Excavation of an Iron Age 'Aggregated' Settlement At Manor Farm, Humberstone, Leicester.

SK6275 0652

John Thomas

For: The Environmental Dimension Partnership and Gateway College

Checked by **Signed:** .....**Date**: .....
Name: .....
Approved by **Signed:** .....**Date**: .....
Name: .....

University of Leicester
Archaeological Services
University Rd., Leicester, LE1 7RH
Tel: (0116) 2522848 Fax: (0116) 2522614
www.le.ac.uk/ulas
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Summary

Archaeological excavations at Manor Farm, Humberstone, Leicester (SK 6275 0652) have revealed an extensive area of Iron Age 'aggregated' occupation consisting of a sequence of large stock enclosures and a linear spread of 'open' settlement adjacent to a linear boundary ditch. Settlement on the site was evidently long-lived with occupation beginning in the Late Bronze Age/Early Iron Age although the main phases of the site dated to the Middle and Late Iron Age, finally coming to an end in the late 1st century BC or early 1st century AD. The site probably represents part of the same settlement revealed at Elms Farm, to the east and together the two excavations indicate that an area in excess of 8ha was occupied, making this the largest Iron Age settlement found in the county. The scale and longevity of the sites occupation is reflected in the size of the main finds assemblages which represent the largest pottery and animal bone groups from contemporary sites in the East Midlands. Limited environmental information suggests that the site existed within a largely cleared landscape, with areas of open grassland and possibly agricultural fields nearby, although wooded areas must still have been in the vicinity. Although it is thought that the inhabitants of the settlement were involved in mixed farming, an emphasis on pastoralism is suggested. The site was also involved in various craft activities such as metalworking, weaving and bone-working and was part of a wide network of trade and exchange.

Introduction

This report presents the results of archaeological excavations of an area of extensive Iron Age settlement carried out by University of Leicester Archaeological Services (ULAS) on land at Manor Farm, Humberstone, Leicester (centred on NGR SK 6275 0652) (Fig. 1).

Archaeological work was originally carried out in response to development proposals for the construction of two places of worship (Hindu Mission and Dawoodi Borah Jamaat complex), and access road and sewers to serve the development (Project Reference LC202). In recent years the development proposals have changed with the site now being the location for Gateway College campus. Gateway College have made a significant contribution to the excavation costs of this project and have funded the entire post-excavation programme. An initial desk-based assessment prepared by ULAS (Thomas 1998) showed that the site lay within an area of high archaeological potential. To the north and southeast a previously unknown Iron Age settlement had been revealed beneath ridge and furrow pasture fields (Charles *et al* 2000-See Figure 2). The site also lay close to the medieval village of Humberstone and one of its manors to the south. The majority of the development area was also covered with the remains of ridge and furrow agricultural systems that had apparently lain undisturbed since the medieval period. Subsequent evaluative work on the area including geophysical survey (Butler 1999) and trial trenching (Gossip 1999) confirmed the presence of Iron Age occupation remains including circular buildings, enclosure ditches, gullies pits and post holes. Limited sample excavation of features revealed in the trenches yielded artefactual evidence of habitation including pottery, animal bone, flint tools and highlighted the potential for survival of environmental remains. A second stage of evaluation targeted geophysical anomalies and apparently 'blank' areas that had not previously been tested (Thomas 2001). This stage served to further confirm the results of the geophysical survey and to define potentially 'blank' areas.

The main excavation work was undertaken between 2001-2002, during which a total of 2.4ha was stripped and recorded. Following further evaluation to the east of the previously recorded areas (Alsitzoglou 2006), a third area of archaeological remains covering approximately 0.27ha was stripped and recorded in 2007.

Site Description, Topography and Geology

The site is located northeast of Manor Farm, Humberstone, approximately 5km east of Leicester city centre. It consists of an irregular, roughly linear block of land of *c*.5.15ha. which occupies an area off Colin Grundy Drive, Keyham Lane. Prior to the excavation the site was used as pasture land and defined to the north-east by the A47 link road, to the south-west by Manor Farm and to the south-east by Humberstone police station (Keyham Lane) and Church Farm House. The development area lies on

a boulder clay ridge, at a height of 97-100m OD, overlying Lower Lias clays and limestone. To the south and north the ground falls off into the valleys of the Scraptoft and Melton Brooks respectively.

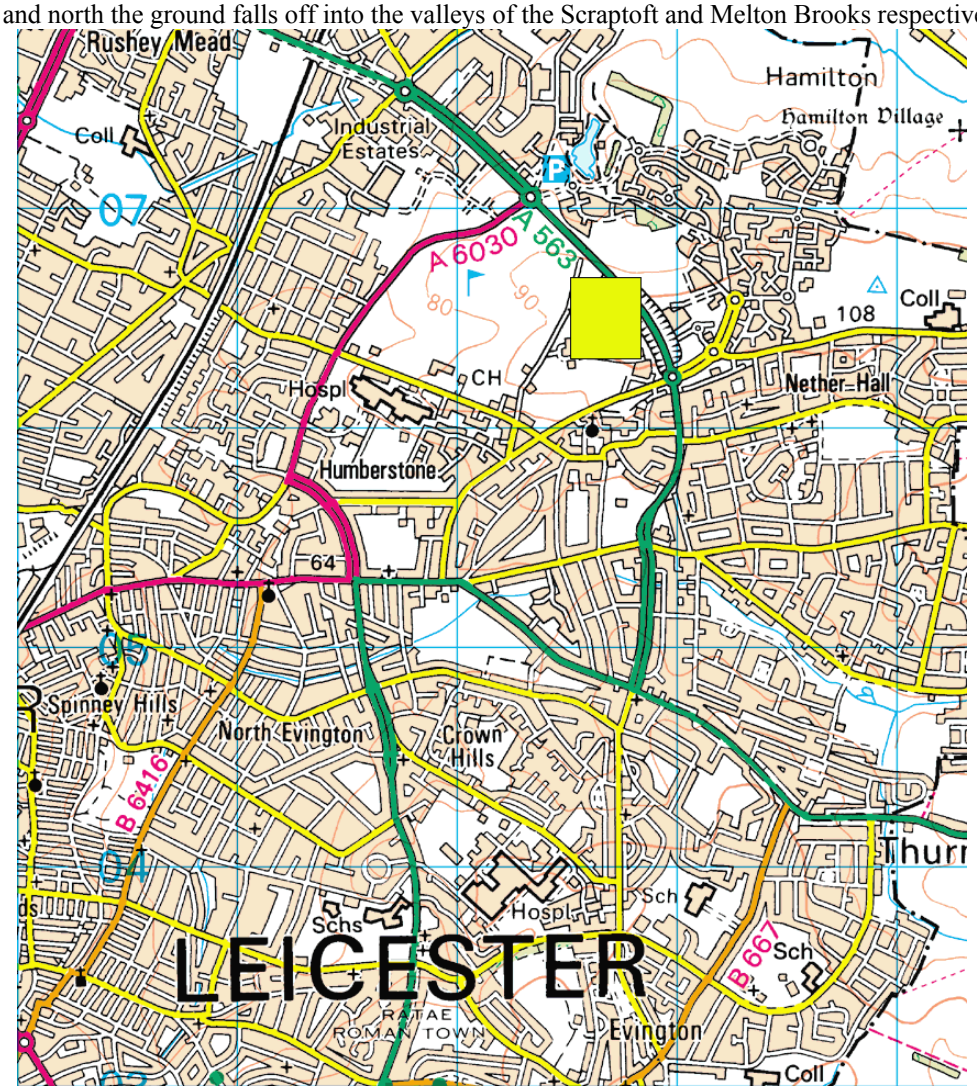

Figure 1 Location of the development area (highlighted)
Based on Ordnance Survey mapping
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Archaeological Background

The site is located within a wider area of known Late Bronze Age and Iron Age activity in the eastern hinterland of Leicester. To the south an area of Late Bronze Age to Early Iron Age occupation and stock management has recently been excavated (Beamish and Shore 2008). Most pertinently to the Manor Farm site, excavations to the east at Elms Farm, revealed a substantial and long-lived mid-late Iron Age settlement (Charles *et al* 2000) that very likely represents part of the same spread of occupation. Geophysical survey to the west of the excavated area has also revealed that settlement continues in this direction (Thomas 2004). To the north of the Manor Farm site, recent archaeological work in advance of housing development has indicated areas of ditching and a possible enclosure (Richards 2004, 2005). Chance finds during the construction of the Quakesick Spinney housing development, including pottery and a gold stater of the local Iron Age tribe, the *Corieltauvi*, were associated with a hearth and indicate a further area of later prehistoric ooccupation in the area. Late Iron Age occupation in the wider locality is also known at Crown Hills (Chapman 2000), and probably at Rushey Mead, where a crouched inhumation in a pit has been recorded (Pollard 2001).

Aims and Objectives

The specific objectives of the project, as stated in the 'brief", were to record a sufficient amount of the archaeological remains within the development area to establish their extent, date range, quality,

character and form. The site was identified as having the potential to address a number of research aims, both regional and national. They were originally described in the Project design and are as follows:

- ***The evolution of rural settlement*** (EH 1997; T3)

Recording and analysing the distribution of remains on a site may help to define areas of domestic activity in contrast to other activity areas (e.g. crop processing) and may also contribute towards understanding of deposition/discard patterns on the site. It has recently been suggested that rates of change may have been variable between different regions. Comparison with other regions may show differences in exploited resources and crops grown over time.

- ***Settlement and land use on the East Midlands claylands***

Comparison with sites on different geologies may show differences in agriculture or economy. The agricultural economy of the region in the prehistoric and Romano-British periods is poorly understood. This situation is only likely to be improved by consideration of a number of sites in the study area as a whole. Evidence from the extensive nearby site at Elms Farm (Charles *et al* 2000) indicates that there is good potential for the survival of bone and charred plant remains in the area. The recovery of such remains is essential towards furthering an understanding of Iron Age economies.

- ***The study of settlement patterns in the hinterland of Leicester***

Leicester was an important tribal centre during the late Iron Age (Clay 1985; Clay and Pollard 1994) and the relationship between Leicester and its surrounding settlements is an ongoing research theme. The site at Manor Farm has the potential to provide important comparative information regarding trading patterns, contact, land use and economy during the period and compliment the work at sites of similar age such as Enderby (Clay 1992, Meek 1997), Humberstone-Elms Farm (Charles *et al* 2000), Hamilton North (Liddle 1994), Huncote (Shore 2001), Kirby Muxloe (Cooper 1995) and Crown Hills, Leicester (Chapman 2000).

- ***Deposition patterns on Iron Age sites***

Recent research has suggested that not all artefacts found on Iron Age sites are the result of casual refuse disposal but are the product of complex and sophisticated acts involving the deliberate burial of certain artefacts and groups of artefacts ('structured deposition'-Hill 1994; 1995). Examination of the intra-site depositional patterning of artefacts across the site may provide further evidence to contribute to this debate.

- ***Dating***

The long-lived pottery style of the Scored Ware tradition presents a major problem for Iron Age studies in the East Midlands when attempting to establish chronologies for the period (Elsdon 1992; Marsden 1998, 2000). This problem is coupled with difficulties presented by a flat C14 dating calibration curve for the earlier part of the 1st millennium BC in comparison to a kinked curve towards the end of the 1st millennium (Stuiver *et al* 1993). A successful programme of scientific dating involving C14 and thermoluminescence dating was employed at Wanlip, Leicestershire (Beamish 1998, 24-27) and limited results were established at the Elms Farm site to the east (Charles *et al* 2000, 169-70). A successful suite of results from the Manor Farm site would greatly enhance understanding of the chronology and development of the site and also help to position the site within regional and national chronological frameworks.

- ***The study of Iron Age buildings***

Initial work on the project (Butler 1999, Gossip 1999) indicated the presence of Iron Age circular structures and a range of structural types was revealed during the excavation. The evolution of building types forms part of ongoing research into the period and has the potential to examine questions such as the division of internal space and particular use of buildings (e.g. such as workshops/kitchen areas-Clay 1992).

- ***Flint use in the Iron Age***

The site has the potential to contribute to ongoing research into the continued use of flint during the Iron Age (Cooper and Humphrey 1998; Humphrey 2003).

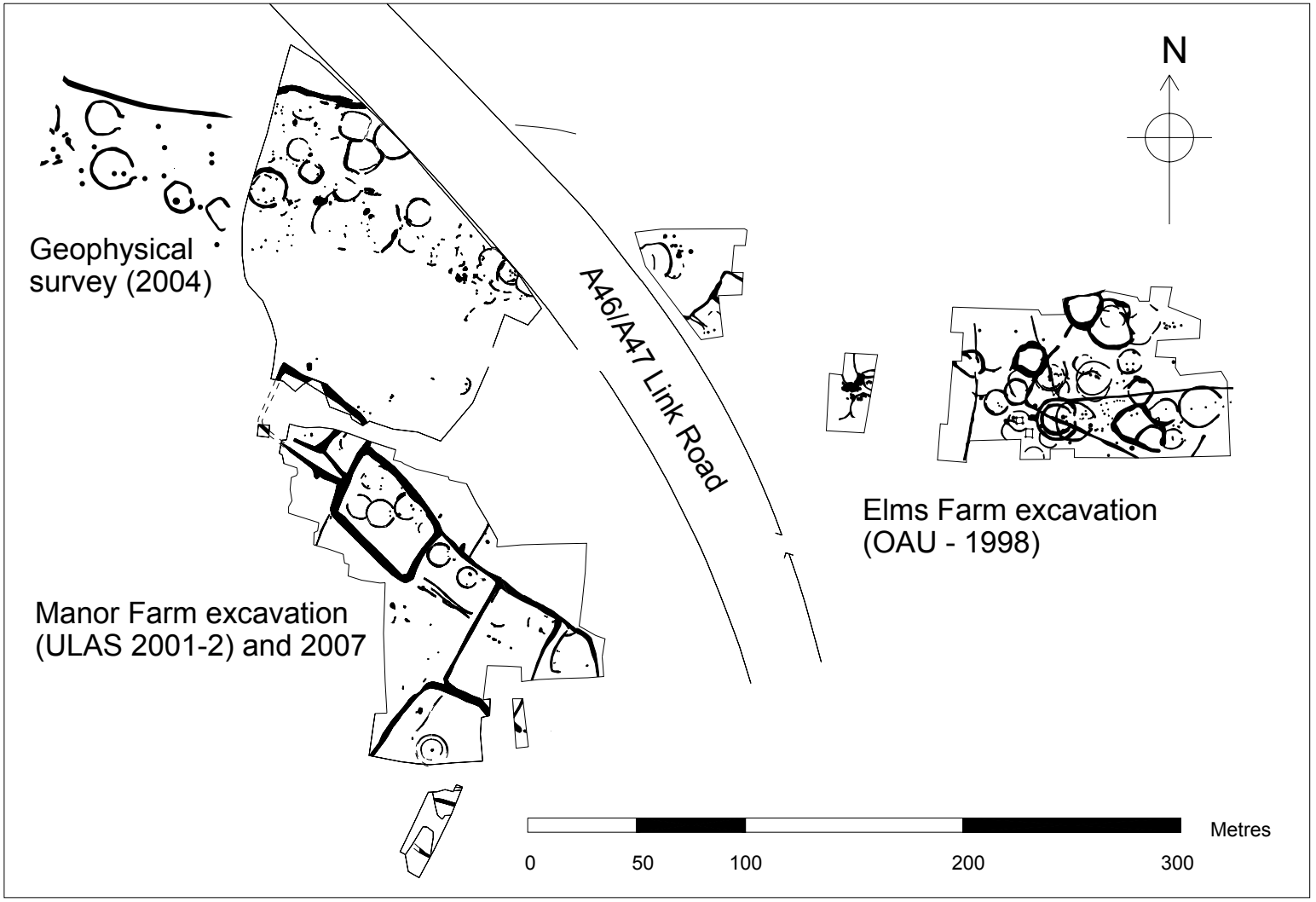

Figure 2 Humberstone 'aggregated' settlement based on archaeological work to date

Methodology

The site was stripped in a perpendicular direction to the ridge and furrow to prevent over excavation of the ridge tops and to enable removal of the deeper plough deposits in the furrows. This resulted in a corrugated effect across the stripped areas and produced a fuller plan of the available archaeological deposits. From the outset it was obvious that truncation from the ridge and furrow had affected the archaeological remains on the site. Only the shallowest features, however, appeared to have been completely truncated; generally the lower portions of features survived in the furrow bottoms. The differential preservation had some influence on the position of hand-excavated sections which, where possible, were excavated on the top of ridges to provide a representative profile.

