C. Swaysland

Cambridge Archaeological Unit
UNIVERSITY OF CAMBRIDGE
April 2004/Report No. 609

Contents

INTRODUCTION	1
<i>Background - 'Fixing' the Roman/Iron Age Landscape</i>	4
<i>Phasing and Report Structure</i>	9
EXCAVATION RESULTS	10
Prehistoric Activity	10
Phase 1 - Middle Bronze Age	10
Phase 2 - Late Bronze Age-Early Iron Age	10
<i>Artefact Studies</i>	14
<i>Worked Flint (M. Edmonds)</i>	14
<i>Middle Bronze Age Pottery (M. Knight)</i>	15
<i>Late Bronze Age-Early Iron Age Pottery</i>	17
<i>Other Artefacts</i>	17
<i>Environmental and Economic Evidence</i>	17
<i>Discussion</i>	18
Late Iron Age and Conquest Period Settlement	21
Phase 3 - Late Iron Age	21
<i>Enclosures</i>	21
Phase 4 - Mid-Late 1st Century AD	22
<i>The Roadway</i>	23
<i>The Main Enclosure System</i>	23
<i>Other Enclosures</i>	24
<i>Late Iron Age and Conquest Period Structures</i>	25
<i>Circular Buildings</i>	25
<i>U-shaped structures</i>	26
<i>Possible Posthole Structure</i>	26
<i>Pond</i>	30
<i>Burials</i>	30
<i>The Cemetery</i>	30
<i>Isolated Burials</i>	31
<i>Catalogue of Burials</i>	32
<i>Pottery Kilns</i>	38
<i>Oven</i>	40
<i>Artefact Studies</i>	41
<i>Late Iron Age and Roman Pottery</i>	41
<i>Coins</i>	46
<i>Metalwork</i>	46
<i>Fired Clay</i>	47
<i>Roman Tile (K. Anderson)</i>	49
<i>Environmental and Economic Evidence</i>	49
<i>Discussion</i>	50
Phase 5 - Late 1st-Mid 2nd Century AD	55
<i>Pottery</i>	56
<i>Small Finds</i>	56

<i>Environmental and Economic Evidence</i>	56
<i>Discussion</i>	56
Phase 6 - Middle Saxon	57
<i>Buildings</i>	57
<i>Wells</i>	60
<i>Artefact Studies</i>	60
<i>Anglo-Saxon Pottery</i> (P. Blinkhorn)	60
<i>Querns</i>	63
<i>Carved Clunch Block</i>	63
<i>Metalwork</i>	64
<i>Environmental and Economic Evidence</i>	64
<i>Discussion</i>	64
Phase 7 - Medieval/Post-Medieval	65
Finds From Metal Detector Survey	68
Environmental Studies	69
<i>Faunal Remains</i> (C. Swaysland)	69
<i>Environmental Bulk Samples</i> (K. Roberts)	77
<i>Pollen Analysis</i> (S. Boreham)	92
Final Discussion	94
Acknowledgements	98
Bibliography	99

INTRODUCTION

Situated on the north side of the grounds of Addenbrookes Hospital (TL 46255535), the c. 3ha site lay upon the Lower Chalk 'terrace plain' that extends north from the Gog Magog downs south of Cambridge. Though to all intents and purposes the area of excavation was essentially flat with its geology bedding between 16.80-17.70m OD, the highest ground lay in its southeastern corner (fig. 1). This correlates with a slight ridge whose line has been reconstructed from earlier survey work within the Hospital's grounds (see Evans 2002). The character of the natural changed markedly across the site: the western third had a sandy matrix with marl 'interruptions' whereas the eastern portion was marly grey clay beds. As will be demonstrated, these variations in the sub-soils clearly influenced activities occurring across the site, and also provided the constituent elements for its main industrial processing (i.e. sand and clay for pottery production).

Following on from a desktop assessment of the immediate area (Hall 2001) the site was subject to fieldwork evaluation in the late summer of 2001. The procedures applied varied according to the differing conditions of its cover. Across the western third - an intensively utilised Hospital car park - there was good aerial photographic coverage which revealed a large sub-square/polygonal cropmark enclosure with associated ditch lengths (fig. 1; see Palmer in Hall 2001 and Armour 2001). The eastern two-thirds of the area lay under the meticulously groomed playing fields of Downing College. Because of their on-going needs - respectively parking and 'playing' - only limited sondages and test pits could be dug within their interior swathes, and any significant evaluation trenching had to be restricted to their perimeters. In an effort to off-set this, in 2001 the playing field was subject to geophysical survey by Oxford Archaeotechnics (fig. 1; see also Armour 2001). This revealed what seemed to be two distinct networks of linear features: in the main, a northwest-southeast oriented system of regular paddocks and also other, more dispersed, linears on a more true north-south orientation. Aside from a scatter of geophysical 'spot anomalies', a distinct large circular feature clearly registered in the middle of the field which was encircled by a distinct ring of high-value resistivity.

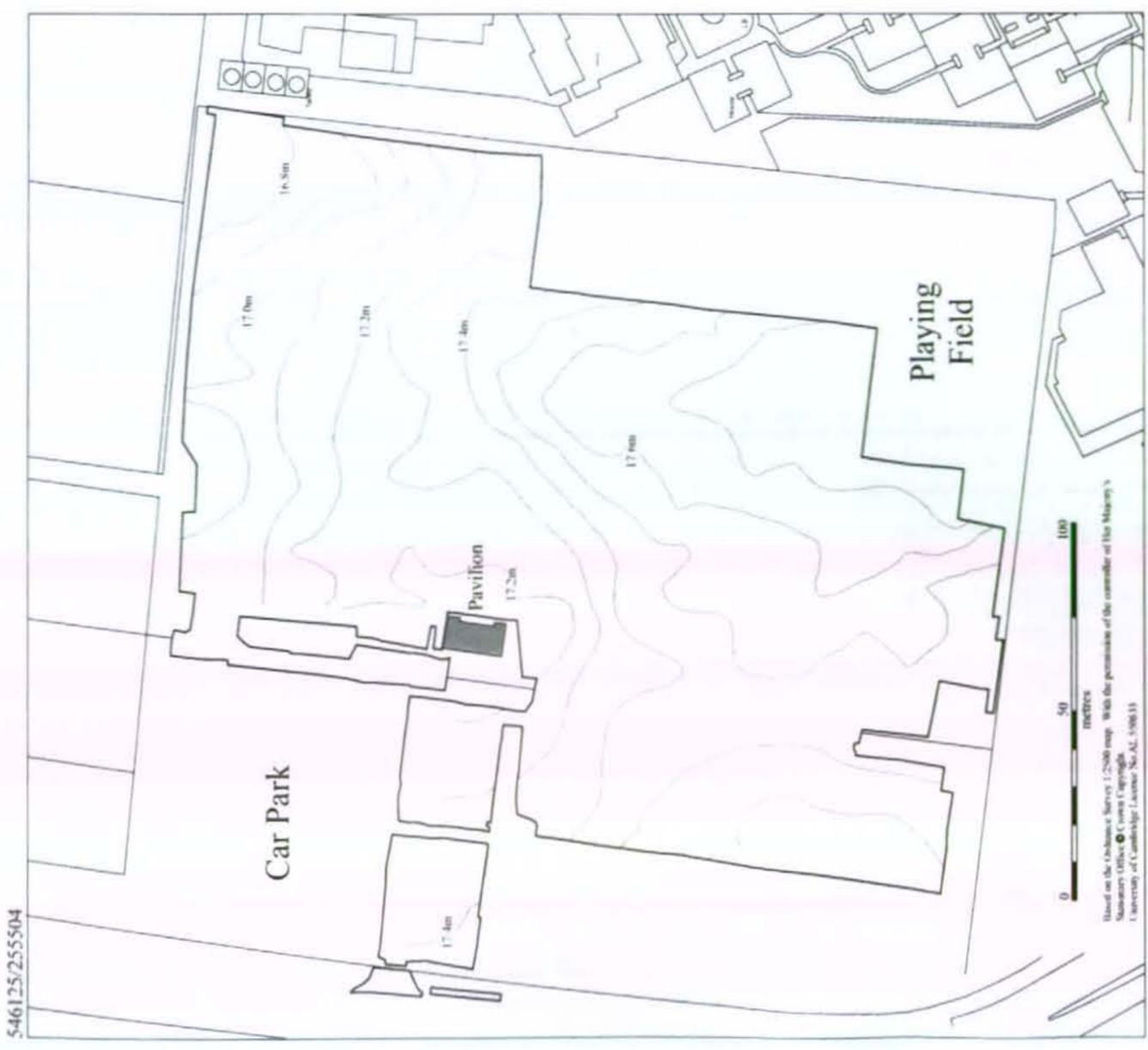
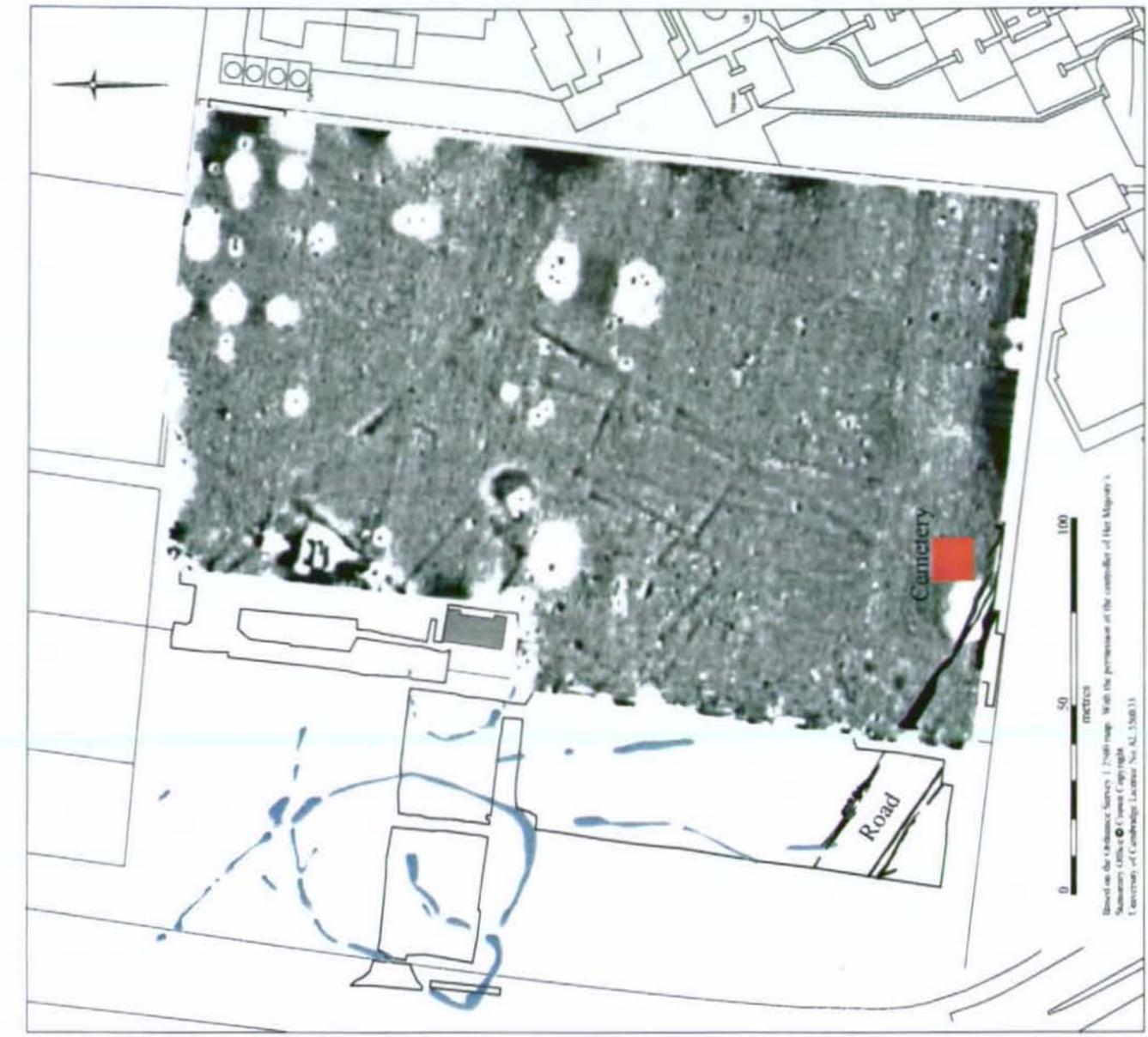
On the whole, the results from the evaluation succeeded in characterising the site's archaeology. Against a background Mesolithic/Neolithic 'presence', evidence of later Bronze Age/Early Iron Age occupation was detected (Armour 2001). The main paddock fieldsystem was identified and determined to be of 1st century AD, Late Iron Age/Early Roman attribution, though that the larger cropmark enclosures on the western side of the area were potentially of earlier, Middle/late Iron Age date was also recognised. Given the results, the most important trench in terms of expanding or informing the scope of the final area of excavation was 13 sited along the western margin beside Robinson Way. Accordingly, its findings are fully incorporated within the report below.

Generally the evaluation demonstrated that the playing field part of the site carried 0.40-.70m topsoil cover, and locally a 0.10-.15m thick, paler sub-soil was detected within its lower profile (as were traces of ridge-and-furrow cultivation). Whilst no horizontal strata as such were found to survive, at the eastern end of Trench 1 a robust spread of cobbles was found to extend across the truncated surface of the natural. During the course of the excavation itself this was found to equate with road metalling that lay within the profile of a 'hollow-way' (see fig. 4).

Under the field direction of Duncan Mackay (and management of Christopher Evans), the excavations occurred between late September 2002 and March of the following year. Portions of the site had to be relinquished by phased stages to dovetail with the concurrent building works, with the result that at any one time we never commanded its extent as a whole. Late in the programme watching brief recording also occurred along the line of a new access road running east from the site, the results of which are reported herein. Information arising from those evaluation trenches that eventually fell outside of the final area of excavation is also summarised within this text. Equally relevant are the results from a single evaluation trench dug along the western side of the adjoining plot immediately to the northeast of the site (*The Addenbrookes Sub-Station Site*; Mackay 2002), and also the evaluation in the rear gardens of 28-32 Long Road (*The Addenbrookes Day-Care Centre Site*; Whittaker 2002). In other words, all of these findings are considered as part of a single programme of investigation.

In the course of the main excavations some 1264 features were exposed, with 4717 contexts recorded (there being 1279 excavation 'interventions'; e.g. individual ditch segment slots or discrete feature excavations). The site indeed proved to be prolific with more than 43,000 finds recovered in total, including 21,917 sherds of pottery and 12,498 animal bones. Features were metal-detected prior to their excavation, though earlier topsoil trials had demonstrated that metal-detecting was unfeasible within this higher level due to the frequency of lost sport-shoe studs. Upon the discovery of the site's kilns, relevant swathes were, in addition, subject to magnetic susceptibility sampling (see fig. 4 and Appendix 1).

Aside from localised patches of metalling across the southern part of the site, no horizontal strata as such survived its long history of arable usage. The construction of the car park had clearly resulted in some degree of truncation across the western third of the site. When this was broken out and its underlying hardcore stripped off, the 'geology' was cleanly exposed (i.e. the sub-soils were truncated). This being said, its construction had clearly been carefully executed, with a geotextile membrane laid over much of the area. There was little additional compression of feature fill and only very localised evidence of any machine-rutting. As is clear from the site's base-plan, while across the southern part of the site the density of postholes is much less in the west than the east, the point at which they stop does not coincide with the edge of the car park but is well shy of it. Moreover, a distinct cluster of postholes did survive in the northwestern corner of the main car park swathe (south of the access road area).



546125/255504

546370/255212

Figure 1

Background - 'Fixing' the Roman/Iron Age Landscape

In 2002 Addenbrooke's Hospital commissioned the CAU to undertake a comprehensive desktop study of the archaeology of its broader environs (Evans 2002). This includes full plotting and appraisal of the wider area's aerial photographs, and the remarkable quality of its cropmark register allows for a high degree of landscape reconstruction (see fig. 26 and Palmer in *ibid.*). It shows that a bi-axial fieldsystem extends throughout this area, though - as indicated by shifts of alignment and some boundary overlap - it need not all have been directly contemporary. Dotted amidst the system are a series of more heavily bounded enclosures that were probably settlement-related (Evans 2002: fig. 7, No. 29.1 & 25), including a triple circuit enclosure of sub-rectangular plan (*ibid.*: No. 1.1). This occurs against a background of earlier prehistoric activity, and findings of Neolithic and Bronze Age date have been made within the landscape (see *ibid.* and Hinman 2001). Not only are probable ring-ditches known therein (i.e. Bronze Age; Evans 2002: fig. 6, No. 25 & 29.1), but also south by Nine Wells there is a large, single circuit circular enclosure that may be of later Bronze Age attribution (*ibid.* No 30). The implications of Cra'ster's New Addenbrooke's excavations are discussed in detail below. Otherwise of major importance for the current Hutchison site is the fact that it appears to fall between two Roman villa complexes: to the south SAM Cam 57 (*ibid.*: fig. 8, No. 31) and, to the north, that first investigated by Walker in 1909 in the grounds of the Perse School (Walker 1910; Evans 2002: No. 16-21).

The current excavations were very much framed by the background of Mary Cra'ster's earlier investigations at New Addenbrookes - a site long held to be 'special'. It was excavated in the summer of 1967 due to the observation of ditch sections by workmen during the course of the Stage 2 construction of New Addenbrooke's. The fragmentary character of the plan shown in the 1969 report reflects the conditions of fieldwork (Cra'ster 1969). Discussion with one member of the team suggest dire rescue circumstances, with only limited cleared exposure (and time) amidst machine-churned ground (K. Pretty pers. comm.).

The main feature exposed was a rectangular ditch enclosure, with rounded corners, some 35ft (107m) across. Its 'V'-shaped ditch was some 7ft (2.10m) across and four feet deep (1.22m; Cra'ster 1969: fig. 1-3). A few pits were exposed within its interior (apparently unexcavated) and it was remarked that many more probably went unnoticed. Some quantity of domestic refuse was recovered from the ditch's basal fills and there can be little doubt that the enclosure was occupied as such. The pottery recovered was of 'Iron Age A' type and thought to be comparable to the assemblage from Barley (Cra'ster 1961). Aside from the main enclosure, a series of parallel ditches ran along its southern side (Cra'ster 1969: fig. 2.'B' & 7). These were not firmly dated and only one seems to have been fully excavated (*ibid.*: fig. 4). This produced pottery of the same general type as the main enclosure, but also found was a fine, La Tène-style decorated pot (fig. 3). The only definite settlement evidence *per se* was found outside of the main enclosure south of the parallel

ditches (also location 'A' on Cra'ster's 1969 plan). There the remains of a sub-circular building ('hut'), as defined by postholes and a prepared floor, were recovered.

The finds from the site are held by the University of Cambridge Museum of Archaeology and Anthropology, and the pottery was viewed in the course of this study (Acc. No. 1968.345, 348, 349, 351, 352 & ZZZ015). Recent re-appraisal of the assemblage indicates that it relates to a Middle/late Iron Age ceramic tradition (J.D. Hill pers. comm.). It is probably of 3rd/2nd century BC date, though the La Tene decorated pot could be later and suggest occupation into the 1st century BC. (Note the assemblage includes a few Romano-British sherds and a piece of roof tile, which apparently derive from the upper profile of the main enclosure ditch.) The bone from the excavations cannot be located and may well have been discarded. This is indeed unfortunate as it precludes radiocarbon dating of the site's assemblages. The material was, however, studied for Cra'ster's report and of the 107 pieces recovered, 57% were cattle and 38% sheep/goat; three horse (3%) and two pig (2%) bones were also noted (1969: Appendix). In short, there seems nothing particularly noteworthy in this as a faunal assemblage, apart perhaps from the frequency of pig - held by some to be a marker of site status (e.g. see Davis in Evans 2003a and in Malim 1998) - which is very low.

The accrued status of the site (i.e. 'specialness') will be discussed below. Before doing so, three points warrant emphasis. Firstly, when compared to the ditches exposed in the Hutchison Site investigations, Cra'ster's main ditches seem to have been much more 'robust'. Equally, the recent excavations demonstrate just how slight most of the directly house-related features are as a result of intense, long-term plough-damage. Given this, it is remarkable that any building-plan evidence was recovered at all from the 1960s fieldwork in the light of its conditions, and certainly much must have been destroyed without notice.

Secondly, there is the degree to which Cra'ster's site *seems* to 'fix' the prime axes of the immediate south-of-Cambridge Roman landscape, with its southern parallel ditches continuing the line of the Colchester Roman road. Projecting the line of the northward *Via Devana* route, exposed by Walker at the Perse School (RCHM[E] 1959: xxxiii, 5), established the cross-roads (though not continuing south of the Colchester route), which roughly corresponds with the N-S ditch coming off of Cra'ster's southern parallel ditches. Yet this is only a matter of a vague correlation. The Addenbrooke's Roman cross-roads was basically 'set' by the RCHM[E]'s re-alignment of the *Via Devana* through the careful plotting of Walker's Perse School investigations (cf. Fox 1923: Map IV). Of the Colchester route, this is a matter of informed supposition and not direct evidence. Aside from a general respect of this alignment, no direct trace of this route was found in the Hutchison investigations. Essentially its route at this point is based upon the line of Worts' Causeway, which has been equated with the Roman road (RCHM[E] 1959: 6). This route is thought to have led to a bridgehead or ford at Grantchester and from there continue westwards to join Akeman Street northeast of Barton. The problem with this interpretation is that Worts' Causeway is known to have been cast up by the bequest of William Worts in 1763 (Walker 1910). Whilst it may have incorporated the earlier Roman route,

it could originally have been a Medieval headland and a number of headlands are plotted in the vicinity on a parallel alignment (fig. 2). In other words, Wort's Causeway itself need not directly mark the line of the Roman road as such.

Plotting of Cra'ster's site against these putative routes (something that has not been attempted before; cf. Browne 1974: Map 26) shows considerable off-set - the Roman roads would run across the interior of the 'New Addenbrooke's' enclosure. While, from this the very existence of these routes at this point could be questioned, the fact that Cra'ster's site does align so closely to, at least, the E-W road (as does also the broader 'landscape grid') suggests that it/they must either kink along their length or that their position has not been accurately projected. The E-W route may lie further south than has been plotted if its line is indicated by the parallel ditches on the southern side of the 'New Addenbrooke's' enclosure. If so, then the headland immediately south of Wort's Causeway would be a better candidate for its route.

The final point that warrants emphasis is the detailed contour map that Cra'ster produced for the core area of the Hospital (Cra'ster 1969: fig. 1). Whilst only showing variation between 42 and 62 feet (c. 13-19.00m), it indicates that the Iron Age enclosure lay across the crown of a distinct E-W oriented rise. Aside from attesting to the immediate landscape sensitivity of the site's layout, this relief also indicates what 'topography' has been lost through the construction of the Hospital; no trace of this rise survives today.

Despite the fact that only an incomplete plan of the enclosure was retrieved and little of its interior could be examined in detail (understandable given the limited resources at hand), Cra'ster's Addenbrooke's site has long been held to be 'special'. Now with 35 years hindsight, is this still the case? The status of this site has hinged upon the deep 'V'-shaped profile of its boundary ditch and, more importantly, the recovery of a La Tène-style decorated vessel that was unique in the region at that time and suggested high status and/or distant trade connections. Whilst recent fieldwork has shown that such vessels were not commonplace, one or two pots of this type have now been found on a number of later Iron Age sites in the region, including the Wardy Hill Ringwork and West Fen Road site on the Isle of Ely (Evans 2003 and Evans *et al.* forthcoming), and at Greenhouse Farm, Cambridge (Hill *et al.* in Evans 2003). What is interesting given their low numbers and distinctive style is that they seem to have been made from local clays, and this could indicate their on-site manufacture by itinerant potters familiar with this specialist decorative style. This additional context goes some way to undermine the 'specialness' of Cra'ster's site and, as discussed below, a number of comparable sub-square cropmark enclosures are now known to lie within the Addenbrooke's environs.



Figure 2 View of the site looking west

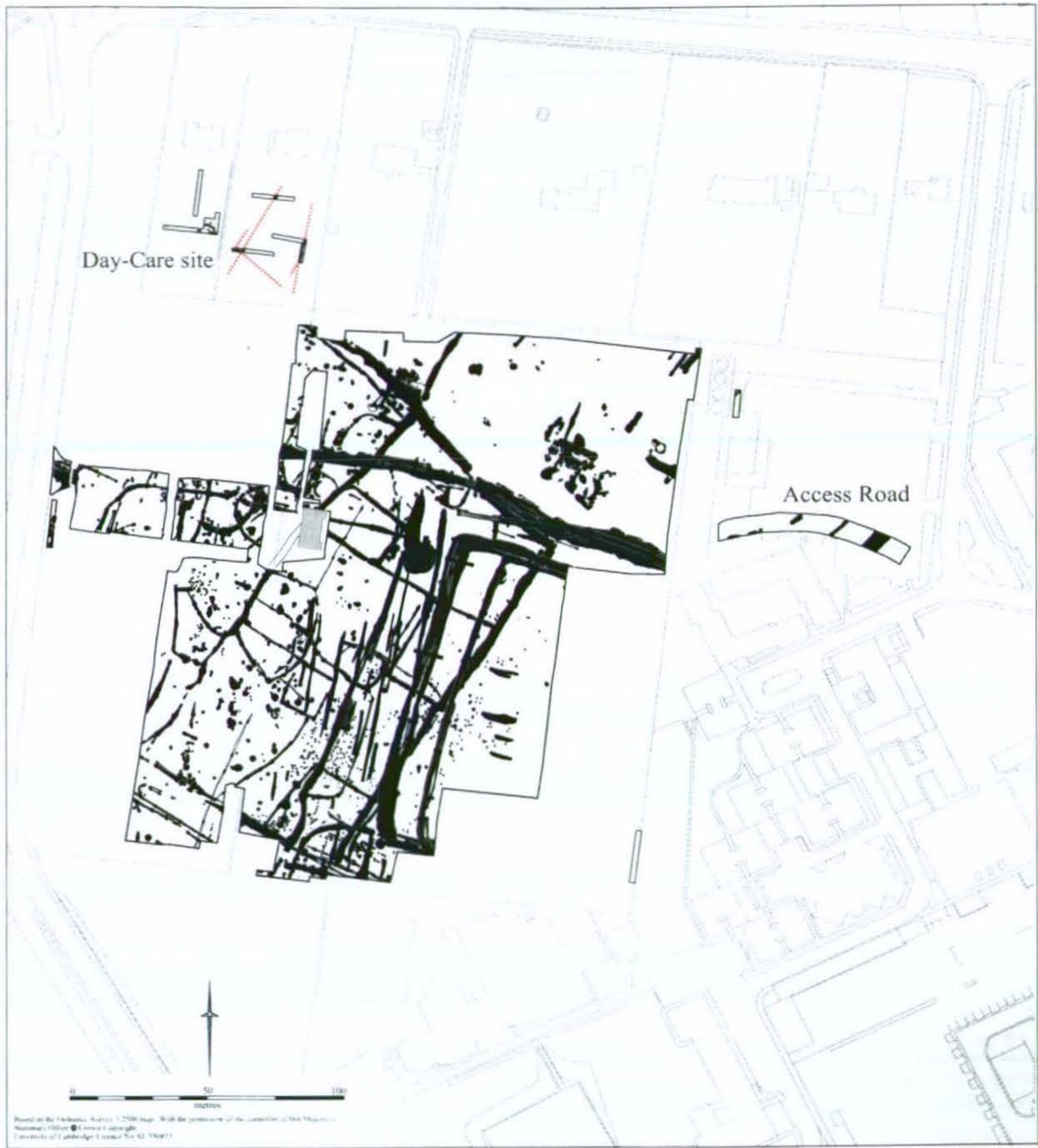


Figure 3



A-C Areas of Magnetic
Susceptibility Survey

Metalling

Figure 4

Phasing and Report Structure

Leaving aside the site's Mesolithic/Neolithic artefact 'background' (and also 20th century intrusions), six main periods of usage/occupation were identified:

- 1) Middle Bronze Age activity
- 2) Late Bronze/Early Iron Age settlement
- 3) Later Iron Age occupation
- 4) Conquest Period occupation
- 5) Later Roman fieldsystems
- 6) Middle Saxon settlement
- 7) Medieval ridge-and-furrow agriculture.

In terms of the broader understanding of the development of the Addenbrookes landscape there can be little doubt that Phases 3/4 are the most important. There are, however, difficulties in its definition or, at least, its sub-division into distinct later Iron Age and immediately Conquest (i.e. primary Roman) phases. This is unfortunate for, like at the Greenhouse Farm complex on the east side of Cambridge (Gibson & Lucas 2002), it is crucial for understanding when (post-Bronze Age) bi-axial fieldsystems were established - during the Late Iron Age or as part of the Conquest? In this regard it is essential that the site be situated in the broader cultural geography of Later Iron Age Southeast England. Like Cambridge itself, it falls on the northern border of the Aylesford-Swarling zone and the limits of direct Roman Gaulish influence during the later 1st century BC and the first half of the 1st century AD. This is reflected in the uptake of new modes of pottery (wheelmade manufacture) and burial (cremation rite), and also changes in dress/grooming and the adoption of coinage (see Hill *et al.* 1999). As will be explored below, this is directly reflected on this site by the occurrence of Iron Age coinage and the frequency of its brooches and wheelmade pottery (see Evans 2003b).

Within this report the excavation results are presented by the site's phases. Specialist studies are integrated within the appropriate sections, with only the results of the environmental analyses standing alone as a separate block within the latter part of the text. A full gazetteer of feature descriptions is appended, thereby permitting us to keep measured description to a minimum within the main body of the text.

EXCAVATION RESULTS

Prehistoric Activity

No features could be dated to before the Middle Bronze Age, although modest quantities of Mesolithic to Early Bronze Age worked flint were recovered as residual material in later features (see Edmonds below). A particular concentration of Mesolithic and Neolithic flint - including an Early Neolithic leaf-shaped arrowhead - occurred in and around pit F. 468, but otherwise the material seems fairly evenly distributed across the site. The impression gained is of only transient or low intensity landscape use during earlier prehistory.

Phase 1 - *Middle Bronze Age* (fig. 6)

Five features contained pottery of the Deverel-Rimbury tradition, dating them to the Middle Bronze Age (c. 1500-1000 BC). In the eastern area of the site, F. 120 and F. 150 were oval postholes or small pits, c. 0.50m across and 0.1m deep, while pit F. 157 was larger, measuring 1.5 x 0.95 x 0.32m. Removed some distance to the north of these features was isolated pit or posthole F. 342, measuring 0.36 x 0.33 x 0.10m, which was distinct from the other Middle Bronze Age features in having a different pottery fabric (see Knight below). Finally, in the north-western part of the site was intercutting quarry pit complex F. 727, 4.75m across and up to 0.56m deep. The distribution of finds among the Middle Bronze Age features shows differential patterning, with most of the pottery (>1kg) coming from the two small pits F. 120 and F. 150 in the southeast, while most of the bone came from the quarry pit complex. The absence of worked flint from any of the features is notable, and could indicate that a full range of 'domestic' activities was not taking place.

The small number of features datable to this period indicates a fairly modest level of activity. The distribution and nature of the activity mirrors that of the Late Bronze Age/Early Iron Age, with 'settlement' features clustering in the southeastern part of the site and marl quarrying to the north. While the Middle Bronze Age activity can thus be seen as a direct precursor of the Late Bronze Age/Early Iron Age settlement, the fact that Deverel-Rimbury and post-Deverel-Rimbury pottery were never found together in the same feature does give a sense of chronological distinction between the two phases.

Phase 2 - *Late Bronze Age/Early Iron Age* (fig. 6)

An extensive swathe of features extending across much of the site can be dated to the Late Bronze Age/Early Iron Age (c. 1000-400 BC) by the presence of pottery in the Post-Deverel-Rimbury (PDR) tradition. These features consist of 21 pits greater than 0.5m diameter, 32 smaller pits or postholes, a possible cremation pit, a large area of quarry-pitting, and a small ring-gully. The main concentration of settlement evidence lies in the south and southeast of the site, with two small pits to the north (F. 647 and F. 721), while the quarrying and ring gully lie in the otherwise unoccupied northeast. It is likely that many more of the small pits and postholes in the southern and

eastern areas of the site belong to this phase but contain no datable material. Significant amounts of PDR pottery were found as residual material in later features, suggesting that the Late Iron Age and Roman enclosure systems have obliterated many features dating to this period.

Although there is an abundance of postholes, with particular clusters lying in the south and southeast of the site, it is difficult to recognise individual structures and no houses can be identified. Any houses that did exist may have been overlain by the Late Iron Age and Roman enclosure systems, or could alternatively lie outside the excavated area, as the boundary of the settlement swathe was not reached to the east and south. The only buildings that can be discerned are three rectangular 'four-posters', Structures 1-3. Such structures are usually interpreted as raised granaries.

Structure 1 at the southeastern edge of the site measures 2.25m north-south by 2.75m east-west, formed of postholes F. 142-144 and F. 146. The postholes range from 0.22-0.32m diameter and from 0.09-0.28m deep with mid brown silt fills (F. 143 held 12g of PDR pottery).

Structure 2, placed a short distance to the northwest, measured 1.75 x 1.75m. The four postholes (F. 160, F. 161, F. 163 and F. 164) ranged from 0.30-0.43m diameter and from 0.09-0.28m deep with grey-brown silt fills. No artefacts were recovered, but the structure falls within an area of dense Late Bronze Age/Early Iron Age settlement activity.

Structure 3 was located in the western part of the site and measured 2.25m x 2.25m. The four postholes (F. 582-585) range from 0.20-0.36m in diameter and from 0.04-0.12m deep, with fills of dark grey-brown sandy silt. No finds were recovered. Due to its location, the period attribution of this structure is not certain, but it has been tentatively placed in the Late Bronze Age/Early Iron Age by analogy with Structures 1 and 2.

In addition, two other 'four-posters' (one actually being a five-post setting) were possibly apparently (marked A & B on fig. 6), though these are of much more dubious status.

Despite the lack of recognisable settlement structures other than granaries, some zoning in the character of activity is apparent. A plot of the dimensions of the pits suggests a division into three size categories, suggesting functional distinctions (fig. 5). Most of the pits are not more than 1.3m diameter or more than 0.35m deep, but two pits are larger at 2.25-2.40m diameter and 0.60-0.95m deep (F. 45 and F. 970), and there is one 'shaft-like' pit measuring 1.1m diameter and over 1.0m deep, the base not being reached (F. 369). While the densest concentration of pits occurs in the southern and southeastern parts of the site, these all fall into the smallest category. All of the pits in the two larger categories lie in the 'peripheral' areas to the west and north. It can also be noted that the two features with by far the largest assemblages of PDR pottery (>1kg each) are both large 'peripheral' pits (F. 45 and F. 369), which complicates the issue of where the settlement 'core' lay. In both of these pits the pottery deposit lay above a lens of charcoal (the pottery and charcoal deposit lying in a recut in the case of F. 369). None of the pits seem to closely resemble the large 'pit-wells' that are regarded as a type-feature of settlements of this period (e.g. Evans 1999).

The possible cremation, F. 166, is located close to densest area of occupation at the southeast of the site. It consists of an oval pit, 0.60 x 0.48m in size and 0.22m deep, containing 282g of burnt bone along with a single pot sherd and some small pieces of burnt flint.