For the purposes of identification and recording the site was divided up into two areas (Area A and Area B-see Figure 3) using existing field boundaries as distinguishing factors. Area A comprised three stripped areas in the southern field with a combined area of some 0.98ha. The main part of Area A was stripped during November and December 2001 with an additional area to the south being stripped during May 2002. Area B consisted of a 1.4ha stripped area in the northernmost field. Stripping of Area B was undertaken between January and February 2002. In all a total area of 2.67ha was stripped and recorded during the excavation. A metal detecting sweep was undertaken over the stripped areas both following the initial removal of the topsoil and after the archaeological level had been exposed.

Following the machine stripping the exposed areas were planned using a Topcon GTS303 Total Station Electronic Distance Measurer (EDM) linked to a Psion hand-held data logger. The resulting data were processed using n4ce survey software and CAD drawing software to produce site plans at a variety of scales. This procedure enabled the swift production of site plans to aid site excavation strategy and as a guide for preliminary analysis (e.g. spatial distribution of feature types, finds etc and initial spot dating).

Guidelines for the excavation of archaeological features on the site were provided in the 'brief'. They detailed appropriate sampling strategies to establish the stratigraphic and chronological sequence of deposits, for the recognition and excavation of structural features and for the recovery of evidence pertaining to the economic, artefactual and environmental history of the site. Where possible linear features such as gullies were evenly sampled along their length with particular attention being paid to the terminals and intersections with other features. Ring gullies and enclosure ditches were sampled following a consistent strategy where sections for excavation included both entrance terminals, a section at the back of the structure diametrically opposite the entrance and opposing sections at mid points along each side. Excavated segments were two metres in length. Separate context numbers were assigned to each 1m length to preserve the spatial distribution of finds as an aid to further analysis. As with the linear features attention was given to points where features intersected. Discrete pits and post-holes were generally half sectioned but were fully excavated if they were considered important or contained large groups of finds. Towards the end of the excavation sections across the main enclosure ditches were excavated using a JCB mechanical digger. This was a measure introduced to save time, ensure a representative sample of the features was recorded, and to examine all potential relationships to aid site phasing. All machine cut sections were excavated under full archaeological supervision and separate fill layers were carefully removed in sequence to maximise finds retrieval and ensure their provenance.

In consultation with the ULAS environmental specialist, an extensive programme of sampling was implemented as part of the recording strategy. The potential for good survival of environmental remains, particularly bone, in the clay subsoil was indicated by the results from the neighbouring OAU site at Elms Farm to the east (Pelling 2000). The aim of the strategy was to increase the possibilities of recovering small animal bones and other environmental information to enhance discussion of the sites economy and assist in the recognition of activity areas. Bulk samples of 20 litres were collected from datable excavated (1m) sections for the recovery of charred plant remains and samples of 100 litres (or whole context samples as appropriate) were taken for the recovery of small bones where concentrations of such material were apparent. A limited programme of phosphate sampling was undertaken across the site including selected enclosure and structural features. Samples for hammer-scale were taken from features in the eastern part of Area B that produced evidence of metalworking activities.

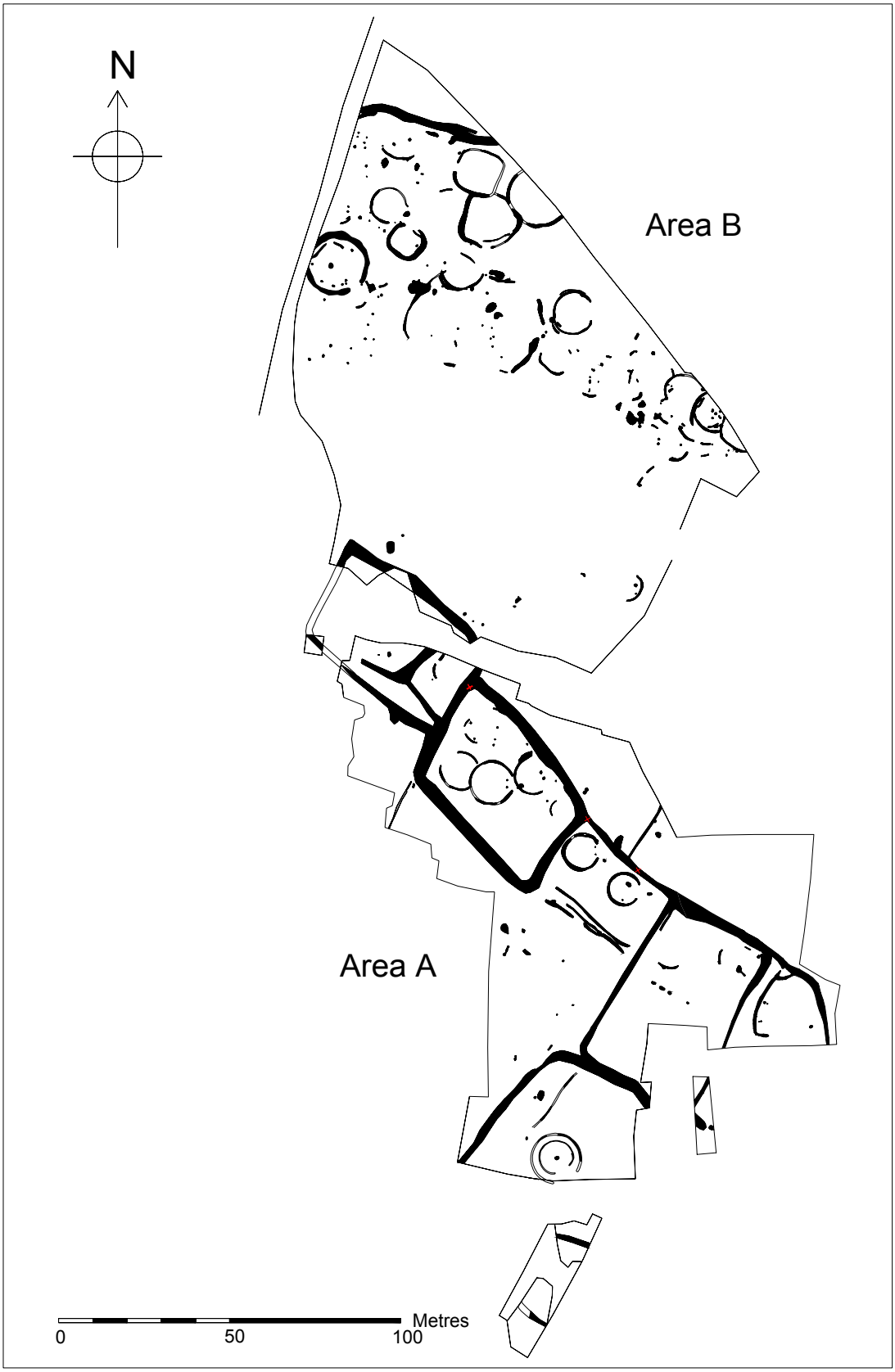

Figure 3 Excavated areas at Manor Farm

All excavated sections were hand-planned, photographed and the sections drawn to scale (either 1:10 or 1:20 as appropriate). Where large groups of artefacts were revealed during excavation of features ongoing written, drawn and photographic records were maintained to fully detail the original context of the finds. All written records were entered onto *pro-forma* ULAS context record sheets and regularly updated site indices were maintained.

Radiocarbon Dating

A total of eight samples was submitted for radiocarbon dating in two batches. Two samples – both animal bone – were processed to graphite at Waikato Radiocarbon Dating Laboratory, New Zealand and measured at Rafter Radiocarbon Laboratory, NZ (Dates prefixed Wk in Fig. 4). A further six samples – three carbonised residues on pottery sherds and three animal bone – were processed and measured at Poznan Radiocarbon Laboratory, Poland (Dates prefixed Poz in Fig. 4). Five samples – four cattle bone and one charred grain – from Elms Farm were processed and measured at Rafter Radiocarbon Laboratory, New Zealand (Dates prefixed NZ in Fig. 4). The details of these results have been reported in Charles *et al* (2000) and so will not be discussed here further. Given the relationship between the two excavated sites it was decided to consider the radiocarbon dates from both areas together, to provide a better overall understanding of the chronological development of the settlement.

Bayesian Modelling – Derek Hamilton

Methodological Approach

A Bayesian approach was adopted for the interpretation of the chronology from the two Humberstone excavations presented here (Buck *et al* 1996). Although the simple calibrated dates are accurate estimates of the dates of the samples, this is usually not what archaeologists really wish to know. It is the dates of the archaeological events, which are represented by those samples, which are of interest (e.g. start or end of settlement).

Fortunately, methodology is now available which allows the combination of these different types of information explicitly, to produce realistic estimates of the dates of archaeological interest. It should be emphasized that the *posterior density estimates* produced by this modelling are not absolute. They are interpretative *estimates*, which can and will change as further data become available and as other researchers choose to model the existing data from different perspectives.

The technique used is a form of Markov Chain Monte Carlo sampling, and has been applied using the program OxCal v4.0.5 (http://c14.arch.ox.ac.uk/). Details of the algorithms employed by this program are available from the on-line manual or in Bronk Ramsey (1995; 1998; 2001). The algorithm used in the models described below can be derived from the structures shown in Figures 1 and 2.

Results

The model for Elms and Manor Farms in Humberstone is slightly more complicated as it has 10 radiocarbon dates from nine features and three coins providing *terminus post quem* dates for their contexts.

The model assumes some sort of continuity (as suggested by the archaeology) between the spatially very close Elms and Manor Farms. The features dated include a Bronze Age ditch, an Iron Age enclosure ditch, a four-post structure, and five roundhouses.

The model has good overall agreement between the stratigraphy, phasing and dating results (A_{model}=73.6%).

The model estimates that the IA activity began in *520–260 cal BC* (*95% probability*; *start Humberstone Phase 2*), and probably in *440–320 cal BC* (*68% probability*). It estimates that dated activity ended in *40 cal BC–cal AD 110* (*98% probability*; *end Humberstone Phase 2*), and probably in *40 cal BC–cal AD 20* (*68% probability*). This final span of dated activity lasted for *160–380 years* (*98% probability*; *use Humberstone Phase 2*) and probably *220–330 years* (*68% probability*).

Laboratory Number	Context	Material	Radiocarbon Age (BP)	Calibrated Date (95% confidence)	*Posterior Density Estimate (95% probability)*
Poz-22739	261 – Recut Ditch (cutting northern side of Enclosure C) – primary fill	carbonised residue	2060 ±30	170 cal BC–cal AD 10	*170–1 cal BC*
Poz-22740	518 – Roundhouse 13 Phase 2 – primary fill	carbonised residue	2150 ±30	360–60 cal BC	*360–280 cal BC (26%)* or *240–90 cal BC (67%)* or *80–60 cal BC (1%)*
Poz-22842	53 – Roundhouse 2 – ring gully fill	sheep/goat humerus	2165 ±30	360–110 cal BC	*360–110 cal BC*
Poz-22959	28 – Roundhouse 1 – entrance post hole fill	cattle ulna fragment	2455 ±35	760–410 cal BC	*760–680 cal BC (26%)* or *670–410 cal BC (69%)*
Poz-22960	96 – Roundhouse 3 – ring gully fill	cattle metatarsal proximal	2155 ±35	360–60 cal BC	*360–270 cal BC (30%)* or *260–90 cal BC (64%)* or *70–60 cal BC (1%)*
Poz-22738	130 – Roundhouse 5 – ring gully fill	carbonised residue	2135 ±35	360–50 cal BC	*360–290 cal BC (14%)* or *230–50 cal BC (81%)*
Wk-16374	Enclosure C – primary fill	Bos Taurus humerus	2186 ±35	380–160 cal BC	*370–160 cal BC (94%)* or *130–120 cal BC (1%)*
Wk-16376	Roundhouse 13 Phase 1 – primary fill	Bos Taurus meta carpal	2259 ±37	400–200 cal BC	*400–340 cal BC (21%)* or *330–200 cal BC (74%)*
NZA-10142	3250 – Four-post structure F5028	charred grain	2292 ±60	520–190 cal BC	*410–190 cal BC*
NZA-10236	3046 – Roundhouse F5001	cattle radius	2270 ±70	520–110 cal BC	*410–160 cal BC*
NZA-10237	3069 – Bronze Age ditch F5008	cattle radius	3076 ±60	1500–1130 cal BC	*1460–1120 cal BC*
NZA-10238	3319 – Roundhouse F5003	cattle metacarpal	2167 ±60	380–50 cal BC	*370–50 cal BC*
NZA-10447	3271 – Terminal of Bronze Age ditch F5008	cattle phalanx	1989 ±60	170 cal BC–cal AD 130	*170 cal BC–cal AD 120*

Figure 4 Radiocarbon results

Excavation Results

Pre-Iron Age Activity

Lithic scatters
A background scatter of *c.*300 struck flints provided evidence of intermittent activities on the site over a considerable time period. Much of the assemblage comprised flakes and other waste pieces, although diagnostic tools included a small collection of blades, scrapers and a single arrowhead. The patinated condition of the blades suggests an early date and could potentially indicate activity from the Upper Palaeolithic period. A fine arrowhead provided evidence of Neolithic activity on the site and, in contrast to the rest of the assemblage, was made of exotic material (see below p94). Bronze Age activity was indicated by a range of scrapers and a plano-convex knife.

Late Bronze Age pit
Occupation during the Late Bronze Age was represented by a large, oval pit (Cut 436), revealed in Area B. This feature contained a small assemblage of pottery sherds and animal bone. The remains of an enclosure dated to the Middle Bronze Age reflected some of the earliest activity to the east, at Elms Farm (Charles *et al* 2000). Although isolated, the pit at Manor Farm provides evidence of continued Bronze Age activity in the area.

The Iron Age Settlement
Area A
Phase 1

Open Settlement
The remains of three very truncated roundhouses appear to indicate the existence of a small open settlement pre-dating the main phases of enclosure in Area A. Although the remains of all three buildings apparently associated with this early phase lie within the bounds of Enclosure C, their positioning suggests they were not contemporary. Both Roundhouses 4 and 6 lie in close proximity to the inner edge of the enclosure ditch, an area that seems highly likely to have been occupied by an inner bank. In addition the northern side of Roundhouse 4 appears to have been removed during the ditch construction, making this building earlier at least. The general similarity of the three buildings included in this phase of activity suggests broadly contemporaneous use although the limited stratigraphic evidence available suggests a degree of chronological change within the group.

Pits
Two pits (184 and 228) clearly pre-dated the construction of Roundhouse 4, both situated on the curve of the buildings ring gully. It is possible that both were associated with activity relating to Roundhouse 6 or 7, suggesting that Roundhouse 4 was a later addition, although due to the lack of datable evidence from this phase this must be a tentative interpretation.

Pit 184 was a large square feature (1.40 x 1.00m) with steep, *c.*0.30m deep sides and a flat base. The majority of 184 survived within the circuit of the Roundhouse 4 gully, which had only slightly truncated the pit's western edge. The pit was packed with large fire-cracked cobbles and charcoal and most likely represents a hearth or cooking pit although evidence of *in-situ* burning was minimal. A possible rubbing stone (SF26) was recovered from this feature.

Pit 228 was revealed below the three phases of the Roundhouse 4 gully in this part of the building, approximately 8m north of Pit 184. This was sub-circular in plan, approximately 1m in diameter and 0.5m in depth. The single fill contained heat cracked stones, animal bones and part of a globular pottery vessel.