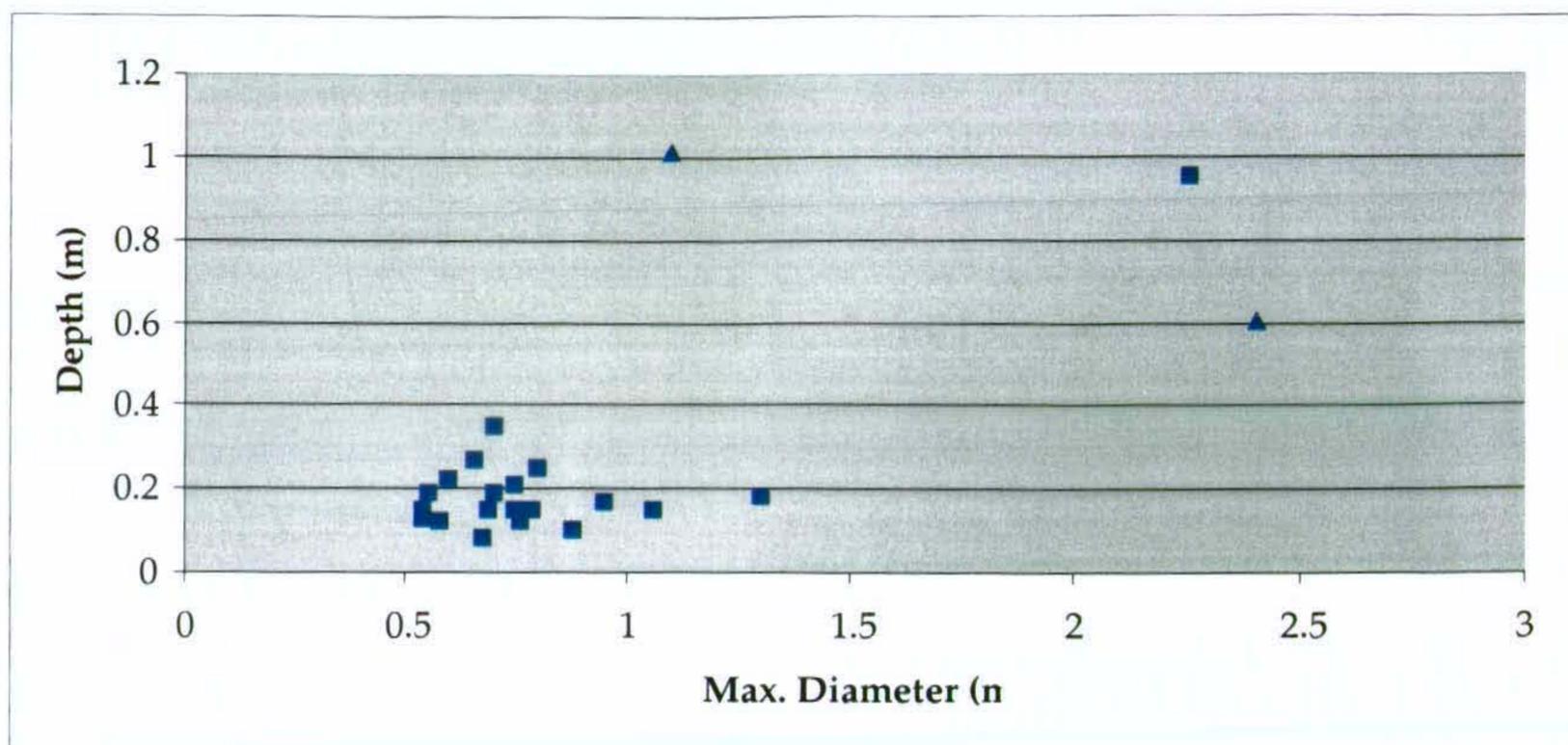


Figure 5: Late Bronze Age/Early Iron Age pits/postholes, over 0.5m diameter. Triangles indicate pits containing large pottery deposits (>1kg).

Set some distance apart from the settlement swathe, in the northeastern part of the site were some features of a different nature, relating to raw material extraction and possible agricultural activity respectively. The former was represented by a substantial complex of irregular, intercutting quarry pits (F. 650-60, F. 696-9, F. 701-5), covering an area of c. 35 x 20m and varying from 0.1-1.0m deep. These quarry pits were presumably created for marl extraction for the purposes of potting, building construction and so forth. While it would be tempting to associate these extraction pits with the intensive Early Roman pottery production, this cannot be the case as the pits collectively contain 473g of PDR pottery but no later material. It is highly unlikely that large open excavations could have existed on the edge of such a substantial Roman site without refuse collecting or being dumped within them.

Also in the northeastern part of the site, Structure 4 (F. 27) is a circular ring gully with an internal diameter of c. 3m, a width of 0.46-0.60m and a depth of 0.17-0.22m. It contained a single silt fill with some charcoal and two small fragments of PDR pottery. This feature is too small to be a levelled barrow or a mortuary ring ditch, and is more likely to be a drainage gully surrounding an agricultural feature such as a hay-rick. While its date must remain uncertain due to the paucity of finds, a parallel is provided by a c. 2m diameter ring ditch recently found associated with a Late Bronze Age/Early Iron Age field system at Deeping St James, south Lincolnshire (Denison 1996).

Of highly dubious status, it is possible that the NNE-SSW oriented ditch line (F. 31 & F. 976) and its western return (F. 32) were related to this occupation. Of very minor, 'gully-like' proportions, the only dateable find from it was a small piece of iron. That the ditch however was cut by the line of the later Roman road (and possibly any Late Iron Age precursor) could suggest its 'early' attribution.

The lithic assemblage from the site consisted of total of 659 pieces of worked stone, all of it flint. Typological and technological characterisation suggests that we are dealing here with a mixed assemblage reflective of more than one episode/period of activity in the immediate area. Diagnostic retouched forms and specific technological repertoires indicate an Earlier and Later Neolithic component in the total, with a few pieces perhaps indicative of Mesolithic activity. These pieces were all recovered as residual material in demonstrably later features. In addition, there is a significant quantity of crudely worked stone recovered from features which may be broadly contemporary with the main phases of activity identified on the site.

In raw material terms, the relatively high frequency of pieces with cortex present on dorsal surfaces suggests that more than one source is likely to be represented within this total. Problems with the characterisation of flint mean that it is seldom possible to attribute particular artefacts to specific sources. However, variations in the composition, weathering and colour of the cortex on material recovered from different features does suggest the use of two broad groups of sources - secondary gravels deposits and chalk flint levels.

In technological terms, it is clear that we are dealing with an assemblage comprising several different approaches to working and most likely several phases. This is also suggested by variability in the degree of patination/cortication on different pieces, though this is uncertain as other factors can influence the process. The bulk of the assemblage (71%) comprised tertiary and secondary flakes of various forms. The frequency of secondary flakes with cortex on c. 50% of their dorsal surfaces was notably high, and is most likely indicative of the working of relatively small nodules of flint from gravels and related secondary sources. The presence of c. 49 fully primary flakes suggests that at least some working on site began with small unprepared nodules. It is also notable that a high proportion of these secondary flakes have large, plain and unprepared (occasionally cortical) platforms and frequent hinge or step terminations. They also tend to be relatively thick and irregular in both plan and profile. This is most likely an indication of a relatively simple and unstructured reduction sequence. Simple retouch/edge damage was identified on 67 of these pieces, a few at least likely to be a product of trampling/post-depositional reworking during the Iron Age/Romano-British phases of activity on the site. There is little to indicate much in the way of careful selection of appropriate pieces for reworking/use. Alongside these flakes are a number of angular and crudely worked cores or core fragments with similar characteristics.

Alongside these traces of a relatively simple and ad hoc attitude towards the stone, there are also pieces that reflect a different approach. These take the form of narrow flakes and blades (e.g. from contexts [1371] and [3314]) and single or opposed platform blade cores (e.g. [156]). The blades vary considerably in form and size. Some are small and highly regular with small and carefully trimmed platforms; three of these have also had their bulbs removed by secondary flaking. There are also larger and longer blades and narrow blades. These also have carefully prepared platforms and several are serrated with micro-denticulate reworking. Much of this material is likely to

be Later Mesolithic or Earlier Neolithic in date, the latter period also suggested by a triangular sectioned and heavily worn fabricator from [1156/7] and a finely flaked leaf arrowhead from [3314], a later pit. Of the four 'formal' scrapers identified in the assemblage, one (from [3314]) is a classic endscraper on a carefully made blade which is likely to date to a similar phase. Two horseshoe/sub-circular scrapers with invasive working are less diagnostic, and may date from the later third/early second millennium, a date also likely for the fine thumbnail scraper from [891/2] and the retouched knife from [141]. One blade, differently patinated, is both regular and far longer (c. 6cm) than the others and may be even older, perhaps Earlier Mesolithic.

Details of the context of recovery demonstrate that much of this diagnostic material had become incorporated as residual debris in later features. This includes the pit F. 468/[3314] which has a significant concentration of flintwork with 'early' attributes. This means that it is difficult to say anything in detail about the scale, or spatial patterning of Mesolithic or Neolithic activities in the immediate area. Perhaps the only observation worthy of note in this regard is that fact that roughly 35% of the total assemblage was recovered from contexts in the vicinity of pit F. 468, the rest scattered in lower numbers across unrelated features. Overall, the densities involved are not substantial, and this may suggest that whatever form those early activities took they were essentially small scale and short lived.

One interesting quality to the assemblage is the high frequency of material reflective of a relatively crude and unstructured approach to working. This component, almost by definition, includes few, if any diagnostic forms. This makes chronological attribution difficult and certainly open to question. However it may well be that a proportion of this material reflects the use of stone as a practical material in the Iron Age or even later phases of activity. Such a late date for routine stone use in Britain has been hotly debated. However, most would now acknowledge that working was indeed a common sight in areas rich in raw materials or 'archaeological' deposits (Edmonds 1995; Young & Humphries 2000). While some of the cruder forms of working are themselves early in date and reflective of variability in skill and/or raw material quality, it is suggested here that some material at least belongs in the first millennium BC.

Middle Bronze Age Pottery Mark Knight

The assemblage is made up of 176 sherds, with a total weight of 1255g (MSW: 7.13g), recovered from 6 different contexts. In all three separate fabrics have been identified. Only 7.4% of the total number of sherds are feature sherds (five Rims, seven Base angles, one applied shoulder cordon). Decoration is equally rare and, with one possible exception, confined to rims. The condition of the assemblage is fair and includes several sherds over 5cm in length and breadth but also many small fragmented pieces. Without exception all of the sherds come from thick-walled vessels (between 10-15 mm).

Context	Sherds	Weight (g)	Fabric
77	22	313	1
1441	18	52	3
1740	14	136	1
2831	1	16	2
2838	7	35	2
3284	114	703	1
Totals: 6	176	1255g	3

Table 1: Middle Bronze Age pottery

The pottery can be described as follows:

[77] includes a large rim fragment (simple flattened) above a slight shoulder. The top of the rim has two diagonal, widely spaced fingertip impressions. The diameter of the rim equals c. 0.30m. A base angle fragment from the same context has a diameter of c. 0.26m.

[1441] is made up of small flint tempered fragments three of which are base angles.

[1740] is dominated by a large body sherd with a plain applied shoulder cordon.

[2831] has a single burnt body fragment.

[2838] comprises seven sherds one of which is a simple rounded rim fragment (diameter: c. 0.24m).

[3284] represents the largest group of pottery and includes the fragments of at least two vessels. Vessel 1 (diameter: 0.26m) has a flattened simple rim decorated along the top with incised diagonal lines (making a twisted ropes effect). Vessel 2 (diameter 0.28m) has a simple rounded rim decorated with a diagonal fingernail impression. Other pieces from this context include two large base angle fragments (c. 0.20m in diameter) and one possible body sherd with a fingertip decoration.

This Middle Bronze Age assemblage represents the fragments from at least seven large, thick walled, bucket-shaped vessels of the Deverel-Rimbury tradition. It includes biconical and straight forms both with simple rims. Apart from one flint tempered vessel the dominant inclusion is shell. Decoration consists of diagonal incised lines or fingertip/nail impressions and one vessel had an applied cordon.

Although small, the assemblage includes vessel forms, rim types and decorative traits found amongst other East Anglian and East Midland Deverel-Rimbury assemblages (Longworth *et al.* 1988). For instance the rims decorated with distinctive diagonal slashes also occur on vessels at Grimes Graves, Norfolk (*ibid*), Fengate, Cambridgeshire (Pryor 1974) and Ardleigh, Essex (Erith & Longworth 1960).

Fabric series:

Fabric 1 – Moderately hard with abundant small, medium and large SHELL and rare small FLINT.

Fabric 2 – Moderately hard with frequent to abundant very small and small SHELL.

Fabric 3 – Very hard with abundant small, medium and large FLINT.

Late Bronze Age/Early Iron Age Pottery

A substantial assemblage of pottery in the Post-Deverel-Rimbury tradition was recovered, dating to c. 1000-400 BC. The material comprises c. 1300 sherds in total, of which 1066 sherds (7736g) were recovered from contemporaneous features. This report follows a brief scan of the material to assess its character and dating; more detailed recording and analysis will be carried out for the final publication of the site.

Much of the material is highly fragmented but some relatively large sherds were also recovered. Vessel forms include both bowls and jars; bases are typically pinched out. Decorated pieces comprise a furrowed bowl from [015], a rim with diagonal stab marks beneath from [2911], a gently carinated vessel with three rows of impressed circular dots immediately above the carination from [3314], and a sand and fine flint tempered vessel with faint combing or 'rilling' from [3314]. One sherd from [4519] has an 8mm deep circular stab mark, creating a marked bulge or knob on the interior side. The context containing the furrowed bowl also contained a small fine vessel with strap handle and two classic pinched fineware rims. Close dating of the assemblage as a whole is difficult, although many of the decorated pieces are likely to date to around the ninth-sixth centuries BC. This group of pottery is important within a local context as the largest PDR assemblage yet recovered from south Cambridgeshire.

Other Artefacts

[263] F. 529 Baked clay spindle whorl, bun-shaped with horizontal 'rilling'. Measures 15mm high, 25mm diameter on upper side and 15mm diameter on lower side. The central perforation tapers from 10mm at the top to 8mm at the bottom. Hard fabric with reduced surface and no visible inclusions. From a Late Bronze Age/Early Iron Age pit.

[3314] F. 468 Fragment of a worked bone point or gouge, 75mm long. Produced from a long bone (possibly a metatarsal) of a sheep-sized animal. The bone has been split down its length so as to retain the inner curvature. From a Late Bronze Age/Early Iron Age pit.

Unstratified, grid 150/310 Cast copper alloy fragment, in the form of a curved plate, 30 x 25 x 2.5mm. One original edge survives, on the shorter, curved axis. This has a slight lip along the internal side (relative to the curvature). A raised straight ridge runs at right angles from this lip along the internal side of the object. Probably a fragment of a Bronze Age socketed axe or palstave.

Environmental and Economic Evidence

A modest quantity of animal bone was recovered from Bronze Age-Early Iron Age contexts (see Swaysland below). One Middle Bronze Age pit, F. 157, contained a small amount of bone including a cattle mandible. Meanwhile, of the twelve analysed features from the Late Bronze Age/Early Iron Age, the identifiable material consisted of cattle (48%), sheep (38%) and pig (14%).

The three environmental bulk samples taken from this phase of the site contained only very small amounts of plant remains, including a single cereal grain of wheat/barley (see Roberts below). One sample, from F. 31, contained a large amount of molluscan remains, including some indicative of damp or wet conditions, and others suggesting an open environment.

Discussion

The Middle Bronze Age settlement at Addenbrooke's is of interest as one of very few known in south Cambridgeshire. The nature of the occupation is difficult to characterise given the small number of features present, and it may be that the core of the settlement lies outside the excavation area to the east. Middle Bronze Age settlements elsewhere in eastern England are often associated with field systems, but there is no evidence for this here. Traces of a possible field system have however recently been found c. 1km to the north at Brooklands Avenue, Cambridge (Cooper forthcoming). Though the ditches contained no dating evidence, an associated pit yielded a sherd in a very similar shelly fabric to that seen at the present site. It is thus conceivable that the putative Brooklands field system and the occupation at Addenbrooke's both formed part of the 'taskscape' of the same local community.

The occupation from the Late Bronze Age/Early Iron Age seems rather more substantial in nature. The extensive, unenclosed settlement 'swathe' seen at this site is an example of a mode of settlement that seems fairly typical of this period in eastern England. Such swathes could be produced by occupation plots undergoing short distance shifts over time within a given area of the landscape, a notion which may be supported by the fact that houses from other sites of the period rarely show more than one or two phases of construction.

	MBA	LBA/EIA
Pottery	151 (1296g)	1066 (7736g)
Baked Clay	7 (105g)	28 (564g)
Worked Flint	-	222 (1289g)
Burnt Flint	-	30 (248g)
Burnt Stone	6 (156g)	120 (9000g)
Bone	82 (1503g)	441 (3583g)
Worked Bone	-	1 (1g)

Table 2: Artefacts from features dated by pottery to the Middle Bronze Age and Late Bronze Age/Early Iron Age respectively. Does not include material residual in later features.

The finds assemblages from the site do not seem particularly distinguished in character, with, for example, no evidence for specialised crafts such as metalworking. While the pottery includes several Early Iron Age decorated vessels, burnished finewares are virtually absent and there are no examples of incised geometric decoration. This absence may be chronological in origin (i.e. the site did not continue very far into the Early Iron Age) or have other implications. The clear differences that exist between Early Iron Age pottery assemblages in eastern England - with some sites such as Fengate (Hawkes and Fell 1943) having abundant finewares with elaborate geometric decoration while other sites have few or none - are poorly understood but may indicate social distinctions between communities. Beyond pottery and flint the range of finds is limited, although craft activity is evinced by a spindle whorl and a possible bone gouge. However, the probable palstave fragment (unstratified metal-detector find) can be generally associated with this activity. Evidence for grain processing is elusive, as no querns were found and only a single cereal grain was recovered from the environmental samples.

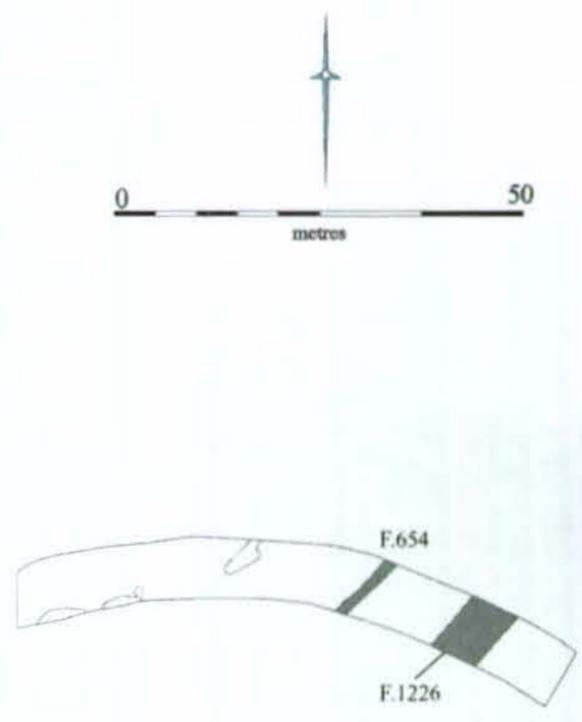


Figure 7 Phases 3 and 4

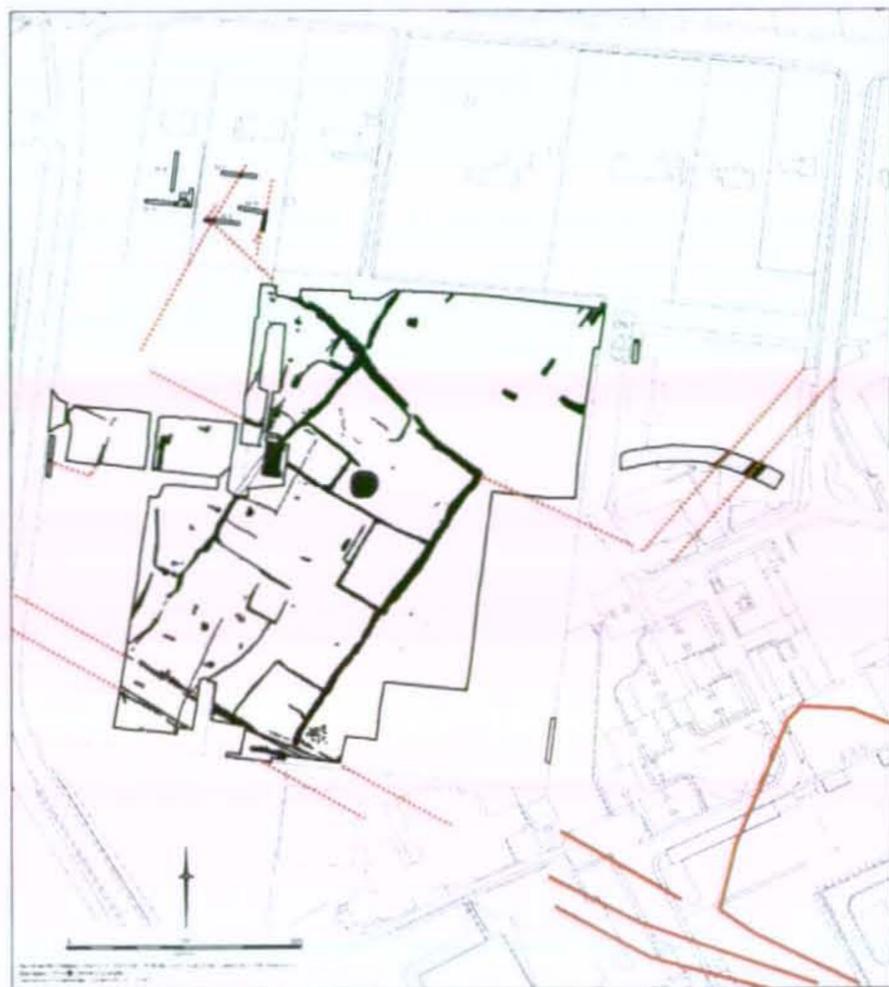


Figure 8

Late Iron Age and Conquest Period Settlement

These Phases (3 & 4) represent the hub of the site's sequence, when it sees its most intense occupation and usage. It spans the later Iron Age and earlier Roman times (i.e. pre-Flavian) - in short, the Conquest period. However, it is in the nature of this 'transition' that it is essentially impossible to adequately disentangle these two horizons. Yes, a series of curvilinear Iron Age enclosures can be distinguished as dominating the western third of the site (west of the cricket pavilion), and east of which a grid-iron of rectangular paddocks are the most apparent - the point of their division being the westernmost main NE-SW boundary, F. 19, F. 1053 and F. 1013. Yet, the two enclosure systems 'inter-penetrate' with each other, making this distinction much less clear cut. Equally, there is a problem of finds attribution as the intensity of these phases of occupation means that artefact residuality becomes a major factor. Moreover, there is also a considerable potential for contemporarily 'mixed' assemblages, and that Iron Age tradition pottery continued to be made after the introduction of more distinctly Roman-type wares (see Hill in Evans 2003a & b for further discussion). It is for these reasons that the teasing out of the interrelationship of these two phases - distinguishing what *The Conquest* meant in the local landscape - represents the crux of the site. It would simply be too arbitrary to here strictly divide these two horizons from the outset and, therefore, they are discussed (and analysed) together.

Phase 3 - *Late Iron Age* (fig. 7 & 8)

The core of the Late Iron Age settlement lay in the central and western parts of the site. It is primarily composed of a series of ditched enclosures (A-H), which can be seen to extend beyond the excavated area as cropmarks. The curvilinear nature of these enclosures contrasts with the rectilinear layouts of the subsequent systems. Nonetheless, there is a sense of a NW-SE/NE-SW landscape axis that was maintained by the Conquest period layout. Other features datable to this phase include at least two roundhouses and a series of 'U'-shaped structures.

Enclosures

A is a possible enclosure extending beyond the western edge of the excavation, suggested by a pair of parallel ditches, F. 943 and F. 945, that branch off in a northwesterly direction from Enclosure B. These ditches are not visible as cropmarks, and their course is thus uncertain; however, they could form an enclosure with a roughly parallel ditch seen in aerial photographs extending from the northern point of Enclosure B (see below). F. 943 measures 2.20m wide and 1.38m deep, while F. 945 measures 1.00m wide and 0.35m deep.

B is the largest of the Late Iron Age curvilinear enclosures. Parts of the east and west sides of the enclosure were uncovered, the remainder lying outside the area of excavation but clearly visible as a cropmark, measuring c. 60 N-S by 50m E-W. The aerial photographs also show two further ditches extending off from the northern point of the enclosure in northwesterly and northeasterly directions respectively. As excavated, the enclosure ditch on the east side (F. 855) is 1.13-1.70m wide and 0.37-0.90m deep, while that on the west side (F. 809/942) is 1.50m+ wide and 0.21-0.64m deep.

C is an enclosure defined on its southern and eastern sides by ditch F. 832. It is open on its western side, while the postulated northern side lies beyond the limit of excavation. The area of the enclosure as exposed is 14m E-W by 17m N-S. The enclosure ditch measures 1.80-2.20m wide and 0.37-1.03m deep.

D is a sub-circular enclosure, again only partly lying within the excavated area, measuring 24m NE-SW by 20m+ NW-SE. There appears to be an opening at least 9m wide on the NW side. The enclosure ditch on the south and west side (F. 835) is 0.85-1.30m wide and 0.38-0.57m deep, while that on the north side (F. 885) is 1.07m+ wide and 0.19m deep. The ditch on the east side lies outside the excavated area.

E is a small sub-rectangular enclosure adjacent to the northern side of Enclosure D, measuring c. 12m NE-SW by 12m NW-SE. It contains a possible roundhouse, Structure 7. The SW side of the enclosure is formed by F. 885 (Enclosure D), while the SE side may have been obliterated by the Phase 4 Enclosure J. The enclosure ditch on the NE side (F. 628) is 0.70m wide and 0.11m deep and that on the NW side (F. 891) is 0.60m wide and 0.17m deep.

F is a V-shaped enclosure with its apex to the south, measuring 32m along its E/SE side and 23m along its SW side. The enclosure ditch on the E/SE side (F. 55) measures 0.74-0.92m wide and 0.25-0.33m deep, while that on the SW side (F. 1106) measures 1.00-1.70m wide and 0.14-0.43m deep. It is possible that F. 1106 kinks before continuing for a further 25m north-westwards as F. 1085, the relationship between the two ditches being obscured by the later Enclosure J.

H is a sub-rectangular enclosure conjoining the SE side of Enclosure I, open on the SW side and measuring 25m NW-SE by c. 17m NE-SW (c. 425m²). The enclosure ditch measures 0.69-0.85m wide and 0.10-0.29m deep, and probably effectively represents a continuation of the first phase ditch (F. 68) of Enclosure I.

I is a small sub-rectangular enclosure measuring 16m NW-SE by 14m NE-SW, with a 5m wide opening on the NW side. The ditch forming the SW side of the enclosure continues northwestwards (as F. 280) to conjoin with Enclosure F. The enclosure ditch had been recut along most of its length, with the original ditch (F. 68) truncated on its inner side by F. 12. F. 68 measures c. 0.85m wide and 0.18-0.32m deep, while F. 12 is larger, measuring 0.95-1.30m wide and 0.32-0.51m deep. The NW side of the enclosure (F. 64) differs in being formed of a single slighter gully, measuring 0.25-0.49m wide and 0.17-0.19m deep.

The northern edge of the Late Iron Age settlement is perhaps demarcated by NW-SE aligned ditch F. 718/927/929. This measures 0.35-1.45m wide and 0.23-0.58m deep; its line is echoed by the later Phase 4 ditch F. 720/930.

Phase 4 - *Mid-Late 1st Century AD* (fig. 7 & 8)

The Phase 4 layout consists of a rectilinear enclosure system on a NW-SE/NE-SW alignment. This is dominated by a large sub-rectangular enclosure (J), subdivided into various smaller compounds (J1-6). The southern edge of the enclosure is demarcated by a NW-SE-aligned roadway with paired flanking ditches. A series of pottery kilns are found at the margins of Enclosure J, especially on its western side, although in some cases these must fall relatively late in the phase as their stokeholes were dug within the enclosure ditch after it had partially silted up. Further ditches striking off from Enclosure J to the north and west delineate further enclosures or fields. Immediately to the east of Enclosure J and to the north of the road lies a small unenclosed cemetery, which is broadly contemporary with this phase. If the settlement core of this phase is taken to be Enclosure J, then the focus of activity had shifted eastwards from the preceding period.

The Roadway

The roadway is demarcated by parallel ditches 13m apart, extending right across the southern part of the site, with a length of 95m exposed. No trace of metalling was present. The northern side (F. 4, F. 5, F. 381-2, F. 1011) appears to have been recut along most of its length, while the southern side consists of a pair of parallel ditches (F. 973-4 and F. 975) that may again represent two phases. The individual ditches measure 0.44-1.00m wide and 0.09-0.41m deep. While at its western end the road is aligned NW-SE, there appears to be a slight kink to an alignment more like WNW-ESE at the eastern end.

The Main Enclosure System

Enclosure J measures 180m NE-SW by 65m NW-SE (c. 11,700m²). Its various elements can be described as follows.

The SW side of J is formed by the northern flanking ditch of the roadway (F. 5), discussed below. The remaining three sides show multiple recuts along their lengths. On the southeast side (F. 8/24/194), the individual ditches measure 0.58-1.25m wide and 0.22-1.02m deep, while on the northwest side (F. 19/1053) they measure 0.35-1.52m wide and 0.10-0.80m deep. The northeast side is demarcated by a more robust ditch with a probable entranceway placed roughly midway. The western length of this ditch (F. 22) is c. 1.50m wide and 0.95-1.44m deep, with smaller recuts of around 0.30m deep. The eastern length (F. 23) measures 0.56-1.56m deep, the full width being unclear due to later truncation. The entranceway underwent repeated recutting and remodelling, but the precise form and width at any one stage is unclear due to truncation by the later ditch F. 21. Branching off from F. 22 and flanking the entrance on its western inner side is a further ditch, F. 30, measuring 0.80-1.20m wide and 0.28-0.43m deep.

J1 is a trapezoidal enclosure comprising the northern part of Enclosure J, measuring 75m long on the NE and SW sides by 36m on the SE side and 53m on the NW side (c. 3375m², or c. 2935m² excluding J2). While the NW, NE and SE sides are all formed by the ditches of Enclosure J (see above), the SW side is composed of ditches F. 16 and F. 339/597/599. These two lengths of ditch butt-end together at a point that may represent an entranceway. F. 16 measures 1.49-1.70m wide and 0.56-0.60m deep, while F. 339/597/599 is 0.50-1.50 wide and 0.09-0.50 deep. J1 contained a large pond, F. 770, described below (*The Pond*).

J2 is located in the southwest corner of J1, measuring 26m NW-SE by 17m NE-SW (c. 440m²). The NW side is formed by F. 19 (see J) and the SW side by F. 16 (see J1). The ditches on the remaining two sides (F. 18 and F. 20) measure 1.35-1.75m wide and 0.42-0.64m deep.

J3 is a sub-rectangular enclosure located in the northeast corner of the southern part of Enclosure J. It measures 35m NE-SW by 22m NW-SE (c. 770m²). The SE side is formed by F. 24 (Enclosure J) and the NE side by F. 339 (Enclosure J1). The ditches on the remaining two sides (F. 13 and F. 86) are 1.15-1.65m wide and 0.46-0.76m deep. Parallel to the west side of the enclosure at a distance of 2.5m is a further ditch, F. 205, measuring 18m long, 0.50-0.92m wide and 0.13-0.35m deep.

J4 is a sub-rectangular enclosure located on the western side of the southern part of Enclosure J. It measures 25m NE-SW by 18m NW-SE (c. 450m²), and is open on the SE side. The NW side of the enclosure is formed by F. 1053 (Enclosure J). The enclosure ditch on the NE side (F. 36) is 0.70-0.84m wide and 0.13-0.29m deep. That on the SW side (F. 38) is 0.54-1.13m wide and 0.19-0.48m deep; this extends to the SE beyond the open SE side of the enclosure, totalling 40m in length. A further ditch (F. 56) is located within Enclosure J4, extending from F. 1053 in a southeasterly direction for 18m; it measures 0.66m wide and 0.20m deep. This subdivides Enclosure J4, the northern part forming J4a with the slightly smaller J4b to the south.

J5 is a 'free-standing' enclosure located approximately at the centre of the southern part of Enclosure J. In plan it comprises three sides of a rectangle, open on the northeast side, measuring 15m NW-SE by 12m NE-SW (c. 180m²). The enclosure ditch (F. 1) is 0.70-1.54m wide and 0.12-0.42m deep.

J6 is a sub-rectangular enclosure located in the southeast corner of Enclosure J, measuring 30m NE-SW by 26m NW-SE. The SE side is formed by F. 8 (Enclosure J) and the SW side by the northern flanking ditch of the roadway. The remaining two sides (F. 3 and F. 11) are 0.95-1.50m wide and 0.26-0.53m deep. A further ditch, F. 746, projects from F. 8 for 10m into the enclosure and may represent a subdivision.

Other Enclosures

To the north of Enclosure J are a series of ditches that follow the same alignment to and are clearly part of the same system as this enclosure. These demarcate two further 'enclosures', K and L, although as both continue beyond the excavated area it is unclear whether they were 'closed' units in the same way as Enclosure J. In the case of Enclosure K at least, the internal area contains only a few features, and must represent part of a field system rather than an occupied settlement area.

K is demarcated by ditches continuing the line of Enclosure J north-eastwards, measuring 70m along its SW side and 95m+ along its SE side. The SW side is formed by F. 22 and F. 23 of Enclosure J. The NW side (F. 28) is a continuation of F. 19 of Enclosure J, measuring 30m+ long, 2.00m wide and 0.30m deep. Meanwhile, the SE side is an intermittent continuation of F. 24 of Enclosure J, consisting of F. 26 and parallel ditches F. 735-738, the latter extending beyond the northern edge of the excavation. F. 26 measures 8.8m long, 2.20m wide and 0.19m deep, while F. 735-738 are slighter, ranging from 0.58-1.79m wide and from 0.07-0.23m deep. Further ditch fragments on the same alignment occur within Enclosure K (F. 709 and F. 739) and to its east (F. 25, F. 619 and F. 1226). F. 619 was a particularly substantial NW-SE aligned linear, measuring 2.67-3.20m wide and 1.18-1.50m deep; it lay beneath the Phase 5 field system ditch F.21 which at that point followed a similar alignment.

L is demarcated on its SE side by F. 28 and on its NE side by frequently recut ditch F. 720/930, which represents the continuation of F. 22 of Enclosure J. The dimensions of the enclosure are 40m+ long on the SW side and 30m+ long on the southeast side. The individual ditches on the SW side measure 0.35-2.95m wide and 0.23-0.80m deep.

The area bounded on the southeast by J and on the northeast by L is referred to as Enclosure M. This area contains a series of smaller enclosures, M1-5.

M1 is a sub-rectangular enclosure located in the NE corner of M, measuring 10m NE-SW by 10m NW-SE with an entrance at the SW corner (c. 100m²). It is bounded on the SE side by Enclosure J (F. 19) and on the NE side by Enclosure L. The remaining two sides (F. 684 and F. 780) are 1.1-1.9m wide and 0.33-0.67m deep.

M2 is a sub-rectangular enclosure on the eastern edge of M, measuring 19m NE-SW by 13m NW-SE (c. 247 m²). It is open on the SW side, with the SE side formed by F. 19 (see J) and the NE side by F. 684 (see M1). The ditch on the remaining side (F. 34) is 0.56-1.15m wide and 0.16-0.57m deep.

M3 is a possible sub-rectangular enclosure to the west of M2, measuring c. 10m NE-SW by 10m NW-SE. It is open to the NE, with the remaining three sides (F. 903 and F. 906) measuring 0.35-1.16m wide and 0.11-0.39m deep.

Further to the south lies a sinuous, N-S aligned boundary formed by ditches F. 868, F. 1038 and F. 1076. A 4m wide gap between F. 1038 and F. 1076 may form an entranceway. Immediately to the north of this entrance, an irregular boundary formed by intercutting ditch

segments (F. 1246-1252) runs for 10m NW-SE from the butt end of F. 1076 to meet ditch F. 1053 (the boundary between J and M). M4 is the name given to the area bounded by F. 1246-52 to the S, F. 1076 to the W and F. 1053 to the E/SE.

M5 is a rectilinear enclosure, one corner of which was uncovered at the western edge of the excavation, measuring 20m+ along its SE side and 17m+ along the NE side. Part of the SE side of the enclosure is demarcated by parallel ditches 0.5m apart. The enclosure ditches (F. 810, F. 811, F. 1193 and F. 1194) are 0.34-0.89m wide and 0.13-0.30m deep.

Late Iron Age and Conquest Period Structures (fig. 9) - Circular Buildings

Two probable and two possible roundhouses or circular buildings are represented in the northwestern part of the site by curved gullies. One of the buildings (Structure 5) has two concentric gullies marking the wall line and outer eaves gully, while the other buildings are marked by single gullies. With the possible exception of Structure 8, which may have been c. 10m in diameter, the buildings are all relatively small at only 3.5-5.0m diameter (measured from gully mid points). The closely neighbouring Structures 5 and 6 may represent a paired unit; both contained large quantities of artefactual material (Table 3). The pottery from the circular structures is generally of Late Iron Age character, though a few sherds may be post-conquest, including a tiny fragment of Samian from Structure 6.

Structure 5 (F. 907/908) Two concentric gullies forming the eastern half of a penannular structure with an opening to the north, the western half of the structure lying outside the area of excavation. The outer ring gully, F. 907, had a diameter of c. 6m. It measured 0.42-0.61m wide and 0.20-0.35m deep with a single silt-sand fill. F. 907 appeared to be cut by gully F. 906 immediately to the east. The slighter inner ring gully, F. 908, had a diameter of c. 4.5m. It measured 0.30-0.38m wide and 0.08-0.16m deep, again with a silt-sand fill. The two gullies are likely to be contemporary, with the inner ring representing the wall-line and the outer ring an exterior eaves gully. This is supported by the fact that the inner gully contained only a single sherd of pottery whilst the outer gully contained much more material (Table 3). Two possible postholes lying within the northern entranceway were investigated (F. 910 and F. 911) but were thought unlikely to be real features.

Structure 6 (F. 913) Two gullies forming a penannular structure with a west-facing entrance, the eastern half of the structure falling outside the area of excavation. The gully was c. 3.5m in diameter, 0.36-0.46m wide and 0.13-0.20m deep with a U-shaped cut and a sand-silt fill. The entrance measures 1.5m across. The large quantities of artefactual material found (Table 3) may indicate that the gully was an open feature rather than a wall foundation trench. It may have been a drainage gully around a small ancillary building, granary or hayrick associated with the Structure 5 'roundhouse', lying immediately to the southwest.

Structure 7 (F. 893) A curved length of gully that might represent the western side of a circular structure, c. 5m in diameter. The gully measures 0.46-0.52m wide and 0.10-0.33m deep, with a silty fill. A possible posthole within the gully towards its northern end suggests that it may have been structural.

Structure 8 (F. 635) A curved length of gully, 5.0m long, that might represent the western side of a circular structure, c. 10m diameter. The gully measures 0.40-0.43m wide and 0.17-0.23m deep with a clay fill.

	Pottery	Bone	Baked Clay
Structure 5, outer ring	69 (711g)	13 (340g)	20 (82g)
Structure 5, inner ring	1 (19g)	-	-
Structure 6	155 (1843g)	13 (8g)	-
Structure 7	19 (277g)	6 (127g)	11 (21g)
Structure 8	11 (82g)	1 (32g)	-

Table 3: Artefact assemblages from circular structures.

U-shaped Structures

Four small structures consisting of U-shaped gullies are found in the western part of the site, three of which are close together in an east-west aligned row. These typically enclose an area of c. 5m², and in three cases an oval pit is found in the centre of the structure. Postholes were found within two of the gullies themselves, suggesting that they were structural foundation trenches. Neither the gullies nor the central pits contain much artefactual material, with just a few sherds of Late Iron Age pottery and a small amount of animal bone recovered. This makes it difficult to suggest the precise function of these structures, though they are likely to have been small ancillary buildings.

Structure 9 (F. 828/829) Two gullies forming a U-shaped structure with its entrance to the southeast. There is a short gap in the circuit at the northeast corner, and the northern arm of the gully continues beyond the edge of the excavated area to the east. The structure encloses an area of c. 2.0m by 2.5m. The gully measured 0.30-0.50m wide and 0.10-0.19m deep with a dark sandy fill. Four postholes could be seen within the gully along the southern and western sides of the structure, including one marking the southeastern butt end. These postholes shared the same fill as the gully itself. Approximately central within the enclosed area was an oval pit, 0.6m diameter and 0.29m deep, with a similar fill to the gully.

Structure 10 (F. 871) Three sides of a U-shaped or sub-circular gully, the western part of which lay outside the excavated area. As exposed the structure encloses an area of c. 2.0m east-west by 2.5m north-south. The gully measured 0.28-0.40m wide and 0.18-0.36m deep with a dark sandy silt fill. A single posthole could be discerned within the gully on the northern side of the structure, sharing the same fill as the gully itself. Approximately central within the enclosed area was an oval pit, F. 872, measuring 0.56m wide and 0.19m deep with a similar fill to the gully.

Structure 11 (F. 867) A U-shaped gully with its entrance facing north, enclosing an area of c. 2.0m north-south by c. 1.5m east-west. The gully measures 0.38m wide and 0.18m deep with a loamy fill containing some charcoal.

Structure 12 (F. 101) A U-shaped gully with its entrance facing north, enclosing an area of c. 2.0m east-west by 2.5m north-south. The gully measured 0.40-0.68m wide and 0.20-0.33 deep, with an orange-grey silt-clay fill. Approximately central within the enclosed area lay an oval pit, 0.67 x 0.39m in size and 0.20m deep, with a pale brown sandy silt fill. A further elongated pit, F. 103, lay immediately to the north of the U-shaped gully, and perhaps formed part of the same structure. This measured 1.70 x 1.10 x 0.25m and was filled with a dark brown sandy silt.

Possible Posthole Structure

Structure 13 is the label applied to an amorphous cluster of 33 postholes on the western edge of the excavation (Fs. 1129-37, 1139-52, 1155-6, 1158-61, 1163-66, 1176). These ranged in size from 0.18-0.50m diameter and from 0.08-0.28m deep, variously having orange, orange-brown and grey-brown sandy and silty fills. No finds were recovered, and no building plan can be discerned even when like postholes are compared with like. An association is possible with inhumation burial F. 1162 on the western edge of the posthole cluster. A date for the structure in the Late Iron Age or Early Roman period seems more likely than the later Bronze Age/Early Iron Age due to its location within the site.

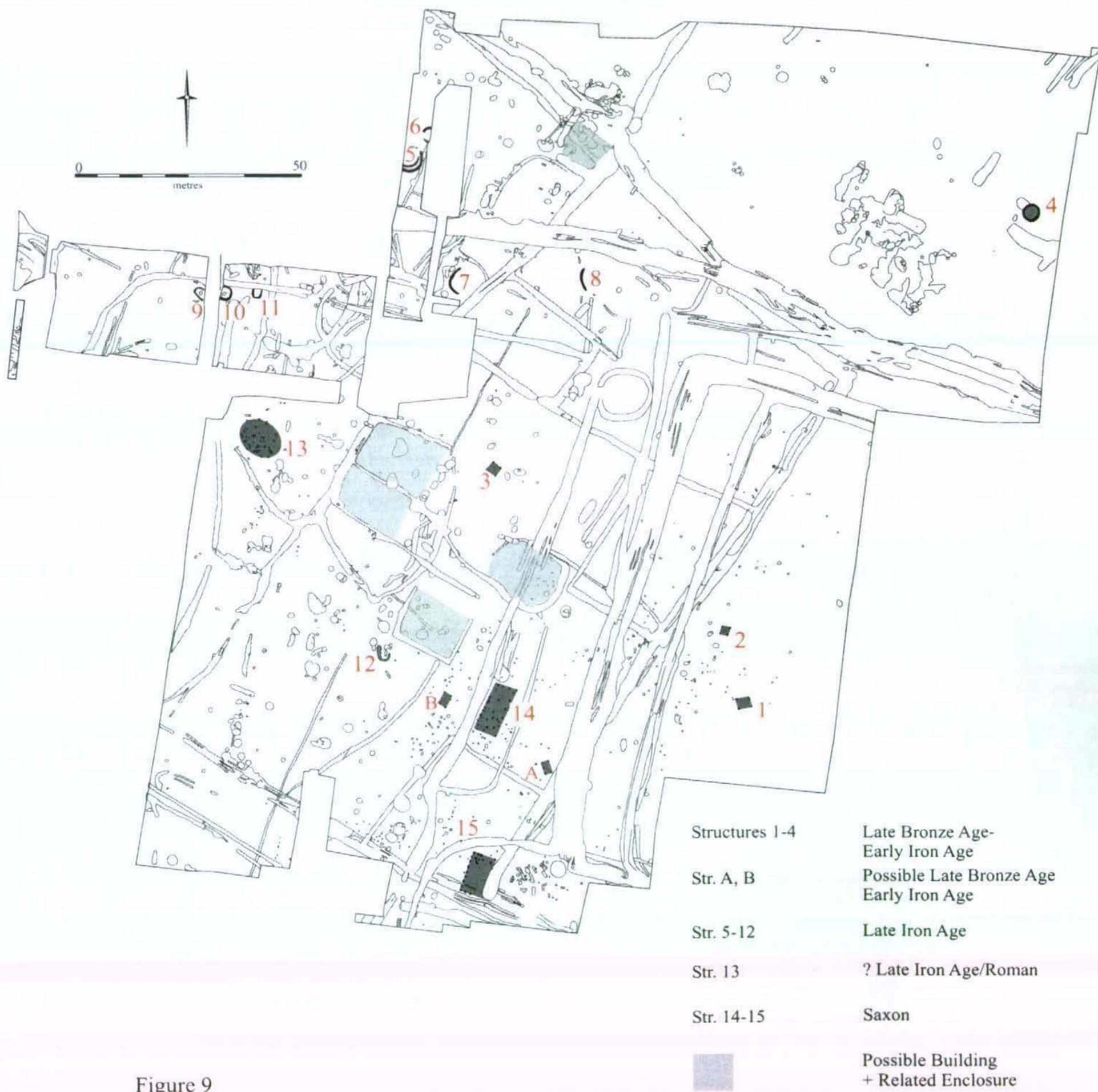


Figure 9

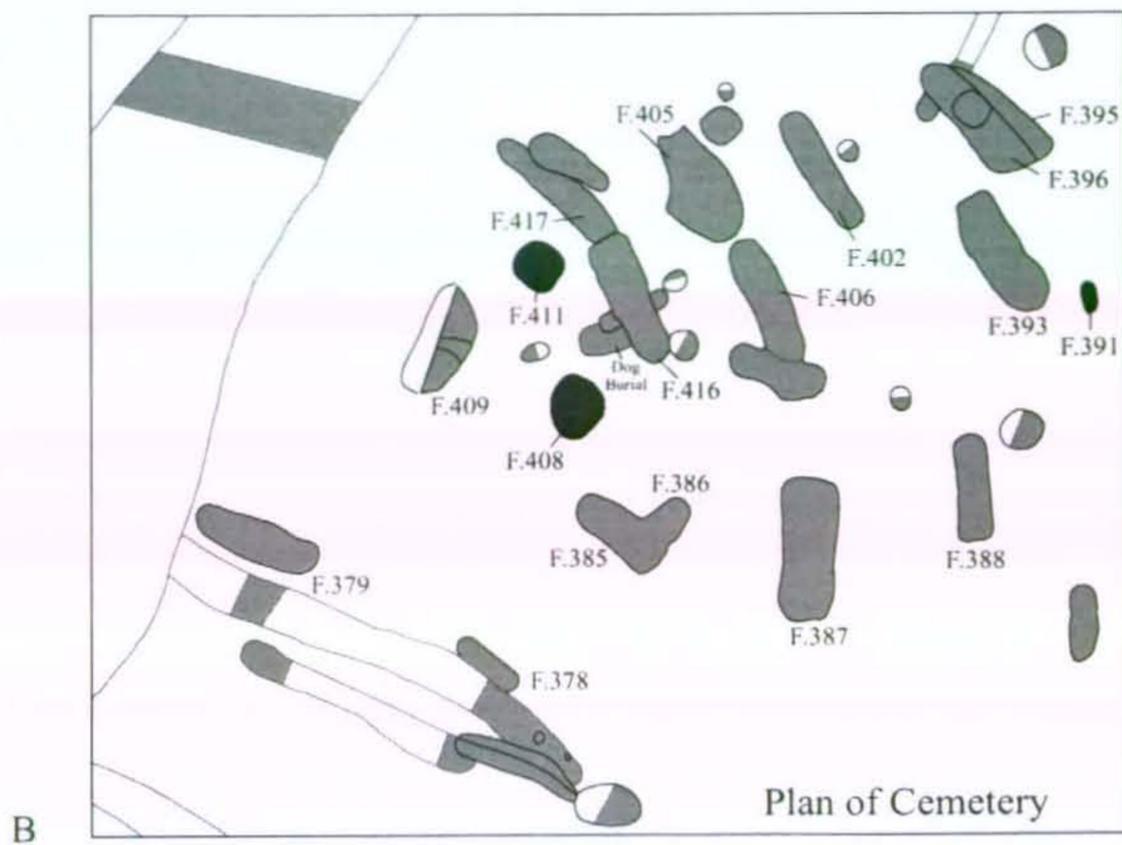


Figure 10

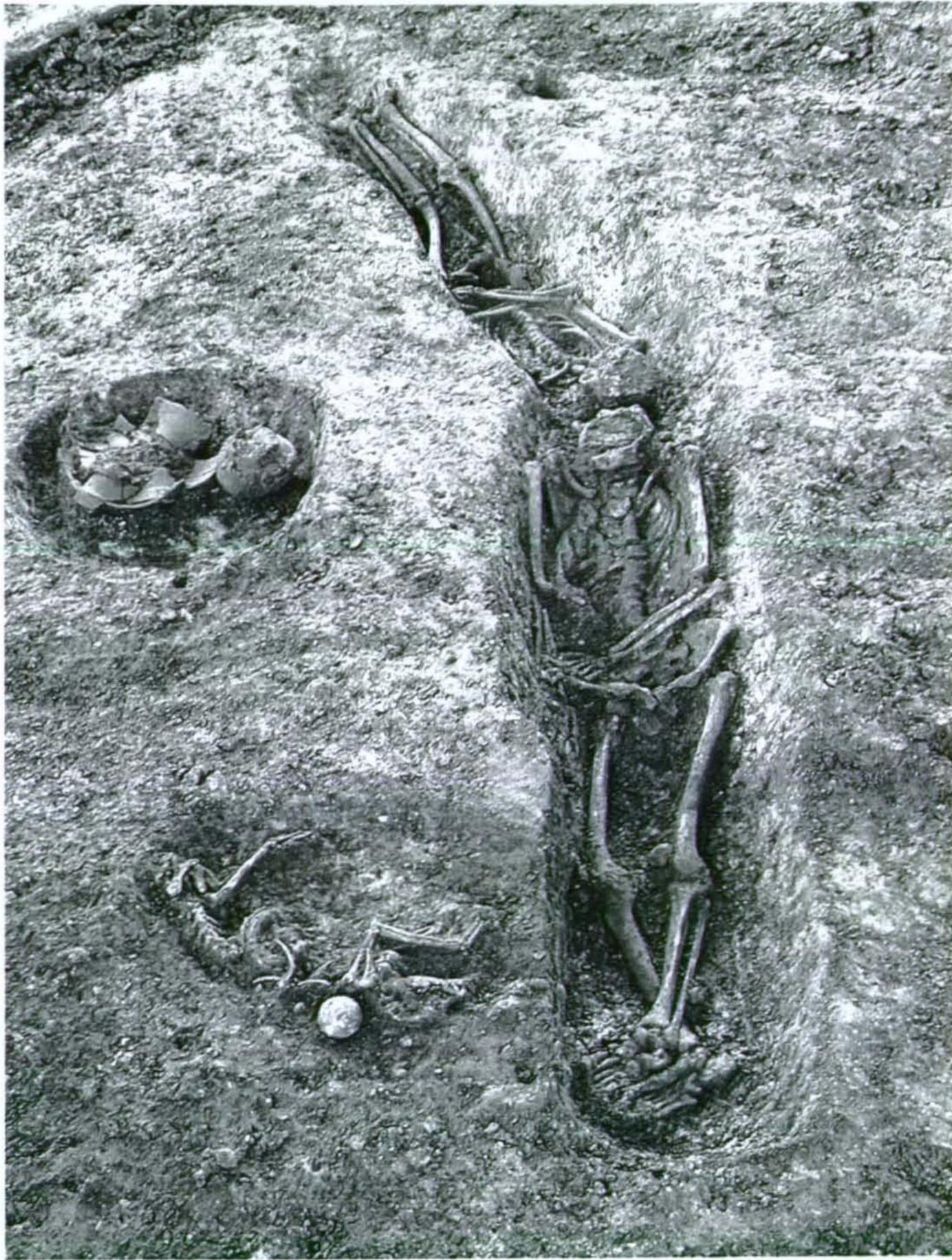


Figure 11 Looking North to Graves F.416 + F.417, Cremation F.411 and Dog Burial F.412

Pond

Lying within enclosure J1 was a large pond feature (F. 770), approximately 10.00m diameter and more than 3.00m deep (the base was not reached; see fig. 7 & 25 and Boreham below). This contained a complex series of deposits, with generally dark brown upper fills and paler, more clayey lower fills. F.770 was enclosed by a penannular ditch, F. 768/775, which was later slighted by a recut of the pond. This ditch measured 1.60-2.15m wide and 0.68-1.02m deep, with its entrance to the west. The dating evidence from F. 770 suggests that it was established in Phase 4 and probably continued to be maintained into Phase 5.

Burials (fig. 10 & 11) - *The Cemetery*

A small cemetery dating to the mid/late 1st century AD was located on the southern edge of the site, tucked into an external corner of the Conquest period system formed by the northern roadside flanking ditch and NE-SW enclosure ditch F.8. The cemetery contained sixteen inhumations, consisting of twelve supine, two crouched and two prone burials, as well as three cremations. A fully articulated dog was also buried alongside one of the graves. Pottery from the cremations and one of the inhumations indicates a date in the decades following the Roman conquest.

Of the inhumations, eleven were aligned SE-NW, four with the head to the SE, and seven with the head to the NW; one was aligned SW-NE with the head to the SW; three were aligned N-S with the head to the N, and one aligned NE-SW with the head to the NE. Both sexes were represented. Only one burial contained a child skeleton (F. 388), and one skeleton (F. 406) appeared to have been buried without a skull (several of the skeletons had lost their skulls due to truncation, but F. 406 was relatively untruncated). Four of the inhumations contained possible grave goods. Child burial F. 388 contained a fragment of a copper alloy pin. Although this could have been residual from the grave backfill, the object did appear to be related to the skeleton. Prone burial F. 396 contained a near-complete pot. Crouched burial F. 405 contained part of a copper alloy bracelet and several copper alloy rings. Prone burial F. 385 contained an iron nail, although this could have been residual. It is interesting to note that all of the graves containing possible grave goods differ from the majority, two being prone, one crouched and one juvenile – all but one of the remaining burials were of supine adults, although of course this only accounts for grave goods that survived the burial environment. Intriguingly, the dog also appears to have been buried with a spherical flint nodule, c. 0.06m in diameter, that had been placed beside its head.

All of the cremations were urned, and F. 408 contained two brooches, along with copper alloy sheet fragments and iron fragments, as well as containing four complete vessels. Cremation F. 411 contained two vessels and copper alloy fragments.

One further notable feature of the cemetery was a pit (F. 389), measuring 0.90m N-S by 0.36m E-W and 0.12m deep, which contained a quantity of

partially articulated animal bone. C. Swaysland reports on the bone as follows:

The bone was in poor condition, it has suffered from chemical abrasion and root etching removing surface detail from the bone. The bone was recovered in five distinct clusters:

1. Left carpals, left metacarpal, 2 phalanx 1, 1 phalanx 2 and 1 phalanx 3
2. A small quantity of rib fragments
3. 2 phalanx one, 3 phalanx 2, 4 phalanx 3
4. A small quantity of ribs
5. Right carpals, right metacarpal, 1 phalanx 1, 1 phalanx 2, fragmentary vertebrae, proximal ulna fragment.

All the bone is consistent with having originated from one individual calf. All epiphyses were unfused, excluding proximal metacarpals these fuse before birth. However, none of the elements recovered are in the early fusing category, therefore it can only be said that the animal was less than 1.5 years at death though it is probable that it was younger than this. The bones recovered are predominantly from the lower leg and are non-meat bearing. These are generally considered to be waste material and of little economic value.

The location of these bones from a juvenile cow in a grave-shaped cut in a cemetery is interesting. It is possible they represent food debris connected to ceremony relating to a burial rite.

Isolated Burials

Four isolated burials containing full skeletons were uncovered, two of which occurred within ditches. There was also one almost entirely truncated grave, and two pits containing human bone, a mandible and two baby bones respectively. In addition, a *possible* cremation dated to the Late Iron Age was found to the north of the cemetery.

One inhumation was uncovered in the butt-end of Conquest period ditch system F. 23. The body was that of a supine adult lying SE-NW with the head to the SE. Rather than a grave having been excavated, it appeared that the body had simply been placed in a partially silted ditch terminus and then covered with soil. The ditch then continued in use and was possibly recut, but without disturbing the skeleton. A pot found close to the skeleton may well have been buried with it.

The second ditch burial (F. 1050) occurred in Conquest period ditch F. 1013. This burial lay within its own grave cut that was dug below the level of the ditch base. The body was that of a prone adult lying NNE-SSW with the head to the north. Although excavation demonstrated that the grave did not cut through the ditch backfill, the grave could either be fully contemporary with the ditch, having been deliberately dug into the ditch base and backfilled to the same level, or simply predated the ditch and was coincidentally slighted. Given the central position of the grave within the ditch cut, and its relative depth, the ditch and the grave were probably contemporary.

A third isolated skeleton occurred in grave F. 687, adjacent to Conquest period ditch F. 22. The body was that of a supine sub adult and was aligned NE-SW with the head to the NE. To the NW of the cemetery lay another grave, containing a supine adult male aligned E-W with the head to the east.

The remaining human skeletal material consisted of small amounts of disarticulated or truncated bone. F.1162, on the western side of the site, was severely truncated and contained only hands and skull fragments. On a vaguely N-S alignment with the head to the north, this would have been a prone adult burial. Pit F. 37 contained a mandible, and pit F. 668 contained two baby bones.

Catalogue of Burials

Full analysis of the human remains will be carried out for the final publication of the site.

Inhumations in Cemetery

F. 378 [3600-2] Supine adult, truncated with skull and feet missing. Aligned with head to SE. Rectangular grave cut, 1.02 x 0.32 x 0.10m.

F. 379 [3709-11] Supine adult male, truncated, with cranium missing. Aligned with head to SE. Rectangular grave cut, 1.63 x 0.50 x 0.12m.

F. 385 [3666-8] Prone adult, female? Aligned with head to SE. Truncates F. 386. Fill contained a large iron nail. Rectangular grave cut, 1.67 x 0.45 x 0.15m.

F. 386 [3694-6] Severely truncated by F. 385, legs only survive. Aligned with head to SW. Grave cut 0.57+ x 0.58 x 0.25m.

F. 387 [3642-4] Supine adult. Aligned with head to N, head turned to face W. Rectangular grave cut, 1.85 x 0.60 x 0.30m.

F. 388 [3488-90] Supine child. Aligned with head to N. A copper alloy pin fragment was recovered from the right ribcage area. Rectangular grave cut, rounded at head end, 1.38 x 0.43 x 0.40m.

F. 393 [3491-3] Supine adult. Aligned with head to NW; legs slightly flexed. Rectangular grave cut, 1.70 x 0.67 x 0.30m.

F. 395 [3441-3] Supine adult male, severely truncated by grave F. 396 and posthole F. 397, with only elements of the left side of the skeleton remaining. Aligned with head to NW. Rectangular grave cut, 1.60 x 0.26 x 0.11m.

F. 396 [3444-6] Prone adult, truncating grave F. 395 and truncated by posthole F. 397. Aligned with head to NW. A near complete pot was placed adjacent to the head. Dated mid-late 1st century AD. Rectangular grave cut, 1.80 x 0.44 x 0.21m.

F. 402 [3485-7] Supine adult male. Aligned with head to NW. Rectangular grave cut, rounded at head end, 1.90 x 0.43m.

F. 405 [3494-6] Crouched adult. Aligned with head to NW, facing SW. Contained three copper alloy rings, found under the left scapula and skull, and a copper alloy bracelet fragment. Oval grave cut, 1.55 x 0.85 x 0.25m.

F. 406 [3618-20] Supine adult, head missing. Aligned with head to NW. Subrectangular grave cut, 1.50 x 0.47 x 0.30m.

F. 409 [3613-5] Supine adult, severely truncated. Aligned with head to N. Rectangular grave cut, 1.05 x 0.45 x 0.06m.

F. 416 [3631-3] Supine adult. Slightly truncates grave F. 417; cut by dog burial F. 412. Aligned with head to NW. The left arm is flexed across body with the hand resting on the right forearm. The legs are slightly flexed with the left leg crossing the right just above the ankle. Rectangular grave cut, 1.78 x 0.50 x 0.21m.

F. 417 [3652-4] Supine adult. Aligned with head to the SE. Both arms are flexed with the right arm crossing the left. Skull truncated by grave F. 416. Sub-rectangular grave cut, 1.68 x 0.38 x 0.30m.

F. 418 [3610-12] Supine adult, severely truncated. Aligned with head to SE. Rectangular grave cut, 1.15+ x 0.38 x 0.10m.

Isolated Inhumations

F. 23 [1432-3] North end of site in Phase 4 ditch butt. Supine adult; right arm extended under the body and the left arm flexed across the pelvis. Aligned with head to SE, facing NE. Possibly buried with pot.

F. 687 [1914-16] North end of site. Supine sub adult. Aligned with head to NE. The cut was too small for the body, which was interred awkwardly, with the right arm flexed across the abdomen and the right leg flexed over the left leg. Sub-rectangular grave cut, 1.47 x 0.52 x 0.57m.

F. 752 [951-3] Just north of cemetery. Supine adult male. Aligned with head to E, facing N. The right arm was flexed over the chest and the left arm flexed over the pelvis. The left leg was slightly flexed over the right. Rectangular grave cut, 0.96 x 0.59 x 0.28m.

F. 1050 [3940-2] Western car park, beneath Phase 4 ditch. Prone adult. Aligned with head to NNE. Dimensions of grave cut uncertain.

F. 1162 [4088-90] Western car park, isolated, very truncated. Probably originally prone.

Cremations

F. 344 [817-8] Possible cremation, to north of cemetery. Truncated inverted pot accompanied by a very small amount of bone. Late Iron Age. Contained within a shallow pit, 0.30m diameter and 0.05m deep.

F. 391 [3331-2] Cemetery. Disturbed cremation with a truncated vessel. Dated AD 55-96.

F. 408 [3616-7] Cemetery. Cremated bone was found in two vessels, a buff ware girth beaker with three carinations and a butt beaker. The latter also contained a copper alloy brooch and copper alloy sheet fragments. Other grave goods consisted of two further pots (a flagon and a carinated jar), a rosette brooch and iron fragments. Hazelnut shell was found in an environmental sample from the cremation pit. Dated AD 69-96. Placed in an oval pit, 0.79 x 0.68 x 0.33m.

F. 411 [3663-5] Cemetery. The cremation itself was contained in a buff ware butt beaker. Fragments of a further Gallo-Belgic vessel and some copper alloy fragments were also found. Dated AD 50-80. Placed within an oval pit, 0.65 x 0.62 x 0.16m.

Dog Burial

F. 412 [3634-6] Located within cemetery, cutting grave F. 416. An articulated dog skeleton was placed on its right side facing east. A spherical flint nodule was located on the base of the cut, behind the dog's neck. Oval cut, 0.67 x 0.50 x 0.04m.



Figure 12 Kiln Locations

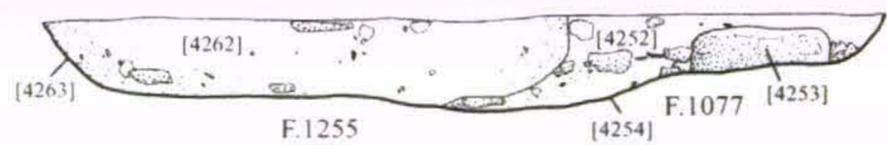
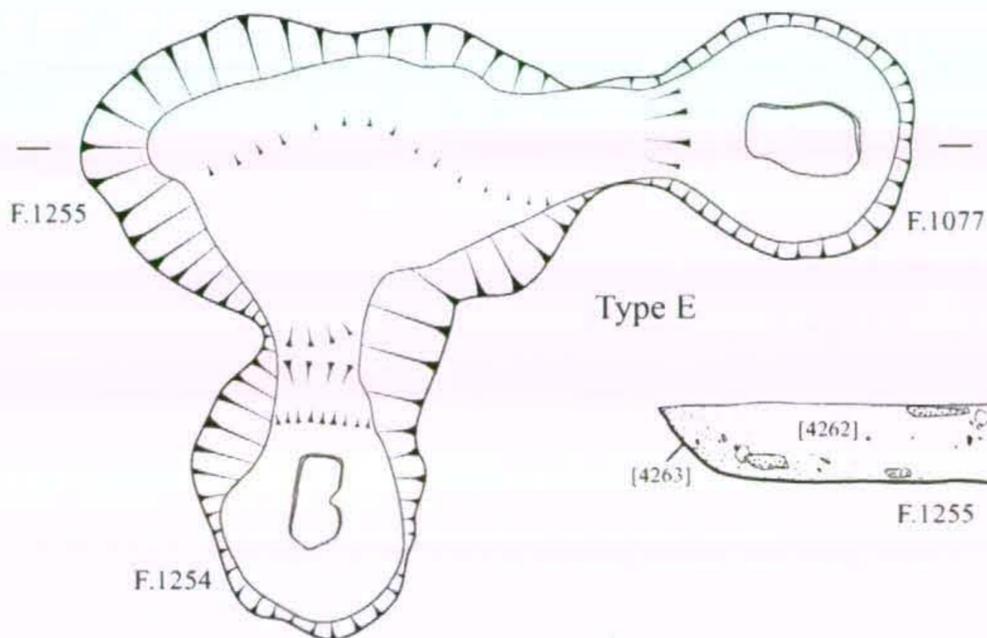
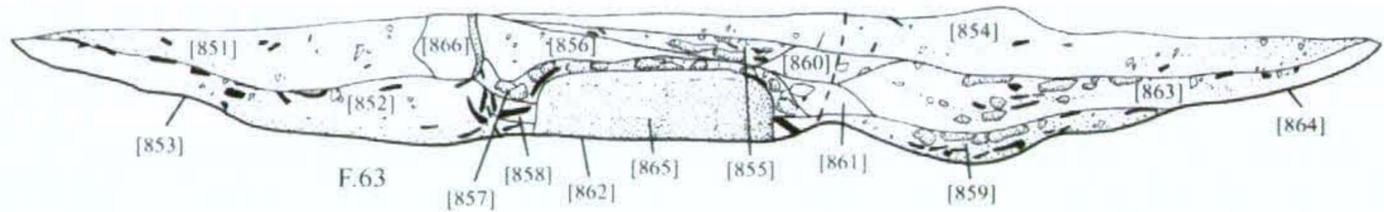
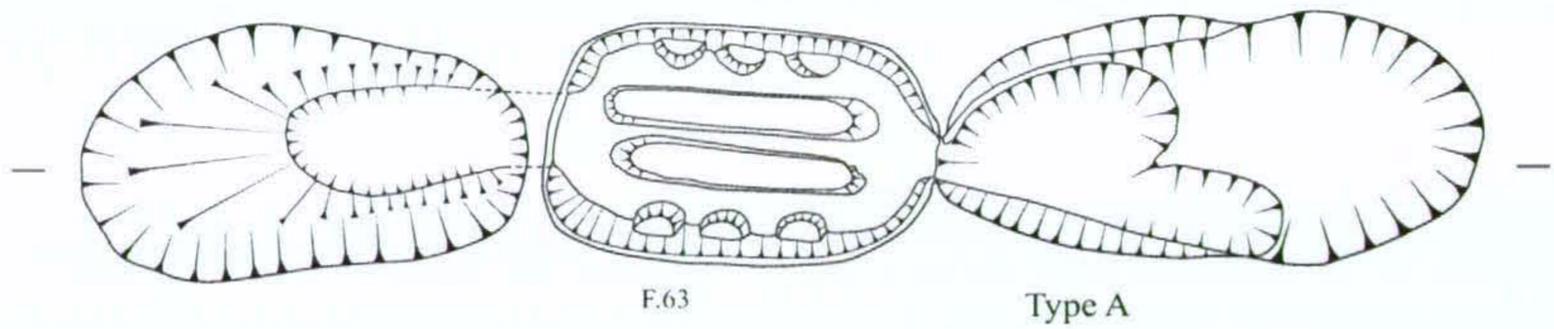
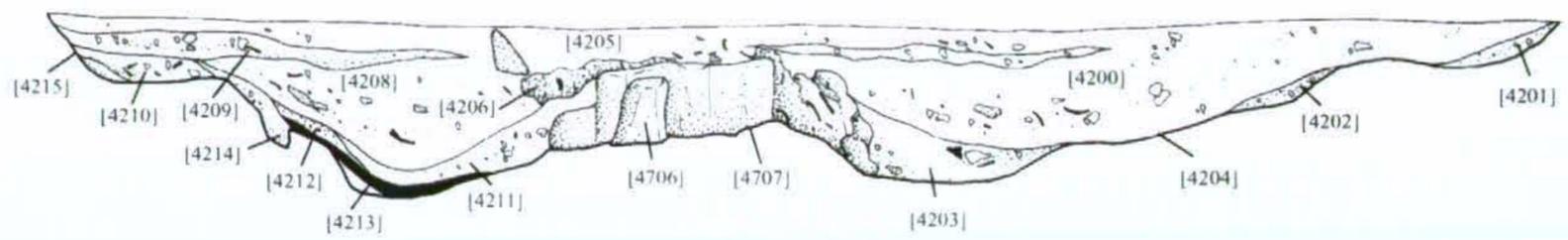
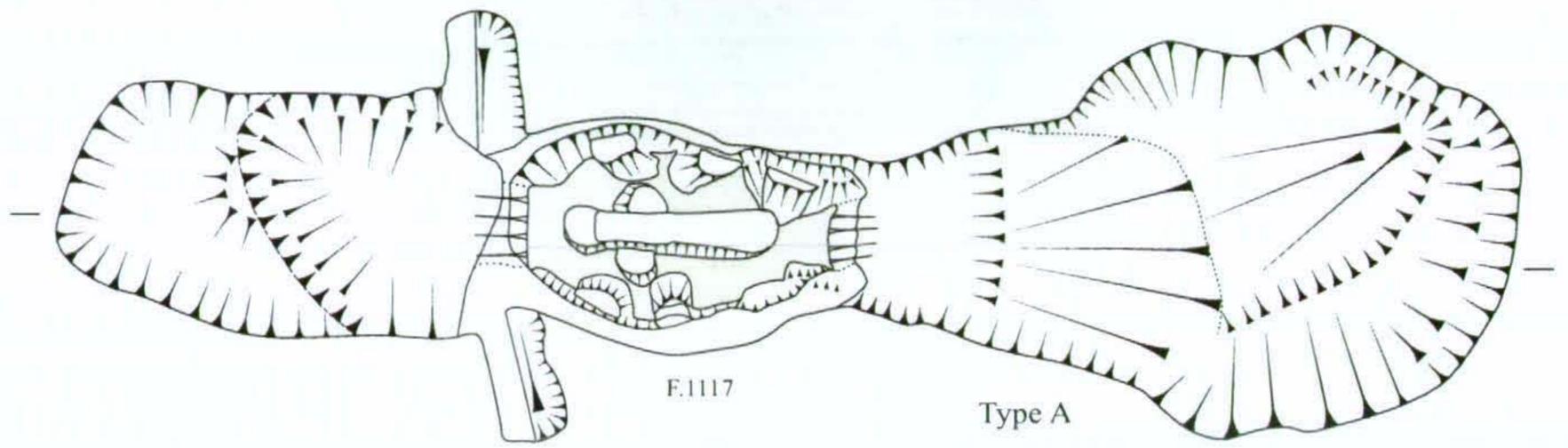


Figure 13

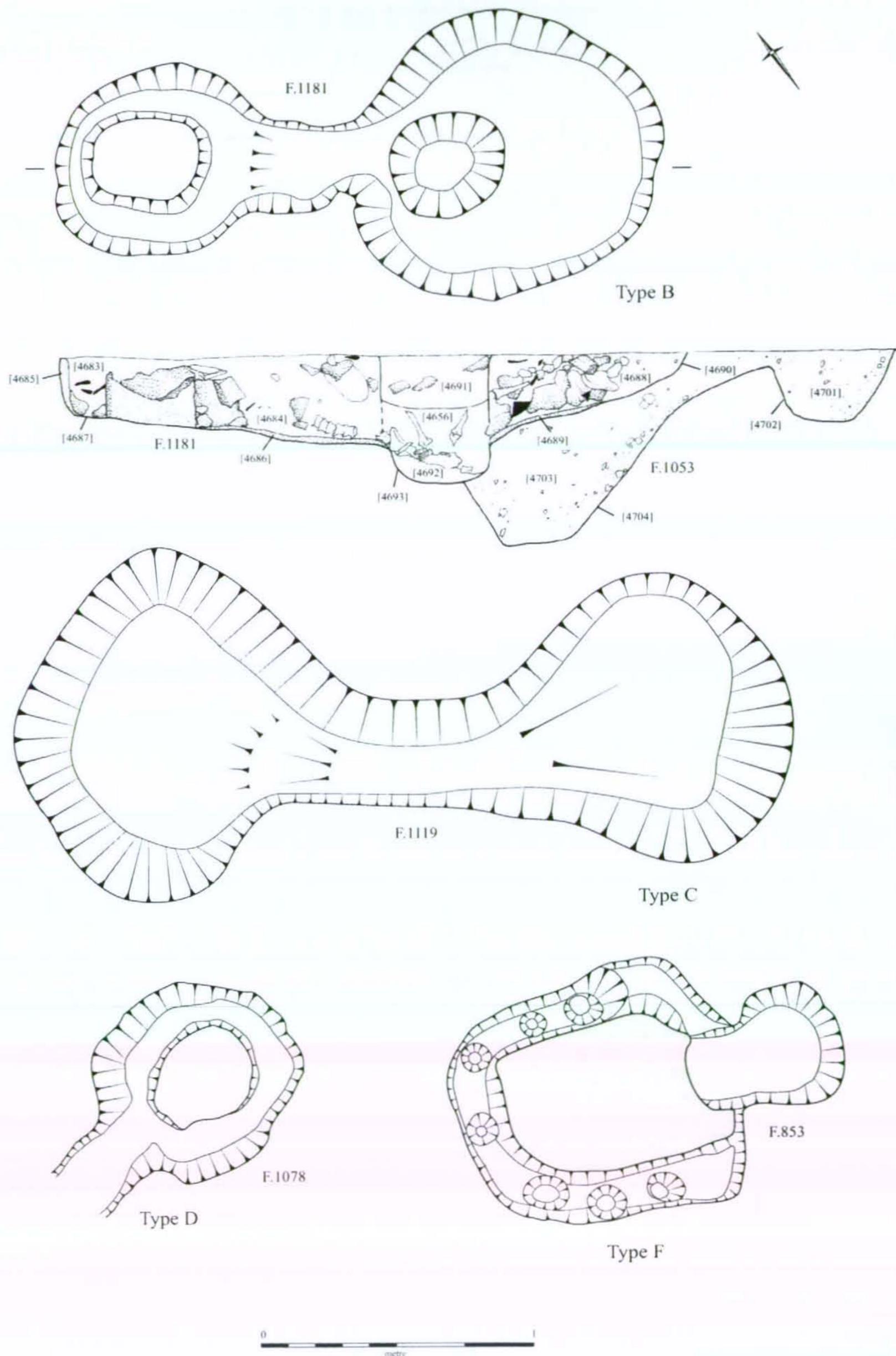


Figure 14



Figure 15

Pottery Kilns (fig. 12-15)

A total of eleven kilns were discovered across the site. These are mostly found at the margins of the main Conquest period enclosure, and all probably belong to that phase. The kilns represent six distinct types (A-F), often with sub-distinctions within these groups. Two of the kilns were constructed but never used. Five other features remain possible candidates as kilns, but lacked either the form or fill to confirm a definite classification. Spatially, the kiln types showed no sign of clustering or grouping together but, with the exception of F. 63, all were built along the extremities of the major rectangular Conquest enclosure system, and were relatively well spaced. Where a direct relationship existed between the kilns and the ditch system (e.g. F. 340 and F. 1181, both of which utilized the ditch backfill for the digging of a stokehole), it was evident that the kilns were constructed when the Conquest ditches were largely silted up and only a hollow or minor recut still existed. Kiln F. 63 lay almost in the centre of the main enclosure system, and appeared to be contemporary with some of the minor internal enclosures (e.g. F. 12). The orientation of the kilns varied greatly, but favoured an opening to the east.