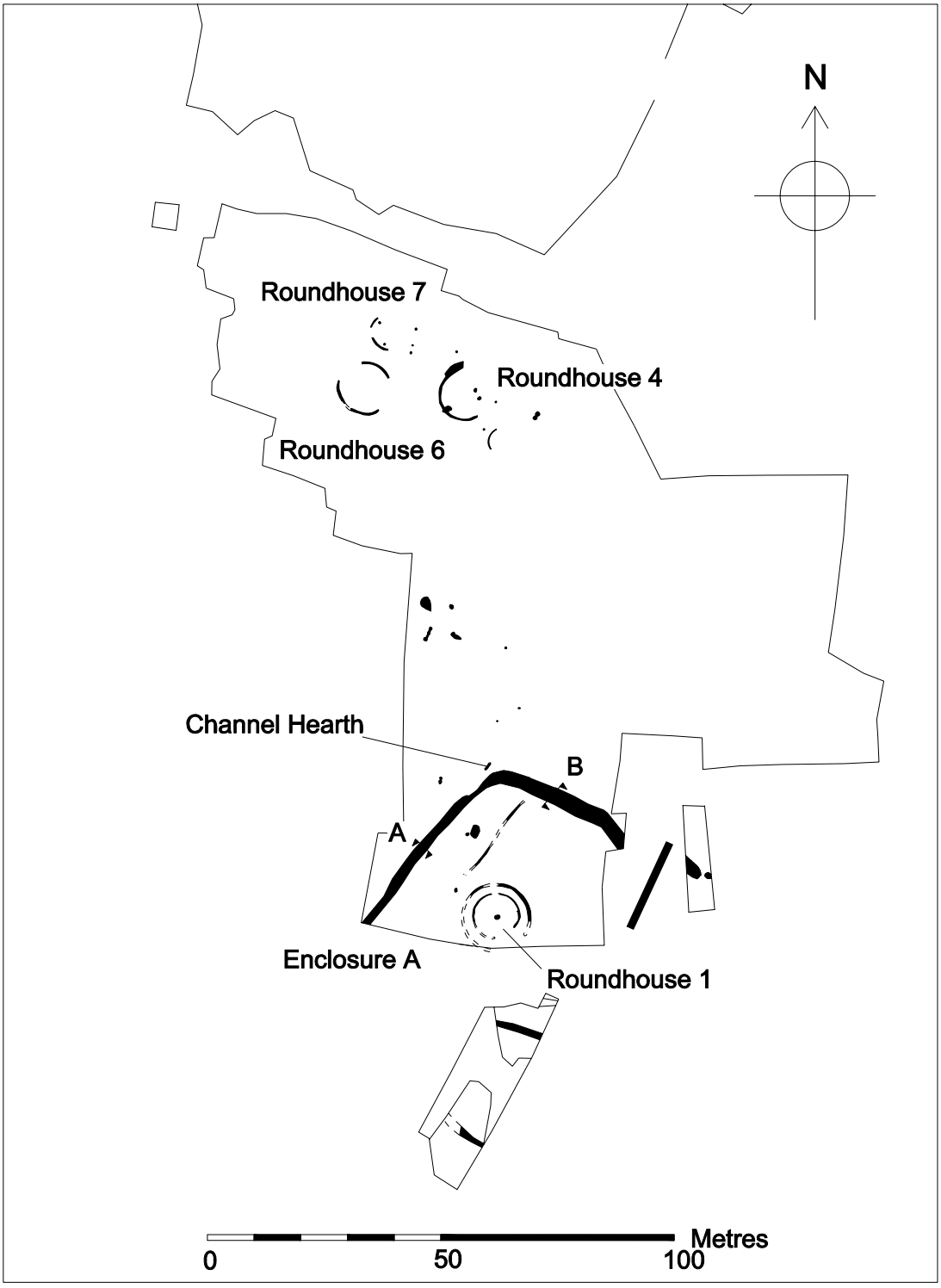

Figure 5 Area A – Phases 1 and 2

Roundhouse 4 and associated features

Roundhouse 4 was represented by a penannular eaves drip gully (Cut 160) demarcating an area of *c.*11m in diameter. The building had an east-facing entrance, the northern side of which had been removed during the construction of Enclosure C (see below). Survival of the eaves drip gully was variable, ranging from only 0.05m deep in the southern section, to 0.30m in depth to the north. Where survival was best, 160 was up to 1m wide with a broad 'U'-shaped profile. Evidence for maintenance of the gully was revealed in the northern quarter of the circuit which had been partially redefined on two occasions (Cuts 165 and 193). 165 was 0.35m deep with a well-defined 'U'-shaped profile. 193

had a similar profile but was only 0.15m deep. Cut 193 was also associated with a post-hole (Cut 167) that was situated close to the gully end. No evidence was recovered for any internal features associated with the building although the vestiges of two post-holes, approximately 1.9m apart, on the eastern side of the building may have related to a former entrance. Quantities of Iron Age pottery and animal bone were recovered from the roundhouse gully and its recuts. Of note was a large portion of pot base that was recovered from the surviving entrance terminal of Cut 160, a broken quern stone fragment was found in the upper portion of Cut 165 and a bone 'scoop' (SF83) came from Cut 193. Limited information for plant remains, including only two cereal grains and weed seeds, was recovered from this building.

Roundhouse 6
Roundhouse 6 lay approximately 13m to the west of Roundhouse 4 and comprised a penannular gully (Cut 109) with a *c.*10.5m diameter. An east-facing entrance some 6.5m wide was defined by the two rounded gully terminals, the southernmost of which had been cut by the Roundhouse 5 ring gully. The profile of 109 was generally 'V'-shaped, between 0.20m and 0.35m deep, although survival was variable as a result of plough damage, a section to the rear of the building having been completely removed. No internal features survived within this building. A single fill was present in the gully, containing moderate levels of charcoal throughout. Low quantities of pottery and animal bone were recovered from this building although in contrast, a relatively dense concentration of cobbles was revealed in the northernmost gully terminal.

Roundhouse 7
Slightly north of Roundhouse 6 a very truncated section of curving gully (Cut 172) indicated the probable location of a third building (Roundhouse 7). This partially surviving gully had a shallow (*c.*0.10m deep), rounded profile and formed a broken arc with its open side facing to the east. Within the curve of the gully were two post-holes, one at either end of the arc, which were probably the remains of an associated structure. The degree of truncation that these features had suffered made the form of this building difficult to interpret. Given the variation of structural evidence from other parts of the site, it is equally possible that these remains represent a fully or semi-circular building. No finds were associated with this building although weed seeds similar to those recovered from Roundhouse 4 were present.

Other features
A scatter of post-holes and a short length of curving gully were located in the immediate vicinity of the three buildings, at least some of them apparently relating to short sections of fencing. Their connection to any particular phase is difficult to prove.

Phase 2

Enclosure A and associated features.

Enclosure A – Phase I
Enclosure A was located in the southernmost part of the site and had developed over two phases. In the first phase Enclosure A was represented by a steep-sided ditch (242=248) with a broad 'V'-shaped profile (on average 2m wide and 1m deep) defining a roughly square area of *c.*48m x 46m (*c.*0.25ha). A single ditch terminal was revealed, indicating the presence of an entrance in the north-eastern corner of the enclosure. A second entrance in the opposite (north west) corner of the enclosure was suggested by a distinct narrowing of the ditch circuit although excavation in this area did not provide conclusive evidence for this. With the exception of a few pottery and animal bone fragments from the northern ditch section, very little artefactual evidence was recovered from this ditch.

Roundhouse 1
Roundhouse 1 was located centrally within the first phase of Enclosure A and had a south south-east facing entrance. This building was notable in having a well-preserved penannular wall slot (*c.*9.5m diameter) in addition to an outer eaves drip gully (*c.*13.5m diameter).

Wall Slot
The wall slot (7) had a sharp, narrow 'U'-shaped profile (*c.*0.20m wide x between 0.25m and 0.53m deep) with near vertical sides and a slightly rounded base. A south south-east facing entrance to the building was defined by a *c.*4.5m break in the slot circuit. The western side of the entrance had been removed by ploughing, however on the opposite side the threshold was represented by a post-hole (29 - *c.*0.6m diameter by 0.40m deep) that lay at the end of the wall slot. Animal bone and pottery were recovered from the base of the post-hole which also contained quantities of charcoal within its fill. A concentration of packing stones was also recovered from the post-hole, some of which were revealed to be broken quern stone fragments and rubbers. A small assemblage of pottery was recovered from the wall slot but otherwise the fills were relatively artefact-free. Quantities of charcoal were recorded throughout, although a distinct concentration was apparent close to the buildings entrance, according with a similar density from the corresponding entrance post-hole. A second concentration of charcoal was also revealed at the rear of the building, alongside burnt bone, although this is likely to have been disturbed from a steep-sided circular feature (55) that had been truncated by the wall slot. A cattle ulna fragment from the entrance post-hole produced an estimated date of 760-410 cal BC (Poz-22959).

Central Hearth (Plate 1)
An oval-shaped hearth (5 – 1.3m x 0.94m x 0.15m deep) lay in the centre of Roundhouse 1. A small deposit at the base of this feature had apparently been burnt *in-situ* and contained grains, weed seeds and fragments of spelt wheat indicative of localised de-husking and cleaning of wheat for consumption. Above this, another burnt fill contained two large saddle quern stones (SF 22 and 23) within a concentration of smaller cobbles, some of which were burnt. Both querns had been inverted and placed with the grinding surface down within the hearth fill. One of the querns, (SF22), had regular pecking marks on the exposed face, apparently caused during re-use as an anvil stone. This apparent change in function is supported by the high levels of hammerscale from the surrounding fills, indicative of iron smithing. A final fill also contained quantities of burnt stones and occasional charcoal. Large amounts of fired clay fragments were also recovered from both upper fills of this feature.

Plate 1 Quernstones found in the Roundhouse 1 hearth

Post-holes
Two post-holes were located within the perimeter of the Roundhouse 1 wall slot. On the western side a circular post-hole (*c.*0.5m diameter and 0.27m deep) lay adjacent to the inner edge of 7. On the opposite side of the building a smaller post-hole (60 – 0.18m in diameter and 0.15m deep) lay in a similar position against the wall slot.

Eaves drip gully
A penannular eaves drip gully (10) defined the outer perimeter of Roundhouse 1, located some 1.5m from the wall slot. This gully varied in width between 0.45m and 0.65m but generally had a shallow, 'U'-shaped profile, *c.*0.20m in depth. No finds were recovered from this feature although a low density of charcoal was present throughout. Single numbers of charred cereal grains were also recovered from areas close to the buildings entrance and to the rear of the building, opposite the entrance.

Other Features within Enclosure A
To the rear of Roundhouse 1 a slightly sinous gully (20) was intermittently evident over a distance of *c.*20.6m. This feature was *c.*0.50m wide and had a shallow, 'U'-shaped profile, approximately 0.25m deep. No finds were recovered from this gully.

A scatter of pits was also located behind Roundhouse 1. Close to the southern end of gully 20, a small oval pit (243 – 0.13m deep) was located. Further north a larger, sub-circular pit (27 – 3.5m x 2.5m x 0.4m deep) lay adjacent to another small oval pit (40). The larger pit contained a varied finds assemblage including quantities of burnt stone, charcoal, animal bone, pottery and flint.

Features immediately outside Enclosure A
Several features were located on the outside of Enclosure A, in the vicinity of the putative north-western entrance and may have been related to this phase of the sites occupation.

Two-post structure

An apparently related pair of small pits or post-holes (42 and 44) lay on the southern side of the 'entrance'. These were both oval in plan and very shallow (only 0.1m deep) but may represent the truncated remains of a two-post structure. Charcoal and a single sherd of pottery were recovered from these features.

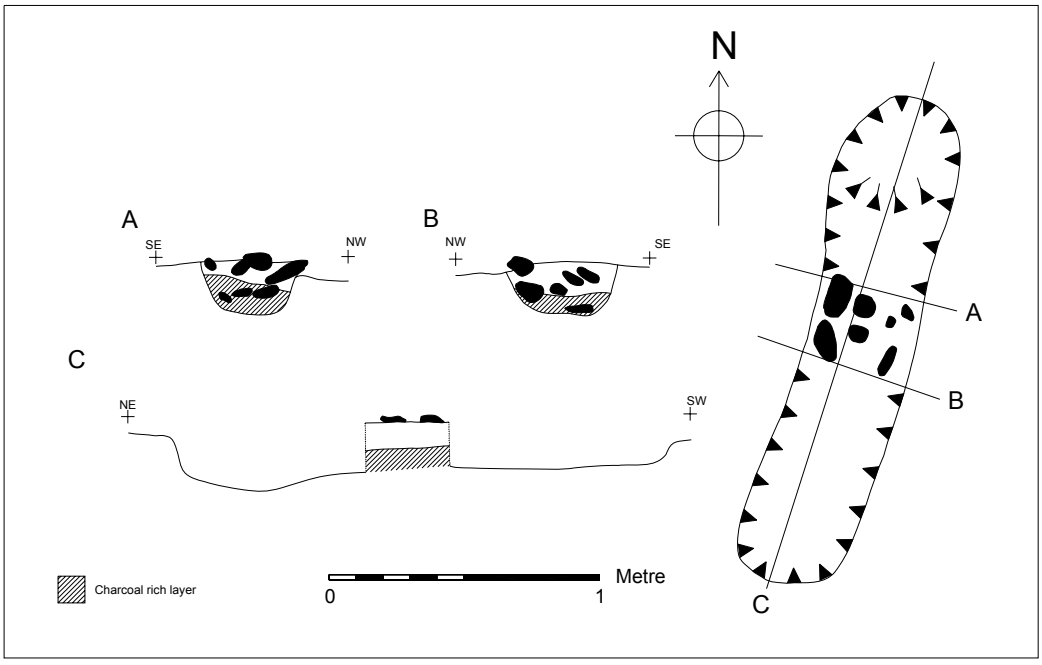

Figure 6 Area A – Phase 2 Channel Hearth

Iron working 'channel hearth'
On the northern side of the 'entrance' an enigmatic short linear feature (38) may have been the remains of a 'channel hearth' probably used for smithing (Figure 6, Plate 2). This was sub-rectangular in plan, measuring *c.*1.9m x 0.47m and 0.2m deep, and had steep sides leading to a flat base. The northern end of the feature had been subjected to heat and was noticeably more regular than other areas, adopting a

square shape that was also slightly deeper. The feature was distinguished by the large concentrations of burnt stones and charcoal with which it was filled. Concentrations of spheroidal hammerscale from the hearth suggest that it was used for primary smithing of iron bloom. A burnt quern stone fragment (SF84) was recovered from this feature.

Plate 2 The 'channel hearth' during excavation

Enclosure A – Phase II
Subsequently Enclosure A was re-planned and the area extended to form a large rectangle measuring *c.*48m x 68m (*c.*0.37ha). The original square shaped enclosure ditch appears to have become largely infilled before being redefined. The second phase enclosure was defined by a slightly less substantial ditch with a more rounded profile (244=322) that was on average 1.5m wide and 0.70m deep. The north-eastern enclosure entrance was retained although the putative entrance in the north-western corner was sealed by the second phase ditch. As with the first phase of this enclosure, finds from the surrounding ditch were scarce, with the exception of a small collection of pottery and animal bone from the western side.

Phase 3
In this phase a pair of rectangular ditched enclosures (Enclosures C and D) was created in the northernmost part of Area A. They were apparently built together, sharing a common orientation and size, and are considered contemporary and of similar function.