Type A

Two kilns fell within this category, F. 63 and F. 1117, and although displaying marked differences in internal structure, both were obviously products of the same kiln tradition. Both were distinguished by a large, clay-lined central chamber with complex integral supports and a tunnel flue at both ends leading to large stoking pits. Both lay on a broadly NW-SE alignment, and were backfilled with large quantities of ash, pottery and fired clay collapse from the superstructure. Individually, F. 63 contained two elongated central pedestal shelves and six symmetrical pilasters. F. 1117 contained only one central elongated pedestal with a smaller pedestal added to the western end, and six symmetrical pilasters. In addition, F. 1117 had two small entranceways excavated adjacent to the western opening, possibly representing side flues. The two kilns in Type A are identical in their basic form to kiln F. 238 at Greenhouse Farm (Gibson and Lucas 2002, 99-100). The type otherwise seems to be fairly unusual within a regional context.

Type B

Three kilns fell within category B, F. 340, 786 and 1181. All three kilns were at least partially clay-lined with a central pedestal in the main chamber, and all opened towards the east via a narrow flue that led to an unlined stoking pit of comparable size to the main chamber. Kiln F. 786 had not been used, and contained no material from a collapsed roof, suggesting that the structure was never completed. Certainly the base of the kiln had been lined with white clay, but not the sides or the tunnel flue. The remaining two kilns had been used, and both were backfilled with large amounts of ash, pot and structural collapse. Worth noting is that the stoke pits of all three kilns were excavated into the backfill of earlier ditches, probably in part utilising the hollow still in existence, while the main chamber was excavated into predominantly virgin ground. F. 340 was the most distinctive of the group, having a much wider flue and flared (possibly accidentally so) sides. F. 1181 had been partially redug after going out of use, a pit being excavated into the stoke hole until the tunnel flue was exposed, and the body of an adolescent horse being placed in the pit, with its head through the tunnel and lying in the main chamber. This bizarre burial had seemingly taken place before the superstructure collapsed, for pieces of roof collapse were found overlying the horse's head.

Type C

Type C consisted of an individual kiln of classic dumbbell shape, which would have been included in Type B except for the absence of a central pedestal. Kiln F. 1119 was lined with white clay but completely unfired, with no kiln waste or debris in its backfill. No evidence of a collapsed superstructure existed, suggesting that the feature was never completed, which may also explain the absence of a pedestal. However, there were two very close parallels to this kiln at Greenhouse Farm (Group 4), both unpedestalled and of a comparable size.

Type D

Two kilns were included as Type D, F. 626 and 1078. Although their main chambers were very similar to Type B, both had an elongated flue but no surviving stoke pit. Both kilns were, however, severely truncated and there was no reason to assume that the stoke pit was significantly higher than the main chamber. F. 1078 was clay lined with a central pedestal, and had been dug into the top of a large, amorphous feature probably representing a tree-throw. F. 626 was not clay lined, but had a central clay pedestal. However, this pedestal ([1701]) was slightly off centre, and a second pedestal was present ([1700]), asymmetrically placed at the rear of the north wall. Pedestal [1700] was not as well fired as [1701], and may represent a collapsed side pedestal. Both of these kilns lay on the western edge of F. 19/1053, but their flues were pointing in opposite directions, F. 626 towards the east and F. 1078 to the west. Significant quantities of kiln waste from F. 626 had been deposited in the upper fill of F. 19.

Type E

Kiln Type E consisted of two adjacent kilns, F. 1077 and 1254, both sharing the same stoking area, F. 1255. Neither kiln was clay lined, although both had a central pedestal of fired clay. A later recut of F. 1255 had obliterated any stratigraphic sequence between the two kilns, but a direct parallel to this double kiln form was present at Greenhouse Farm (F. 309/310). Given their individuality (only one other kiln, F. 626, was not clay lined), their use of the same stoking area, and the existence of a parallel elsewhere, it is likely that the kilns were fully contemporary, rather than one replacing the other. The reason for recutting the stoke pit/s once the kilns had gone out of use is obscure, although a still recognisable stoke pit backfilled with kiln waste would have provided a ready and easily extracted supply of pottery wasters from which to produce grog for further pottery production.

Type F

The single kiln of this type, F. 853, lay on the western edge of the site. F. 853 had been severely truncated during car-park construction works, and was also significantly rooted/burrowed. Consisting of a sub rectangular chamber with an eastward facing flue, several intercutting pits (F. 854) provided a stoking area and kiln waste disposal dumps. What remained of the kiln was clay lined, with a possible clay shelf to either side of the flue, and probable stake-holes around the sides and rear of the chamber. A shallow pit on the western end of the kiln was also seemingly related to it, but no flue linked the two, and the feature had been almost entirely truncated. The stoking and refuse pits on the eastern side were more deeply cut, and produced a large amount of pottery.

Others

Two further features can also be put forward as possible kilns. F. 636 and 680, pits in the NW area of the site, both contained a large amount of pottery and burnt material. Of particular interest was a flue-like extension at one end of F. 636, but the cut was so shallow that natural disturbance could not be ruled out. Perhaps a more likely interpretation of both features is that of pits backfilled with kiln waste.

All of the above features fall broadly within the category of 'Belgic'-type early Romano-British kilns as defined by Swan (1984). The structure and orientation of the kilns is discussed here; further aspects of their use are considered below in relation to the baked clay and kiln furniture.

The orientation of the kilns varied greatly, but generally favoured an opening to the east. This is in direct contrast to Greenhouse Farm, c. 5km to the northeast, which produced the only directly comparable and contemporary kiln group in the region, where a west-facing opening was dominant. It is difficult to ascribe this reversal to a difference in the prevailing winds, which at a distance of only 5km, with no major geological features close by to channel the wind, would undoubtedly have been in the same direction. Interestingly, the two most intricately constructed kilns, F. 63 and F. 1117, had double openings, and F. 1117 also had small side flues, enabling the potters to exploit any change in the wind direction. The double opening was also present in the most complex of the Greenhouse Farm kilns. This raises the possibility that the smaller kilns were intended for use over only a very short period, perhaps only a matter of days, and were therefore built to favour the wind direction at the time of construction. This could account for the two unused kilns having been abandoned in the face of a changing wind, and also for the striking difference in alignment represented on the two sites.

The second most notable difference between the Addenbrooke's and Greenhouse Farm kiln groups is the presence in the Addenbrooke's kilns of a central pedestal shelf (or variation of) in all but one of the kilns (F. 1119, which was unfired and therefore possibly incomplete). Other than this distinction, the main kiln types are remarkably similar, particularly F. 63, which was to all intents and purposes identical to Greenhouse Farm Group 2. Although, over such a short distance, the possibility of the same individuals constructing the kilns on both sites cannot be ruled out, the distinctions are perhaps great enough to suggest that the individual settlements were creating their own variants within the same building and design tradition, tailoring each group to the particular conditions and needs of the site.

The location of the kilns, placed at the margins of the Conquest period enclosure with the stokeholes in some cases placed in its partially silted-up ditches, seems to be typical of the period. It can be paralleled elsewhere in Cambridgeshire at Greenhouse Farm (Gibson & Lucas 2002), Longthorpe (Dannell & Wild 1987) and Haddon (Hinman 2003).

Oven

Lying within Enclosure M1 was a small keyhole-shaped oven, F. 783. This consisted of a dump of clay within a hollow which had been moulded to form a circular chamber, 0.56m diameter, with a short NW facing flue, 0.18m long. The oven chamber survived to 0.14m deep, and would presumably have originally been enclosed by a domed superstructure. Two soft rectangular bricks revetted the exterior of the oven wall. The interior of the chamber showed signs of firing and contained a black, burnt fill. Keyhole-shaped ovens have often been interpreted as corn-dryers, but the small example here is more likely to have been used for domestic-scale baking. The

environmental sample from the oven contained only sparse plant remains that gave little clue as to function.

Artefact Studies

Late Iron Age and Roman Pottery

An assemblage of c. 20,000 sherds dating to the Late Iron Age and earlier Roman period (1st century BC-2nd century AD) was recovered. This report follows a brief scan of the material to assess its character and dating; more detailed recording and analysis will be carried out for the final publication of the site.

'Middle Iron Age Tradition'

The handmade later Iron Age pottery includes some examples of typical 'Middle Iron Age tradition' vessel forms such as slack-shouldered jars, typically in quartz sand-tempered fabrics. No vessels with curvilinear La Tène style decoration were found to match the example from Cra'ster's (1969) excavations at New Addenbrooke's. There is, however, a single burnished bowl rim with a La Tène style pattern of small impressed dots (from [2401]). Only a few sherds have the irregular scoring characteristic of East Midlands 'scored ware'. Further work would be required to elucidate whether any of this material represents a pre-Late Iron Age phase as such, given that such 'Middle Iron Age tradition' pottery continued to be used into the Late Iron Age and even the early Roman period in the region.

Late Iron Age-1st century AD

Diagnostically Late Iron Age forms are more common in the handmade material, with several good examples of the cordoned vessels in grog or grog/sand tempered fabrics that mimic wheelmade forms and date to the 1st centuries BC and AD. There are also large handmade storage jars, often with vertical combing. The wheelmade Late Iron Age pottery is essentially in the 'Aylesford-Swarling' tradition and can be tempered with grog, sand, or a mixture of the two. Vessel forms include cordoned jars and bowls, large storage/cooking jars, butt beakers and pedestal urns. At least some of the wheelmade material seems to date as early as the later 1st century BC, including a grog-tempered pedestal urn from [2407] with parallels at the Hinxton cremation cemetery (Hill *et al.* 1999).

Occupation clearly continued without break across the conquest. Conquest period and Early Romano-British material comes not only 'settlement' contexts as before, but also from kilns and burials. The 'Romanizing'/Early Romano-British material consists mostly of coarse orange and grey wares in sandy fabrics, many of which appear to have been made in the kilns on site. The kiln assemblages are all of later 1st century AD date (late pre-Flavian to Flavian), and have clear similarities to those from the nearby and broadly contemporary kilns at Greenhouse Farm (Gibson & Lucas 2002). However, a notable difference to Greenhouse Farm and some other contemporary kiln sites in eastern England is that the kilns were associated with a wider settlement complex yielding the same vessel and fabric types, rather than being located at a previously abandoned settlement. The main vessel forms are jars, bowls and beakers; the jars and bowls are often combed or rilled, while some have incised chevrons or diagonal lines on the shoulder. Some of the kiln assemblages are very substantial in size, and the presence of over-fired wasters provides direct evidence for the on-site production of certain fabrics/vessel types. In addition to local products, coarseware finds characteristic of the transitional conquest period include several shell-tempered channel rim jars, more usually found in Northamptonshire and Bedfordshire and uncommon in the Cambridge area, which originated c. 20 AD and continued into the Early Roman period (Friendship-Taylor 1999).

Alongside the coarsewares, there is also a small but interesting group of finewares. Some of the finewares from settlement and kiln contexts are painted. This includes several local ring-

and-dot painted vessels from Cherry Hinton (2km away), dated c. 55-90 AD (Evans 1990). One pot from [4168] painted with fern fronds or trees is very similar to published examples from the kilns at Weekley, Northants, dated c. 45-60 AD (Woods and Hastings 1984). One further pot from [2725] painted with horizontal bands and 'bird's feet' also shows similarities in motif with painted wares from Northants (cf. Woods and Hastings 1984), although the only direct parallel for a painted pot in this *form* comes from Colchester, from a context dated to before 61-65 AD (Hawkes and Hull 1947, pl. LXXVII, 6).

Though most of the pottery came from settlement and kiln contexts, an important group of unpainted finewares came from cremation grave F. 408. This included a buff ware girth beaker with three carinations, a butt beaker, a flagon and a carinated jar, dating to the Flavian period. Pottery otherwise only occurred sparsely within the cemetery, but that found consistently dates from the pre-Flavian to Flavian periods.

There are few sherds that can be definitely identified as imports. Small sherds of Samian were recovered from nine contexts, one of which shows traces of an attempted repair with pitch or resin. There is a single amphora sherd from [2100], probably a Dressel 2-4 Catalan amphora. These typically contained wine. They date to the late 1st century BC-1st century AD, but are most usually found in post-conquest contexts in Britain, as seems to be the case at this site on stratigraphic grounds.

The assemblage from ADF02 shows general similarities with the Late Iron Age/Early Roman pottery recovered from the earlier evaluation excavations both at this site (Lucas 2001) and at the neighbouring Addenbrooke's Daycare Centre site (Monteil 2002). Meanwhile, the material from Cra'ster's 1967 excavations at Addenbrooke's differs in that only handmade later Iron Age pottery was recovered. Cra'ster's most important find was a La Tène bowl decorated in a style that is now known to be specific to central Northants, where it has been argued to date to c. 175 BC-20 AD (Jackson and Dix 1987). Interestingly, this is the exact same area to which some of the early Roman painted wares from ADF02 show strong affinities.

The main value of the assemblage is that a substantial group of stratified pottery has been recovered that spans either side of the Roman conquest, from the 1st century BC to the 2nd century AD. As such the material clearly holds great potential for elucidating the changes in identity and ways of life known as 'Romanisation', as expressed through developments in pottery production, exchange and use.

Beyond this, two features of the assemblage stand out. The first is the significant amount of pottery from relatively early in the Late Iron Age, including the handmade imitations of wheelmade forms, something fairly uncommon in the area. Secondly, the kiln assemblages are of great interest with regard to the organisation of Early Roman pottery production and distribution in the Cambridge region. Initial assessment indicates that some good parallels for the kiln products exist in other published assemblages from the Cambridge area, and closer characterisation of the Addenbrooke's products in terms of form and fabric will elucidate whether the site supplied a wider area. This can help to evaluate the theories of the social context of Early Romano-British pottery production that were proposed in relation to the Greenhouse Farm kilns (Gibson and Lucas 2002). As noted above, there are reasons to suspect that the context for pottery production at Addenbrooke's differed from that at Greenhouse Farm, as the kilns were associated with a wider settlement complex.



Figure 16

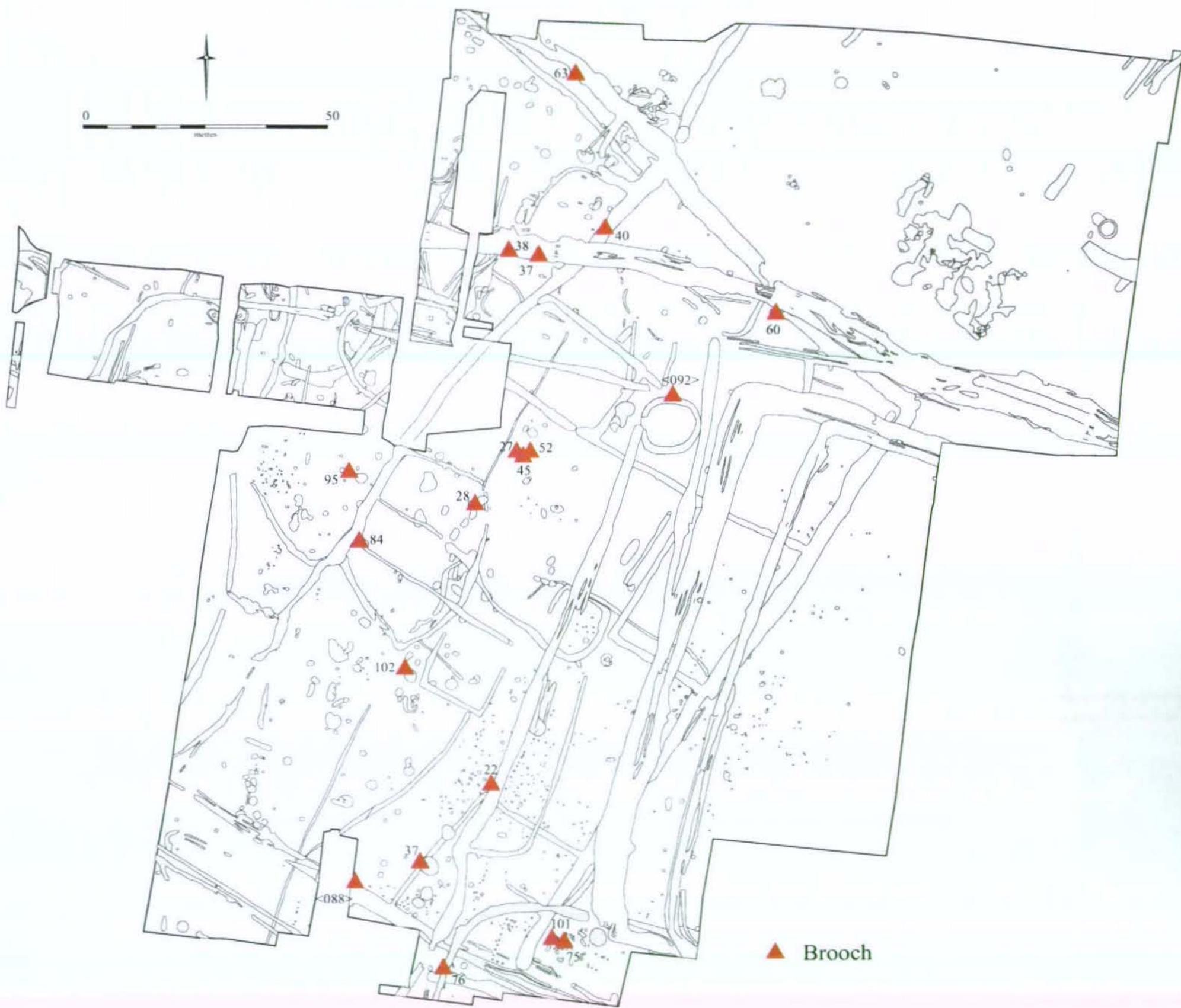


Figure 17

Coins (Iron Age coin identifications by Adrian Popescu; fig. 16)

Spot find 1 Uninscribed British Class II potin coin. Obverse: head left, plain border; reverse: 'bull' left, above two crescents, below pellet, plain border. Cu/Sn cast bronze II, weight 1.43g. Second half of 1st century BC. Cf. *BMCIA* 715.

Spot find 17 Late Iron Age Catuvellaunian copper alloy coin. Northern bronze, inscribed 'RVES', attributed to Tasciovanus. Obverse: bearded head right, before [...], border?; reverse: horse right with helmeted rider, before VII, pellet border. AE unit VIII, weight 1.89g. Second half of 1st century BC. Cf. *BMCIA* 1700.

Spot find 23 Badly corroded copper alloy coin, 15mm diameter. Possibly Late Iron Age.

Spot find 64 Late Iron Age silver coin. Icenian Pattern/Horse type, reverse ECE, EDN or Symbol.

Spot find 88 Late Iron Age copper alloy quarter stater. Possibly a contemporary forgery of Cunobelin, North Thames c. 10-40 AD (cf. *BMCIA* 1850).

Metalwork

Brooches

Some 15 Late Iron Age and Early Roman brooches were recovered (fig.17). Types represented include Langton Down, Hod Hill, Aucissa, Colchester and Rosette. Full analysis of the assemblage will be carried out for the final publication of the site.

Copper Alloy

[982] *F. 340* Pin fragment, 51mm long. Circular cross-section, tapering from 3mm to 2mm diameter.

[3116] *F. 918* Roman snakes-head bracelet with head end missing. Maximum diameter 47mm; 3.5 x 2mm thick.

[3489] *Grave F. 388* Curved rod, 30mm long. Circular cross-section, 3mm diameter.

[3494] *Grave F.405* Three rings associated with inhumation burial [3495]. Each is plain with a circular cross-section. The smallest is 21mm external diameter and 1.5-2mm thick, the middle-sized is 23mm diameter and 2.5mm thick, and the largest is 24mm diameter and 2-2.5mm thick.

[3616] *Cremation F. 408* Crumpled, irregularly shaped sheet fragment, c. 30 x 20mm in size. Accompanied by numerous crumbs. From within Early Roman cremation vessel.

[3664] *Cremation F. 411* Crumbs, from within cremation vessel.

Lead

[4367] *F. 1032* Two small sheet fragments. Weight 6g.

Iron

[156] F. 98 Socket or ferrule fragment, 50mm long.

[1624] F. 24 Plate fragment, 70 x 25mm in size, with a small (c. 2mm) perforation.

[3175] F. 339 Curved, tapering square sectioned rod, 35mm long and up to 8mm thick.

[3616] *Cremation* F. 408 Small undiagnostic lumps

[3862] F. 1043 Corroded rod, 30mm long.

[3911] F. 1115 Probable knife blade fragment, 60mm long.

[4184] F. 1078 Curved, tapering round-sectioned rod fragment with one rounded end, 32mm long and up to 8mm diameter.

[4498] F. 1066 Bent square-sectioned bar, 300mm long, up to 15mm thick.

Nine nails were also recovered. These can be divided into two groups, as follows:

A) Large nails up to 50mm long, with round heads c. 20mm in diameter, and shafts 5-10mm thick. There are four of these, from [1026], [1486], [2657] and [3666].

B) 'Standard'-sized nails with smaller round or square heads. The longest is 95mm long. There are five examples, from [089], [887-8], [1004], [3172] and [4639].

Fired Clay

A total of 7183 pieces (192.6kg) of fired clay was recovered. The assemblage differs from what would be expected from a 'normal' Late Iron Age or Roman settlement, where most finds are typically daub fragments or amorphous lumps. Here, the assemblage is dominated by fragments of flat plates, blocks or slabs that were presumably associated with the pottery kilns or other industrial activities. Unfortunately, most of the material is too fragmented to reconstruct. The recognisable kiln furniture from the kiln contexts themselves is discussed first, before moving on to the remaining artefacts.

Kiln Furniture

Three principal varieties of kiln furniture can be distinguished, namely kiln bars, thin 'plates' and thick marl or clunch 'slabs'. The distributions of these may indicate differences in the methods of use of the various kilns (Table 4), although it should of course be remembered that material dumped within a kiln need not have been functionally related to it.

Kiln Bars - At least 29 fragments of kiln bars were recovered from five contexts associated with kiln F. 1181 ([4683], [4684], [4688], [4691], [4700]), representing a minimum of ten bars. Additional *possible* fragments were recovered from kilns F. 1077 ([4252]), F. 1119 ([3954]) and F. 1254 ([4262]) None of the bars can be reconstructed to completeness, the longest surviving fragment measuring 24cm long. The bars bifurcate at one end to two rounded prongs, joined at U-shaped cusp. The shaft is roughly rectangular in cross-section, tapering along its length down to a rounded butt end. The bars measure 7.5-9cm wide at the pronged end, 4.5-5.5cm wide at the butt end, and are 3.5-5cm thick. The fabric is hard and oxidised with voids from plant temper. No parallel for such pronged bars is provided by the standard work on Romano-British kilns (Swan 1984). The kiln bars from other Conquest period/Early Roman

kilns in Cambridgeshire at Greenhouse Farm, Swavesey and Haddon were of the more normal 'cigar-shaped' type with two tapering ends (Gibson and Lucas 2002; C. Evans 1990; J. Evans 1998; J. Evans in Hinman 2003).

'Slabs' - Many large, thick, irregular slabs of baked marl or clunch were recovered from kilns F. 63 ([851-2], [855], [857], [859], [863]), F. 853 ([2367-8]), F. 1117 ([4205-6], [4208]), F. 1181 ([4683-4], [4691]), and F. 1254 ([4262]). These typically measure 40-60mm thick and generally show evidence for scorching on one surface only. A role as some kind of kiln lining or covering as opposed to free-standing kiln furniture is thus indicated.

'Plates' - Numerous fragments of thin, roughly made, flat though slightly undulating 'plates' were recovered from kilns F. 1077 ([4252]), F. 1181 ([4683], [4688], [4691], [4700]) and F. 1254 ([4255], [4260]). These measure 5-15mm thick, and often show a slight 'curl' at the edge. Due to the fragmentation of the material, the overall size and form of these items is unclear. Very hard oxidised fabric with abundant chaff or plant impressions.

At the Roman kiln site of Bursea House, East Yorkshire, the kiln fabric was divided into two groups: thicker pieces (30-70mm thick) which were interpreted as the lining of the permanent walls of the kiln, and thinner, often curved pieces (10-24mm thick) which seem to have been irregular plates used to create a temporary roof during the firing (Halkon & Millett 1999, 123). A similar interpretation is possible for the 'slabs' and 'plates' seen here.

One item from a non-kiln context (fill [581]) should also be noted here. This is a fragment of a circular 'platter', c. 30cm diameter and 2.5cm thick, in a hard oxidised fabric. Parts of similar objects were found at Haddon and Bursea House; at the latter site it was proposed that these were spacers between pots in a kiln during firing (Halkon & Millett 1999: 123).

Kiln	Kiln Type	Total weight fired clay/clunch (kg)	Bars	'Plates' (Roofing?)	'Slabs' (Walling?)
F. 63	A	39.11	No	No	Yes
F. 1117	A	39.01	No	No	Yes
F. 1181	B	35.86	Yes	Yes	Yes
F. 340	B	1.28	No	No	No
F. 626	D	1.93	No	No	No
F. 1078	D	0	No	No	No
F. 1077	E	2.10	?	Yes	No
F. 1254	E	6.52	?	Yes	Yes
F. 853	F	0.35	No	No	Yes

Table 4: Distribution of furniture from kiln contexts, excluding unfired kilns.

Other Fired Clay Artefacts

The remaining objects of fired clay that are recognisable as artefacts are described as follows.

[1447] Two bricks that externally revetted oven F. 783. Both originally measured c. 18 x 8 x 5cm, but are now very fragmented. Fairly soft oxidised fabric with voids from plant material.

[1456] Fragment of large slab, 4cm thick. Straight edge on one side, 13cm long; survives to 24cm long across opposing axis. Hard mottled oxidised/reduced fabric with sand and flint.

[1768] Weight, probably a loomweight, measuring 85mm high. The cross-section is roughly square (c. 40 x 40mm), with rounded corners. There is an oval perforation, 15mm below the top of the object, c. 18 x 16mm in size. Hard reduced fabric with fine quartz.

[4213] Complete loomweight of triangular form, perforated through each of the three corners. As is often the case, one side is slightly shorter than the other two, measuring 14cm compared to 15cm long. Loomweights of this form were in use from the 5th century BC into the Roman period. Hard oxidised fabric with one flint lump visible.

Querns

Eight querns or quern rubbers were found, as follows (see fig. 20):

Feature	Context	No.	Description
18	[1808]	1	Saddle quern rubber
663	[2767]	1	Possible saddle quern rubber
791	[2193]	1	Partial pudding stone rotary quern (upper stone), 10cm high at axle hole
832	[2460]	1	Quern fragment, possibly from saddle quern
885/941	[3056]	1	Pudding stone rotary quern fragment
1036	[3860]	1	Rotary quern fragment (lower stone)
1013	[3937]	1	Possible saddle quern rubber
1076	[4000]	1	Rotary quern fragment (upper stone), 12.5cm diameter

Table 5: Querns

Roman Tile K. Anderson

A small quantity of Roman tile was recovered from the excavations, with just 26 pieces weighing 1903g. The assemblage comprised of seven different tegulae, most of which were relatively small and abraded although there was one with part of its flange [4205] (F. 1117). There were also three inbrex tiles and a flue tile, which had combing on the exterior. The remaining pieces were too small to be identified by form, but were recorded as Roman because the fabrics were similar to those from the diagnostic sherds.

Overall the quantity of the tile is too small to confirm the presence of any building on the site. Most of the tile came from features that also contained early Roman pottery, which implies that the tile is also of this date. However, there were also some pieces that were residual in Saxon contexts and others that were intrusive, thus dating the tile more specifically becomes difficult.

Environmental and Economic Evidence

For the Late Iron Age, the faunal assemblage showed a ratio for the major domesticated species of 53% cattle, 38% sheep, and 8.5% pig (see Swaysland below). The figures remain fairly similar for the Conquest/Early Roman period, with 55% cattle, 41% sheep and 4% pig. Horse, dog and goose were also present in both phases. A Late Iron Age pit, F. 69, contained a substantial deposit of 90 sheep bones, some articulated, suggesting the remains of a feast. The age data from these demonstrated that there was a culling strategy geared towards maximising meat production; the cattle bone from these phases includes pieces from animals that had been used for traction.

The environmental samples from the Late Iron Age and Early Roman period show relatively small amounts of cereal grains and chaff including wheat and barley. The exceptions to this are samples from kiln contexts, which show markedly raised levels of spelt and emmer chaff, suggesting the use of wheat straw as fuel. The weed seeds from these phases come from both disturbed waste ground and arable land, with some wetland plants also found. The molluscs are mostly indicative of open ground, with a few suggesting damp conditions.

Discussion

Although not without interruptions and irregularities, Phase 4 clearly saw the establishment of a 'grid-iron-like' system of paddocks coming off of (and respecting) the line of the southern E-W road. In many respects the key question here is the degree to which this system had its origins in the preceding late Iron Age landscape.

As has been defined the Phase 3 involves two types of enclosure - both a series of more robustly bounded enclosures of sub-circular plan and also an irregular 'linear' system. In the former category, extended over some 2085sqm the main enclosure would be B, which is that which registered so prominently on the site's aerial photographs. Although closely corresponding to features revealed in the course of the excavations, there has to be some doubt whether the cropmark register of its northern half/third is not somewhat 'confused' by other features/systems. (Here it warrants notice that, as shown from the air, its seemingly internal sub-divisions actually related to the position of the Phase 4 enclosure M.5.) Given its configuration and scale Enclosure B would seem to be a 'farmstead type' compound entirely typical of the period and probably attributable to the Middle/late Iron Age. Unfortunately the stratigraphic relationship between it and the Iron Age enclosure (A) it 'overlaps' in the western, Robinson Way-side trenches was not established. However, Enclosure A - which was also robustly ditched - was probably of comparable function and date. The same, however, is not true of Enclosure C which clearly respected 'B' and, obviously post-dating it, probably represents an elaboration and expansion of the larger enclosure. (Sub-)Enclosure C was itself truncated by the western side of a much smaller, sub-circular enclosure, D. Approximately 22m across (and also visible on aerial photographs), this probably bounded a building rather than delineating a larger compounded *per se*. The layout of Enclosure D is of direct relevance as, based on the plan evidence at hand, it would not seem to have been completely discrete. In other words, it could not have been entirely (sub-)circular, but rather came off the western side of a linear ditch. This can only have been a precursor of the western side of the main Phase 4 paddock enclosure, J. Also of Late Iron Age attribution, Enclosure F must also have shared a ditch on the same alignment. This would, therefore, suggest that by the time of the construction of Enclosures D and F what was to become the Conquest system's alignment had been established. This would be further confirmed by the fact that Enclosure I (whose western boundary was truncated by Enclosure F features) was itself truncated by ditch F. 68 that continued east (as F. 177, 197 & 198) where it 'ghosted' or pre-dated the southwestern axis of the Phase 4 paddock (J; this Iron Age paddock being referred to as H). Similarly the alignment of ditch F. 929 along the northern side of the Phase 4 paddock enclosure M would also suggest a Late Iron Age origin for its layout.

Ignoring for the moment any question of Iron Age precursors, there can be no doubt that the main, Enclosure J of the Phase 4 system was laid off of the axis of the southern E-W road. The 'ropey' or interrupted quality of the road's flanking ditches would seem, at least in part, to relate to the fact that access into the paddock system was from off of it. Indeed, as indicated by the entrance gap in the northern paddock, J.1 ditch line, the main axis of movement through the enclosure paddocks would seem to have been N-S.

The relative regularity of the Enclosure J layout would seem to relate to the fact that it was the main focus of settlement at this time (below the distributions of buildings and industry is discussed), and with its smaller internal paddock sub-divisions (J.2, .3 & .6; see below for J.4 & .5) and the almost 'monumental scale' central well in J.1, it does seem quite formal in its arrangement. In this context why the southwestern axes (F. 2 and F. 1013 and F. 1038/1071 in M.4) should curve northward is unknown. This would not seem to be determined by any obvious topographic factor and, rather, it can only be presumed that it pertains to 'accommodation' with the earlier, Late Iron Age layout.

The sense of a Conquest period 'grid-iron' is again expressed across the northwestern quarter of the site and can be seen in the M.5 layout. It would also be apparent in the fact that within the cropmark plots a ditch is shown running northwest from the northern side of Enclosure A that is clearly the continuation of the ditch line dividing paddocks J.1/.2 and J.3, even though it did not continue across the western margin of the site *per se*. Equally, that the line of ditch F. 718 (*et al.*), dividing Enclosures L and M was also picked up in the 2002 Day-Care Centre investigations (Whittaker 2002) demonstrates the further continuance of the 'paddock's grid'. This being said, within the site north of this line (in the area of Enclosures L & K) the ditch lines were more irregular and discontinuous (interestingly though the F. 26 and F. 735 boundary in K is shown on the geophysical plots as continuing southwest to join with Enclosure J). This may relate to a more major land-use distinction, for the northern Enclosure J/M boundary (F. 22, 23 and F. 718 *et al.*) was extremely 'ropey' and irregularly scarred, and this may be the result of plough-turning along its line. (The Phase 5 boundary at this point also has the same 'feathery' character.) What this would suggest is that arable fields lay north of Enclosure J and M, with settlement and presumably also animal paddocks occurring within their bounds.

The southern E-W ditch within the area of Enclosure K (F. 619) was relatively large and it can only be presumed that it continued eastward and was joined by the two complimentary-aligned ditches in the access road area - F. 654 and F. 1226. The latter of these was of robust proportions and would seem to have been a major boundary. In the field it was suspected that these two parallel ditches might define a NE-SW oriented track or even a roadway, but of this there was no conclusive evidence. It should equally be stressed that while in the geophysical survey across the unexposed southeastern portion of the playing fields there are also 'ghosted' alignments that could hint of the continuation of the F. 654 and F. 1226, their register is too dispersed and indistinct to definitely ascribe their projection.

The site's Iron Age round buildings exclusively occur throughout the northwestern quarter of the site. Defined by minor eavesdrip gullies, these are relatively small being only 3.5-10.00m in diameter (Structures 5-8). There is much greater ambiguity concerning the attribution and plan of the western posthole (-only) defined roundhouse - Structure 13. There is less certainty of the details of its plan and, indeed, its date (whether Phase 2 or 3). The status of the very small, 'U'-shaped structures, 9-12, is equally problematic and these have little obvious parallel. They definitely seemed 'structural' (i.e. not tree-

throws, etc.) and may relate either to small sheds or 'ricks', or even some manner of industrial activity (e.g. clamps, kilns ovens), though of the latter there was no direct evidence of burning. (An irregular, building-suggestive sub-circular gully was also distinguished at the 2002 Day-Care Centre site; Trench A; Whittaker 2002.)

Within the main area of excavation there was one other possible later Iron Age structure, the I/F. 64 sub-rectangular/-ovoid ditch setting. No posthole pattern was found to confirm this interpretation, and rather this suggestion arises from the regularity of its gully-/ditch-'surround'. The character of late Iron Age building within southern Britain has long been a major question - were they round or rectangular, and to what degree were they without earth-fast foundation (i.e. sleeper beam construction)? This becomes all the relevant given that many definite Iron Age roundhouses are themselves only defined by their eavesgullies and were clearly without substantive posthole settings (e.g. Evans 2003a).

The question of whether the I/F. 64 enclosure surrounded or defined a building does itself relate to the apparent paucity of the site's Conquest period structures - occupation *per se* then obviously occurred on site, but no building plans as such were recovered. However, applying the same logic as above, might not the regularity of the more rectangular ditched 'small' paddocks equally relate to the fact they surround buildings? The most obvious example would be the J.5/F. 1 'U'-shaped enclosure, that might in fact have superseded or replaced the somewhat more irregular I/F. 64 setting (fig. 9). Other possible candidates for this would be the J. 4 (.a & .b; F. 36, F. 38, F. 56 & F. 1053) ditches and also the M.1/F. 684 & F. 780 square in the northeastern corner of Enclosure M. This issue, and particularly its ramification for the Late Iron Age/Conquest period occupation at the Greenhouse Farm site, will be further discussed below (see *Final Discussion*).

The status and attribution of the site's southern roadway will also be discussed at length below (see *Final Discussion*). Here, for the sake of analytical convenience, it has been assigned to the Phase 4 occupation and as a primary Roman/Conquest phenomenon. However, it warrants mention that the way in which the Phase 3 pitting seemed to respect its line and the manner in which its profile was locally 'hollowed' prior to its metalling could suggest that an Iron Age 'way' on this line may well have preceded the road as such. This would certainly compliment the situation and alignment of Cra'ster's '67 enclosure.

With 16 inhumations and three cremations, the scale (and 'mix') of the site's cemetery is directly equivalent to, for example, the southern burial ground at the Vicar's Farm site in West Cambridge (Lucas 2001). Although based on its limited dating evidence it is here assigned to the Phase 4 Conquest period occupation, this does not imply that did not continue into the subsequent Phase 5 Roman usage. Indeed, the F. 178/492 (*et al.*) ditch line seemed to turn south-eastwards in respect to it. Two other points warrant emphasis as regards the cemetery. Firstly, and again comparable to Vicar's Farm with its double horse-head setting, is the evidence of animal ritual as evinced in the F. 412 dog burial and also the F. 398 'bone' pit. The second point relates to the apparent absence of any Iron Age interments within it, despite the fact that it

also had 'Early Roman' grave good-accompanied cremation burials. Whilst this was also the case at Vicar's Farm, that site equally lacked any substantive Iron Age occupation. This is not the case at the Hutchison site, where there was rather direct settlement continuity during the first centuries BC and AD. This makes it somewhat surprising that its cemetery did not also span its Iron Age usage and raises the question of just where their dead were interred.

For the most part the site's significant 'type' distributions occur in such low numbers as to not be particularly meaningful. The five Iron Age coins recovered, for example, are dispersed and without any obvious concentration (fig. 16). The same is basically true of the Samian, though it shows a westward propensity suggesting that some it may relate to pre-Conquest trade (i.e. occurring in Iron Age contexts; fig. 16). More meaningful, or at least convincing, seems to be the brooch distributions as these are almost entirely restricted to the Enclosure J 'block' core of the Phase 4 Conquest period paddocks (including the cemetery; fig. 17). The distribution of the site's kilns is equally insightful. Apart from two cases, they only occur along the western portion of the site, with six occurring immediately beyond the main F. 19/1053 boundary (fig. 12). This would equally suggest that the core of the Phase 4 Conquest period settlement as such lay immediately east of its axis within the enclosure 'block' J core.

Involving a comparable range of types as found at Greenhouse Farm, Cambridge (Gibson & Lucas 2002), this evidence of pottery production would also essentially seem to be of pre-Flavian attribution. However, unlike at that site, here this activity directly related to contemporary settlement and not a specialist 'enclave' (i.e. a re-used later Iron Age paddock at Greenhouse). Based on the Greenhouse Farm excavations, Gibson and Lucas postulated a model of intermittent/seasonal, strictly local production, perhaps involving itinerant specialists. The fact that the Hutchison kilns so clearly match those at Greenhouse site could be seen as supporting that interpretation, perhaps with the same 'specialists' visiting both locales. However, based on the frequency/extent of such Early Roman pottery production within Cambridge's environs now known, an alternative would also be possible. This would involve a 'catch-up' or mass-production model. Rather than relating to intermittent needs (i.e. occasional/seasonal production essentially replacing broken vessels) this would be determined by an *en masse* adoption of a Roman-type ceramic repertoire and, instead of involving a regular rhythm, relate to an intense supply need (i.e. rapid 'Roman' pottery style uptake and the collapse of 'Iron Age-type' manufacture).

The relationship of the site's kilns to the Phase 4 paddock system warrants discussion, as in two instances (F. 340 & F. 1181) the kilns occurred in relationship to the system's ditches. In both cases the kiln-derived rake-out material extended across the middle profile fills of these boundaries. From this it could be inferred that the paddocks had by then been established for some time (and they were poorly maintained) and this evidence could, thereby, be employed to further arguments concerning the later Iron Age (pre-Conquest) attribution of the system's layout.



Figure 18 Phase 5

Phase 5 - *Late 1st-Mid 2nd Century AD* (fig. 18)

The Roman field system, representing at least two distinct phases of activity, lay on a broadly NNE-SSW/ENE-WSW alignment. Containing very little contemporary material, the system was agricultural in nature and consisted largely of droveway-related ditches. Much of the system was formed of wide, shallow ditches with multiple narrow recuts, suggesting a long period of use, and making a precise phasing difficult. Based on the number and alignment of the ditches, at least two phases can be distinguished, but with dating evidence and clear stratigraphic relationships being almost entirely absent, the relative phasing of each is tentative.

The northern boundary of the Roman system was formed by F. 21, a somewhat serpentine feature in a system otherwise dominated by straight linears. Up to 8.40m wide and composed of at least four recuts, F. 21 was generally shallow, although it reached a depth of 1.44m at its eastern end, becoming much shallower towards the west. The number of recuts (which individually were very narrow), along with the 'feathering' of minor recuts along its edges, suggests a period of extended use, and it is likely that the boundary was a feature of both droveway systems. Likewise, F. 770, a large pond in the central area of the site, was likely a feature of both systems, albeit much silted up.

The remaining features can be split up as follows:

System 1: F. 21, 816, 851, 852, 838, 839, 879, 17, 956, 210, 178, 9, 479, 42, 480, 41.

System 2: F. 21, 40, 957, 178, 179, 9, 491, 492, 381, 382, 508, 7, 67, 608.

Both of these systems appear to form NNE-SSW droveways leading to a more permanent WNW-ESE route. The section of double-ditch formed by F. 40 and F. 41 links with both systems and demonstrates something of the evolution between the two systems. Little evidence for the actual use of the droveways survived, although a fragmentary gravelled surface existed at the southern end of the system, sharply bounded by F. 7.

A certain amount of development appears to have taken place, resulting in both systems sharing certain features (or recuts within them). Interestingly, although the Phase 5 systems obliterate the Phase 4 alignments, none appear to cut the earlier roadway ditches, either butting/turning against them or turning before them. Indeed, with the droveways leading to the road but not crossing it, it is tempting to see the earlier road retained as a convenient routeway, at least for stock control, although the flanking ditches were not maintained. A scattering of pits can also be dated by their finds to this phase (F. 850, 1052, 1190). Kiln F. 1119 and the uppermost fill of the stokehole of F. 1117 also contained material of this phase, but this seems more likely to be dumped refuse than the residues of pottery production itself.

After around the middle of the 2nd century AD the levels of activity seem to have dropped markedly. Only a few small scraps of pottery and a Barbarous radiate of the third quarter of third century AD indicate a Late Roman presence.

Pottery

New features in the ceramic assemblage from Phase 5 that indicates a late 1st-mid 2nd century AD date include flanged bowls, 'London Ware' style pottery, possible Horningsea wares, and some new buff wares. A mere three sherds of Nene Valley colour coat pottery (mid 2nd century AD onwards) were found. The paucity of features common from the mid 2nd century onwards, particularly colour coats, indicates that occupation came to an end by that time, with only manuring activity continuing.

Small Finds

Spot find 3 Roman copper alloy As of Trajan, 98-117 AD. The reverse shows Moneta holding scales and cornucopiae.

Spot find 18 Roman copper alloy coin. Barbarous radiate, third quarter of third century AD.

[1010] *F. 956* Partial Millstone grit rotary quern (lower stone), 26cm diameter, 5cm high at axle hole, 10cm high at outer rim.

Three iron nails were also found; one from *F. 955* and two from *F. 956*.

Environmental and Economic Evidence

Environmental evidence is rather sparse for this phase. The samples taken from the ditch system contained virtually no archaeological plant remains, with just a single wheat grain and a small amount of charcoal (see below).

Discussion

Dating to the later 1st –early 2nd century AD, this phase marks a very major change in the site's sequence. Primarily a lack of occupation *per se* within the immediate area and, instead, it was given over to fields. This interpretation is entirely consistent with the very low finds density from this time, which for the most part need not represent anything other than manuring activity. This could be further confirmed by the character of main, northernmost E-W boundary (*F. 21*), as its 'feathery' morphology would suggest repeated 'scarring' and re-working through sustained plough action along it.

While this phase therefore attests to a major change of land-use, unfortunately it is not possible to be absolutely certain what it implies for the potential continuance of the southern roadway. Its line was then clearly impinged upon by ditches *F. 39/43* and *F. 508* (and there is no evidence whatsoever of the maintenance of its flanking ditches), but it still nevertheless may have continued as a 'way'. Equally, the paucity of post-2nd century pottery need not imply that this system itself was then abandoned. Indeed, representing no more than outfields (albeit on a 'big' scale), it need not have then seen any finds deposition. The recovery of a few scraps of very abraded Nene Valley wares might attest to the continuance of manuring into the 3rd/4th centuries.

Phase 6 - *Middle Saxon* (fig. 19)

The identifiable Saxon features consisted of one curvilinear ditch (F. 6/F. 420), five wells (F. 482, F. 500, F. 501, F. 552 and F. 609), a pit (F. 529), and one or possibly two rectangular post-hole buildings (Structures 14 and 15). Most of these features occurred close to the southern limit of the excavation, although a possible Saxon well occurred much further to the north.

Ditch F.6 was distinctive from most of the features around it due to the darkness of its fill – a rich, very dark brown clay-silt with frequent charcoal and artefacts, including Saxon pottery, fully consistent with domestic deposition. The ditch narrowed at F. 419 before widening out again as F. 420, which itself then butt-ended. Lying just to the south of this terminus was a well, F. 482, which contained Saxon pottery in its upper fills. Contained by this semi-circular enclosure was Structure 14. Although containing no dating evidence, the building sits uncomfortably with the Conquest period ditches around it, as well as the adjacent cemetery and road.

Also falling within the Saxon phase were four outlying wells, F. 552, F. 500, F. 501 and F. 609. Although only F. 552 was clearly dated by Saxon pottery, the others were close enough in their form and fill to be associated with the later phase of the site, along with a tendency for the latest features to contain lava quern fragments. Of the five wells included in the Saxon phase, four of them contained lava fragments, which were also found in ditch F. 6. Excluding a piece of lava quern occurring residually in a furrow inside enclosure F. 6, and another piece in Saxon pit F. 529, only two other pieces occurred across the entire site.

Buildings

Two rectangular buildings may be of Anglo-Saxon attribution, although neither yielded any datable material. Structure 14 is the most likely to be of this date, due to its location within Saxon enclosure ditch F. 6, and its awkward placing in relation to nearby Late Iron Age and Roman features. The dating of Structure 15 is more uncertain, and it is very tentatively placed in the Saxon period on the grounds of its comparable morphology and alignment to Structure 14.

Structure 14 - A rectangular structure formed of 15 surviving postholes, measuring 9.25m NNE-SSW by 5.0m ESE-WNW. The west side of the structure was intact, with nine postholes spaced c. 1m apart (F. 428, F. 431, F. 436, F. 439, F. 441-5). If corner posts are counted twice, there were four surviving postholes on the north side (F. 423, F. 428-30), three on the south (F. 445-7) and two on the east (F. 423, F. 425). Further postholes on the northern and southern sides are likely to have been obliterated by furrow F. 1235. On the east side, posthole F. 425 cut ditch F.8, and further postholes were perhaps not possible to observe within the silted-up ditch, due to its similarity in colour to the posthole fills. The structural postholes ranged in size from 0.20-0.48m diameter and from 0.03-0.32m deep with mid brown-grey silt fills. Two small pits with dark charcoal-packed fills, F. 424 and F. 432, lay within the northeast and northwest corners of the building respectively, and may have been internal fixtures. F. 424 measured 0.53 x 0.48 x 0.10m, while F. 432 was 0.44m in diameter and 0.15m deep; there was no trace of in situ burning. Also within the northern part of the building was a cluster of four postholes (F. 433-4 and F. 437-8) which had identical fills to the structural postholes. There were no finds of any kind from the structure.

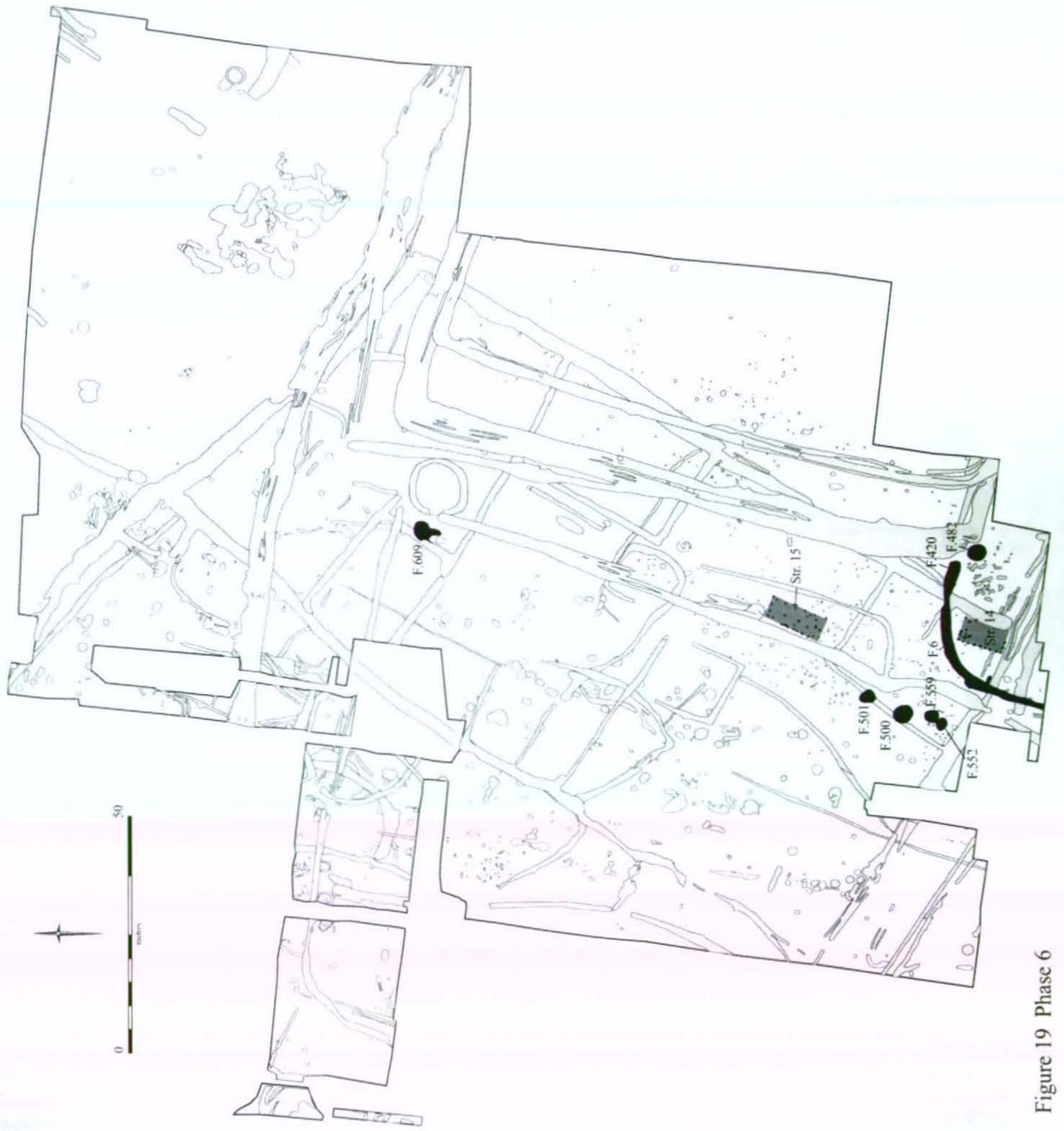


Figure 19 Phase 6



Figure 20

Structure 15 - A rectangular structure formed of 36 postholes (F. 222-243, 245-53, 255, 257, 264-5) distinguished by their orange-brown silty fills. The exact form of the building is uncertain, but it seems to measure c. 11m NNE-SSW by c. 5m ESE-WNW. The west wall is formed of eight postholes (F. 230-4, 236, 242, 248) and the north wall by four postholes (F. 222-225); the south and east walls are more difficult to trace. The postholes range from 0.17-0.47m in diameter and 0.03-0.30m in depth. One further posthole, F. 244, is located within the area of the structure, but may not be related as it has a differing grey-brown silt-clay fill.

Wells

Five wells have been attributed to the Anglo-Saxon period. Four of these are placed at the southern end of the site (F. 482, F. 500, F. 501 and F. 552), the latter three being arranged in a closely spaced, north-south aligned row, while F. 609 was located further to the north. These ranged from 2.2-4.0m diameter, and from 2.8-3.4m deep, with the exception of F. 609 which was only excavated to 1.4m depth. All were roughly circular with vertical or near-vertical sides and fairly flat bases. The sides were presumably revetted, though no actual traces of this could be observed.

The wells typically showed a complex series of fills, with clay or silt-clay deposits predominating. Finds were generally scarce. F. 552 contained eleven sherds of Ipswich Ware in secondary fill [1258], while F. 482 contained Ipswich Ware in the upper three fills. F. 609 could be slightly later in date due to the presence of a sherd of St Neots-type pottery from upper fill [1588]; this feature also contained lava quern fragments. The pottery from F. 500 and F. 501 consisted only of small numbers of Late Iron Age and Roman sherds, though F. 500 contained fragments of lava quern. F. 501 meanwhile contained a remarkable carved clunch block of uncertain date (see below). A further well, F. 728, situated at the northern edge of the site might on morphological grounds also date to the Saxon period, although the only datable find was a single sherd of PDR pottery.

Feature	Diameter (m)	Depth (m)
F. 482	3.4	3.2
F. 500	4.0	3.0
F. 501	3.0	3.4
F. 552	2.2	2.8
F. 609	3.9	>1.4

Table 6: Anglo-Saxon wells

Artefact Studies - Anglo-Saxon Pottery

Ipswich Ware (Paul Blinkhorn)

Ipswich Ware, dated AD 725-850 (Blinkhorn 1999) was the first pottery to be produced on an industrial scale in post-Roman England. It was made on a 'slow-wheel' or turn-table, and manufactured exclusively in the eponymous Suffolk wic. It has the widest distribution of any native pottery type of the period, and is found all along the east coast of England from York to Kent, and penetrated westward along the major river valleys as far as Gloucestershire.

There are two main fabric types, although individual vessels which do not conform to these groups also occur:

GROUP 1 - Hard and slightly sandy to the touch, with visible small quartz grains and some shreds of mica. Frequent fairly well-sorted angular to sub-angular grains of quartz, generally measuring below 0.3 mm in size but with some larger grains, including a number which are polycrystalline in appearance.

GROUP 2 - Like the sherds in Group 1, they are hard, sandy and mostly dark grey in colour. Their most prominent feature is a scatter of large quartz grains (up to c 2.5mm) which either bulge or protrude through the surfaces of the vessel, giving rise to the term "pimply" Ipswich ware (Hurst 1976). This characteristic makes them quite rough to the touch. However, some sherds have the same groundmass but lack the larger quartz grains which are characteristic of this group, and chemical analysis suggests that they are made from the same clay.

The assemblage comprised 20 sherds with a total weight of 1005g. The estimated vessel equivalent (EVE), by summation of surviving rim sherd circumference was 0.62. All the sherds from this site are of Group 2 type, although it cannot be said if this is of significance, as no typological fabric or form traits have ever been identified due to a lack of suitable stratigraphic sequences. Three rim sherds were noted, two of West's type I.C rim and one of his type II.K (ibid. 1964). All were from jars, and the body sherds revealed no evidence of any other vessel types being present. No decorated sherds were noted, although all the sherds from the upper bodies of vessels had horizontally finger-grooved surfaces, a standard technique of the industry. The number of cross-fits suggest that it is an assemblage which is more or less contemporary, and that there was not long-lived middle Saxon activity at the site.

The pottery occurrence by number and weight of sherds per context by fabric type is shown in Table 7.

Sherd No.	Context	Feature	No.	Wt. (g)	Comments
1	450	420	1	96	Sherd from very large jar
2	450	420	1	31	Shoulder of small jar
3	450	420	1	10	Bodysherd, small jar
4	450	420	1	26	Large jar, joins with sherd 5
5	451	420	1	54	Large jar, joins with sherd 4
6	451	420	1	27	Base sherd, probably same vessel as sherds 4 and 5
7	451	420	1	35	Joins sherd 13, large jar
8	451	420	1	189	Bodysherd from large jar
9	451	420	1	62	Base from large jar
10	451	420	5	12	Miscellaneous fragments.
11	1258	552	1	326	Full profile of small jar, type I.C rim, 120mm diameter, EVE = 48%
12	3513	482	1	14	Rimsherd, type II.K, 200mm diameter, 4% EVE, joins sherd 16
13	3514	482	1	53	Joins sherd 7
14	3514	482	1	17	Rimsherd, type I.C, 120mm diameter, 10% EVE
15	3514	482	1	16	Bodysherd, small jar
16	3515	482	1	37	Bodysherd, same vessel as sherds 4,5 and 6?
		Total	20	1005	

Table 7: Ipswich Ware

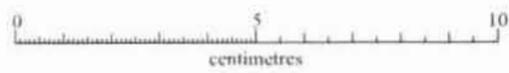
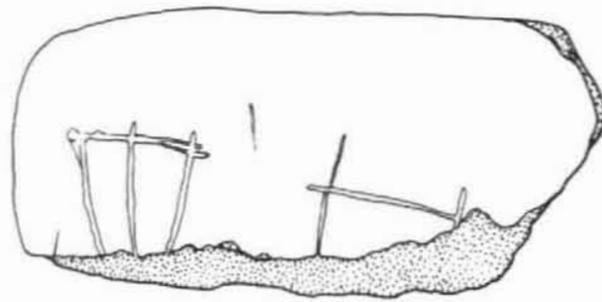
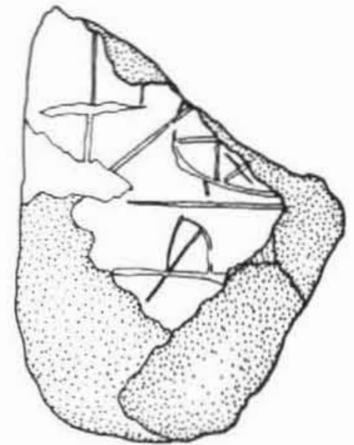
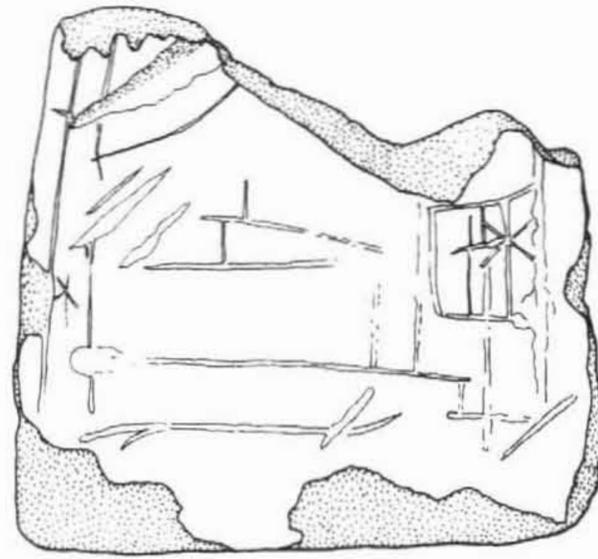
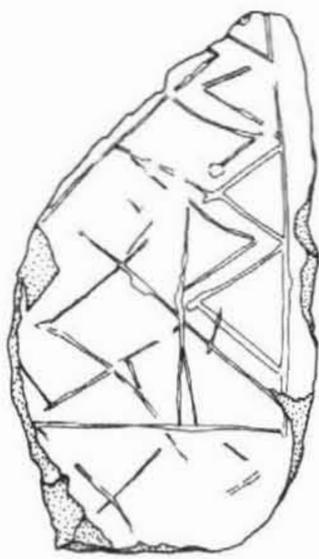
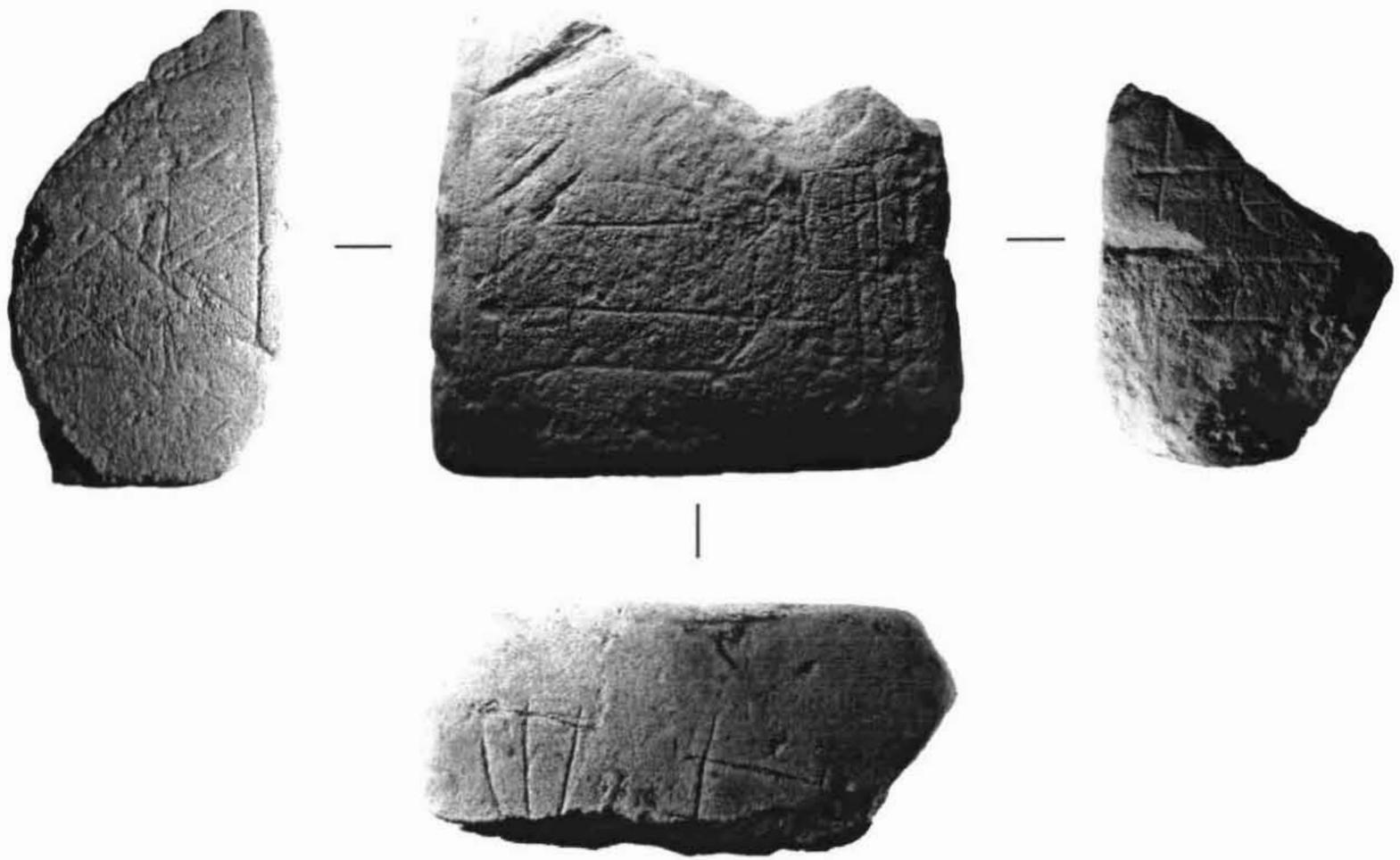


Figure 22 Carved Clunch Block

St Neots Ware

One sherd (119g) of shelly St Neots-type ware, dating to the 9th-11th century AD, was found in context [1588]. This is a rim sherd with part of a bar lug.

Querns

Some 103 pieces (7878g) of lava querns were found, mostly small fragments 20-40mm thick (fig. 20). One piece from [1010] has an axle hole. Most of the lava querns are from certain Anglo-Saxon contexts, and it is likely that all are of this date.

Lava stone of this type originates from the Eifel region of Germany. During the Saxon period it is believed to have been imported as roughouts rather than as finished querns. Intact Saxon lava querns are typically 70-85mm thick, implying that the examples recovered here had been considerably worn through use.

Feature	Context	No.	Weight (g)
420	[1186]	2	4
482	[3513]	25	222
500	[1097]	2	9
500	[1098]	22	304
529	[261]	20	83
552	[659]	1	68
609	[1518]	9	672
770	[2019]	1	221
809	[2329]	2	97
1066	[4498]	15	5546
1244	[3347]	1	227
-	Spot find 14	3	425

Table 8: Lava fragments

Carved Clunch Block

Fill [1226] in Anglo-Saxon well F. 501 contained part of a rectangular clunch block with various incised markings (fig. 22). The block is a well-faced ashlar stone that may well have been taken from a masonry building. Parts of four finished surfaces survive, with one complete edge, the block measuring 130mm x 120mm+ x 65mm+. Three of the faces have darkened surfaces, while the remaining (largest) face and the broken surfaces are noticeably cleaner. This suggests that the darkening did not occur post-deposition but while the block was in use, perhaps from exposure to smoke.

Each of the four surfaces bears markings, the clearest occurring on the three darkened surfaces. Of these, the side with the most regular ornamentation has a rectangular frame enclosing a row of double nested chevrons, fairly shallowly incised. Another side has two deeply and crudely incised incomplete motifs, and the third has a series of confused markings including one 'X' motif. The 'clean' face of the block is meanwhile marked with a series of fairly straight lines that may or may not be deliberate ornamentation. The differences in the character of the markings on the various surfaces suggests

that they were not all carved at the same time, by the same person, for the same purpose. The block is likely to be either Roman or Anglo-Saxon in origin, although the markings could have been incised after its original use-life. The markings cannot be dated stylistically, given that chevrons and crosses are common motifs through most periods of antiquity.

Metalwork

Fill [1099] in well F. 500 yielded two iron objects. One is a strip fitting, 120 x 8mm, with three rivets on one side, the other a round-sectioned rod fragment, 90mm long and 4mm diameter. A further small fragment of iron was recovered from [1514] (well F. 609) and a small fragment of copper alloy from [1226] (well F. 552).

Context [450] in ditch F. 420 meanwhile yielded a copper alloy needle with head broken off across the eye, 115mm long, and three corroded iron plate fragments, including one with a rivet.

Environmental and Economic Evidence

The animal bone recovered from secure Saxon contexts showed a ratio for the three major domesticated species of 54% cattle, 35% sheep and 10% pig. Horse, dog, cat, goose and chicken bone was also present (see Swaysland below).

The environmental samples, taken mainly from well fills, were in some cases very rich (see Roberts below). There were large amounts of cereals, dominated by free-threshing wheat grains, but with barley, rye and oats also represented. Celtic beans or peas may also have been grown. Of wild plants, stinking chamomile was found in large amounts, possibly indicating a change by this time to mouldboard plough cultivation of the heavy clay soils. Significant numbers of fenland plants such as rushes and sedges evinces the importation of plant materials. The molluscs include both damp ground and open ground species. This evidence is supplemented by analysis of pollen from well F. 482 (see Boreham below), which indicates an open tree-less environment with some evidence for arable activity and for nearby damp ground.

Discussion

With only twenty-one sherds of pottery attributable to this phase, this does not seem a major occupation. Indeed, its existence was not recognised as such during the excavations and was instead only identified in course of post-excavation study. However, by the measure of other contemporary Middle Saxon settlements within the region (see Mortimer, Regan & Lucy forthcoming for overview), this must be counted as a considerable presence. This impression is furthered by the recovery of the two 'longhouses' of the period.

Pottery	21 (1124g)
Baked Clay	101 (912g)
Iron	3 (30g)
Copper Alloy	1 (3g)
Lava Stone	103 (7878g)
Worked Clunch	1
Slag	1 (93g)
Bone	1738 (22,192g)

Table 9: Summary of finds from Anglo-Saxon contexts (worked flint and residual pottery and tile excluded).

The manner in which Structure 15 was tucked into the 'alcove-like' arrangement of Roman ditches F. 15 and F. 67 would suggest that it was the earthwork survival of the Phase 4 ditches (perhaps enhanced by associated hedge lines) that went on to structure the Saxon landscape. In other words, they conveniently re-utilised its remnant earthwork boundaries. In this capacity some element of doubt must exist as to whether the curvilinear ditch line F. 6 actually represents a newly established feature at this time, or some manner of re-cutting of an earlier Roman feature. Although Saxon material occurred well down within the profile of this feature, its general plan-layout does seem to mirror the arrangement of the Phase 4 ditch F. 816 in the north of the site and respect - and perhaps even continued - the southern corner of the main Roman system (F. 9, 178, 491 and 492).

The frequency of the wells apparently attributable to this period would also attest to the intensity of settlement-usage at this time. In this regard the carved clunch block recovered from F. 501 can only be considered an extraordinary find and one without direct parallel. It could stylistically fit either a Roman or Saxon attribution and here the degree of artefact residuality within the Saxon features does not abet its assignation.

Phase 7 - *Medieval/Post-Medieval* (fig. 23)

No settlement activity as such seems to have occurred on the site following the end of the Saxon occupation. Use of the area for agriculture during the medieval and/or post-medieval periods is attested by numerous furrows, mostly on a north-south alignment. There were however also a few at right-angles to that axis along the eastern side of the site and this change of alignment would suggest a major field division (which actually appears to roughly co-relate with the Phase 4 ditch-line, F. 9, 178 and 957 *et al.*). The Draft 1st Edition OS map of 1810 shows the area of the site as farmland, a situation that continued into the early 20th century.

The only notable finds from this phase were three coins from metal detecting, one of the mid 14th century and two of the later 16th century.

Spot finds 43 and 44 - Two copper alloy Nuremberg jettons, 1562-86.

Spot find 48 - Silver penny of Edward III, 1356-61, from the Durham mint.



Figure 23 Phase 7 Ridge and Furrow



Figure 24

Finds from Metal Detector Survey

Finds from the metal detector survey are listed below, excluding obvious post-medieval material (datable coins and brooches are discussed by phase above).

Copper Alloy

Spot find 12 Bent strip, possibly a bracelet fragment, 60 x 13mm. A central groove flanked on each side by a narrower groove runs down the length of one side of the object. An irregular perforation at one end seems to have been punched through and may not be original.

Spot find 14 Bent strip, 25 x 5 x 1mm. Possibly post-medieval.

Spot find 15 Small, thin sheet fragments.

Spot find 16 Pin with finely moulded bulbous head, 75mm long. Maximum shaft diameter 2.5mm. Midway down the pin, a fine ?incised line spirals around the shaft three times.

Spot find 35 Ring, 13mm external diameter. Circular cross-section, 2mm diameter.