Enclosure C
Enclosure C was built in the area formerly occupied by the Phase 1 open settlement. It was a large rectangular enclosure defined by a substantial 'V'-shaped ditch (Cut 254) which demarcated an area measuring approximately 45m x 30m (*c.*0.13ha). A north-easterly facing entrance to the enclosure was defined by a *c.*6m wide gap in the ditch circuit, located close to the eastern corner. The enclosure ditch was remarkably consistent in dimension measuring on average 3m in width by 1.80m deep around much of the circuit. Towards the enclosure entrance however the ditch became noticeably narrower and shallower, measuring *c.*2.20m wide x 1.20m deep by the time it had terminated. Enclosure C was evidently the result of a single phase of use, the ditch fills representing gradual infilling over time with

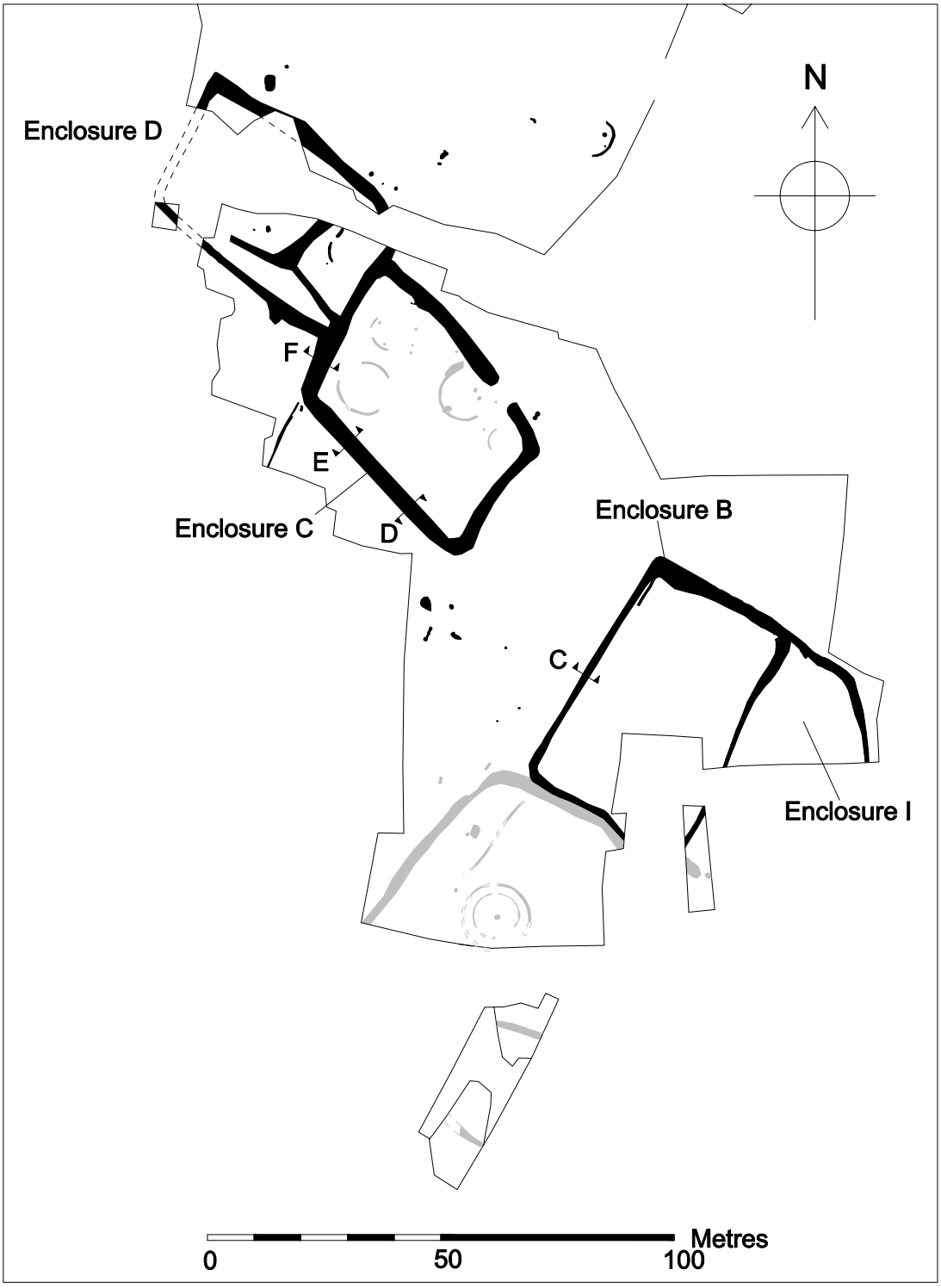

Figure 7 Area A – Phase 3

no evidence for recutting. The evenly layered nature of the ditch fills gave little clue as to the presence of an internal bank although it seems likely that one existed. Pottery and animal bone were recovered from the early fills of the enclosure ditch although in very small amounts. A radiocarbon date obtained from cattle bone within a primary fill of Enclosure C estimated a Middle Iron Age date of 380BC to 160BC (Wk16374) for its construction.

Enclosure D

Enclosure D was conjoined to the western side of Enclosure C but was offset to the north. This enclosure was also rectangular in plan and defined by a substantial boundary ditch (270=291=899) measuring *c.*30m x *c.*46m (*c.*0.13ha). 270 had a broad U-shaped profile that was on average *c.*2.9m

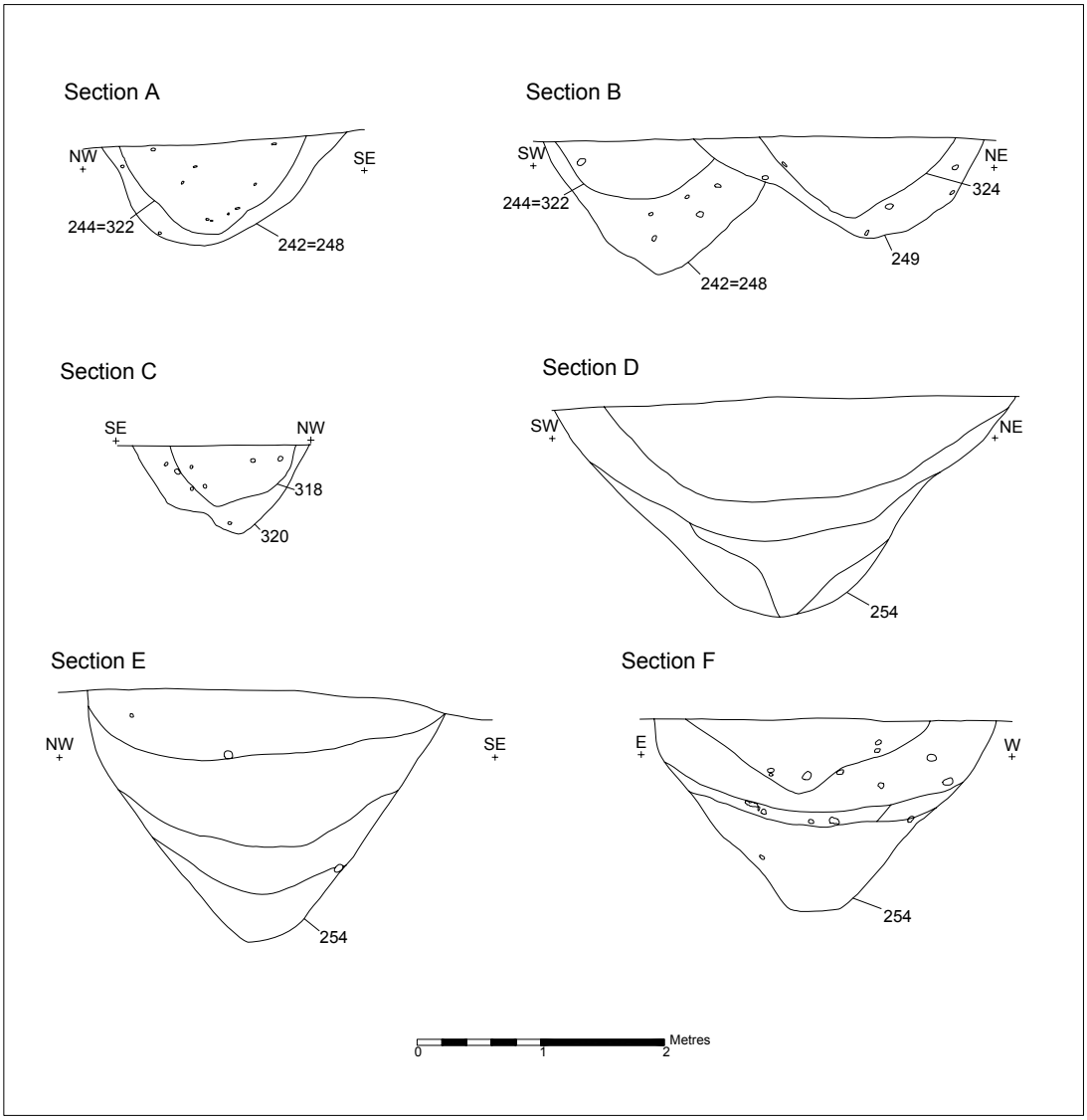

Figure 8 Area A section drawings

wide and *c.*1.3m deep. No entrance to the enclosure was revealed, although surrounding stratigraphic evidence suggests that access may have been admitted through a gap in the eastern corner. The single ditch fill revealed in 270 suggested rapid backfilling once the enclosure had gone out of use. With the exception of a few pottery sherds from the southern side of the enclosure, the ditch was finds-free.

The internal space of Enclosure D was sub-divided by two ditches (274 and 286) which would have organised movement as well as providing further drainage in what was (during the excavation) a particularly wet area of the site. 286 was only partially revealed but had a wide U-shaped profile (*c.*2.9m wide and *c.*1.20m deep) that appeared to form a right-angled boundary adjacent to the northern edge of Enclosure D. 286 was linked directly to the western edge of Enclosure C by a relatively shallow, U-shaped ditch (274 - *c.*1.6m x *c.*0.4m deep) that had been recut once (277) according to a similar profile. No finds were recovered from these ditches.

Two elongated pits (201 and 205) were located in the eastern quadrant of Enclosure D, both of which were irregularly shaped and shallow. Pottery, charcoal and animal bone were recovered from 201 but

in low quantities. It is possible they once formed part of a semi-circular arrangement, perhaps providing a base for a fence or hedge.

Enclosure B
Enclosure B was a more regular and slightly larger rectangular enclosure with rounded corners, situated some 35m east of Enclosure C. This enclosure measured *c.*49m x *c.*32m (*c.*0.17ha) and was demarcated by a steep sided, V-shaped ditch (249=320) that ranged in width from *c.*1.4 – 2m in width and 0.6 – 0.8m in depth. Enclosure B was oriented in such a way that it lay at right angles to Enclosure C although the northern edges of both shared a similar alignment. The southern side of the enclosure was also aligned on the backfilled (but apparently still evident) northern edge of Enclosure A, which it partially truncated. No evidence for an entrance was revealed although if Enclosure B was broadly contemporary with Enclosures C and D, it might be suggested that access could have existed on the northern side, as located within the other boundaries. A scatter of charcoal flecks was apparent within the single enclosure ditch fill but no artefacts were recovered.

After the initial boundary phase of Enclosure B had filled in the enclosure was redefined according to the same plan. This second phase was represented by a smaller scale ditch (318=324) with a V-shaped profile, measuring between *c.*0.6 – 1.6m wide and *c.*0.4 – 0.6m deep. As with the previous phase of this enclosure, although occasional charcoal flecks were observed, no artefacts were recovered, perhaps indicating this was set away from the main dwelling areas of the settlement.

Enclosure I
Enclosure I was only partially revealed but appears to have been broadly contemporary with Enclosure B. This enclosure was defined by a wide and shallow U-shaped ditch (1017) measuring *c.*1.8m wide x 0.50m deep. The ditch apparently originated from the north-east corner of Enclosure B although later recuts had obscured the full stratigraphic relationship. The ditch shared a common alignment with Enclosure B for approximately 17m before turning southwards and continuing into the unexcavated area. The eastern edge of Enclosure B seems to have been shared by Enclosure I, providing further evidence of broad contemporaneity. In common with the other enclosures relating to this phase, little artefactual evidence was recovered from ditch 1017.

Phase 4
After the Phase 3 enclosures had gone out of use the area underwent a final period of reorganisation in which various elements of the former boundary system were redefined, creating a series of smaller enclosures (E, J and K). Principally this involved the creation of a new boundary ditch that recut the northern edges of Enclosures B and C, effectively joining these two areas together, and acted as a spine for the new, loosely enclosed areas.

Boundary Ditch
The focus of activity in the latest phase was a boundary ditch (265) that was located along the northern edges of the, by now largely infilled, Enclosures B, C and D. This ditch effectively sealed the former entrance of Enclosure C and stratigraphic evidence suggests the same for Enclosure D. The eastern limit of the boundary formed one edge of a loosely enclosed area (Enclosure K) that re-used the northern half of Enclosure B and a redefinition of Enclosure D formed the western side of the complex.

Environmental information from the ditch fills suggests that these new areas were constructed in an open environment with probable grassland pasture nearby.

In contrast to the enclosure ditches through which it was cut, ditch 265 was generally less imposing, measuring on average *c.*2m in width x 1.2m in depth with a broad U-shaped profile. Also in contrast to the earlier ditches, the fills of 265 contained much more domestic debris, illustrating its proximity to areas of occupation. Areas of the ditch that lay adjacent to the main buildings (Roundhouses 2, 3 and 5) yielded particularly rich assemblages of finds including pottery, animal bone and burnt stones. A fragment of Cheshire briquetage from the eastern boundary of Enclosure E indicated importation of salt and wide-ranging trade links. Of particular note a large finds collection adjacent to Roundhouse 5 contained a group of partially worked red deer antler that had been deposited alongside other animal bone and a large assemblage of pottery (Plate 3). The ceramic repertoire included Late Iron Age forms and decoration that displayed affinities with the Aylesford Swarling and La Tène traditions. These finds came from one of the final fills of ditch 265 indicating that their deposition was one of the very

final episodes of activity on this part of the site. A radiocarbon date on carbonised pottery residue from these deposits estimates that the ditch was becoming infilled between 170 cal BC and cal AD 10 (Poz-22739).