Spot find 46 Copper alloy ?coin fragment, c. 16mm diameter.

Spot find 47 Sheet or blade fragment, 55 x 20mm in size and up to 1.5mm thick.

Spot find 59 Small sheet fragment.

Spot find 69 Perforated disc, 21mm diameter and less than 0.5mm thick. There is a slight raised lip around the circumference on one side. The perforation is irregularly shaped, c. 3mm diameter. Possibly a button back.

Spot find 72 Curved rod with a flattened oval cross-section, possibly a bracelet fragment. Length 65mm; thickness tapers from 5 x 3mm down to 3 x 2.5mm.

Spot find 86 Oval stud, with one convex bun-shaped side and one slightly concave side. Measures 15 x 12mm in size and 4mm high. There is a central circular perforation, 5mm diameter.

Lead

Spot find 4 Amorphous fragment, possibly casting waste. Weight 8g.

Spot find 36 Two crumpled openwork fragments, made of strips 3mm wide.

Spot find 85 Spindle whorl. Sub-circular, c. 30mm diameter, with a flattened bun-shaped underside and slightly concave upper side. The central circular perforation measures c. 6mm diameter.

Iron

Spot find 2 Triangular plate, 75mm along each side. There is a circular perforation in one corner, 3mm diameter.

Spot find 11 Loop-headed bar fragment, 60mm long with a 12mm diameter perforation.

Spot find 13 Knife blade with tang missing, 93mm long.

Spot find 25 Rectangular plate, 55 x 40mm in size.

Spot find 55 Knife blade, 120mm long, including 20mm long (broken) tang.

Spot find 56 Knife blade, 125mm long, including 45mm tang.

Spot find 57 Sickle blade fragment (tip end), 180mm long and up to 30mm wide.

Spot find 66 Plate fragment, 58 x 62mm.

Spot find 91 Square-sectioned bar, 30 x 10 x 10mm, with a from which extends a flattened end curled back upon itself to form a loop, 13mm diameter.

Some 16 handmade, square-shafted nails were recovered, from spot finds 5-10, 15, 19-21, 26, 29, 30, 67, 70 and 93 (fig. 24). In addition, three possible hobnails were found, from spot finds 65, 89 and 94.

Environmental Studies

Faunal Remains C. Swaysland

A total of 12,496 fragments of animal bone was hand recovered from the site. Excluding articulated and partially articulated remains a sample numbering 3298 fragments (26.4% of total) was analysed for zoological and archaeological traits. A further 2372 fragments from articulated or partially articulated specimens was also considered. The total number of fragments identified to species or broad size category, excluding articulates and partial articulates is 1345 (40.8%). The condition of the bone was variable; almost all had suffered some degree of damage caused by contact with acids in plant roots.

Due to time constraints it was not possible to analyse all of the assemblage. Therefore a quantity of material was selected that would provide a representative view of the site and would maximise the information that could be obtained from a limited sample. The sampling strategy was designed to fulfil the following criteria based loosely on O'Connor (1991):

- To represent all of the main periods of occupation
- To include those samples particularly rich in faunal remains
- To focus on features of particular archaeological importance.

In order to satisfy the above it was decided to analyse all contexts with greater than one hundred fragments and any other contexts from the same feature. In addition, all material from Bronze Age-Early Iron Age pits, Iron Age ring gullies and Saxon features was considered. The material from pit F. 389 was also analysed but is reported separately above in the discussion of the cemetery. The strategy employed introduced some anomalies; it selected all the articulated remains (> 100 bones) and also two large skulls broken into many fragments. Despite this, the strategy seemed to work well; all periods and areas of the site were represented, as were different types of features. The main 'conquest' period of the site was, however, perhaps somewhat under-represented.

The material identified for analysis was individually recorded to highlight patterns in element distribution, age profiles, butchery and spatial

distribution. Animal bones were identified with the aid of Schmid (1972) and the Cambridge Archaeological Unit reference collection. Bird bones were identified with the aid of Cohen and Serjeantson (1986). Where possible sheep and goat bones were distinguished following Boessneck *et al.* (1964) and Halstead and Collins (2002). Non-diagnostic elements such as ribs and vertebrae were identified to broad size category. All complete long bones were measured after von den Dreisch (1976). Quantification is by number of individual fragments (NISP). Where it was clear that a group of fragments originated from a single bone they were grouped together and counted as a single element: i.e. 100 fragments from a broken skull were counted as 1 bone. The assemblage was analysed by phase as identified by the excavator.

Bronze Age-Early Iron Age

Thirteen Bronze Age-Early Iron Age pits were investigated. One was dated to the Middle Bronze Age and twelve were from the Late Bronze Age/Early Iron Age. The condition of the material from these pits is poor; most have heavily eroded surfaces and are in fragmentary condition.

One Middle Bronze Age pit, F. 157 [1740], contained animal bone. One bone could be identified, a cow mandible. The 3rd molar was fully erupted and had wear to the front two cusps suggesting an age at death in excess of 3 years (Grigson 1982).

Twelve pits attributed to the Late Bronze Age/Early Iron Age contained animal bones: F. 72, F. 81, F. 127, F. 128, F. 154, F. 165, F. 166, F. 188, F. 369, F. 468, F. 474, and F. 498. A total of 143 fragments were recovered; 65 fragments (45.4%) were identified to 26 specimens (Table 10).

Species	NISP	NISP %
Cattle	10	38.5
Sheep/goat	8	30.8
Pig	3	11.5
Medium sized mammal	3	11.5
Large sized mammal	2	7.7

Table 10: Relative species proportions, Late Bronze Age/Early Iron Age pits.

Cattle and sheep/goat are the main species present. One humerus was identified as sheep. Pig are of lesser importance, two right scapulae are present one from a juvenile, one from an adult. All bones are within the size range for domestic species. One sheep/goat mandible indicated an age at death of 3-4 years (Payne 1973).

Late Iron Age

A range of features from the late Iron Age was considered: four pits (F. 97, F. 98, F. 69 and F. 574), one ditch (F. 64) and three ring gullies (F. 898, F. 907 and F. 913). Cattle and sheep/goats remains dominate the assemblage from pits F. 97 and F. 98. A range of meat and non-meat bearing elements is present in the assemblage indicating the animals were butchered on-site. The material is characterised by fragmentary disarticulated bones indicating domestic waste. Three goose bones were recovered; it is not known if they are from wild or domestic species.

Species	NISP	NISP %
Cattle	25	25.8
Sheep/goat	18	18.6
Pig	4	4.1
Horse	4	4.1
Medium sized mammal	18	18.6
Large sized mammal	25	25.8
Bird	3	3.1

Table 11: Relative species proportions Late Iron Age pits F. 97 and F. 98.

F. 69 was a shallow pit containing a large amount of articulated and non-articulated remains of sheep and cattle and two non-articulated pig bones. A total of 90 sheep/goat bones was recovered, this includes six articulated limbs. Three left rear legs, two left front legs, one right front leg and a series of vertebrae were recovered. In addition there were two examples of complimentary radius and ulna; these are bones that occur very close together in life but are not usually fused together. All animals that could be distinguished between sheep and goat were identified as sheep. Table 12 shows the fusion status of the sheep epiphyses after Silver (1969). Limbs that articulate were counted once for the earliest fusing epiphysis that was in an unfused state.

Fusion Category	Estimated age (months)	Percentage fused	Percentage unfused	Number
1	6-10	100	0	7
2	13-16	92.3	7.7	13
3	18-28	25	75	12
4	30-42	25	75	12

Table 12: Sheep fusion data F. 69

This table shows that no sheep in the earliest fusion category and very few in the second fusion category (7.7%) entered the pit. In the third and fourth fusion category 75% were culled. This table indicates a highly selective culling strategy; most of the animals in this pit were killed after 18 months. The animals would be approaching prime size/weight for meat production and it is probable they represent animals killed in the summer/autumn of their second year. One mandible was recovered with an age at death of 2-3 years (Payne 1973 wear stage E).

An estimation of the withers (shoulder) height may be made from the length of the longbones. The two unbroken long bones were measured and withers heights were calculated using the factors of Teichert (undated in von den Driesch and Boessneck 1974):

Element (L/R)	Measurement (cm)	Factor (Teichert)	Withers (cm)
Metacarpal	GL 10.9	4.89	53.3
Humerus	GL 13.0	4.28	55.6

Table 13: Estimation of sheep withers (shoulder) height F. 69

Harcourt (1979 in Davis 1987) gives a withers size range of 53-64 cm for Iron Age sheep from Gussage All Saints in Dorset. The sheep found in this pit therefore are within the smaller size range for Iron Age sheep.

A total of 85 cow bones was recovered from F. 69 including two partially articulated lower legs; these are not meat bearing bones. In addition there were 3 complimentary radii and ulna; bones situated together in life though not fused. Two left cow metacarpals exhibited extended epiphyses, a trait often exhibited by animals used for traction (Bartosiewicz *et al.* 1997). Butchery marks are infrequent though one calcaneum shows cut marks consistent with dismemberment and one radius had a heavy chop mark. Analysis of the state of epiphyseal fusion (Table 14) indicates that in the early fusing or juvenile group 30.8% of cattle were killed. In the middle fusing or sub-adult group 37.5% of cattle were killed. In the late fusing or adult group 66.6% of cattle were killed. This indicates that there was a reasonable degree of attrition on the younger animals but most in this pit were killed between the ages of 3-4. This would be when they are approaching their largest size/weight. A number of animals lived to a mature age when all bones have fused. Two metacarpals showed exostosis to the distal epiphyses consistent with use as draught animals (Bartosiewicz *et al.* 1997).

Fusion Category	Estimated age (years)	Percentage fused	Percentage unfused	Number
Early	up to 1.5	69.2	30.8	13
Middle	2.5-3	62.5	37.5	8
Late	3-4	33.3	66.6	12

Table 14: Cattle fusion data F. 69.

Three cattle mandibles could be aged by means of tooth eruption and wear (Grigson 1982). One had age at death of 2.25-2.5 years; two had an age at death in excess of three years.

Iron Age pits containing articulated animal remains have provoked much debate (e.g. Wilson 1992, Hill 1995). The deposits in F. 69 are not the usual fragments encountered from domestic waste. The bones have been butchered but not very intensively as may be seen from the different ways in which cattle and sheep remains were treated. The sheep encountered here were small animals; they could be processed for food with the limbs remaining articulated. The waste is thus deposited in an articulated state. The cattle, being much larger, required dismemberment so that the lower legs, i.e. only the waste material, was deposited in an articulated state. Therefore it is probable that the remains in F. 69 relate to an episode of meat consumption. The character of the deposition of the bones seems to represent a single event. The amount of meat represented by the bones in this pit would far exceed that required by a single household. Therefore some kind of special event or feast can be envisaged. Meat sharing in many agricultural societies is associated with major religious festivals or celebrations of life events (Grant 2002), an association Hill (1995, 102) would regard as 'ritual consumption'. This pit seems very similar in character to pit A12 found at Baldock (Chaplin and McCormick 1986) which was interpreted as possibly representing the slaughter of a breeding flock connected to the Boudiccan revolt.

The F. 53 pit deposit is somewhat confused having suffered from truncation. The pit contained the remains of at least three dogs all of which were probably deposited in an articulated state. Two dogs were 'large', one was 'small'. The smaller dog of the three is articulate; these bones have been measured (Table 15). Other larger dog bones were recovered some in articulation but none was complete to allow measuring. Two of the individual dogs show cut marks consistent with skinning.

Element (L/R)	Measurement GL (mm)	Factor (Harcourt 1974)	Withers height (cm)
Radius L	111	(3.18XGL)+19.51	37.2
Radius R	111	(3.18XGL)+19.51	37.2
Ulna L	131.5	(2.73XGL)+6.21	38.1
Humerus L	119	(3.43XGL)-26.54	38.1
Humerus R	118	(3.43XGL)-26.54	37.8
Tibia L	131	(2.92XGL)+9.41	39.1
Tibia R	131	(2.92XGL)+9.41	39.1
Femur L	123	(3.14XGL)-12.96	37.3

Table 15: Pit F. 53 articulated dog withers heights after Harcourt (1974).

The 'smaller' of the dogs would have had a shoulder height of around 38cm. This is at the extreme smaller size range of Iron Age dogs (Harcourt 1974). In addition to the dogs discussed above, F. 53 also yielded 3 fragments of cattle skull and horncore. Pit F. 53 would seem to represent the deposition of noxious waste principally after skinning activities.

The section in ditch F. 64 contained a cattle skull from a mature animal with an age at death of in excess of three years. Hill (1995) has argued that complete or near-complete animal skulls should be regarded as 'special' deposits and their deposition in boundary ditches surrounding settlements may be significant.

A small quantity of animal bone was recovered from three ring gullies, F. 898, F. 907 and F. 913. There were no identifiable fragments from F. 913. F. 898 and F. 907 both contained remains of cattle and sheep/goats. A mixture of meat and non-meat bearing bones of both species are represented. Overall three cattle bones and six sheep/goat bones were recovered one of which was distinguished as sheep. One cattle left metatarsal showed interesting pathology. The bone had broken and re-healed in such a position that the proximal end was twisted approximately 20 degrees towards the medial side. This would have had the result that the cow's foot would have been splayed out from the normal position.

Late Iron Age/Conquest

Two ditch features were analysed from this period: F. 1013 and F. 1053. The former contained the partially articulated skull and vertebrae of one very old dog and three disarticulated cow and sheep/goat remains. Ditch F. 1053 contained cattle and sheep/goat in equal amounts (Table 16). All sheep/goat that could be identified to species were sheep. One cattle metatarsal showed widening of the distal epiphysis; this indicates use as a traction animal (Bartosiewicz *et al.* 1997).

Species	NISP	NISP%
Cattle	29	34.9
Sheep/goat	29	34.9
Pig	4	4.8
Dog	3	3.6
Medium sized mammal	10	12.0
Large sized mammal	8	9.6

Table 16: Relative species proportions ditch F. 1053

Late Iron Age/Roman

One pit, F. 10, was dated to this phase. Two cattle mandibles from different animals were recovered from it that could be aged, both showing an age at death of six months (Grigson 1982). Two sheep/goat mandibles from different animals were recovered that could be aged, both showing eruption and wear consistent with Payne (1973) stage D. This indicates an age at death of 1-2 years.

Species	NISP	NISP %
Cattle	17	53.1
Sheep/goat	10	31.3
Medium sized mammal	5	15.6

Table 17: F. 10 Relative species proportions

Conquest Phase

Two ditches (F. 18 and F. 1206), two pits (F. 591 and F. 1046), two kilns (F. 1117 and F. 1181) and one 'dog burial' (F. 412) were analysed.

The excavated portion of ditch F. 18 contained 14 cattle bones and 3 sheep/goat bones. In addition to this there were a large number of fragments from a cattle skull that may have been complete. Ditch F. 1206 contained a horse skull from a relatively young animal; incisor tooth wear indicates an age at death of around five years (St. Clair 1975). The presence of isolated skulls, particularly of horses, is recorded at other Iron Age and Romano-British sites in England (cf. Dobney 2001; Hill 1995) and has often been ascribed a 'ritual' function.

Pit F. 1046 yielded the following animal bone (Table 18):

Species	NISP	NISP %
Cattle	11	17.5
Sheep/goat	35	55.6
Pig	3	4.8
Horse	2	3.2
Medium sized mammal	3	4.8
Large sized mammal	6	9.5
Large bird	3	4.8

Table 18: Relative species proportions F. 1046

In this feature sheep/goat are the dominant species (55.6%). One sheep/goat mandible showed tooth wear indicating an age at death of 1-2 years (Payne 1973 stage D). Three large bird bones were recovered; one was definitely identified as goose, one was a probable goose and one was unidentified.

All bones from pit F. 591 were very root etched. Seven cattle bones were identified, a mixture of meat and non-meat bearing bones were present. One vertebra of sheep/goat size was recovered. In addition one residual horse metapodial was found; this specimen was in poor condition but seems to have been worked.

Two kilns, F. 1117 and F. 1181, were selected for analysis on the basis of the high number of bones that were recovered from them. Bone debris in kilns could represent rubbish deposition after the kilns have been abandoned, though there is a suggestion of a 'placed' deposit in F. 1181.

Species	F. 1181 NISP	F. 1181 NISP %	F. 1117 NISP	F. 1117 NISP%
Cattle	21 (414)	42	20	44.4
Sheep/goat	4	8	12	26.7
Pig	2	4	0	0
Horse	0	0	4	8.9
Medium sized mammal	18	36	2	4.4
Large sized mammal	5	10	7	15.6

Table 19: Relative species proportions kilns F. 1181 and F. 1117, figures in brackets refer to an articulated calf

Cattle are the dominant species in both features. A complete articulated calf [4656] was recovered from inside kiln F. 1181. The age at death of this animal from tooth eruption and epiphyseal fusion was 12-18 months. The excavator believes this animal was placed inside the kiln prior to the destruction of the kiln. This may have served a ritual purpose. A complete mature cattle metacarpal with articulating 1st phalanges and one 2nd phalange was also recovered from F. 1181, these elements showed evidence of carnivore damage. The greatest length of the metacarpal was 16.7cm. Metacarpal length is known to be sexual dimorphic, the sex of this animal from which this bone came is unknown. Therefore the withers height is given as a range from 101cm to 106cm. One cattle mandible was recovered from F. 1117, this had an age at death of in excess of three years (Grigson 1982 wear stage 8). Sheep/goat bones also showed mix of meat and non-meat bearing elements. One mandible indicated an age at death 4-6 years (Payne 1973 wear stage G). One complete sheep metacarpal was recovered. This measured 12.07cm, indicating a withers (shoulder) height of around 59cm. One sheep distal tibia showed pathology consistent with arthritis.

F. 412 was located within the Roman cemetery and contained the articulated remains of a mature dog and a spherical flint nodule. It has been speculated that this nodule may have been the dog's 'ball'. Unbroken long bones were measured and a withers (shoulder) height was calculated using the factors of Harcourt (1974) to be around 39cm. This height is at the smaller end of the size range for Iron Age dogs though Romano-British dogs have a much greater range of sizes (*ibid.*).

Anglo-Saxon

Material from ditch F. 6/F. 420 and four wells (F. 482, F. 500, F.501 and F.552) was analysed. The excavator considers that there may be risk of residual material occurring in these deposits. The species proportion in F. 6 and F. 420 are rather different. F. 6 has a high proportion of sheep/goat and low levels of cattle whereas F. 420 has similar proportions of cattle and sheep/goats. Both features have low levels of pig remains and both features had one bird bone. The bird bone from F. 6 was identified as domestic goose and the bird bone from F. 420 was a 'bantam sized' chicken.

The partially articulated remains of a cow were recovered from F. 420 [1186]. The skull, atlas, axis, vertebrae sacrum and pelvis were present. All the adult maxillary teeth were present and well worn; this indicates an age at death in excess of three years (Grigson 1982). Some pathology was noted; the sacrum had fused to the 6th lumbar vertebra. The cause of this pathology is unknown. Many bones, particularly the ribs, showed evidence of carnivore damage. A complete horse metatarsal was recovered from F. 420 [1186]; a withers (shoulder) height of 131.1cm was calculated using the factors of Kiesewalter (1888 in von den Driesch

and Boessneck 1974). This is equivalent to 13 hands; by modern standards this animal would be considered a pony.

Species	F. 6 NISP	F. 6 NISP %	F. 420 NISP	F. 420 NISP %
Cattle	6	7.3	18 (70)	24.7
Sheep/goat	23	28.0	16	21.9
Pig	6	7.3	6	8.2
Horse	0	0	4	5.5
Medium sized mammal	34	41.5	19	26.0
Large sized mammal	12	14.6	9	12.3
Chicken	0	0	1	0
Goose	1	1.2	0	1.4

Table 20: Relative species proportions Saxon ditch F. 6/F. 420 (figures in brackets refer to articulates)

The ageing data from F. 6 and F. 420 is somewhat conflicting. F. 6 had a young pig aged 7-13 months (Silver 1969) and a cow aged 2.5-3 years (Grigson 1982). F. 420 had a mature pig aged in excess of 22 months (Silver 1969), a cow aged 2.25-2.5 years and a sheep/goat aged 4-6 years (Payne 1973).

Four wells (F. 482, F. 500, F. 501 and F. 552) were identified as Saxon:

Species	NISP	NISP %
Cattle	105	42.0
Sheep/goat	45	18.0
Pig	12	4.8
Horse	22	8.8
Dog	2	0.8
Cat	3	1.2
Medium sized mammal	15	6.0
Large sized mammal	46	18.4

Table 21: Relative species proportions, Saxon wells.

Cattle are the most frequently represented species (Table 21). This material was in general quite fragmentary, although one complete metatarsal was recovered. The withers (shoulder) height of the animal from which this bone originated was calculated using the factors of Matolcsi (1970 in von den Driesch and Boessneck 1974) and was in the range of 115-123 cm. One section of skull from F. 482 [3827] showed cranial perforations. It has been suggested that this is a possible indication of yoking (Brothwell *et al.* 1996); however these traits have reported in wild bovids thus lending support for a congenital cause for this condition (Manaseryan *et al.* 1999; Baxter 2002). Four cattle mandibles were complete enough to allow an age at death to be estimated. One mandible was from a juvenile animal aged 6-18 months; three were from mature animals aged in excess of 3 years at death (Grigson 1982).

Sheep/goat represent (18%) of the assemblage; all specimens that could be distinguished to individual species were identified as sheep. A small amount of tooth eruption and wear data was recovered indicating a wide range of ages at death from 6 months to 6 years with no one age category being predominant.

The proportion of horse bones in these features was relatively high (8.8%) and included one complete tibia. This was measured and a withers (shoulder) height calculated of 141.7cm (Kiesewalter 1888 in von den Driesch and Boessneck 1974). This is equivalent to 13.9 hands and would by today's standards be considered a pony.

Post-Medieval

Pit F. 167 contained the partially articulated remains of a foetal calf and a mature sheep. The excavator considers this deposit to be post-medieval; the large size and robust build of the sheep supports this assertion.

Conclusion

In all phases, all sheep and goats that could be distinguished to species were identified as sheep. Therefore the term 'sheep' will be used henceforth though it should be remembered that a few goats might be included in this category. In all periods almost the entire assemblage was derived from domesticated mammals. The vast majority came from the three main domestic species: cattle, sheep and pig. Cattle and sheep are dominant throughout. In all phases cattle proportions exceed those of sheep though in certain features the proportions are reversed. Pig is of minor importance throughout, only in the Late Bronze Age/Early Iron Age and the Saxon periods do proportions of pig exceed 10%.

Phase	Cattle %	Sheep %	Pig %
LBA/EIA	47.6	38.1	14.3
Late Iron Age	53.2	38.3	8.5
Conquest	55.3	40.9	3.8
Saxon	54.4	35.4	10.1

Table 22: Major species relative proportion by phase excluding articulars.

The transition from the Late Iron Age to the Conquest phase is the most important to us here and presents a high degree of homogeneity. Proportions of cattle and sheep remain very similar, only levels of pig alter, decreasing from 8.5% in the Late Iron Age to 3.8% in the conquest period. King (1991) has described a hierarchy of site types in the early Roman period based on meat consumption. Villas and highly Romanised sites show high levels of cattle and pig down a gradient to non-Romanised settlements showing a continuation of the predominant Iron Age pattern of relatively high sheep proportions. This pattern does not really fit the Addenbrooke's data as the Iron Age material does not show the high levels of sheep. However it has been observed that not all of southern England fits the high Iron Age sheep pattern. Maltby (1981 in Dawson 2000) has shown that in contrast to other areas in southern England, in the South Midlands the trend during the Iron Age is for cattle increasing in proportion to sheep. It is interesting that the proportion of pig is lower in the Conquest sample than in the Iron Age sample. Pig was considered a delicacy in the Roman world and it occurs in large amounts on highly Romanised sites (Dobney 2001). It is possible to speculate that the Addenbrooke's community had been trading pigs with the Roman military thus removing pigs from the assemblage found in the conquest period. Thus it would seem that processes of acculturation or 'Romanisation' from the perspective of meat consumption seem to be limited.

Age at death data is extremely limited, the only feature to have a reliably large sample size is F. 69 dated to the Late Iron Age. This showed animals predominantly being raised until reaching prime size/weight demonstrating a meat economy. However this pit seems to have served a 'special' function and it would be unwarranted to extrapolate generalised husbandry regimes from this individual feature.

Articulated burials are dominated by dogs; these can be interpreted in different ways. The dogs in F. 53 show evidence of having been skinned and their carcasses would seem to simply represent noxious waste thrown into a pit. This is in contrast to the dog 'burial' F. 412 located in a human cemetery accompanied by a 'ball'. Other 'ritual' behaviour may be seen the deposition of a complete calf inside a kiln.

Changes in the size of cattle due to local improvement in husbandry practises or the importation of new stock have been observed on some Roman sites in Britain and Europe though mainly on sites of a late Roman date (Dobney 2001). Complete long bones were very limited on this site; one cow metacarpal was recovered from a Conquest phase kiln which is of 'small' size and thus shows little sign of 'Romanisation'. One Saxon cattle bone was recovered that showed a withers size increase of up to 17cm.

A very small amount of size data is available for sheep. This tentatively suggests a small size increase from a withers height of 54cm in the late Iron Age to 59cm in the Conquest period. This however is still within the size range for Iron Age sheep so may not be significant.

Overall this assemblage shows a high degree of continuity from the Late Iron Age to the Roman period. It seems that the Roman influence was not apparent in the Conquest period material.

Environmental Bulk Samples Kate Roberts

Sixty samples from a variety of contexts were submitted for analysis. All were processed using an Ankara-type flotation machine (French, 1972). The flot was collected using a 300 μ m sieve, and the heavy residue was washed over a 1mm mesh. The flots were dried prior to their examination, under a low-power binocular microscope and scanned for identifiable plant and molluscan remains. Plant remains were identified using the reference collection of the Pitt-Rivers Laboratory, Department of Archaeology, University of Cambridge. Plant nomenclature follows Stace (1997). The molluscan remains were identified with, and nomenclature follows Beedham (1972). Mollusca were only analysed when there were more than fifty examples in a sample, a number considered to give some statistical significance. The contents of the flots are summarised at the end of the report in table form. The heavy residues greater than 4mm were examined and the contents were incorporated into the tables at the end.

Preservation in these samples was mainly by charring. This material was very well preserved and some samples were very rich. However density varied widely between phases on this site, ranging from 0.03 items per litre in the Roman phases to 59.17 in the Saxon phases. The texture of the plant remains was very well preserved allowing a good level of identification. Fragmentation was not that common.

Some samples occurred with uncharred plant remains, however there were only moderate amounts of seeds. In these it does not appear that the remains

were part of a properly waterlogged assemblage as the quantities were too small. It is more likely that if these remains were waterlogged, they were a remnant of a waterlogged assemblage.

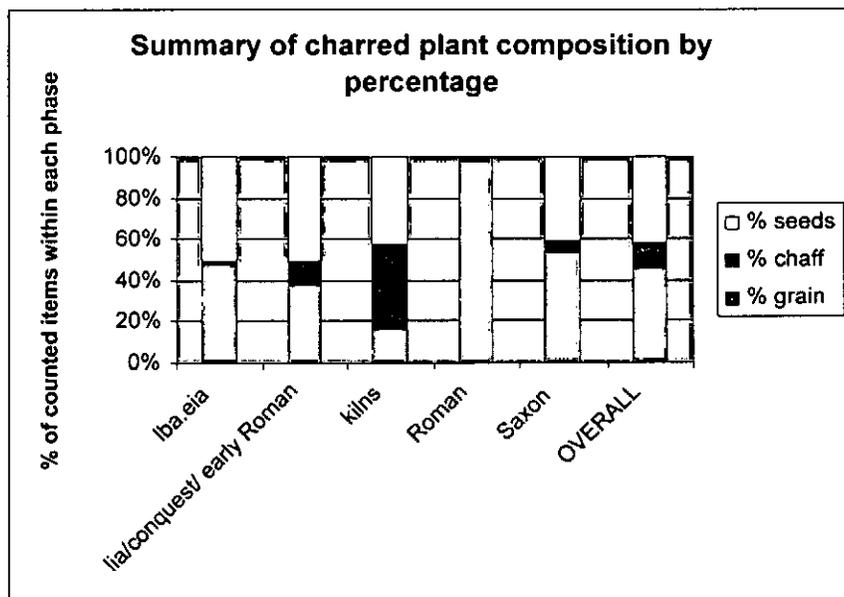
Molluscan remains were present in large numbers in some of these samples. In the majority of cases they were well preserved and whole, enabling identification. Where more than fifty molluscan shells are preserved, their implications are discussed below.

Results - Charred Plant Remains

As can be seen below the richest samples come from the Roman kilns and from Saxon features. Plant remains in the other phases of the site were less common.

Phase	LBA / EIA	LIA / Conquest / Early Roman	Kilns	Roman	Saxon	OVERALL
Total Samples	3	28	10	4	11	56
Total volume/litres	45	264	92.5	37	89	527.5
TOTAL CEREAL GRAIN (with oat)	1	55	213	1	2803	3073
TOTAL CEREAL CHAFF ITEMS	0	16	544	0	296	856
TOTAL CEREAL CHAFF ITEMS	1	72	569	0	2167	2810
TOTAL NON-CEREAL SEEDS	2	143	1326	1	5266	6739
TOTAL COUNT						
count density (items per litre)	0.04	0.54	14.34	0.03	59.17	12.78

Table 23: Statistical summary of the charred remains from all phases.



Late Bronze Age / Early Iron Age

There were three samples from this phase of the site. Very small amounts of archaeological plant remains were present, including a single cereal grain of wheat/barley (*Triticum* sp./*Hordeum vulgare*) and a single indeterminate small seed. Only small amounts of charcoal were present in these samples.

Late Iron Age/Conquest Period (Phases 3 and 4)

Thirty-eight samples were taken from this phase of the site. They will be discussed together for this work, however, of these, the kilns (ten samples), will be discussed as a separate group as their contents are distinctly different from the rest of the samples in this phase.

Plant remains were scarce in these samples. Cereals were present in small or negligible amounts. There were small amounts of barley (*Hordeum vulgare sensu lato*), some of which was identifiable as hulled, and a single grain of which was identifiable as twisted hulled barley, suggesting the possibility of 6-row barley, but there was no chaff to make this more certain. Wheat was also present although it was only possible to identify it as *Triticum* sp. in most cases. Some grains were identified as emmer wheat (*Triticum* c.f. *dicoccum*) and there were larger numbers of free-threshing wheat (*Triticum aestivum sensu lato*). There were also small or moderate amounts of indeterminate cereal grain.

Chaff was also very scarce in these samples. There were small numbers of glume bases which could have been from spelt or emmer wheat (*Triticum spelta/dicoccum* chaff) as well as a small amount which were spelt glumes (*Triticum spelta* chaff). There was also a single example of a cereal culm node.

Charred wild plant remains were even scarcer than cereal grain in these contexts. Present in two samples from F. 408 and F. 855 were fragments of hazelnut shell. Weeds included some ruderal species such as goosefoot (*Chenopodium* sp.), curled dock (*Rumex crispus*) and dock (*Rumex* sp.) in very small numbers. There were also small quantities of arable weeds, especially indeterminate grasses (Poaceae indet.), but also occasional seeds from fescue (*Festuca* sp.), rye-grass (*Lolium* sp.), meadow-grass (*Poa* spp.) and brome (*Bromus* sp.) Other arable weeds included vetch/wild pea (*Vicia/Lathyrus* sp.), scentless mayweed (*Tripleurospermum inodorum*), goosegrass (*Galium* sp.). There were also small amounts of plant remains from fenland plants including seeds from black bog-rush (*Schoenus nigricans*) and sedge (*Carex* sp.).

As there were only small amounts present in these samples, it is likely that they do not represent deliberate deposition, and are present due to residuality in the soil. The weed seeds may show some use of fenland resources, but as this is based on the occurrence of single seeds, it is not a reliable conclusion.

Kilns

These samples were substantially richer than all of the other samples from the same phase of the site. They also contained proportionally more chaff than the other samples from all phases of the site. While all these samples were proportionally richer there were two samples that were particularly rich. These were taken from F. 63 and F. 1117 [4206] and each contained over a hundred items of chaff and more than fifty counts of grain. Hulled barley (*Hordeum vulgare sensu lato*) was present in most samples, and some of this was obviously twisted or straight. However the majority of the barley was less well preserved and so the grain cannot be used to show definitively whether this barley was of the six-row variety. The barley chaff was not well enough preserved to be useful either. The wheat grain was a mixture of a small amount of spelt (*Triticum spelta*) and larger amounts of emmer (*Triticum dicoccum*), free-threshing wheat (*Triticum aestivum sensu lato*) and indeterminate wheat (*Triticum* sp.). In one sample from F. 1181 a single grain of rye (*Secale cereale*) was present. There were also small amounts of oats (*Avena* sp.) present in some of the samples. Also present were large amounts of indeterminate cereal grain.

Chaff was dominated by glume bases. The majority of these were too heavily eroded to be certain as to whether they were spelt or emmer wheat (*Triticum spelta/dicoccum*) but where the glumes were less poorly preserved they were all spelt wheat glumes (*Triticum spelta*). Other chaff included small amounts of barley rachis internodes (*Hordeum vulgare sensu lato*), rye (*Secale cereale*) rachis internodes, oat (*Avena* sp.) awns, indeterminate cereal culm nodes and a hexaploid wheat rachis internode (bread wheat). These were present in minute quantities in comparison with the glume bases.

Wild plant remains in these samples were also much more common. Ruderal species included many-seeded goosefoot (*Chenopodium polyspermum*), fat-hen (*Chenopodium album*), goosefoot (*Chenopodium* sp.), common/spear-leaved orache (*Atriplex patula/prostrata*), knotgrass (*Polygonum aviculare*), black-bindweed (*Fallopia convolvulus*), small seeded dock (*Rumex sanguineus/conglomeratus/obtusifolius*), curled dock (*Rumex crispus*) and dock (*Rumex* sp.). Arable weeds included small amounts of vetch/wild pea (*Vicia/Lathyrus* sp.), black medick (*Medicago lupulina*), clover (*Trifolium* sp.), field gromwell (*Lithospermum arvense*), cleavers (*Galium* sp.), stinking chamomile (*Anthemis cotula*), scentless mayweed (*Tripleurospermum inodorum*), fescue (*Festuca* sp.), rye-grass (*Lolium* sp.), lesser cat's tail (*Phleum bertilonii*), cat's tail (*Phleum* sp.), meadow-grass (*Poa* spp.) and indeterminate grasses (Poaceae indet.). There were also some wetland plants including seeds from great fen sedge (*Cladium mariscus*), sedge (*Carex* sp.), black bog-rush (*Schoenus nigricans*) and common spike-rush (*Eleocharis palustris*) although these were only present in very small quantities.

Roman (Phase 5)

These four samples contained virtually no archaeological plant remains. There was a single wheat grain and a small amount of charcoal

Saxon

There were eleven samples taken from Saxon features. Of these five were very rich. These samples contained large amounts of cereal grain, but smaller amounts of chaff proportionately than the samples taken from the kilns. The cereal in these samples was dominated by large amounts of free-threshing wheat grain (*Triticum aestivum sensu lato*). There were also small amounts of emmer and spelt wheat grains (*Triticum spelta/dicoccum*). Barley (*Hordeum vulgare sensu lato*) was present in only slightly smaller numbers than the free threshing wheat. In many cases it was possible to tell from the keel of the grain that this was hulled barley. It was also possible in many cases to distinguish between twisted and straight barley and the ratio between the two in most of the samples was roughly two to one, suggesting that these grains were definitely the remnants of a six-row hulled barley. There were also moderate to large amounts of rye (*Secale cereale*) and oat (*Avena* sp.). There was also evidence for possible cultivation of the celtic bean/pea (large Leguminaceae) although the legumes were slightly fragmentary so this is not conclusive. Finally there were also fragments of hazelnut shell (*Corylus avellana*) in these samples.

The chaff was present in much smaller quantities in these samples. It was also from different plants. The dominant kind was rachis internodes from barley (*Hordeum vulgare sensu lato*). It was also often from 6-row barley. There were still occasional spelt/emmer wheat (*Triticum spelta/dicoccum*) glume bases. There were moderate numbers of bread wheat rachis internodes (Hexaploid wheat) and some indeterminate wheat rachis internodes. Also found was a single oat (*Avena* sp.) floret which appeared to be of the wild variety but as this was the only example it could not be used to say that all of the oats were wild. There was also small amount of rye (*Secale cereale*) rachis internodes. There were large numbers of culm nodes from indeterminate cereals.