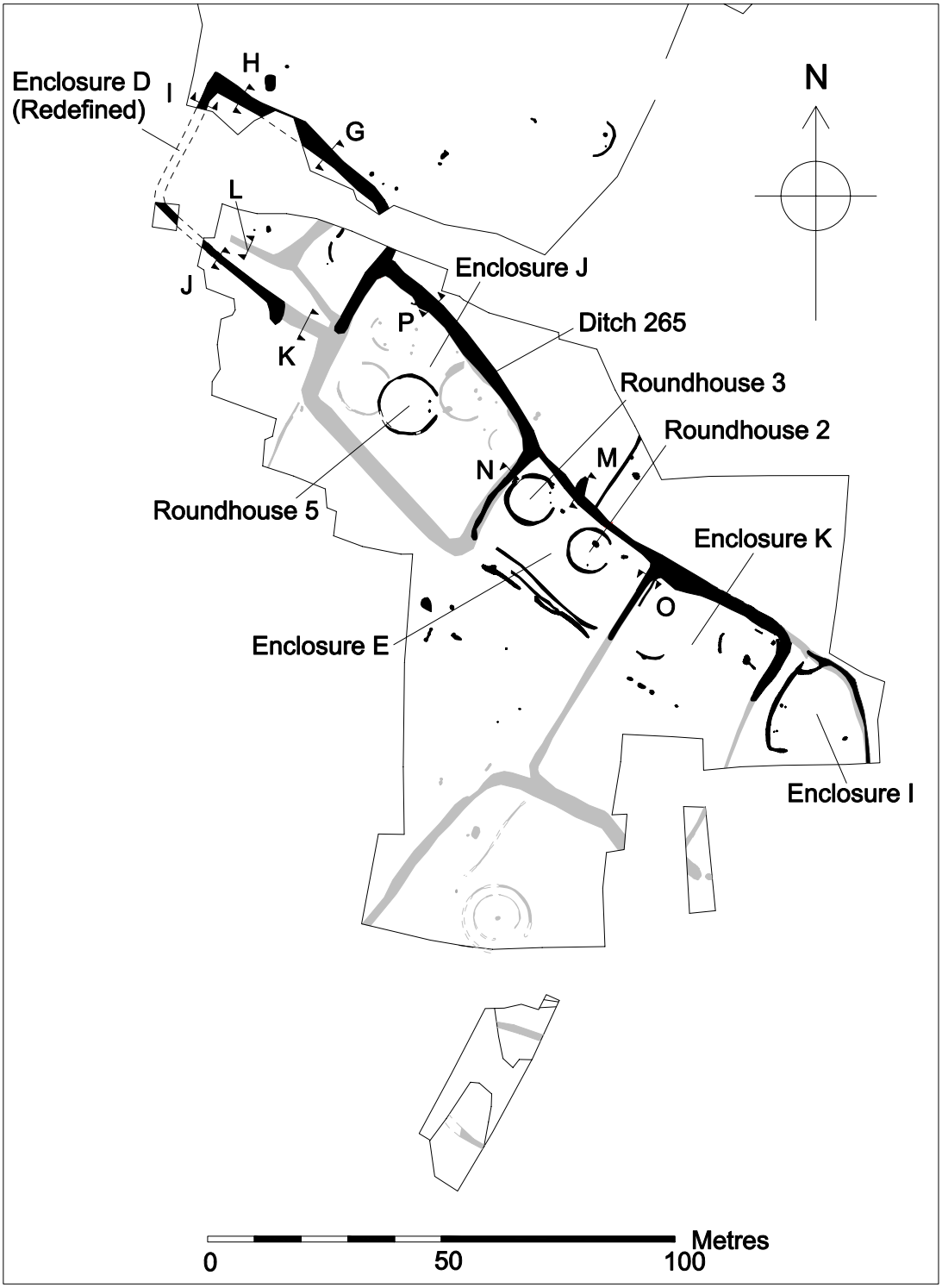

Figure 9 Area A – Phase 4

Plate 3 Excavation of red deer antler from Ditch 265

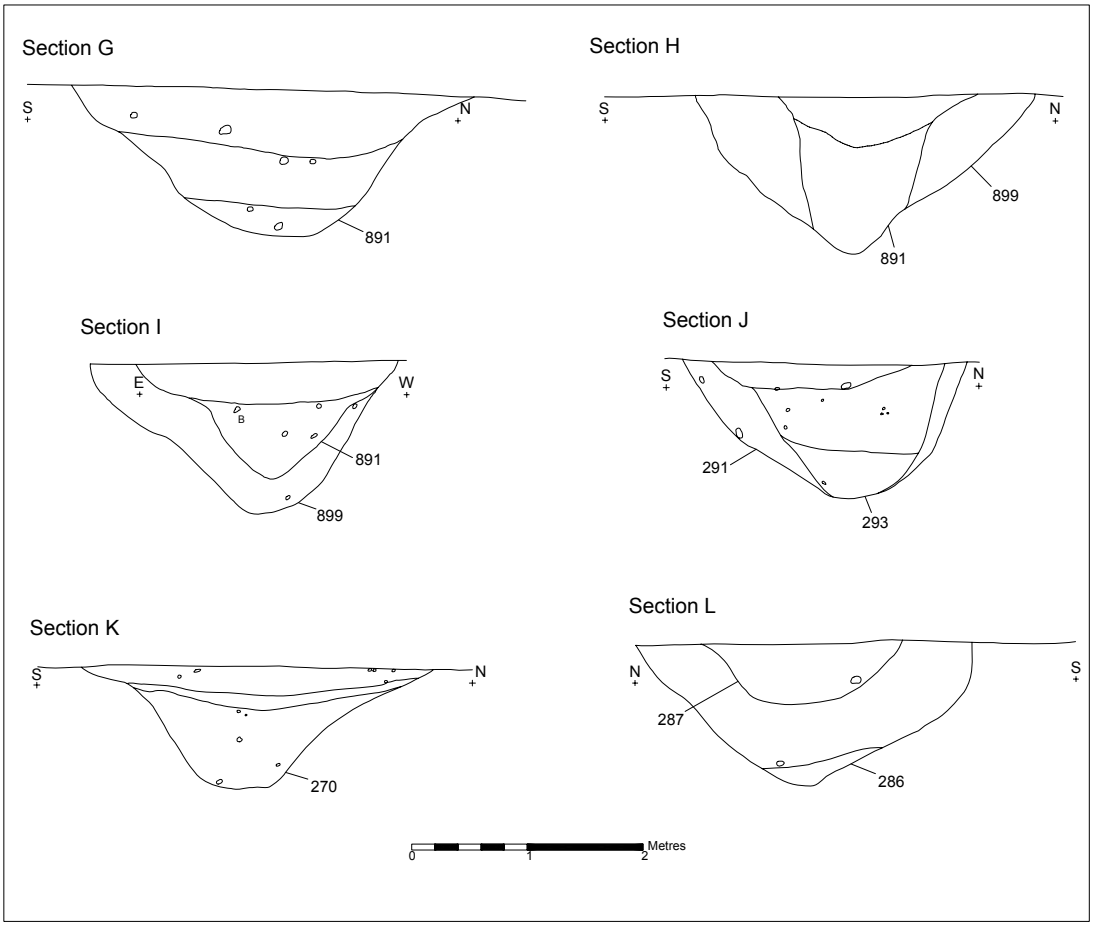

Figure 10 Area A section drawings

Although largely infilled the ditch must have remained evident as a landscape feature for some time after occupation had ceased on the site and a collection of late 1st/early 2nd century AD finds including Samian ware pottery fragments had accumulated in the final silting of the boundary. Of particular interest, a small 'purse' group of three closely related early Roman coins showing the laureate head of Nero, had been deliberately placed in the top of ditch 265 at the northern corner point of Enclosure J. In the opposite corner, close to Roundhouse 3, a broken rotary quern fragment was recovered.

Enclosure E

Enclosure E was a sub-rectangular area located in the space between Enclosures B and C, measuring *c.*36m x *c.*18m (*c.*0.07ha), which contained a pair of apparently contemporaneous roundhouses (Roundhouse 2 and 3). Enclosure E was defined on three sides by a *c.*2m wide x 0.8m deep ditch with a variable U/V-shaped profile (265=297=231). The northern boundary to this area was a newly created length of ditch but the eastern and western ditches represented partial redefinition of ditches associated with Enclosures B and C respectively. In contrast the southern limits of Enclosure E were defined by a loose arrangement of linear gullies (63 and 149 together with a third feature unexcavated). These were narrow, sinuous boundaries, both of which terminated before reaching the associated ditch sections to the east and west, perhaps indicating access points in the southern corners of the enclosure. The excavated gullies both had similar broad, U-shaped profiles although gully 63 was slightly wider and deeper (*c.*0.8m x *c.*0.4m) than 149 (*c.*0.7m x *c.*0.25m) overall. The fill of 149 was relatively sterile and contained no finds. This contrasted sharply with the fill of 63, which was abundant in artefacts including concentrations of pottery, charcoal, animal bone (including a horse skull), quernstones (SF10 and SF11 – see Plate 4) and charred plant remains.

Plate 4 Quernstone group from Enclosure E

A surface of compacted cobbles (234 – *c.*3.5m x 1.7m x 0.1m deep) was located adjacent to the outer edge of the northern boundary of Enclosure E with which it was contemporary. The location of the surface, some 10m from the north-western corner of the enclosure, coincided with the entrance to Roundhouse 3 and may indicate a further point of access to the enclosure, possibly by means of a bridge or planking laid across the open ditch. A narrow U-shaped gully (116 – *c.*0.4m x 0.2m deep) running north-east – south-west away from the enclosure, lay close to the cobbled surface and may also have helped structure movement in and out of the area.

Roundhouse 2

Roundhouse 2 was represented by a *c.*8.8m diameter penannular eaves drip gully (45) with an east facing entrance. In general 45 had a broad U-shaped profile, between 0.45m and 0.72m wide, and varied in depth between 0.12m and 0.28m. A *c.*4m wide entrance to the building was defined by the opposing square-cut gully terminals. Quantities of pottery, animal bone and charcoal were recovered from all excavated sections of the gully, with notable concentrations in the northern and north eastern areas of the circuit. Small amounts of hammerscale from the northern gully terminal suggest nearby smithing activity. A relatively large assemblage of charred plant remains from this building included barley and cereal remains, as well as a noticeably abundant representation of onion couch grass tubers. The environmental remains concentrated in the buildings entrance and around the sides but were relatively absent from areas to the rear of the building. The quantities of charred plant remains from Roundhouse 2 suggest they originated from domestic scale food production.

Within the building a shallow ovoid pit (56 – 0.78m x 0.48m x 0.11m deep) lay inside the northern entrance terminal. This contained animal bone and substantial remains of a pottery vessel that had apparently been deposited whole, or near complete, and flattened *in-situ*. A probable post-hole (61) was located on the opposite side of the building, close to the eaves drip gully. An estimated date of 360-110 cal BC (Poz-22842) was produced from a sheep/goat sized humerus found within the buildings ring gully.

Approximately 3m from the entrance of Roundhouse 2 a tree-throw was located.

Roundhouse 3

Roundhouse 3 was situated approximately 6m to the rear of Roundhouse 2, placed snugly in the north-western corner of Enclosure E. This building consisted of a penannular eaves drip gully of two phases (161 and 82) and the truncated remains of two entrance post-holes (195 and 197) which provided some sense of the structures diameter. Remains of the earliest phase of eaves drip gully (161) only existed in the western and southern areas of the circuit, the rest having been completely removed during recutting. In the better areas of survival 161 had a steep sided, U-shaped profile with a flat base. Pottery, animal bone, charcoal and burnt stones were recovered from the fill. The second phase of this gully (82) encircled an area of *c.*9.5m diameter with a *c.*4m wide break in the eastern side creating an entrance. 82 was generally U-shaped in profile and varied in width between *c.*0.6 and *c.*0.8m but had a fairly consistent depth of *c.*0.3m. In general the fills were slightly darker and more charcoal-rich than those of the earlier phase and contained significant quantities of pottery, animal bone and burnt stone as well as a fragment of tap slag as evidence for metalworking in the buildings vicinity. Of note large fragments of a pottery vessel were found in the northern gully terminal alongside deposits of animal bone. Additionally a small amount of cereal grains, including barley, was recovered from this building, as well as weed seeds and a sloe stone as evidence for gathered food. The remains of two circular post-holes (195 and 197) lay *c.*0.5m inside the gully circumference and give some indication of the diameter of the Roundhouse 3 structure, which would have been *c.*8.4m.

A small oval pit (Cut 85) was located adjacent to the northern side of the Roundhouse 3 entrance, which it partially cut through. The pit was shallow (*c.*0.15m deep) and contained pottery and animal bone.

A probable hearth (202) was located approximately 1.5m from the southern entrance terminal. This was *c.*1m in diameter and *c.*0.1m deep and consisted of burnt stones, burnt clay and charcoal. A cattle metatarsal from the Roundhouse 3 ring gully produced an estimated date of 360-60 cal BC (Poz-22960).

Activity to the west of Enclosure E

Enclosure J

To the west of Enclosure E a similar area of occupation (Enclosure J) was created to the south of the main boundary ditch, in which a single roundhouse (Roundhouse 5) was situated. The western edge of Enclosure E formed one side of this partly enclosed area and the opposite side was created by partly recutting the western edge of Enclosure C. There was no apparent southern edge to Enclosure J which may have been left open or perhaps was defined by hedging.

Roundhouse 5

Roundhouse 5 was represented by a *c.*11.8m diameter penannular eaves drip gully with an east facing entrance (127, see Plate 5). Despite some plough truncation Roundhouse 5 was in a generally good state of preservation and revealed some evidence for general maintenance over time. Generally 127 had a deep (*c.*0.48m) 'V'-shaped profile, although in contrast it was shallower (*c.*0.28m deep) and more rounded at the rear of the building, to the west. Also in this area of the building the truncated remains of an earlier phase of gully suggested the former presence of a narrow gap within the circuit, situated diametrically opposite the entrance. At the front of the building the gully terminals were rounded and adopted a slightly wider profile with a pronounced 'U'-shape. Within the *c.*4m wide entrance to Roundhouse 5, the remains of a pair of recut threshold posts (175/188 and 178/189) were situated 1.5m from the inner edge of 127. The post-holes were oval-shaped and on average were 0.70m x 0.50m x 0.25m deep. No other structural remains were revealed although if the distance of the entrance posts from the eaves drip gully is extrapolated, a building with a diameter of *c.*9.7m can be suggested. Quantities of pottery and animal bone were recovered from all excavated sections of 127 as well as charcoal, burnt stones and fired clay, which included hand-moulded fragments of possible loomweights and part of a perforated, oven plate. A polished bone pin beater (SF12) provides further evidence for weaving and the presence of spheroidal hammerscale in the northern gully terminal suggests primary smithing in the vicinity of the building. Only very low numbers of charred plant remains were recovered. Carbonised residue on pottery produced an estimated date of 360-50 cal BC (Poz-22738) from the buildings ring gully.

Plate 5 Roundhouse 5 (foreground) and Roundhouse 6 to the rear

Redefinition of Enclosure D

The western limit of the Phase 4 complex consisted of a reworking of the Enclosure D remains. The enclosure was clearly recut in two separate phases although the precise chronology of the reworking is unclear. The end result of this remodelling however, was the redefinition and re-orientation of this

area. Ditch 265 apparently sealed a probable entrance in the north-eastern corner of the earlier enclosure but appears to have respected much of the earlier layout. Recuts were identified in all excavated sections of the Enclosure D ditches, except in the south-eastern corner where a new entrance may have been created. Here, a compacted cobble layer (*c.*0.15m thick) had been laid above the infilled remains of the former boundary, which may have acted as hardstanding for a new entrance. After this recut had almost filled in, the enclosure circuit was once more redefined by a sharp V-shaped ditch (293=891) measuring between 1.6 and 2m wide by *c.*1.3 m deep. This enclosure ditch also appeared to have been deliberately backfilled during a single event due to the consistency of its single fill. Limited amounts of charcoal, pottery and animal bone were recovered during the excavation of this ditch. A final layer of silting above the main ditch infill also contained small amounts of pottery.

Activity to the east of Enclosure E

Enclosure K

The northern half of Enclosure B was also redefined at this time, creating a smaller, rectangular area (Enclosure K) to the immediate east of Enclosure E. This area had similar dimensions to Enclosure E, measuring *c.*31m x *c.*21m (*c.*0.07ha) and was also defined on three sides by boundary ditch 265, which extended into this area. The southern side of Enclosure K was loosely marked by an alignment of shallow, oval pits (81 and 90 plus two unexcavated) that had average dimensions of *c.*1.5m x *c.*0.8m x *c.*0.20m deep.

A few features provided evidence for activities within the area. In the south-western corner a short section of curving gully (105) was approximately 7m long x 0.8m wide and had a steep sided U-shaped profile *c.*0.25m deep. Several concentrations of pottery were found along its length and a shale bead was recovered from the western end. A similar curving gully (unexcavated – *c.*4m in length) lay in the opposite corner of the enclosure. To the east of this was an irregularly shaped pit (1005) that had been recut on its northern side by a second, smaller pit (1000). Pottery, animal bone and burnt stones were recovered from the fill of 1000. Approximately 6m north of these features a small oval pit (1006-*c.*0.5 x 0.4m x 0.18m deep) was located.

Enclosure I was also modified at this time and a new north-east facing entrance created adjacent to the corner of Enclosure K. A new boundary ditch (1013) was aligned north-east to south-west and projected away from the new entrance. This ditch was relatively narrow (*c.*0.80m x 0.60m deep) with a steep sided U-shaped profile. Generally the feature was finds free although a distinct concentration of pottery was located at the southern butt-end. The function of this ditch is not entirely clear but if it was intended for use in conjunction with the eastern boundary of Enclosure K the two may have formed a stock management feature or funnelling system.