Large numbers of weed seeds were also present in these samples. Arable weed seeds included corn/small-flowered buttercup (*Ranunculus arvensis/parviflorus*), corncockle (*Agrostemma githago*), field penny-cress (*Thlapsi arvense*), clover (*Trifolium* sp.), medick (*Medicago* sp.), thorow-wax (*Bupleurum rotundifolium*), scentless mayweed (*Tripleurospermum inodorum*), fescue (*Festuca* sp.), meadow-grass (*Poa* spp.), timothy (*Phleum pratense*), lesser cat's tail (*Phleum bertilonii*) and cat's tail (*Phleum* sp.) and moderate numbers of field gromwell (*Lithospermum arvense*) and common knapweed (*Centaurea nigra*) and large numbers of vetch/wild pea (*Vicia/Lathyrus* sp.), stinking chamomile (*Anthemis cotula*), rye-grass (*Lolium* sp.) and indeterminate grasses (Poaceae indet.). There were also moderate amounts of eyebright (*Euphrasia* sp.) which grows on damp arable soils.

There were large numbers of fenland plants, with large numbers of seeds from black bogrush (*Schoenus nigricans*) and sedge (*Carex* sp.) as well as smaller numbers of seeds from cotton grass (*Eriophorum* sp.), common spike rush (*Eleocharis palustris*), spike rush (*Eleocharis* sp.),

buttercups (*Ranunculus bulbosus/acris/repens*, *Ranunculus flammula*,) and a large amount of sedge stem material (Cyperaceae indet. vegetal material).

Ruderal weeds included moderate or small numbers of seeds from fat-hen (*Chenopodium album*), common/spear-leaved orache (*Atriplex patula/prostrata*), knotgrass (*Polygonum aviculare*), equal-leaved knotgrass (*Polygonum arenastrum*), black-bindweed (*Fallopia convolvulus*), common sorrel (*Rumex acetosa*), sheep's sorrel (*Rumex acetosella*), curled dock (*Rumex crispus*) and dock (*Rumex* sp.). There were also huge numbers of black mustard seed (*Brassica nigra*) in one context from F. 500 ([1100/1]) as well as smaller numbers from F. 500 ([1102/3]). Also present in that context were seeds from charlock (*Sinapis arvensis*).

Seeds from plants that thrive in nutrient rich soils included stinging nettle (*Urtica dioica*) and henbane (*Hyoscyamus niger*) although these were only present in very small quantities.

Waterlogged Plant Remains and the Local Environment

In most of the cases where uncharred plant remains were found they were found in very small quantities, and appeared to be remnants of waterlogged assemblages.

Late Iron Age/Conquest/Early Roman

One sample which contained uncharred plant remains only contained a single seed from fool's parsley (*Aethusa cynapium*) found in F. 907. This seed occurs in other samples without any other waterlogged or uncharred remains. It is possible that this is intrusive as a greater range of seeds might be expected, and so it is excluded from further discussion.

A rich sample from F. 913 contained small amounts of stinging nettle (*Urtica dioica*), poppy (*Papaver* sp.), chickweed (*Stellaria media*), dogwood (*Cornus sanguinea*), hedge/marsh woundwort (*Stachys sylvestris/palustris*) and black borehound (*Ballota nigra*). This could suggest some kind of successional vegetation, due to the presence of dogwood. It also might suggest nutrient-rich soils as there were stinging nettles present. The other weed seeds were all from wasteland plants. The lack of bramble or elder seeds does mean there were no brambles or elder, as these seeds always survive longer due to their woody component. The small amounts of seeds present in this sample and in most of the other samples, makes it likely that much had decomposed and means that this is an incomplete assemblage, and so is not totally indicative of the local environment. This must be borne in mind for all further local environment discussions.

A sample from the basal fill of pond F. 770 contained similarly small amounts of waterlogged remains. These included small amounts of lesser spearwort (*Ranunculus flammula*), common/spear-leaved orache (*Atriplex patula/prostrata*), chickweed (*Stellaria media*), thistle (*Carduus/Cirsium* sp.), great fen sedge (*Cladium mariscus*) and sedge (*Carex* sp.) and a moderate amount of henbane seeds (*Hyoscyamus niger*). These seeds indicate a nutrient rich soil due to the large presence of henbane seeds, but also a damp environment, due to the fenland plants and lesser spearwort. A wet environment is indicated by the presence of the eggs from water fleas (*Daphne* sp.) in a small quantity. These would also indicate a stagnant water environment as this is where they thrive.

F. 1038, a ditch, contained negligible amounts of uncharred seeds. These included common/spear-leaved orache (*Atriplex patula/prostrata*), elder (*Sambucus nigra*) and bristly oxtongue (*Picris echioides*). This last however is suspected to be intrusive, due to its good condition, and its presence in the vicinity of the area samples were processed. The elder may suggest scrub. However as there is only one seed this is not a reliable indication.

F. 1059, a cremation, contained larger quantities of uncharred plant remains. These included poppy (*Papaver* sp.), fat-hen (*Chenopodium album*), common/spear-leaved orache (*Atriplex patula/prostrata*), chickweed (*Stellaria media*), small seeded dock (*Rumex sanguineus/conglomerates/obstusifolius*), curled dock (*Rumex crispus*), violet (*Viola* sp.), black

borehound (*Ballota nigra*) and sedge (*Carex* sp.). Other than the sedge these are all plants of waste/disturbed ground. The sedge could indicate a damp environment.

Saxon

These samples only contained two samples which contained any waterlogged remains. In each case they contained one seed only, from elder (*Sambucus nigra*). These samples both came from well F.552.

Molluscan Remains

As has been mentioned above, while molluscan remains were generally well preserved there were not always enough to merit further consideration. It must also be noted that the molluscan remains were extracted from the flot and large fraction of the residue only. It is possible that mollusca that did not float could have been lost in the flotation process if they were smaller than 1mm, the mesh size, or could still be in the fine fraction which was less than 4mm. Further work should include looking at the fine residue fraction both for molluscan remains and for any plant remains which may not have floated.

Late Bronze Age/Early Iron Age

One sample contained a large amount of molluscan remains. This came from F. 31 and included many generic mollusca. There were some mollusca that indicate damp or wet environments and these included *Discus rotundatus* and *Carychium minimum/tridentatum*, but these were only present in small quantities. There were larger numbers of *Vallonia excentria/pulchella*, which indicates an open environment. Other mollusca present could indicate a similar environment, including *Pupilla muscorum*, *Lauria cylindracea*, *Vallonia costata* and *Helicella itala*.

Iron Age/Conquest/Early Roman/Kilns

The mollusca from this phase of the site were dominated in every sample by a combination of catholic mollusca and those which live on open ground. The latter were dominated in most cases by *Vallonia excentria/pulchella*, although there were also sometimes large numbers of *Lauria cylindracea*, which is also an open ground type. Other open ground mollusca present in lesser quantities included *Vallonia costata* and *Pupilla muscorum*. There were also occasional mollusca that can indicate dampness, though in much smaller quantities. These included *Aegopinella/Oxychilius* sp., a charred *Carychium minimum/tridentatum* and *Columella edentula*. These last were only present in cremation F. 411 and kilns F. 63 and F. 1117.

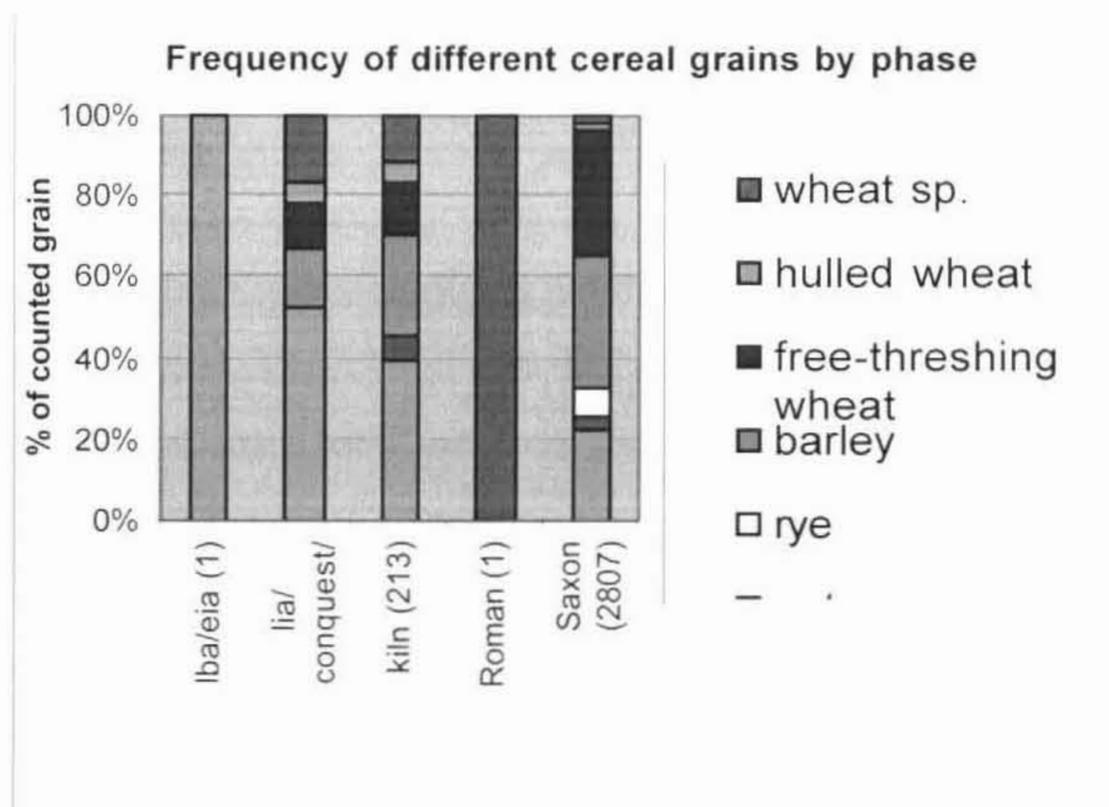
Saxon

The three mollusc-rich Saxon samples come from two wells. The dominant molluscan species was again *Vallonia excentria/pulchella* and it was again supported by other open ground species including *Vallonia costata*, *Lauria cylindracea* and *Pupilla muscorum*. There were also large numbers of the mollusc *Vertigo* sp. which indicates shade. Unsurprisingly there were water mollusca in two of the three samples. These were not the dominant species. They included *Planorbis planorbis* and *Lymnaea truncatula*. There were also large numbers of mollusca which live on damp ground and these included *Carychium minimum/tridentatum*, Succineidae indet. and *Aegopinella/Oxychilius* sp. The Succineidae live on pond weeds and so definitely indicate the presence of water near to these features.

The different phases of this site had markedly different profiles with respect to the charred remains. This is most obvious when considering the differing proportions of cereal in the Late Iron Age/Conquest/Early Roman and the Saxon phases. What is also markedly different are the proportions of chaff and grain in the kiln features as compared to the other features from the same period.

Cereal Cultivation

Preservation of plant remains in the earliest samples was very poor and the Late Bronze Age/Early Iron Age samples only produced slight evidence of cereal cultivation. It was impossible to tell whether this was wheat or barley or what the cultivation conditions may have been like. Wheat and barley are both crops that have been found before at similarly dated sites in the area (Grieg 1991).



The samples from the Late Iron Age through to the Early Roman period, excluding those from the kilns, consisted of emmer, spelt and free-threshing wheat and the chaff was mainly glume bases from spelt/emmer wheat, although those that were better preserved were from spelt wheat. These samples also contained small amounts of barley, most of which was hulled. It was not well enough preserved to tell if it was twisted or straight and so it cannot be said if this was six-row barley. There were no oats present or any rye. The cereals that were present agree well with similarly dated sites in Cambridgeshire, such as Vicar's Farm, West Cambridge (Ballantyne forthcoming), Greenhouse Farm, Fen Ditton (Stevens 2000), West Fen Road, Ely (Ballantyne forthcoming), Maxey (Green 1985), Stonea Grange (van der Veen 1996) and Wardy Hill, Coveney (Murphy 2003). Similarly to this site, Ballantyne (forthcoming a) found at West Fen Road that chaff was dominated by spelt wheat chaff. However in these samples chaff dominated the samples whereas this was not true of the samples from Addenbrooke's.

The weed seeds from these samples were mainly either disturbed wasteland types or arable weeds. The only seeds which did not fit this description were those from wetland contexts, although they were present in small numbers. Again the species found amongst the wild crops resemble closely those found at Vicar's Farm (Ballantyne forthcoming b) and West Fen Road (Ballantyne forthcoming a) and also those found in samples from Shelford in recent work by the Cambridgeshire County Council Archaeological Field Unit (Fryer 2003). The main difference was the lack of stinking chamomile which was relatively common at these sites. This may be due to the early date of these samples. Stinking chamomile only becomes common when cultivation of heavy soils becomes the norm, during the Roman period. It may be that at this site these soils were not yet being cultivated.

The kilns are discussed separately because of their comparative richness, compared to all of the other samples from that phase of the site. The kiln profile is similar to that in the other samples from this phase of the site. The most important difference was the increased importance of chaff in these samples. This was almost all hulled wheat glume bases and was, when identifiable, from spelt wheat, although the majority of the glume bases were too eroded to be sure. The chaff in these samples was present at a ratio of approximately 2:1:2 chaff:grain:seeds. According to the Hillman model (1981) glumes and small seeds should be removed at the second fine sieving, after the grain had been pounded to remove it from the glumes. The majority of the weed seeds in these samples were either from arable contexts or from disturbed ground. There were small amounts of wetland plant seeds here too, but they were in the minority. Most of these seeds were small and present in small quantities. The only exception to this were the large numbers of fescue seeds which although small were present in large quantities. There were also large numbers of medium sized grass seeds, but these were still smaller than most of the grain. Also present were small numbers of field gromwell which is of a similar size to the grain, but these were only present in small numbers. This plant thrives on calcareous soils, so it is likely that the crop grew locally. The glume to grain ratio in an intact ear is 1:1. Therefore as it is, in this case 2:1, it is likely as suggested above that this assemblage is the result of fine sieving. No other profiles of different cereal processing stages (Hillman 1981) have been found in this phase of the site, making it likely that this is the only one which found its way into the archaeological record by charring.

The presence of spelt and spelt/emmer chaff specifically in the kiln features suggests that it may have been collected deliberately for fuel. This is supported by work carried out by van der Veen (1999) who suggests that chaff may have been a commercial commodity and cites examples of chaff being used as fuel in kilns both in Britain and in other countries. While it is impossible to prove here whether these remains were sold for this purpose, as a commodity, it is obvious that they were deliberately used here. Van der Veen (ibid.) also points to the predominance of hulled wheat over barley chaff and states that few uses of barley chaff can be found. She suggests that this may be due to barley being used as animal fodder (including straw and chaff) as well as for human consumption and so not coming into contact with fire as often. Barley chaff is mainly absent here too. The possible use of spelt wheat chaff as a fuel is something that has also been found at other sites where

Roman kilns were excavated. Ballantyne at King's Dyke West, Whittlesey (2002) found glume wheat chaff in kiln samples. Murphy (1989) similarly found mainly spelt glume bases in a sample from a stoke hole of a kiln at Stowmarket, Suffolk.

The samples from the Saxon phase of the site are the richest of all the samples. Apart from richness the main difference is the presence of rye grain, and the large amounts of free-threshing wheat. Some examples of hexaploid wheat rachis internodes were also present, meaning that the wheat could have been bread wheat. Barley which appeared to be of the 6-row variety, based on the ratio of twisted to straight grains, and on some of the chaff, was also present along with oats, and in one case there was a floret which appeared to be from a wild oat, suggesting that some of the oats may have been a wild variety rather than the cultivated variety. Grieg (1991) suggests that the common cereals at this time were free-threshing wheat, barley, rye and oats, and notes that this is in marked comparison to the dominance of hulled wheats previously. A comparison with other similarly dated sites in the area such as Cottenham (Stevens 1998) and West Fen Road (Ballantyne forthcoming a) gives a similar impression, with free-threshing wheat dominating with barley, oats and rye also present. Interestingly there were large numbers of vetch/wild pea/pea (*Vicia/Lathyrus/Pisum* sp.) present in these samples and a small number of possible celtic bean/pea (large leguminaceae) which may also have been a crop. These are also found at West Fen Road (Ballantyne forthcoming a).

The wild plant remains in the Saxon phase of this site were dominated by large amounts of stinking chamomile. Since this was the first time this was present in large quantities, it may be that this was due to changing land use practices. Stinking chamomile is commonly found on heavy clay soils, and is commonly found once the change in arable technology from the ard to the mouldboard plough enables the cultivation of these heavier soils. Importantly these were found on some occasions as charred fragments of seed heads, suggesting that at least some of the seeds had survived removal by sieving earlier by being a similar size to the grain, which would have been sieved as part of processing it for use. Also common seeds were fat-hen and oraches which suggest nutrient rich soil conditions, curled dock, dock, clover, medick, common knapweed and numerous grasses, in particular rye-grass, fescue and meadow grass. Moderate quantities of eyebright were also present, suggesting a damp soil. These are all fairly typical weed seeds, and are broadly similar to those found at Church End, Cherry Hinton in Saxon quarry pit contexts (Roberts 2004a). Interestingly they are also very similar to the weed seeds found in the Saxon phases at the County Folk Museum, Cambridge (Roberts 2004b).

Wetland plants were also present in these samples to a greater extent. These included large numbers of black bog-rush and carex. There were also lesser numbers of common spike-rush and lesser spearwort. There were also large numbers of sedge stem fragments. Altogether these could indicate interaction with the wetland. It is possible that they could all have been crop weeds as damp soils were being farmed as indicated by the presence of eyebright. It is equally possible that they were using fenland resources.

One sample, <35>, from well F.700, contained a large amount of black mustard type seeds (*Brassica c.f. nigra*). This was present in the other sample from this well, <36>, which also contained a moderate amount of charlock seeds. Black mustard is indicative of damp ground, and was found in a well. It is also cultivated as a seasoning, however.

Local Environment

The molluscan remains from the Late Bronze Age/Early Iron Age mainly contained species which indicate open ground, although there were some that indicated damp ground. All the molluscan remains came from F. 31.

The waterlogged remains from the Iron Age to Conquest phases of the site mainly varied between successional vegetation, scrub and wasteland plants and others that indicate a wetland environment. This last was particularly indicated by the presence of sedge and great fen sedge seeds. A large amount of scrub was not indicated by the waterlogged plant remains from these samples, and as most of the seeds which come from scrub such as bramble and elder survive better than others in de-watered conditions, due to their woody nature, it is likely that this area was relatively scrub free. The sample from a pond does indicate stagnant water, and this is supported by the presence of water flea eggs. The presence of stinging nettle, henbane and the occasional elder seed also suggest that some of the features may have been surrounded by disturbed nitrogen rich/manured soils. However as has been pointed out, the poor preservation of these remains means that large parts of the local environment will remain unknown. The mollusca from this phase of the site, including the kilns, indicate an open landscape, with some indications of dampness. This agrees well with the waterlogged plant remains.

The only local environmental evidence in the Saxon samples comes from the molluscan remains. Like all the earlier molluscan assemblages these were mainly dominated by open ground taxa. However there were also small numbers of water mollusca, and some of damp ground and slum types, meaning they can cope with the seasonal drying out of features. These samples were all taken from wells and so it is unsurprising that they may have contained water mollusca.

Tables 24-28

Key 'w' waterlogged/uncharred

'-' 1 or 2 items, '+' < 10 items, '++' 10 - 50 items, '+++> 50 items

Late Bronze Age / Early Iron Age

sample number	<50>	<155>	<1>
context	[1196]	[3226]	[57]
feature number	F.31	F.474	F.166
feature type	early slot	early pit	cremation / early pit
phase	NNE-SSW possible LBA	LBA/EIA	LBA/EIA
sample volume/ litres	14	10	21
flot fraction examined	1/1	1/1	1/1
<i>Triticum/Hordeum</i> sp. grain		wheat/barley grain	1
small seed indet.			-
small charcoal (<2mm)	++	++	+++
med. charcoal (2-4mm)	+		++
large charcoal (>4mm)	+	++	
unidentified charcoal			
bone fragments	+	++	
burnt bone fragments			+++
pot		++	-
burnt stone		+	+
burnt flint			++
burnt clay			
intrusive roots	++	+++	+++
intrusive sesiloides	+++	+++	+++
		burrowing snails	
<i>Carychium ramnosum/indentatum</i>		generally well vegetated; wet/damp	5
<i>Cochlicopa lubrica/lubricella</i>		caltholic	5
<i>Vertigo</i> sp.		variable, generally shady	1
<i>Pupilla muscorum</i>		dry, exposed places	6
<i>Lauis cylindracea</i>		wood/ rocks/ grassland	4
<i>Valonia costata</i>		dry, open places	3
<i>Valonia exarctica/pulchella</i>		open, damp and/or dry habitats	21
<i>Trichia hispida/striolata</i>		caltholic	12
<i>Helicella kala</i>		dry, open grassland	2
<i>Diculus rotundatus</i>		moist, sheltered places	5
juvenile indet.			+

Roman

sample number	<54>	<25>	<54>	<71>
context	[1319]	[537]	[1407]	[1462]
feature number	F.17	F.7	F.21	
feature type	undated E-W ditch	later ditch system	later ditch system	ditch
phase	Roman	Roman	Roman	Roman
sample volume/ litres	5	12	12	8
flot fraction examined	1/1	1/1	1/1	1/1
<i>Triticum</i> sp. grain		wheat grain	1	
small charcoal (<2mm)	++	+	+	++
med. charcoal (2-4mm)				+
large charcoal (>4mm)	+	+		-
unidentified charcoal				
bone fragments	+	+	+	+
small bone				
pot				
flint				
burnt flint				
burnt clay				
intrusive roots		++		++
intrusive sesiloides		++		++
		burrowing snails		

Undated

sample number	<146>	<31>	
context	[2779]	[1164]	
feature number	F.728	F.432	
feature type	wall	southern post holes	
phase	undated	undated	
sample volume/ litres	1	5	
flot fraction examined	1/1	1/1	
hulled <i>Hordeum vulgare</i> s.l. grain		hulled barley grain	16
<i>Triticum</i> sp. grain		wheat grain	7
<i>Lolium</i> sp.		rye-grass	9
small seed indet.			+
small charcoal (<2mm)		+	+++
med charcoal (2-4mm)		+	+++
large charcoal (>4mm)		++	+++
pot			-
burnt stone		+	
burnt flint		+	
uncharred seeds, probably intrusive			-
intrusive sesiloides		++	+++
		burrowing snails	

Kilns

sample number	<79>	<188>	<108>	<186>	<18>	<109>	<196>	<194>	<14>	<255>
context	[1899]	[4256]	[2350]	[4252]	[959]	[2368]	[4211]	[4206]	[978]	[4683]
feature number	F 626	F 1264	F 783	F 1077	F 63	F 063	F 1117	F 1117	F 340	F 1181
feature type	conquest/	conquest/	conquest/	conquest/	conquest/	conquest/	conquest/	conquest/	conquest/	conquest/
phase	early Roman	early Roman	conquest	conquest	early Roman	conquest/	conquest/	conquest/	conquest/	conquest/
sample volume/ litres	8	12	15	12	12	5	12	20	1	7
lit fraction examined	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1
hulled, twisted <i>Hordeum vulgare</i> s.l. grain			1	3				1		4
hulled, straight <i>Hordeum vulgare</i> s.l. grain										2
hulled <i>Hordeum vulgare</i> s.l. grain	1				17	1				
<i>Hordeum vulgare sensu lato</i> grain					15		6			
<i>Triticum c. l.</i> spikelet grain								2		
<i>Triticum c. l.</i> dicoccum grain								4		
<i>Triticum aestivum sensu lato</i> grain	1		1	1	4		9	3		1
<i>Triticum</i> sp. grain		1			14	1		7		
<i>Triticum/Hordeum</i> sp. grain	1		2		1	2	13	2		
<i>Secale cereale</i> grain										1
cereal grain indet.			2	10	1	1		44		6
cereal fragments	+	++		+	++			++		++
<i>Hordeum vulgare sensu lato</i> rachis internode							2			
<i>Triticum aestivum</i> spikelet fork							1			
<i>Triticum aestivum</i> glume base	11			2	36	5	30	22		2
<i>Triticum aestivum/dicoccum</i> spikelet fork					11		5	14		
<i>Triticum aestivum/dicoccum</i> glume base	21	1		6	172	1	94	100		1
Hexaploid <i>Triticum</i> sp. rachis internode					1					1
<i>Secale cereale</i> rachis internode		1								
<i>Avena</i> sp. awn								2		
cereal indet. culm node										1
<i>Ranunculus</i> sp.				1						
<i>Chenopodium polydium</i>		1								
<i>Chenopodium album</i>						2				
small <i>Chenopodium</i> sp.						5				
<i>Althaea rosea/prostrata</i>								8	12	
<i>Polygonum aviculare</i>								3	12	
<i>Fallopia convolvulus</i>										
<i>Rumex sanguinalis/conglameratus/obolus/obtus</i>										
<i>Rumex c. l.</i> capsule										1
<i>Rumex</i> sp. kernel										3
small <i>Rumex</i> sp.						1		1		
medium <i>Vicia/Lathyrus/Pisum</i> sp. (2-4mm)							1			1
small <i>Vicia/Lathyrus</i> sp. (<2mm)						1				1
<i>Medicago lupulina</i>										
small <i>Trifolium</i> spp. (<1mm)								1		
<i>Achillea cynaphorum</i>	wl		wl						2	
<i>Nicotiana glauca</i>									wl	
<i>Lithospermum arvense</i>				3						2
<i>Euphorbia</i> sp.				1		1	3	2		
<i>Galium</i> sp.					2	5	18	18		2
<i>Anthemis cotula</i>										
<i>Trifolium repens/madonum</i>								1		
<i>Elychnia palustris</i>								5		
<i>Schoenus nigriscapus</i>						1		2		
<i>Cladonia mariscus</i>						1		1		1
medium trilete <i>Carex</i> sp.										
<i>Festuca</i> sp.				1	13		10	103		1
<i>Lolium</i> sp.	1			2	8		4	7	9	1
<i>Poa</i> spp.			1	5						
<i>Avena</i> sp.				2	2					
<i>Phleum bertolonii</i>								6		3
<i>Phleum</i> sp.			1							
large <i>Poa</i> spp. indet. (> 4mm)				6		2		16		
medium <i>Poa</i> spp. indet. (< 4mm)	2	6	1	20	37	2	38	120		1
small <i>Poa</i> spp. indet. (< 2mm)	5							1		
small seed indet.										
large seed indet.										
small charcoal (<2mm)	++	++	++	+++	++	++	+++	+++		
med charcoal (2-4mm)	+		+	++	++	++	++	++		
large charcoal (>4mm)				++	+	++				
vinified charcoal										
bone fragments										
small bone										
pot		++								
oyeler										
lini										
burnt lin										
burnt clay					+++		+++			
burnt clay with straw impressions										
indet. leaf fragments intrusive									++	
intrusive roots	++				++					+++
intrusive sedge						+++	+++	+++	++	
burrowing snails	++			++	++					
charred <i>Carychium minimum/tridentatum</i>					2					
<i>Cochlicopa lubrica/lubricella</i>					1					
<i>Vertigo</i> sp.					1					
charred <i>Vertigo</i> sp.					1					
<i>Papilio muscotum</i>					2					
<i>Leuca cyathifera</i>										
<i>Valeriana cordata</i>					10					
<i>Valeriana emetica/pulchella</i>					74				26	
<i>Trichia hispida/striolata</i>					8				74	
<i>Aegoponella/Carychus</i> sp.					5				5	
juvenile indet.										
charred enamel							4		++	

Saxon

sample number	<4>	<10>	<5>	<170>	<35>	<36>	<41>	<42>-<43>	<46>	<47>	<159>
Context	[401]	[151]	[92]	[399]	[1000]	[1020]	[129]	[129]	[124]	[124]	[151]
feature number	F 6	F 42	F 52	F 42	F 50	F 50	F 52	F 52	F 50	F 50	F 42
feature type	circule	apogee	vall grain	soth past	hole	Alex's well	Alex's well	well	well	well	well
phase	concrete	concrete	concrete	concrete	concrete	concrete	concrete	concrete	concrete	concrete	concrete
sample volume litres	12	8	8	1	20	20	4	8	5	2	3
litre fraction examined	1/1	5	8	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1
hulled, hulled Hordeum vulgare s.l. grain											
hulled, straight Hordeum vulgare s.l. grain											
hulled Hordeum vulgare s.l. grain											
Hordeum vulgare s.l. grain											
Triticum c.l. spelta grain											
Triticum c.l. dicoccum grain											
Triticum spelta dicoccum grain											
Triticum aestivum s.l. grain											
Triticum aestivum s.l. grain											
Triticum sp. tall grain											
Triticum sp. grain											
Triticum/Hordeum sp. grain											
Saccharum cereale grain											
cereal grain indet.											
cereal embryo sp.											
cereal flag											
6-row Hordeum vulgare s.l. rachis internode											
Hordeum vulgare s.l. rachis internode											
Triticum spelta rachis internode											
Triticum spelta rachis internode											
Hordeum vulgare s.l. rachis internode											
Triticum sp. rachis internode											
Triticum sp. rachis internode											
Saccharum cereale rachis internode											
Avena sp. rachis internode											
cereal indet. rachis internode											
cereal indet. culm node											
cereal indet. culm node flag											
Ranunculus c.l. repens											
large Ranunculus c.l. bulbosus/actris/repens											
Ranunculus c.l. flammula											
Ranunculus acris/paniculatus											
Ranunculus sp.											
Papaver somniferum											
Urtica dioica											
Corylus avellana nut shell fragments											
Chenopodium album											
Aster sp.											
Chenopodiaceae indet.											
Agrostis sp.											
small Cyperaceae seed (1mm)											
Polygonum aviculare											
Polygonum persicaria											
Fallopia convolvulus											
Rumex acetosella											
Rumex acetosa											
Rumex c.l. crispus											
small Rumex sp.											
Brassica c.l. nigra											
Sinapis c.l. alba											
Brassica/Sinapis											
Rapistrum rapanistrum seed case											
Taraxacum officinale											
large legume indet. (>4mm)											
medium Vicia/Lathyrus/Prum sp. (2-4mm)											
small Vicia/Lathyrus sp. (<2mm)											
Taraxacum officinale sp.											
Medicago sp.											
small Trifolium spp. (<1mm)											
Oxalis acetosella											
Bupleium rotundifolium											
Agrostis sp.											
Hyocyanus nigra											
Lithospermum arvense											
Oxalis sp.											
Oxalis/Elymus sp.											
Galium c.l. aparine											
Sambucus nigra											
Cercaria nigra											
Lepidium sativum											
Artemisia cotula											
Artemisia cotula seed head fragment											
Trifolium pratense nodum											
Elymus											
Elymus pectinatus											
Elymus sp.											
Schizanthus sp.											
medium trifoliate Carex sp.											
inverted trifoliate Cyperaceae stem fragment											
Festuca sp.											
Lolium sp.											
Poa sp.											
Avena sp.											
Phleum pratense											
Phleum pratense											
Phleum pratense											
large Poaceae indet. (>4mm)											
medium Poaceae indet. (2-4mm)											
small Poaceae indet. (<2mm)											
Poaceae rachis internode											
small seed indet.											
large seed indet.											
small charcoal (<2mm)											
mid charcoal (2-4mm)											
large charcoal (>4mm)											
un-wooded charcoal											
egg shell											
bone fragments											
plated bone fragments											
small bone											
pot											
ophorite											
burnt stone											
oxalate											
bit											
burnt bit											
burnt clay											
stone tools											
velvet snailshells											
Lychnis muralis											
Polygonum persicaria											
small Ranunculus indet.											
charred small Ranunculus indet.											
Caryophyllus minimum/induratum											
Succisa pratensis											
Cochlearia officinalis/Ranunculus											
Veronica sp.											
charred Veronica sp.											
Pulsatilla nuttalliana											
Luzula cylindrica											
Valeriana confusa											
charred Valeriana confusa											
Valeriana officinalis/Valeriana											
charred Valeriana officinalis/Valeriana											
Capsella c.l. hederacea											
Taraxacum officinale											
Asperula cynosuroides sp.											
Oxalis sp.											
geranium indet.											

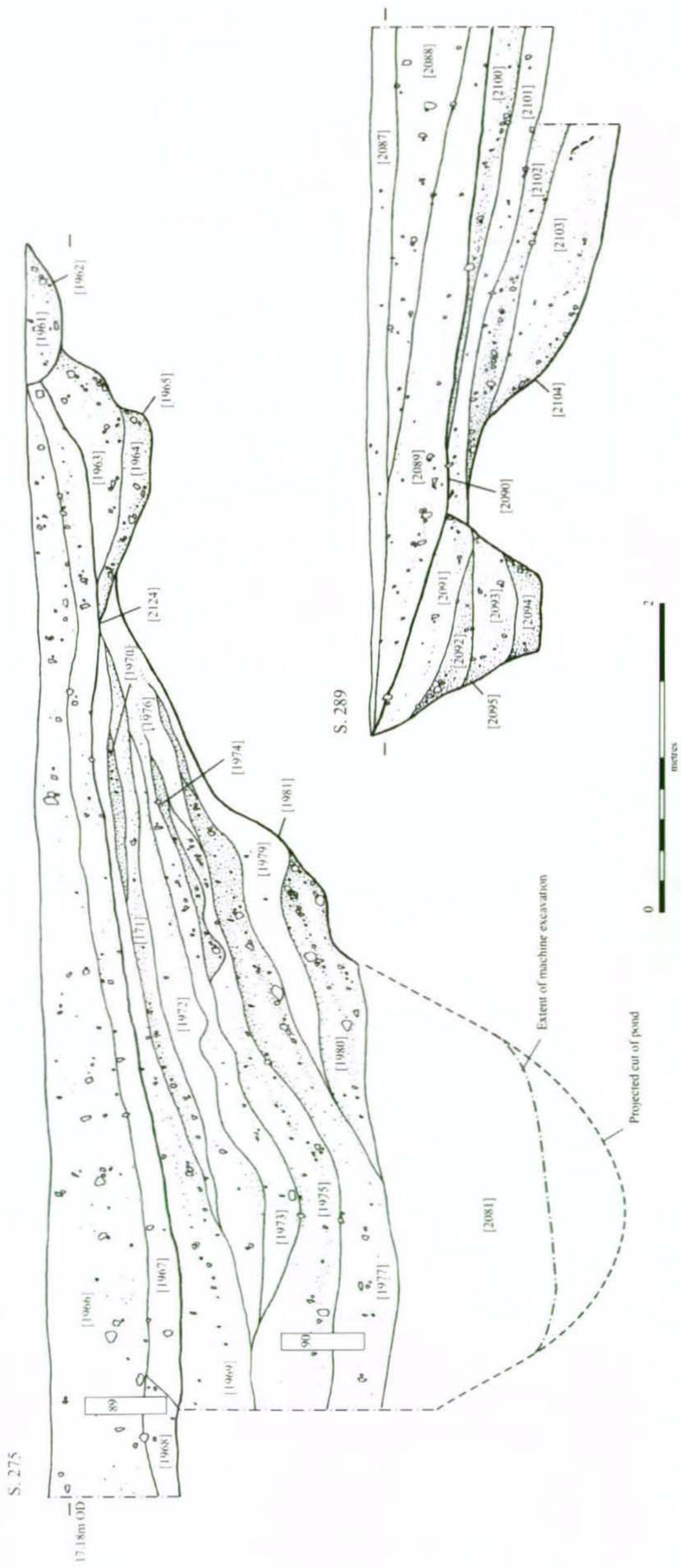
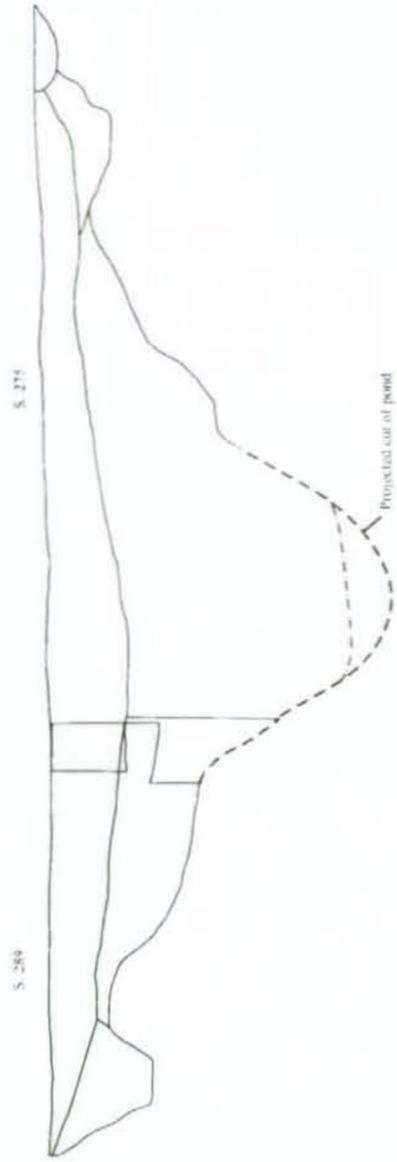


Figure 25

Pollen Analysis Steve Boreham

Three monoliths of sediment are considered in this report. Monolith <180> ([3828]-[3829]) from Saxon well F. 482 was 30cm long. It comprised a basal grey silt unit (0-9cm) from which a pollen sample was taken at 6-7cm, an orange, brown and grey mottled silty sand unit (9-23cm), and an upper light grey and white marly silt unit (23-30cm) from which a pollen sample was taken at 25-26cm. Monolith <90> ([1975]-[1977]) from the lower fills of well/pond F. 770 was 50cm long and comprised homogenous light grey silty clay from which pollen samples were taken at 5-6cm, 25-26cm and 43-44cm. Monolith <89> ([1966]-[1968]) from the upper fills of F. 770 was 50cm long and comprised homogenous dark grey silty clay from which pollen samples were taken at 5-6cm, 25-26cm and 42-43cm.

Eight samples of sediment from the three monoliths were prepared using the standard hydrofluoric acid technique, and counted for pollen using a high-power stereo microscope.

F. 482/Saxon Well - Monolith <180> ([3828]-[3829])

Two samples of sediment (6-7cm & 25-26cm) were analysed from this monolith. Pollen concentrations were quite low at 8053 and 13,280 grains per ml respectively, and preservation of the palynomorphs was quite poor with many grains showing signs of oxidation and corrosion. As a consequence, only 138 pollen grains were counted from sample 6-7cm, although 291 were counted from sample 25-26cm, which approaches the statistically desirable minimum of 300 pollen grains.

The samples analysed produced a relatively consistent pollen assemblage dominated by grass (c. 50%), with various herbs and very few trees and shrubs. The percentage of undifferentiated Asteraceae (Lactuceae) pollen was rather high (>20%), indicating that soil processes had begun to alter the pollen assemblage through oxidation. This could explain the paucity of arboreal (tree & shrub) pollen, represented only by small amounts of hazel (*Corylus*) and pine (*Pinus*). Cereal pollen was present in the upper sample (25-26cm), and nettle (*Urtica*) pollen was found in both. Damp ground taxa present included sedges (Cyperaceae), mare's tail (*Equisetum*), ferns (Pteropsida) & bur-reed (*Sparganium*). There appears to be no significant variation or trend between the two samples.

F. 770 Conquest Period Well/Pond (lower fills) - Monolith <90> ([1975]-[1977])

Three sediment samples (5-6cm, 25-26cm & 43-44cm) were analysed from this monolith. Pollen concentrations were moderate at between 28,665 & 30,286 grains per ml. The preservation of palynomorphs was quite good with only a few grains showing signs of oxidation and corrosion. The basal sample (5-6cm) yielded 346 grains, whilst 25-26cm gave 260 grains and the upper sample (43-44cm) produced 204 grains.

All the samples were dominated by grass (33-53%), but here was a clear trend up the sequence with more trees and shrubs at the base (11.5%, 10 taxa) and fewer towards the top (3.9%, 3 taxa). The percentage of undifferentiated Asteraceae (Lactuceae) pollen was reassuringly low (<11%), suggesting that post-depositional oxidation processes had only modified the pollen signal slightly. Arboreal (tree & shrub) pollen was largely represented by hazel (*Corylus*), oak (*Quercus*), ash (*Fraxinus*) and willow (*Salix*). Cereal pollen was present throughout, reaching 10.8% in the upper sample. Elevated amounts of strap-wort plantain (*Plantago lanceolata*) (c. 7-12%) are particularly notable within the herbs. There is little in the pollen signal to indicate a pond environment, although sedges (Cyperaceae), ferns (Pteropsida) & bur-reed (*Sparganium*) certainly indicate damp ground nearby.

F. 770 Conquest Period Well/Pond (upper fills) - *Monolith <89> ([1966]-[1968])*

Three sediment samples (5-6cm, 25-26cm & 42-43cm) were analysed from this monolith. Pollen concentrations were rather low at between 2074 and 5808 grains per ml. The preservation of palynomorphs was generally quite poor with many grains showing signs of oxidation and corrosion. The basal sample (5-6cm) yielded 111 grains, the middle sample (25-26cm) gave only 60 grains and the upper sample (42-43cm) produced 124 grains. All of these counts are far below the statistically desirable minimum of 300 pollen grains, and therefore the results should be treated with caution.

The difficulty with the basal sample (5-6cm) is that it was dominated by undifferentiated Asteraceae (Lactuceae) pollen (54.1%), indicating that soil processes have seriously altered the pollen signal. The remaining spectrum from this sample is dominated by grass, with herbs, very few trees and shrubs, and notably 8.1% cereal pollen. The middle and upper samples also have elevated levels of Asteraceae (Lactuceae) pollen (22-30%) indicating that oxidation of pollen may have affected the signal. Both samples were dominated by grass (45-48%), with a few herbs, and very few trees and shrubs. Cereal pollen was apparently absent from these samples.

Conclusions

Monolith <180> ([3828]-[3829]) - Although the pollen signal from the two samples from this monolith showed some sign of post-depositional modification, it is clear that this sediment was deposited in an ostensibly tree-less environment dominated by grass and tall-herbs. There is some evidence for arable activity, but the absence of the disturbed ground indicator *Plantago lanceolata* suggests that this was some distance from the site. However, the presence of *Urtica* may indicate local enrichment of soils by human activity or animal dung. There is reasonable evidence for the presence of damp ground nearby, but not for bodies of standing water. This sequence must be Iron Age or later, based on the lack of arboreal taxa, corresponding with the Saxon date ascribed.

Monolith <90> ([1975]-[1977]) - The pollen signal from this monolith was apparently almost unchanged by soil processes, and showed a grass-dominated environment with ruderal weeds and tall-herbs. There is strong evidence for arable activity, and the presence of *Plantago lanceolata* indicates that this was occurring close to the site. The sample from the bottom of the sequence has the unmistakable signal of mixed-oak woodland, probably growing some distance from the site. However, by the top of the sequence this signal has all but disappeared. There is little evidence for a pond at this site, although there evidence for damp ground nearby.

Monolith <89> ([1966]-[1968]) - In many ways this is the most difficult monolith to interpret, since the amount of post-depositional modification of the pollen signal appears to be rather large. It is clear that sedimentation took place in a grass-dominated environment with tall herbs and ruderals. The basal sample shows clear evidence of arable activity nearby, although this appears to absent further up the sequence. The presence of *Urtica* at the top of the sequence may indicate local enrichment of soils through human activity, although there is no evidence of soil disturbance. There is scant evidence for damp conditions near the site, and further interpretation is almost impossible. Dating of the sequence must remain highly speculative, but it is probably Iron Age or later, based on the lack of arboreal taxa. This again corresponds with the ascribed date.

Final Discussion

The 'story' or focus of the site must be its Iron Age and Roman phases. Its preceding prehistoric (Neolithic and Bronze Age) and subsequent Middle Saxon usage are, of course, significant episodes in the locale's sequence and generally attest to the long-term attraction of the 'Addenbrooke's plain', but otherwise they can only really be considered as incidental. Pending further investigation within the immediate area (*viz.* the density and recovery rate of other sites of these periods), their occurrence does little more than demonstrate that the kind of occupation sequences found in the southern Cambridgeshire river valleys, such as at Hinxtton or Bourn Bridge, extended to the south Cambridge environs.

The recovery of the E-W Roman road along the southern side of the site would generally match its location as postulated by the RCHM[E] (1959) and others. This being said, its alignment is not as has been proposed but actually runs further north-over-west (fig. 26). Though this would correlate with the series of Roman boundaries recorded along the southern side of Cra'ster's '67 New Addenbrooke's enclosure, east thereof it would run some 200m south of its putative Worts' Causeway line. Though having to involve a slight alteration in its alignment, it would rather seem to continue along the marked headland that lies south of that historical thoroughfare, and in field survey this headland is recorded as being a 'metalled' bank (Kemp 1993). Projecting this roadway west of the site it would cross the Cam between Grantchester and Newnham (c. 400m south of the latter).

Aside from this positive recovery, the site also provided negative evidence of the area's Roman road system as no trace of the postulated northward length of the *Via Devana* (the 'Perse School Road') was observed. As projected it should have crossed through the eastern margins of the site, possibly within the eastern access road trench, but no evidence was found of it. The only possible candidate for a N-S roadway anywhere close to this route was the central 'seam' within the Phase 5 later Roman fieldsystem, which did after all locally carry metalling toward the south of the site. Whilst always possible, this however was not convincing as such and its alignment would not correlate with this putative way (A road in this position would have to had go over the huge Phase 4 well/pond in Paddock J.1 and there was no evidence of any metalling subsiding down into its fills.)

It should be stressed that the NW-SE alignment of the site's Phase 4 paddock/enclosure system and the roadway is the general or 'default' alignment throughout the region (fig. 26). A recent study has shown, for example, that it is common to all the Roman settlement's excavated on the Isle of Ely (Evans *et al.* forthcoming). Yet in at least one instance there its origins clearly lay in the later Iron Age orientation (Hurst Lane; *ibid.*). This is also the orientation of the Late Iron Age fieldsystem at Greenhouse Farm (fig. 27; Gibson & Lucas 2002) - and for that matter also most Bronze Age fieldsystem within the region - and this would therefore further support the later Iron Age attribution of the Hutchison site and Addenbrooke's 'system', and the road (its Bronze Age system did not however follow this orientation; see fig. 6 and Hinman 2001).

E:545710.05
N:255593.50

E:547251.30
N:255593.50



Figure 26

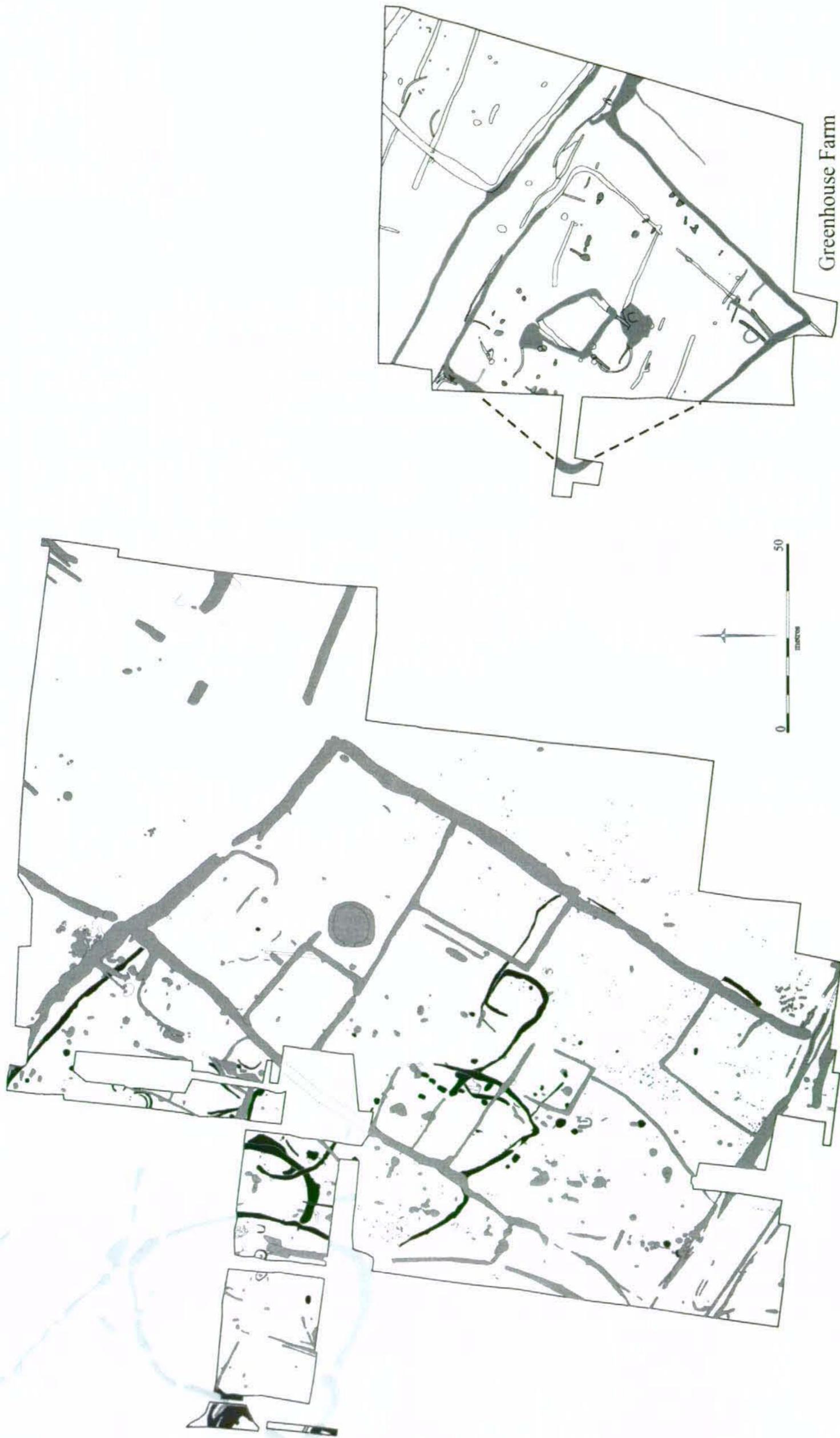


Figure 27

As discussed above, the recovery of the site's series of Conquest period kilns, which so closely match those at Greenhouse Farm (and falling hard on the heels of its excavation), does seem quite remarkable. Together with the earlier evidence of comparable production at the Cherry Hinton War Ditches (lying only 2km to the northeast), this does seem a very high recovery rate. It is this that goes some way to question Gibson and Lucas' model of intermittent/seasonal production and the evidence could, alternatively, be interpreted as reflecting intense post-Conquest manufacture (albeit on a local scale). Perhaps this is also symptomatic of the Aylesford-Swarling 'phenomenon', as such Early Roman kiln complexes are not found, for example, along the southern fen-edge or on the Isle of Ely. Perhaps it was the case that amongst more Romanised Late Iron Age communities within the 'core zone' Iron Age pottery traditions and trading networks collapsed wholesale with the Conquest proper. This argument could, however, be questioned by what seems to be the Cambridge-focus distribution of these kiln complexes and this raises the issue of whether it reflects town-related production. Unfortunately the evidence is ambiguous. Over the last few years evidence of Cambridge's later 1st century AD settlement has now finally been found on the lower eastern Castle Hill-slope immediately above the river crossing (e.g. at the Cow and Calf, Castle St. and Chesterton Lane/Bridge St. corner; see Cessford forthcoming). Yet this could not have been an extensive settlement, one necessarily needing to draw its pottery from upwards of 4km away. Equally, until a series of Conquest period rural settlements are excavated on a sufficient scale in the south of the County we will not be able to resolve to what degree this scale of pottery production was regional (i.e. within the Aylesford-Swarling 'core') or Cambridge-specific.

As raised in the Phase 3/4 discussion, the notion that the smaller 'tightly' square/rectangular gully settings might reflect the location of Conquest period buildings is intriguing. It would be paralleled at the Trinity Lands site on Ely (Evans *et al.* forthcoming) and, also, in the Late Iron Age paddock system at Greenhouse Farm (Gibson & Lucas 2002). This suggestion would evoke the 'classic' round *vs.* rectangular Late Iron Age houses issue in Britain. It would certainly help to explain the 'missing', for many Aylesford-Swarling sites of the period and Early Roman settlements in general have a marked paucity of houses. Housing at this time obviously could not have just been restricted to either roundhouses or major *aisled* halls/barns.

This facet of the site's settlement 'architecture', along with its apparently Late Iron Age fieldsystem, would demonstrate the Aylesford-Swarling zone connections of the Addenbrooke's communities. This would be in addition to its frequency of wheelmade pottery, Iron Age coin-use and Conquest period brooches. (One presumes that they also practiced a cremation burial rite, though the Iron Age settlement's cemetery was not exposed; see Hill *et al.* 1999 for general discussion.) The early uptake of these 'Roman' practices on the part of the area's Late Iron Age communities - variously through 'core-area' trade, influence and contact with Gaul and the Continent - would only be one facet of the site's Romanisation. Against this, the fact that it saw settlement continuity until the later decades of the 1st century AD would be entirely typical and is also found, for example, on the Isle of Ely settlements (Evans *et al.* forthcoming Evans 2003a). The real brunt of Romanisation only came thereafter, probably in the earlier 2nd century with the advent of the

Phase 5 fieldsystem at the Hutchison site. Marking the turning over of the area to agricultural land and the apparent displacement of its resident population, this attests to a major change of land-use. Yet there would be no compelling environmental factors to account for this change. Instead a socio-political impetus must be presumed, probably the local adoption of a villa-based economy (either at the Perse School site or the CAM SAM 57 cropmark complex) and with the 'enlistment' of the locals as indentured labour.

Finally, it should be stressed that the degree to which this site has been able to further understanding of the local dynamics of the Roman Conquest and the subsequent Romanisation of its communities is largely due to the scale of the excavations. 'Big' issues such as these require an equivalent-scale response, and in this case the opportunity to investigate this site at such a level has gone far to elucidate the archaeology of the Addenbrooke's environs and South Cambridge as a whole.

Acknowledgements

The fieldwork was funded by the University of Cambridge, with support from Cancer Research-UK amongst others, and we are grateful for the full co-operation and encouragement throughout of Timothy Warren (University Estates Management and Building Services) and Dr. John Tooze of those respective organisations. The excavations greatly benefited from the development programme's management by the Davis, Langdon & Everest team, variously Stuart Axcell, Will Bidewell and John Pearson, and was also further facilitated by Steve Edwards at Lanig O'Rourke's (and the site's ground crews). Nick Champion of the University's Press Office much abetted the smooth running of the site's press liaison and helped with its two open days.

Of course, a great salute of thanks must be given to the CAU staff and particularly Jen Wills (the site supervisor) who persevered through often trying and wet on-site conditions. The site's finds were processed with the utmost efficiency by Norma Challands and her staff, and illustrations within this report reflect the skills of Andy Hall, Matt Brudenell and Iain Forbes.

Finally Evans gratefully acknowledges discussion with Dr. Kate Pretty, which went far to elucidate just what conditions were like during the '67 New Addenbrooke's excavations.

Bibliography

Abrams, J. 2000. *Prehistoric Field Systems at Long Road 6th Form College, Cambridge: An Archaeological Evaluation*. Cambridgeshire County Council Archaeological Field Unit Report 176.

Alexander, J. and J. Pullinger 2000. Roman Cambridge: Excavations on Castle Hill, Cambridge, 1956-1988. *Proceedings of the Cambridge Antiquarian Society* 88.

Armour, N. 2001. *An Archaeological Evaluation at Downing College Sports Field, Long Road, Cambridge*. CAU Report 452.

Bacilieri, C and R. Palmer 2001. *Downing College Sports Ground, TL462553, Cambridgeshire: Aerial Photographic Assessment*. Air Photo Services Report 2001/08.

Ballantyne, R. M. 2002. Preliminary assessment of the bulk samples from Whittlesey Brick Pits. In D. Gibson and M. Knight *Prehistoric and Roman Archaeology at Stonald Field, King's Dyke West, Whittlesey – Monuments and Settlement*. CAU Report 498.

Ballantyne, R. M. forthcoming a. The botanical assemblage, in R. Mortimer and R. Regan *West Fen Road*. CAU Report

Ballantyne, R. M. forthcoming b. The plant remains. In G. Lucas *Vicar's Farm*. CAU Report

Bartosiewicz, L., W. Van Neer and A. Lentacker 1997. *Draught Cattle: Their Osteological Identification and History*. *Annalen Zoologische Wetenschappen* Vol. 281

Baxter, I. L. 2002. Occipital perforations in a late Neolithic probable aurochs (*Bos primigenius bojanus*) cranium from Letchworth, Hertfordshire, UK. *International Journal of Osteoarchaeology* 12, 142-3.

Beedham, G. E. 1972. *Hulton Group Keys: Identification of the British Mollusca*. Buckinghamshire: Hulton Educational Publications Ltd.

Bewley, R. H. 1994. *Prehistoric Settlements*. London: Batsford/English Heritage.

Blinkhorn, P. W. 1999. Of cabbages and kings: production, trade and consumption in Middle Saxon England, in M. Anderton (ed.) *Anglo-Saxon Trading Centres and their Hinterlands. Beyond the Emporia*. Cruithne.

Boessneck, J., H. H. Müller and M. Teichert 1964. Osteologische Unterscheidungsmerkmale zwischen Schaf (*Ovis aries* Linné) and Ziege (*Capra hircus* Linné). *Kühn-Archiv* 78, 1-29.

Bradford, L. J. 1978. The Cambridge Archaeological Field Group: First Report. *Proceedings of the Cambridge Antiquarian Society* 68: 11-3.

- Brothwell, D., K. Dobney and A. Ervynck 1996. On the causes of perforations in archaeological domestic cattle skulls. *International Journal of Osteoarchaeology* 6, 471-87.
- Brown, R. and D. Score 1999. A Bronze Age enclosure at Fulbourn Hospital, Cambridgeshire, *Proceedings of the Cambridge Antiquarian Society* 87: 31-43.
- Browne, D. M. 1974. *An Archaeological Gazetteer of the City of Cambridge*. Cambridge: Cambridge Antiquarian Society.
- Carter, G. A. 1998 *Excavations at the Orsett 'Cock' Enclosure, 1976*. East Anglian Archaeological Reports 86.
- Chaplin, R. E. and F. McCormick 1986. The animal bones, in I. M. Stead and V. Rigby *Baldock: The Excavation of a Roman and Pre-Roman Settlement 1968-72*. Society for the Promotion of Roman Studies.
- Cohen, A. and D. Serjeantson 1986. *A Manual for the Identification of Bird Bones from Archaeological Sites*. London: Archetype Publications.
- Connor, A. 2000. *Middle Iron Age Activity at 90 Glebe Road, Cambridge: Further Investigations*. CCC AFU Report A160.
- Cra'ster, M. 1961. The Aldwick Iron Age Settlement, Barley, Herts. *Proceedings of the Cambridge Antiquarian Society* 54: 22-46.
- Cra'ster, M. 1969. New Addenbrooke's Iron Age site, Long Road, Cambridge. *Proceedings of the Cambridge Antiquarian Society* 62, 21-8.
- Dannell, G. and P. Wild 1987. *Longthorpe II: The Military Works-depot*. London: Society for the Promotion of Roman Studies.
- Davis, S. J. M. 1987. *The Archaeology of Animals*. London: Batsford.
- Dawson, M. 2000. The Ouse Valley in the Iron Age and Roman periods: a landscape in transition, in M. Dawson (ed.) *Prehistoric, Roman and post-Roman Landscapes of the Great Ouse Valley*. CBA Research Report 119.
- Denison, S. 1996. News. *British Archaeology* 16, July 1996.
- 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*. CBA Research Report 125.
- Dreisch, A. von den 1976. *A Guide to the Measurement of Animal Bones from Archaeological Sites*. Peabody Museum Bulletin 1. Peabody Museum of Archaeology and Ethnology Harvard University.
- Dreisch, A. von den, and J. Boessneck 1974. Kritische Anmerkungen zur Widerristhöhenberechnung aus Längenmaßen vor und frühgeschichtlicher Tierknochen. *Saugetierkundliche Mitteilungen* 22, 325-48

- Erith, F. H. and I. H. Longworth 1960. A Bronze Age Urnfield on Vinces Farm, Ardleigh, Essex. *Proceedings of Prehistoric Society* 45.
- Evans, C. 1990. *Archaeological Investigations at Swavesey, Cambridgeshire, 1990*. CAU Report 4.
- Evans, C. 1990. *The Duxford Archaeological Assessment*. Cambridge: CAU Report 1.
- Evans, C. 1991. *Archaeological Investigations at Duxford, Cambridgeshire, 1991*. Cambridge: CAU Report 40.
- Evans, C., 1992. Commanding gestures in lowland: the investigation of two Iron Age ringworks, *Fenland Research* 2: 16-26.
- Evans, C., 1997 Hydraulic communities: Iron Age enclosure in the East Anglian Fenlands, in Gwilt, A. and Haselgrove, C. (eds.), *Re-constructing the Iron Age*: 216-27. Oxford: Oxbow Monograph 71.
- Evans, C., 2000a 'Wardy Hill, Coveney', in Crowson, A., Lane, T. and Reeve, J. (eds.), *The Fenland Management Project: Summary Volume*, 44-51, Lincolnshire Archaeology and Heritage Reports Series No. 3.
- Evans, C. 2000b. Iron Age Forts and Defences (#12), in Kirby, T. and Oosthuizen, S. (eds.), *An Atlas of Cambridgeshire and Huntingdonshire History*. Cambridge: Centre for Regional Studies, Cambridge.
- Evans, C. 2002. *The Archaeology of the Addenbrooke's Environs: A Desktop Essay*. CAU Report 497.
- Evans, C. 2003a. *Power and Island Communities; Excavation of the Wardy Hill Ringwork, Coveney, Isle of Ely*. Anglian Archaeological Reports 103.
- Evans, C. 2003b. Britons and Romans at Chatteris: investigations at Langwood Farm, Cambridgeshire. *Britannia* 34: 175-264.
- Evans, C., M. Knight and L. Webley forthcoming. An Island Prehistory: Iron Age Settlement, 'Poverty' and Romanization on the Isle of Ely. *Proceedings of the Cambridge Antiquarian Society*.
- Evans, J. 1990. The Cherry Hinton finewares. *Journal of Roman Pottery Studies* 3, 18-29.
- Evans, J. 1998. Belgic pottery and kiln furniture from Swavesey, in J. Roberts *Iron Age and Medieval Activity at Blackhorse Lane, Swavesey*. Cambridgeshire County Council Archaeological Field Unit Report 151.
- Fox, C. 1923. *The Archaeology of the Cambridge Region*. Cambridge: University Press.

French, D. H. 1972. Excavations at Cass Hasan III 1969-70, in E. S. Higgs (ed.) *Papers in Economic History: Studies by Members and Associates of the British Academy Major Research Project in the Early History of Agriculture, 182-8*. Cambridge: Cambridge University Press.

Friendship-Taylor, R. 1999. *Late La Tène Pottery of the Nene and Welland Valleys, Northamptonshire* (BAR British Series, 280).

Gibson, D. and G. Lucas 2002. Pre-Flavian kilns at Greenhouse Farm and the social context of early Roman pottery production in Cambridgeshire. *Britannia* 33, 95-127.

Grant, A. 2002. Scales of reference: archaeozoological approaches to the study of behaviours and change, in K. Dobney and T. O'Connor (eds.). *Bones and the Man: Studies in Honour of Don Brothwell*. Oxford: Oxbow Books.

Green, F. J. 1985. Evidence for domestic cereal use at Maxey, in F. M. Pryor *et al.* *Archaeology and Environment in the Lower Welland Valley*, 224-32. East Anglian Archaeology 27. Cambridge: Cambridge Archaeological Committee

Grieg, J. R. A. 1991. The British Isles, in W. Van Zeist *et al.* (eds.) *Progress in Old World Palaeoethnobotany*. Rotterdam: Balkema.

Grigson, C. 1982. Sex and age determination of some bones and teeth of domestic cattle: review of the literature, in B. Wilson, C. Grigson and S. Payne (eds.) *Ageing and Sexing Animal Bones from Archaeological Sites*. BAR British Series 109.

Halkon, P. and M. Millett 1999. *Rural Settlement and Industry: Studies in the Iron Age and Roman Archaeology of Lowland East Yorkshire*. Leeds: Yorkshire Archaeological Society and East Riding Archaeological Society.

Hall, A. 2001. *An Archaeological Desk-based Assessment of Downing College Sports Field, Long Road, Cambridge*. Cambridge Archaeological Unit Report 418.

Halstead, P. and P. Collins 2002. Sorting the sheep from the goats: morphological distinctions between the mandibles and mandibular teeth of adult *Ovis* and *Capra*. *Journal of Archaeological Science* 29, 545-53.

Harcourt, R. A. 1974. The dog in prehistoric and early historic Britain. *Journal of Archaeological Science* 1, 151-75.

Hawkes, C. F. C. and C. I. Fell 1943. The Early Iron Age settlement at Fengate, Peterborough. *Archaeological Journal* 100, 188-223.

Hawkes, C. F. C., and M.R. Hull 1947. *Camulodunum*. Oxford: Oxford University Press.

Hill, J. D. 1995. *Ritual and Rubbish in the Iron Age of Wessex*. BAR British Series 242.

- Hill, J.D., C. Evans and M. Alexander 1999. The Hinxton Rings - A Late Iron Age cemetery at Hinxton, Cambridgeshire, with a reconsideration of northern Aylesford-Swarling distributions. *Proceedings of Prehistoric Society* 65: 243-74.
- Hillman, G. C. 1981. Reconstructing crop husbandry practices from charred remains of crops, in R. J. Mercer (ed.) *Farming Practice in British Prehistory*, 123-62. Edinburgh: Edinburgh University Press.
- Hinman, M. 1999a. *Granhams Farm Golf Course - Neolithic to Medieval; the Archaeological Landscape surrounding Granhams Farm, from Nine Wells to Hinton Way, Great Shelford, Cambs: An Evaluation*. Cambridgeshire County Council Archaeological Field Unit Report 167.
- Hinman, M. 1999b. *Ritualistic Prehistoric Activity and Inhumations of land adjacent to Babraham Road, Cambridge*. Cambridgeshire County Council Archaeological Field Unit PXA Report 10.
- Hinman, M. 2001. Ritual activity at the foot of the Gog Magog Hills, Cambridge, in J. Bruck (ed.), *Bronze Age Landscapes: Tradition and Transformation*: 33- 40. Oxford: Oxbow.
- Hinman, M. 2003. *A Late Iron Age Farmstead and Romano-British Site at Haddon, Peterborough* (BAR British Series 358). Oxford: BAR.
- Hughes, T. McKenny 1903. The War Ditches, near Cherryhinton, Cambridge, *Proceedings of the Cambridge Antiquarian Society* 10: 452-81.
- Hurst, J. G. 1976. The pottery, in D. M. Wilson (ed.) *The Archaeology of Anglo-Saxon England*, 283-348. Cambridge.
- Jackson, D. and B. Dix 1987. Late Iron Age and Roman settlement at Weekley, Northants. *Northamptonshire Archaeology* 21, 41-93.
- Kemp, S. 1993. *Cambridge Southern Relief Road: Archaeological Field Evaluation*. Cambridgeshire County Council Archaeological Field Unit Report 85.
- King, A. 1991. Food production and consumption, in R. F. J. Jones, *Britain in the Roman Period: Recent Trends*. Sheffield: J.R. Collis Publications.
- Leith, S. 1996. *An Archaeological Evaluation at the Perse School for Boys, Hills Road, Cambridge*. Cambridgeshire County Council Archaeological Field Unit Report A 89.
- Lethbridge, T.C. 1949. Further Excavations at the War Ditches, *Proceedings of the Cambridge Antiquarian Society* 42: 117-27.
- Longworth, I. H., A. Ellison and V. Rigby 1988. *Excavations at Grimes Graves, Norfolk 1972-1976. Fascicule 2: The Neolithic and Bronze Age Pottery*. London: British Museum Press.
- Lucas, G. 2001. Pottery, in N. Armour *An Archaeological Evaluation at Downing College Sports Field, Long Road, Cambridge*. CAU Report 452.

- Lucas, G. and P. Whittaker 2001. *Vicar's Farm, Cambridge: Post Excavation Assessment Report*. CAU Report 425.
- Mackay, D. 2002. *Addenbrooke's Electricity Substation: An Archaeological Evaluation*. CAU Report 469.
- Malim, T. 1998. Prehistoric and Roman remains at Edix Hill, Barrington, Cambridgeshire, *Proceedings of the Cambridge Antiquarian Society* 86: 13-56.
- Manaseryan, M. H., K. Dobney and A. Ervynck 1999. On the causes of perforations in archaeological domestic cattle skulls: New evidence. *International Journal of Osteoarchaeology* 9, 74-5.
- Monteil, G. 2002. Roman pottery, in P. Whittaker *An Archaeological Evaluation At 28-30 Long Road, Cambridge, Cambridgeshire*. CAU Report 483.
- Mortimer, R. and C. Evans 1996. *Archaeological Excavations at Hinxtton Quarry, Cambridgeshire: The North Field*. CAU Report 168.
- Murphy, P. 1989. Plant remains, in J. Plouviez 'A Romano-British pottery kiln at Stowmarket', *Proceedings of the Suffolk Institute of Archaeology* 37, 1-12.
- Murphy, P. 2003. Plant macrofossils and molluscs, in C. Evans *Power and Island Communities: Excavations at the Wardy Hill Ringwork, Coveney, Ely*, 84-114. *East Anglian Archaeology* 103. Cambridge: Cambridge Archaeological Committee.
- O'Connor, T. P. 1991. *Bones from 46-54 Fishergate*. Dorset: York Archaeological Trust/Council for British Archaeology.
- Partridge, C. 1981. *Skeleton Green, a Late Iron Age and Romano-British Site*. Britannia Monograph Series, No. 2.
- Payne, S. 1973. Kill-off patterns in sheep and goats: the mandibles from Asvan Kale. *Anatolian Studies* 23, 281-303.
- Pryor, F. 1974. *Excavation at Fengate, Peterborough, England; The First Report*. Royal Ontario Museum. Arch. Mono. 3.
- Pryor, F. 1984. *Excavation at Fengate, Peterborough, England: The fourth report*. Northamptonshire Archaeological Society Monograph 2/Royal Ontario Museum Archaeological Monograph 7.
- Pryor, F. 1998. Welland Bank Quarry, South Lincolnshire. *Current Archaeology* 160: 139-45.
- RCHM(E), 1959. *An Inventory of the Historical Monuments in the City of Cambridge*. London: HMSO.

- Roberts, K. E. 2004a. The Environmental Bulk Samples from Cherry Hinton. In C. Cessford and R. Mortimer *Land Adjacent to 63 Church End, Cherry Hinton. An Archaeological Excavation*. CAU Report 607.
- Roberts, K. E. 2004b. The environmental bulk samples, in C. Cessford *The Cambridge and County Folk Museum, Cambridge: An Archaeological Excavation*. CAU Report 574.
- Schmid, E. 1972. *Atlas of Animal Bones for Prehistorians, Archaeologists and Quaternary Geologists*. Amsterdam, London, New York: Elsevier.
- Silver, I. A. 1969. The ageing of domestic animals, in D. R. Brothwell and E. Higgs (eds.) *Science in Archaeology, A Survey of Progress and Research*. Bristol: Thames Hudson.
- SSEW, 1983. *Soils of England and Wales: sheet 4: Eastern England (1:250,000)*. Soil Survey of England and Wales, Harpenden.
- St. Clair, L. E. 1975. Teeth, in R. Getty Sisson and Grossman's *The Anatomy of Domestic Animals*, fifth edition. Philadelphia, London, Toronto: W.B. Saunders Company.
- Stace, C. 1997. *New Flora of the British Isles*. Cambridge: Cambridge University Press.
- Stevens, C. 1998. The plant remains, in R. Mortimer *Excavation of the Middle Saxon to Medieval Village at Lordship Lane, Cottenham, Cambridgeshire*. Cambridge: CAU Report 254.
- Stevens, C. 2000. The plant remains, in D. Gibson and G. Lucas *Excavation of the North Field, Greenhouse Farm, Cambridge*. CAU Report 354.
- Swan, V. G. 1984. *The Pottery Kilns of Roman Britain*. London: HMSO.
- van der Veen, M. 1996. Plant remains, in R. P. J. Jackson and T. W. Potter *Excavations at Stonea, Cambs. 1980 – 85*, 613-37. London: British Museum Press.
- van der Veen, M. 1999. The economic value of chaff and straw in arid and temperate zones. *Vegetation History and Archaeobotany* 8. 211-24.
- Wait, G.A. 1992. *Archaeological Investigations: New Addenbrookes, Centre for Brain Repair, 1992*. CAU Report 74.
- Walker, F.G. 1910. Roman Roads into Cambridge. *Cambridge Antiquarian Society Communications* 14: 141-76.
- West, S. E. 1964. Excavations at Cox Lane (1958) and the town defences, Shire Hall Yard, Ipswich. *Proc. Suffolk Inst Archaeol* 29, 23-303.
- White, L. 1998. *Archaeological Excavation at Cherry Hinton Ring Ditches, Fulbourn Road, Cambridge*. CAU Report 247.

Whittaker, P. 2002. *An Archaeological Evaluation at 28-30 Long Road, Cambridge*. CAU Report 483.

Wilson, B. 1992. Considerations for the identification of ritual deposits of animal bones in Iron Age pits. *International Journal of Osteoarchaeology* 2, 341-9.

Woods, P. and S. Hastings 1984. *Rushden: The Early Fine Wares*. Northamptonshire County Council.