Unphased Features

Features south of Enclosure D

A scatter of features lay beyond the limits of the enclosed areas on the western side of Area A. These included several pits containing large amounts of burnt stones and a linear arrangement of post-holes set within a foundation slot that may have been the base of a short fence or wind break. Due to the general lack of stratigraphic information or datable finds, they cannot easily be placed within a single phase of the sites development. It is likely however, given the similar nature of the features (containing concentrations of burnt stones), that they were related to small-scale industrial activities carried out away from the main living areas.

Features immediately north of Enclosure D

A scatter of pits was located immediately outside Enclosure D to the NE. These were of varying size and several contained large amounts of burnt material including charcoal and burnt bone. Their close proximity to the enclosure ditch suggests they may be the remains of contemporary activities. They may also, however, reflect either earlier or later use of the site.

Semi-circular gully and associated features.

Mid-way between Areas A and B a semi-circular gully (801) may have been the remains of another structure or wind-break. The gully was generally 0.40m wide and between 0.20 and 0.30m deep with a steep-sided U-shaped profile. Within the arc two small pits or post-holes (803 and 805) were located. No finds were associated with any of these features although fills of the gully contained occasional charcoal flecks.

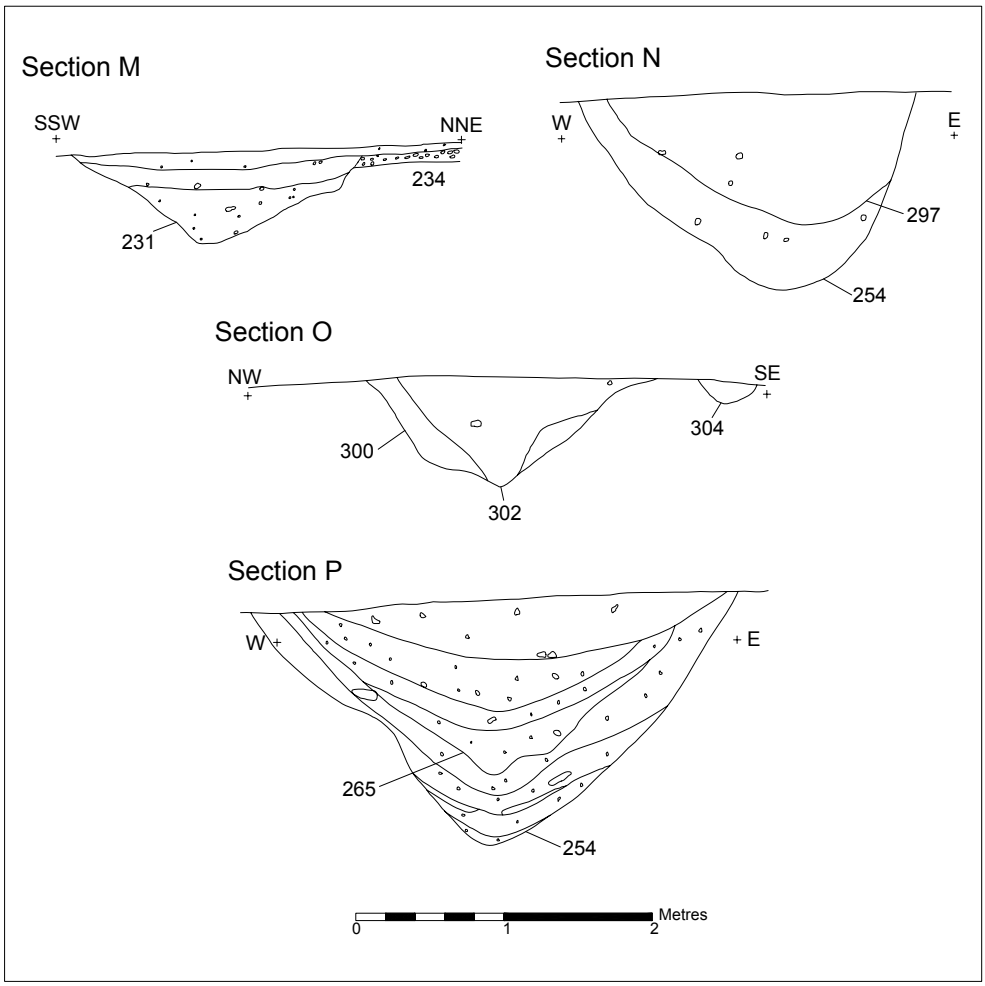

Figure 11 Area A section drawings

Area B (Figure 12)
The morphology of the remains in Area B was very different from that of Area A-essentially an unenclosed or 'open' settlement with very few stratigraphic relationships between features. The remains clearly respected a linear boundary on the northern edge of the site and apparently have a clear (but undefined) boundary to the south. Phasing the development of Area B is problematic due to the lack of inter-cutting features. Whilst this may suggest that very few phases of activity are represented, it is equally likely that settlement spread over time may account for the large number of structural features.

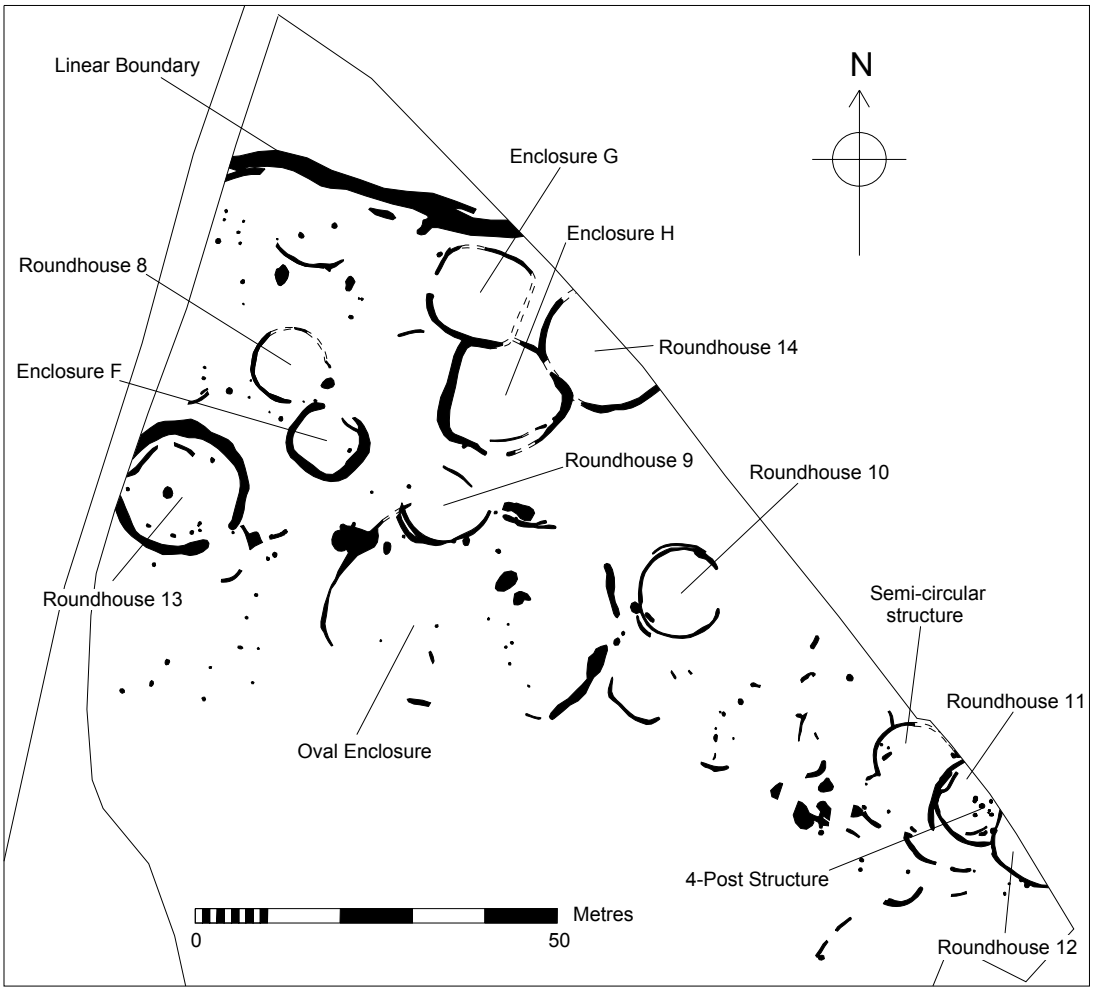

Figure 12 Area B – All excavated features

Linear Boundary
The linear arrangement of the settlement remains in Area B appears to have developed in respect of a sinuous boundary that apparently formed the northern limit of occupation. A *c.*40m section was revealed during the excavations and further evidence for its continuation to the east and west has been revealed as a result of subsequent geophysical survey (Butler 2001, Thomas 2004). Excavation revealed that the boundary was long lived and had a history of renewal, with at least four distinct phases of use (Figure 13-Cuts 900, 902, 902a and 905). Small amounts of charcoal, pottery and animal bone were found in excavated sections of all three phases. Over time the boundary maintained a broadly unchanged alignment although the character of the feature changed from being a broad shallow ditch initially, to later become a smaller, gully-type feature. Evidently from the features characteristics, the importance of the boundary did not lie in its defensive qualities, however it clearly marked a defining point in the landscape of the settlement. The distinct lack of evidence for settlement on the northern side of the boundary suggests that it marked a point in the landscape beyond which it was not acceptable to occupy. The closely respected line of the boundary appears to have played a defining

role in the linear development of settlement, perhaps also reflected in the very clear break in activity on the southern edge of the occupied zone.

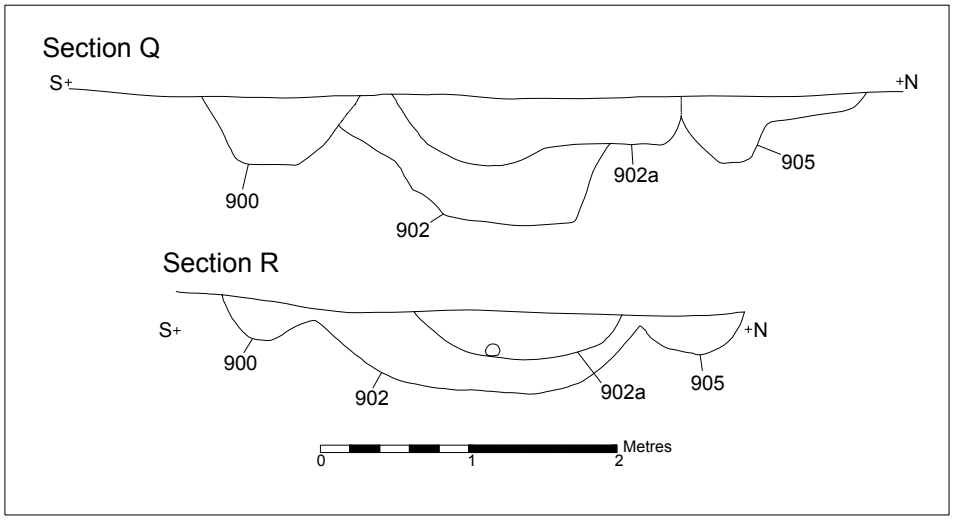

Figure 13 Linear boundary – section drawings

Roundhouse 13 (Figure 14, Plate 6)
Roundhouse 13 was one of the largest buildings revealed during the excavation and lay on the westernmost edge of Area B. It comprised two separate phases of activity, the latest of which represented a large timber building some 13m in diameter within an enclosing eaves drip ditch with a diameter of *c.*17m.

The initial phase was represented by a narrow, V-shaped construction ditch (Cut 415), that may have originally supported a timber palisade, encircling an area of approximately 255 square metres (0.2ha). The ditch was on average *c.*1.10m deep with an estimated upper width of 0.60-0.80m and no more than *c.*0.10m width at the base. Two breaks in the ditch circuit defined an entrance to the north (approximately 5.8m wide) and a narrower eastern entrance measuring *c.*4.3m wide. No other features were obviously linked with this phase of the structures use. Several episodes of infilling, particularly noticeable on the eastern side of the building, suggested that the original phase of Roundhouse 13 may have been allowed to fill gradually after going out of use. However this was in contrast to the available evidence from other parts of the ditch circuit where the presence of only a single fill suggested more deliberate backfilling, perhaps over a single episode. Interestingly, apart from one excavated section on the northern side of Roundhouse 13 which contained a group of animal bones, the rest of the finds assemblage from this phase (mainly consisting of pottery and animal bone) concentrated around the eastern entrance, coinciding with excavated areas that were filled with more than one deposit. A date of 400-200 cal BC (Wk-16376) was estimated for this phase of the buildings use.

Plate 6 Roundhouse 13 following sample-excavation

Following the backfilling of 415 the original circuit area of Roundhouse 13 was redefined by a substantial penannular ditch (Cut 414) that maintained the east-facing entrance but effectively sealed the northern entrance of the earlier phase. In contrast to the sharp, narrow profile of the original boundary, Cut 414 was broad and U-shaped measuring *c.*1.20m wide x *c.*0.60m deep. This phase appears to have ultimately been backfilled in a single episode, possibly as a final act of abandonment. The fill of 414 was remarkably rich in finds, accounting for the largest assemblages of pottery and animal bone from a single structure on the site (see Plate 7). Although the entire circuit of the ditch was finds-rich there was a particular concentration on the northern side, consisting of a substantial deposit of whole, or near complete pottery vessels, animal bone, fired clay and burnt stone that lay in a thick band along the base of the recut ditch. The location of this large deposit coincided with the position of the earlier northern entrance, suggesting that this area of the building had been deliberately chosen for deposition. Also of note on the opposite side of the building a cast bronze 'Thurrock type' coin (potin) was found in the same levels. Carbonised residue on pottery produced an estimated radiocarbon date of 360-60 cal BC (Poz-22740) for this later phase of the buildings use.

Internal features

A loose arrangement of very truncated post-holes (Cuts 463, 459, 461, 465, 469, 471 and 489) formed an incomplete circle of *c.*13m in diameter within the enclosing ditch. These were typically *c.*0.30m round x *c.*0.20m deep and yielded very few finds. Evidently these features had been damaged by later ploughing but it seems likely that they represent the structural remains of a large roundhouse. The post circle was best preserved in the southern half of the building and a distinct clustering close to the corresponding entrance terminal may indicate the location of a threshold structure. A gap in the post circle to the rear of the building contained the ephemeral remains of a shallow curvilinear gully (Cut 507) which contained Iron Age pottery and fuel ash slag, and may also have related to the Roundhouse 13 structure. Lying slightly off-centre to the post circle was a large circular pit (Cut 539 - *c.*1.8m in diameter x 0.30m deep) with vertical sides and a flat base. It is possible that this represents the remains of a central hearth within the roundhouse. A relatively large pottery assemblage of 119 sherds was recovered from this feature, as well as broken fragments of fired clay. It was also the most productive feature from Roundhouse 13 for charred plant remains, containing glumes of spelt and other cereal grains, and weed seeds including brome grass.

Features immediately outside Roundhouse 13
A group of features situated to the immediate south-east of Roundhouse 13 appeared to cluster around the buildings entrance and may have been contemporary, perhaps in part serving to enhance the frontage.

Adjacent to the eastern side of Roundhouse 13 two short lengths of curving gully (822 and 543) may have related to a screen in front of the buildings entrance. Both were fairly shallow and, other than a handful of pottery fragments, were relatively finds free. Gully 543 was cut on its eastern side by a large flat-based pit (541) that contained a large amount of pottery and animal bone.

Slightly to the east of pit 541 a possible two-post structure was represented by a pair of similarly sized post-holes (812 and 814) spaced *c.*1m apart.

Cut 806 was a curving pit or short gully measuring 2.70m long x 0.45m wide x 0.22m deep. The majority of finds from this feature were concentrated midway along its length and included pottery, animal bone and a quern stone fragment (SF 51).

A scatter of small pits and post-holes lay on the southern side of Roundhouse 13. There was little patterning to them although they possibly reflected successive phases of fencing. Of note was an unusually square pit, Cut 580, that lay closest to the building. Apart from its distinguishing shape this feature was also characterised by having a charcoal rich fill containing many burnt stones. A few fragments of pottery and a single piece of burnt bone were also recovered.

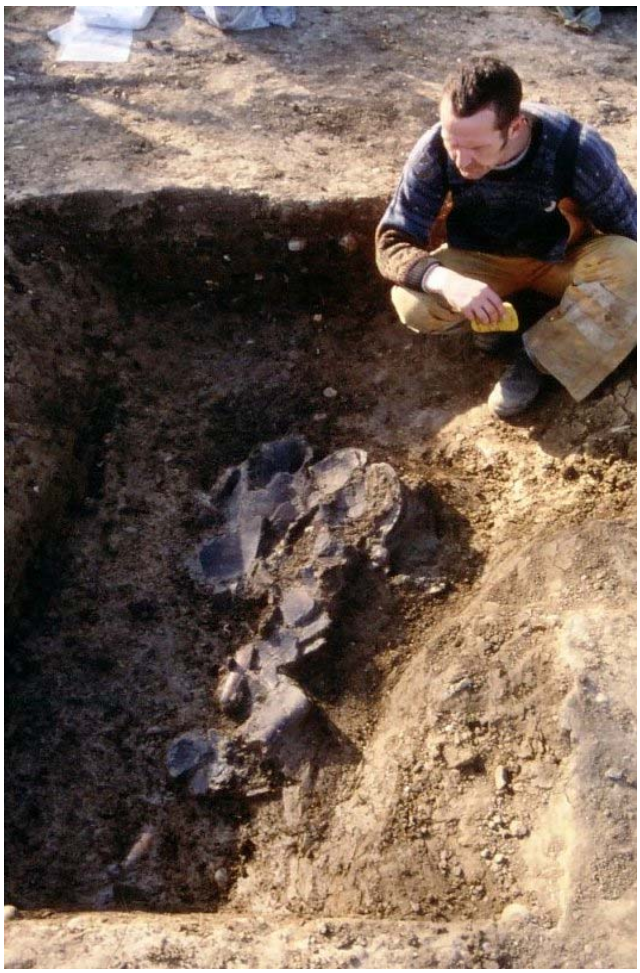

Plate 7 Pottery deposit from the northern side of Roundhouse 13

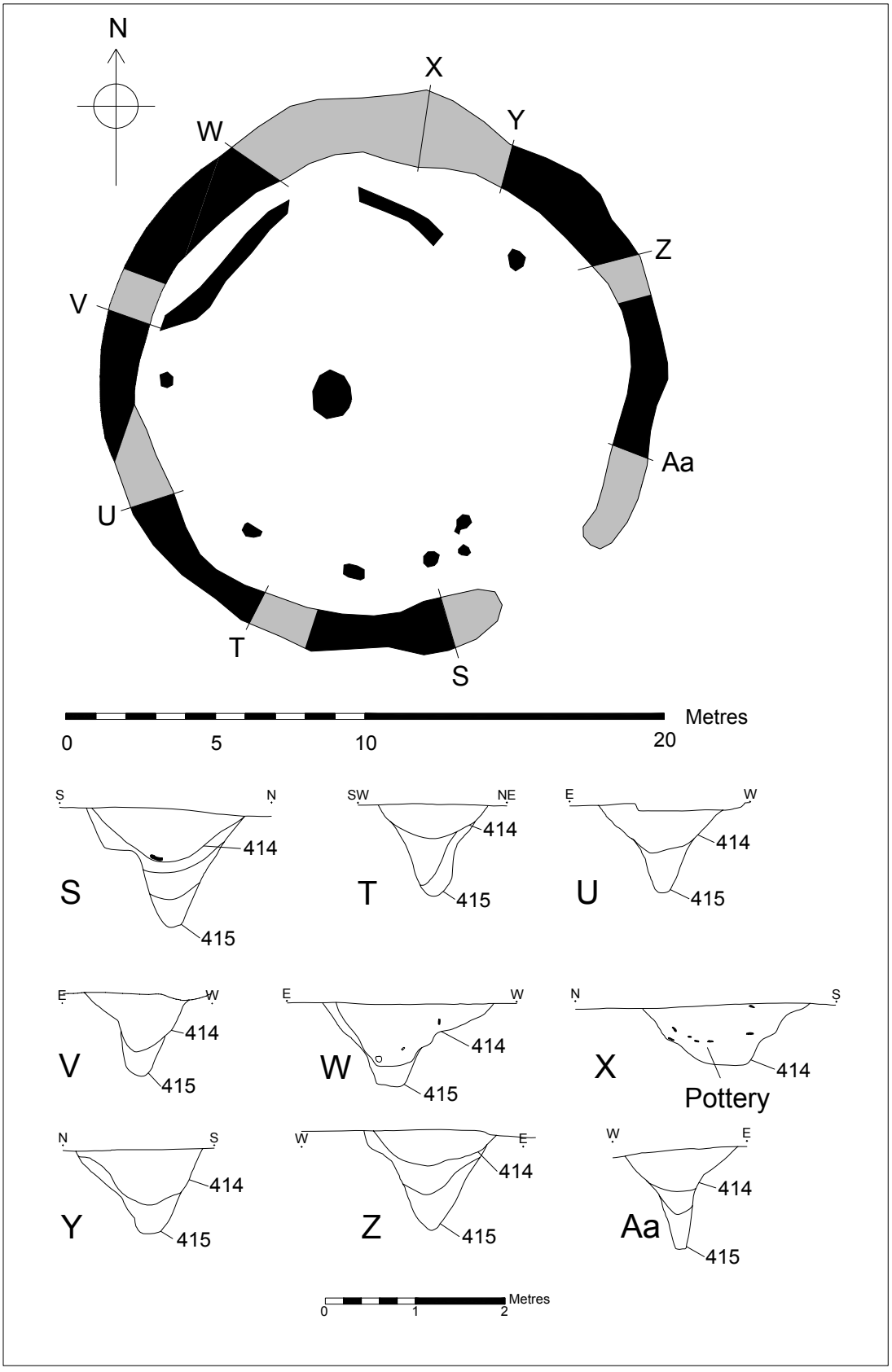

Figure 14 Roundhouse 13 and associated section drawings

Enclosure F and associated features
Enclosure F was a small, *c.*9m square enclosure (enclosing an approximate area of 60.48m^2) with two distinct phases of use and an entrance on the north north-eastern side (Plate 8). Its close spatial relationship and similarity of fill with Roundhouse 13 may indicate that they co-existed and were perhaps used by the same household.

Plate 8 Enclosure F following sample-excavation

The initial phase of Enclosure F was defined by a relatively deep (*c.*0.50m) V-shaped gully (Cut 527) that became noticeably shallower (to *c.*0.10m deep) and more rounded closer to the entrance. The single fill of 527 suggests that it was rapidly backfilled as a single episode rather than being allowed to silt up naturally. Quantities of pottery and animal bone, charcoal and fired clay were present in all excavated areas of gully 527, but showed a marked concentration towards the enclosures entrance. At some stage the enclosure was redefined with the creation of a second gully (Cut 532=590). This second phase boundary adopted the same shape in plan and profile as Cut 527 and again displayed a marked variation in depth between the front and rear of the enclosure, becoming shallower towards the entrance. No apparent recut was evident on the western side of the enclosure and a possible terminal was identified close to the south-western corner so it is possible that in its second phase, Enclosure F had two breaks in its circuit. A slight modification of the northern entrance was also a feature of the redefinition of Enclosure F, replacing the earlier narrow and squared access with a wider and more flared one. The second phase gully was also filled with a single deposit, suggesting that it too had been rapidly backfilled after it had gone out of use. A similar finds assemblage was recovered from this phase which also displayed a tendency to concentrate around the northern entrance.

Two post-holes (536 and 665) were partially revealed beneath the enclosure gullies and probably relate to earlier activity prior to the formation of Enclosure F. A short length of gully (663) was also revealed below gully 590 on the eastern side of the enclosure, possibly reflecting another phase of modification or earlier activity.

After Enclosure F had finally gone out of use a large circular pit (Cut 669) was dug through the backfilled gullies of the eastern side. This pit had near vertical sides and measured *c.*1.50m diameter x 0.70m deep. A charcoal rich primary fill contained pottery and animal bone and was apparently sealed by a thin layer of clay before becoming completely infilled. The final pit fill contained abundant deposits of pottery and animal bone including, from near the top of the pit, a horse skull found in association with a quernstone.

Roundhouse 8
Slightly to the east of Roundhouse 13 a smaller building, Roundhouse 8, was represented by a very truncated penannular eaves drip gully (Cut 401) with a diameter of *c.*10m. Much of the eastern side of this building had been removed as a result of later ploughing although enough survived to enable a south south-easterly entrance to be distinguished. The gully itself was between 0.02 and 0.25m deep and had a shallow, rounded profile. Small quantities of pottery and fired clay were recovered from the gully fill. No internal or structural features survived for Roundhouse 8.

A shallow, circular pit with a flat base (Cut 426) lay outside Roundhouse 8, close to the building's entrance. This was approximately 1.5m in diameter x *c.*0.3m deep and contained two fills. Finds recovered from the pit included pottery and animal bone showing a greater density in the lower fill. The pottery was very similar to that associated with Roundhouse 8, perhaps indicating they were broadly contemporary.

Features to the north of Roundhouse 8
A scatter of features consisting of pits, post-holes and a curving gully lay between Roundhouse 8 and the linear boundary to the north.

Pit 402 was oval in plan, measuring *c.*2.8m x 2m x 0.20m deep, with steep sides and a flat base. Its single fill contained large amounts of pottery, animal bone and charcoal. To the east, a similarly shaped pit (Cut 419) measured *c.*2m x 1m x 0.20m deep. This too contained quantities of pottery, bone and charcoal but in smaller amounts to pit 402. A third pit (Cut 454) was smaller still, measuring *c.*0.60m x 0.40m x 0.20m deep and was finds free.

This small pit group lay to the south of a curving gully (Cut 437) with steep edges and a flat base that measured approximately 10m long x 0.60m wide and was *c.*0.20m deep. Small amounts of pottery and animal bone were found in its fill.

A spread of post-holes (842, 844, 846, 848 and 852) lay along the western edge of the site close to the pit group. No clear formation could be discerned although it is likely that other associated features lay beyond the limit of the excavation. Finds from these post-holes were limited although of note, a complete saddle quernstone (SF 56) was found in the top of Cut 848 and fragments of hearth or furnace lining suggests iron smelting was taking place in the near vicinity.

Roundhouse 9
Roundhouse 9 was located approximately 7m to the east of Enclosure F and was represented by a curvilinear gully (Cut 472 *c.*0.40-0.50m wide and *c.*0.25m deep) with a shallow, U-shaped profile. The gully had been completely removed towards its western end by a furrow, however it is likely to have originally formed a semi-circle with an approximate diameter of 12m. Small quantities of pottery, animal bone and charcoal were recovered from all excavated sections of this gully.

Repairs or additions to the western side of the gully circuit were represented by two shorter lengths of curvilinear gully on the western side of the structure (Cuts 560 and 564). Both were of similar dimensions and profile to Cut 472.

A slightly curving palisade slot (Cut 608) lay on an east-west alignment across the open side of Roundhouse 9, some 3m from the main gully and may have provided footings for a short timber screen or windbreak. The slot, which contained abundant heat cracked stones, pottery and animal bone, had vertical sides and a narrow, flat base, measuring *c.*4m long x 0.25m wide and 0.30-0.40m deep.

Pits in the vicinity of Roundhouse 9
To the rear of Roundhouse 9 a cluster of inter-cutting pits (696, 837, 840 and 841) possibly reflected an area of repeated quarrying. These features were fairly irregular in shape and contained little in the way of finds. A pair of similar pits (834 and 836) lay to the east of Roundhouse 9, both containing small amounts of pottery and bone. The pits were closely associated with a short length of recut gully (828 and 831) that lay to the south on an east-west alignment.

Oval Enclosure
A series of curvilinear gullies appeared to form a large oval arrangement near to the centre of Area B and may have combined to loosely demarcate this part of the settlement. It was noticeable that this area, in an otherwise fairly densely occupied site, was relatively clear of features (Figure 12).

The western side of this area was defined by a long curving gully (600) on a north-east to south-west alignment that cut through the remains of Roundhouse 9 and the pit cluster to its rear. This was approximately 25m long but had been truncated at both ends so was originally slightly longer. It had a broad U-shaped profile with steep sides and a flat base, measuring *c.*0.70m wide x 0.50m deep. Where the gully cut through the pit group a near complete pottery vessel had been deposited.

Two curving gullies (658 and 694) may have defined the eastern side of the area. Gully 658 was the southernmost of the two and lay on a north-east to south-west alignment. It was approximately 10m long, although its southern extent was not completely revealed, and had a broad U-shaped profile (measuring *c.*0.60m wide x 0.40m deep). A large oval pit (752) measuring *c.*6m x 2m x 0.50m deep, cut through the northern side of 658. A relatively large amount of pottery and animal bone was found in this feature. To the north of this was a shorter length of gully (694 – *c.*6-7m long) that lay on a north-south alignment. This also had a U-shaped profile and was broadly similar in size. Both features contained small quantities of pottery and animal bone; a fragment of rotary quern was found in the top of 694.

The northern and southern edges of the possible 'enclosed' area are more difficult to determine, although it is possible that the short gullies on the east of Roundhouse 9 were involved (828 and 831 see above). Only short truncated lengths of gully were identified on the southern side of this area and these had suffered badly as a result of plough damage.

Only a scatter of post-holes and several pits lay within the area defined by the gully arrangement. No clear patterning could be seen in the post-hole arrangement although it is likely that others may have been lost to ploughing. Several large pits (487, 497 and 500) formed a small cluster in the eastern half of the area. These were irregularly shaped and contained very little in the way of finds; probably representing limited episodes of quarrying. Slightly north of this group, a smaller circular pit (measuring *c.*0.80m diameter x 0.37m deep) had a charcoal rich fill but no evidence of *in-situ* burning.

Structural features on the northern edge of Area B (Figure 12)
A group of three interrelated structures, probably representing a roundhouse (Roundhouse 14) and a pair of associated enclosures (Enclosures G and H), was located in close proximity to the linear boundary feature on the northern edge of Area B.

Roundhouse 14
Roundhouse 14 was represented by a half complete, presumably penannular, ditch (Cut 490) projecting from the northern edge of Area B. The ditch was *c.*0.60m deep x 1.30m wide and had an uneven profile with steep inner edges contrasting with more gently sloping outer edges. After this ditch had almost completely silted up, it was redefined according to a similar plan, although the second phase was shallower (Cut 490a – *c.*0.37m deep). On the eastern side of the circuit 490a incorporated a narrow, pebble-filled slot which may have represented measures taken towards more effective drainage in this area. It seems likely that the other half of the structure was destroyed during construction of the A46/47 link road, however what remained indicated it had once defined a large circular area with a *c.*16m diameter. No evidence for an entrance or surviving internal features remained although if this was a roundhouse an east-facing entrance may be surmised based on surrounding evidence. Excavation on the western side of Roundhouse 14 (that may have been the rear of the building should an east-facing entrance have existed) revealed a near complete ovoid bowl-jar that was broadly comparable in size and form to a similar example from the Phase 3 Structure 5022 excavated at the Elms Farm site to the east.

Enclosures G and H
After Roundhouse 14 had gone out of use a pair of enclosures (G and H) were created to the immediate west. There was no evidence to suggest that either enclosure was later than another and the two are considered to have been contemporary. The north-eastern section of the Enclosure G boundary ditch was accurately positioned along the south-western quarter of the Roundhouse 14 ring-ditch, effectively

re-cutting it, and indicating that although backfilled, the remains of the building were still evident for reference.

Enclosure G

Enclosure G was sub-square with a narrow (*c.*2.75m wide) south-facing entrance. It was defined by a V-shaped ditch (Cut 444 – *c.*14m square), *c.*0.50m wide by *c.*0.40m deep, enclosing an area of approximately 179m^2. Overall the evidence suggested the enclosure remains consisted of a single phase although an earlier ditch (Cut 505), revealed along the western side of the enclosure, may indicate that an earlier version had been largely removed by a later redefinition. Within the southern half of the enclosure several post-holes and a length of narrow gully were found just inside the entrance area. It is not certain if these features are contemporary with the enclosure but given their location, close to the entrance, it might be suggested that they related to management of access into the area, possibly for stock control. Although the morphology of Enclosure G suggests it may have functioned as an animal enclosure, quantities of domestic debris including pottery, animal bone, fired clay, and heat cracked stone were recovered from all excavated sections around the ditch circuit, as well as a fragment of iron working slag from the northern side.

Enclosure H

Enclosure H was a slightly smaller (*c.*12m square) enclosure with a west-facing entrance (also *c.*2.75m wide), joined to the northern side of Enclosure G. Enclosure H was defined by a V-shaped ditch (Cut 416) that was on average *c.*0.80m wide and *c.*0.50m deep, enclosing a square area of *c.*134m^2. The eastern side of the enclosure had been completely removed by a furrow but survival in other areas was generally good. No internal features were associated with this enclosure and it is thought likely to have functioned as a stockade for livestock. Small amounts of domestic debris, including pottery, fired clay, animal bone, charcoal and heat cracked stone were recovered from the enclosure fills.

Plate 9 Roundhouse 10 following sample-excavation

Roundhouse 10

The remains of Roundhouse 10 consisted of a complete (albeit truncated by furrows) penannular gully (Cut 514=731, *c.*11.8m in diameter) with a *c.*5m wide, east facing entrance (Plate 9). Cut 514 was on average *c.*0.40m wide and *c.*0.25m deep with a U-shaped profile. A number of short, additional lengths of gully (Cuts 549, 571 and 588) had been added to the main circuit, particularly at the rear of the structure, presumably to facilitate drainage. These shared a similar profile to the main gully, although generally they were shallower, averaging *c.*0.15m in depth. No internal features were evident within Roundhouse 10 although it is probable that any shallow features would have been removed by ploughing. Quantities of pottery, fired clay and animal bone were recovered from Roundhouse 10, as

well as a small bone pin or comb fragment (SF 33 – Figure 34.6) from the southern side of the entranceway.

A large oval pit (Cut 577) located to the rear of the structure may have been contemporary. One of the additional house drainage gullies (Cut 549) apparently terminated in respect of the pit, suggesting it was still in use at the time of the buildings refurbishment. Pit 577 had steep edges, measuring *c.*1.50m x 1.0m x 0.60m deep and contained two fills. The final infilling of the pit held a significant amount of shell-tempered pottery, probably from a single vessel, and animal bone.

A large circular pit (Cut 735) had been cut by the northern side of the Roundhouse 10 gully, close to the entrance. Pottery and animal bone and a large quantity of burnt stone were recovered from the feature.

Occupation remains on the North-Eastern edge of the site (Figure 12, Plate 10)
On the north-eastern side of Area B a cluster of features including structural remains and associated pits, gullies and post-holes appeared spatially distinct from the rest of the archaeological remains in the area. The features here were filled with noticeably darker soils than in other parts of the site and there was a greater concentration of pits. Material from the excavated features in this area also revealed a marked concentration of metal-working waste, suggesting that at some stage, this part of the settlement was a distinct craft zone.

Roundhouse 11
A partially revealed arcing gully (Cut 628) protruding from the north-eastern site edge probably represented remains of an eaves-drip feature relating to a roundhouse (Roundhouse 11). This had, at some point, replaced a rough arc of post-holes on a similar alignment (Cuts 630, 633 and 646) possibly reflecting an earlier structural phase. Cut 628 was generally U-shaped in profile with an average width of *c.*0.40m and depth of *c.*0.30m. Pottery, animal bone, fired clay charcoal and burnt stone were recovered from the gully fills, as well a saddle quern fragment.

Plate 10 Roundhouses 11 (left) and 12 (right) with four-post structure (right of figure)

Roundhouse 12
Roundhouse 12 replaced Roundhouse 11 and was located slightly to the west of the earlier building. This roundhouse was more fully represented than its predecessor, comprising a curvilinear gully (Cut 653), demarcating an area of approximately 11.7m, with an east-facing entrance. Generally the gully was fairly shallow (*c.*0.15m deep) with a regular, wide U-shaped profile. It became noticeably narrower towards the entrance although this may have been related to truncation in this area.

Quantities of occupational debris including pottery, animal bone, charcoal and burnt stone were found in the gully fills, and there was also a significant concentration of iron-working slag and hammer-scale associated with this building. This was in complete contrast to the lack of evidence for metalworking associated with Roundhouse 11, showing a partial change of use on this part of the settlement.

Internal features
A small cluster of possibly contemporary features existed within the circumference of Roundhouse 12, close to the entranceway. A short length of narrow gully (Cut 685) contained an oval post-hole (Cut 683) at its eastern end, possibly representing structural remains of Roundhouse 12. An oval post-hole (Cut 687) located slightly south of these features provided further structural evidence. Positioned centrally within this feature was a roughly squared block of stone with its flattest surface uppermost, suggesting it had been used to support a post. A shallow rounded pit (Cut 648 – *c.*1m in diameter x *c.*0.20m deep) was located just within the southern side of the Roundhouse 12 entrance, where it cut the remains of the Roundhouse 11 gully.

Other associated features
To the rear of the building an earlier curving gully, possibly of two phases (Cuts 777 and 779) may have related to Roundhouse 11. A short S-shaped gully also cut through the infilled Roundhouse 12 gully, indicating later activity. Evidence for metal-working was also recovered from this feature, perhaps suggesting that craft-activities continued on this part of the site following the demise of Roundhouse 12. It is also likely however, given the concentration of slag and hammer-scale in this area, that finds were residual in the later feature.

Four-Post Structure
A four-post structure measuring *c.*2m square lay within the ground plan of Roundhouse 12. The post-holes (Cuts 705, 715, 768 and 771) were all circular (*c.*0.50m diameter), with similar flat based, (*c.*0.30m deep) vertically sided profiles. It is generally thought that such structures were used as granaries and in contrast to surrounding features this structure contained a higher than average amount of spelt grains (including germinated examples), chaff fragments and weed seeds. Small amounts of pottery, animal bone and quantities of hammer-scale were recovered from their fills which may have been residual, suggesting that this structure post-dated Roundhouse 12 and indicating a further change of use here.

A small pit (Cut 913) lay centrally within the plan of the four-post structure although the relationship is unclear. Whilst the pit may be contemporary with the four-post structure, it is just as likely that it was an internal feature of Roundhouse 12.

Features immediately to the south of Roundhouses 11 and 12 (Figure 12)

Semi-circular structure and associated features
A semi-circular structure with an internal diameter of *c.*10.5m lay immediately to the west of Roundhouse 12, with which it may have been contemporary. The structure consisted of an arcing gully (Cut 756), with an open side to the east, and a substantial post-hole that had been incorporated into the southern terminal end. It is likely that a similar arrangement existed on the northern side of the structure although this was never fully revealed, being on the very edge of the excavated area. The gully profile was generally U-shaped, measuring *c.*0.40m wide by 0.20m deep, contrasting with the wider and deeper profile of the oval-shaped southern post hole. Adjacent to this was another very similar post-hole (Cut 861) on the outer edge of the structure.

Several features were also located within the arc of the gully, showing a concentration in the southern half of the area. Just inside the gully a cluster of structural features included two shallow post-holes (Cuts 762 and 764) and a stake-hole (Cut 766). In close association with these features, a shallow elongated pit (Cut 863) lay slightly to the east. All features associated with this structure contained moderate amounts of occupational debris including pottery sherds, animal bone and charcoal. Ironworking slag recovered from Gully 756 and Pit 863 provided additional evidence for craftworking, suggesting that this structure was involved with metalworking or situated close to an area where such activities were taking place.

Other features in the vicinity
A noticeable clustering of archaeological features occurred in the area immediately adjacent to the two roundhouses. These included a number of pits (Cuts 625, 702 792, 793, 751 and 730) of various sizes, curvilinear gullies or slots (Cuts 640, 689, 728 and 775) that may have functioned as insubstantial fences or screens, and an open hearth (Context 770). Small quantities of occupational debris occurred in most of these contexts although within the group, very few features were interrelated, making phasing difficult. It seems likely however, given the sequence of occupation indicated by the structures to the north, that the cluster of remains is the end result of an accumulation of activities associated with particular structures over time.

The Prehistoric Pottery – Patrick Marsden

Introduction
A total of 5651 sherds of pottery was recovered from the excavations weighing 77047g. Theses were of a mid to late Iron Age and late Iron Age date. Nearly all came from roundhouses and enclosures, together with a gully in Area B (see Table 2). Of these 1034 sherds weighing 8,397g came from other features or were unstratified.

Methodology
The material was examined and recorded according to the guidelines for the analysis of later prehistoric pottery (Prehistoric Ceramics Research Group 1997). The fabric groups mainly follow the University of Leicester Archaeological Services fabric series for late Bronze Age and Iron Age pottery (see below Fabrics, exceptions are grog-tempered fabrics G1 and G2- codes specific to this site). Forms, decoration and surface treatment were recorded using guidelines for the recording of later prehistoric pottery from the East Midlands (Knight 1998). Codes or abbreviations used mainly follow these guidelines. The information was inputted onto Excel spreadsheets and then interrogated using ArcGIS.

Fabrics

Descriptions

Sandy
Q1 *quartz sand* Common to abundant sub-rounded to rounded quartz sand (0.25-1mm).

Quartz
Q4 *sandy fabric with quartz* Common to abundant sub-rounded to rounded quartz sand (0.25-1mm) and rare to sparse sub-angular to sub-rounded quartz (probable pebble source, 0.5-5mm, occasionally larger up to 10mm).
Q5 *quartz* Rare to moderate sub-angular quartz (0.5-4mm) and rare to sparse sub-rounded to rounded quartz sand (0.25-1mm).
Note: Q4 and Q5 similar to R2 and R1 respectively but with the larger inclusions consisting of quartz instead of granitic rock.

Granitic rock
R1 *granitic rock* Rare to moderate sub-angular granitic rock (0.5-4mm) and rare to sparse sub-rounded to rounded quartz sand (0.25-1mm).
R2 *sandy fabric with granitic rock* Common to abundant sub-rounded to rounded quartz sand (0.25-1mm) and rare to sparse mostly sub-angular (occasionally angular and sub-rounded) granitic rock inclusions (0.5-4mm).
R3 *sand and grantic rock in approximately equal quantities* Moderate to very common sub-rounded to rounded quartz sand (0.25-1mm) and moderate to common mostly sub-angular (occasionally angular and sub-rounded) granitic rock inclusions (0.5-4mm).
R4 *shelly fabric with granitic rock fragments* Same as S1 with sub-angular, sub-rounded rare to sparse igneous rock inclusions (probably granitic) *c*. 0.5-2mm.
R5 *shelly and sandy fabric with granitic rock fragments* Same as S2 with sub-angular, sub-rounded rare to sparse igneous rock inclusions (probably granitic) *c*. 0.5-2mm.

Shelly
S1 *shell* Moderate to very common shell or platey voids (1-5mm)

S2 *sandy fabric with shell* Same as S1 but common to very common sub-rounded to rounded quartz sand (0.25-1mm).

Grog-tempered
G1 *Grog in shelly and sandy fabric* Shelly and sandy fabric (similar to S2) with sparse rounded grog (c 0.2-0.5mm).
G2 *Grog in sandy fabric* Sandy fabric (similar to Q1) with rare rounded grog (0.5-2mm).

Fabric	Sherd no.	Weight (g)
Granitic rock		
R1	377	3848
R2	4090	57744
R3	105	1695
R4	6	34
R5	13	176
Sandy		
Q1	221	2361
Quartz		
Q4	40	1105
Q5	1	3
Shell		
S1	671	9031
S2	124	1034
Grog		
G1	2	12
G2	1	4
TOTAL	**5651**	**77047**

Table 1 : Fabric group totals - sherd number and weight (g)

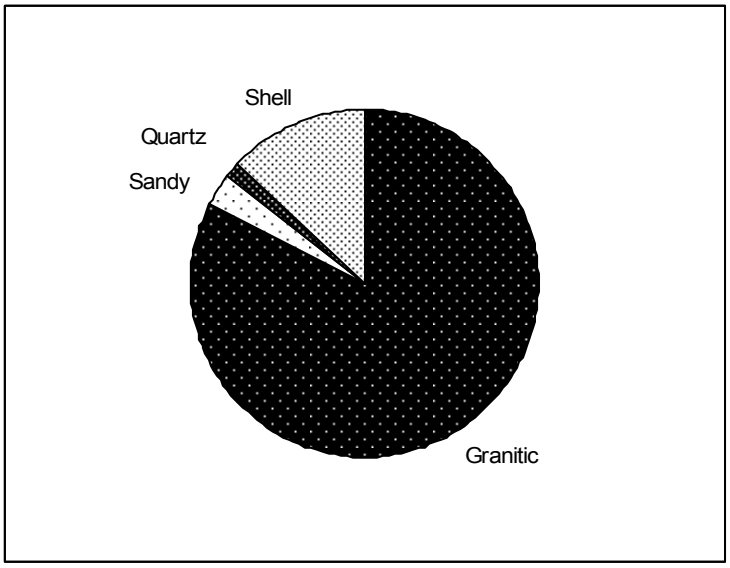

Figure 15 fabric group weight percentages

(grog-tempered omitted as too small)

Discussion of fabrics

Table 1 and Figure 15 above summarise the fabric totals recovered. The percentages of fabric groups by weight are – Granitic 82.4 %, Shell 13.1%, Sandy 3.1% and Quartz 1.4%. These compare with Granitic 89.4%, Shell 8.3% and Sandy 2.3% from Elms Farm (Marsden 2000, 173 and 178 Table 9). The totals are not dissimilar, although the proportion of shell-tempered pottery is even higher at Manor Farm and a small amount of quartz-tempered pottery is also present.

The inclusions in the dominant granitic fabrics are likely to have a Mountsorrel granodiorite source. These inclusions are particularly common in Scored ware pottery from Leicestershire, especially in sites close to Mountsorrel, though they are also recorded elsewhere in the region (Knight *et al* 2003). These outcrops are located fairly nearby, *c*.10 km to the north-west of site. Iron Age features at the site yielded lumps of granodiorite, though it was not found in the adjacent natural boulder clay, indicating perhaps the deliberate importation of the material to the site, perhaps for use as pottery temper. Given the outcrops' proximity, it is possible that the rocks were collected from closer to the vicinity of Mountsorrel to the north-west and then brought back. It should also be noted that some of the granodiorite recovered from features at Manor Farm had been heat-affected, including that from the later re-cut of Enclosure C. Comparable burnt granitic rock was also found in an Iron Age feature at Cossington, Leics (Marsden 2008, 89). It has been argued that heating granitic rocks makes them crumbly and more easily crushed for use as pottery temper (*ibid.*, 120) and these fragments could be evidence of ceramic production at the site. However, at least some of the pottery may also reflect trading of vessels with the inhabitants of the Charnwood Forest, it being difficult to prove conclusively exactly where the granitic-tempered pottery was manufactured.

All of the other fabric groups could well suggest local pottery production at, or near, the site using readily available inclusions. The shell-tempered groups could well reflect the use of local limestone, present in the boulder clay. This also applies to the shell-tempered wares from Elms Farm previously suggested as being of a non-local source by the author (Marsden 2000, 173). The quantities of shell-tempered pottery are unusually high for both sites compared to other Iron Age sites locally, though this could just reflect ease of availability of limestone in the local boulder clay.

Forms

Vessel forms

Abbreviations:

OV ovoid ELL ellipsoid RS round-shouldered GLOB globular CAR carinated

Where identifiable, vessel forms are mostly commonly ovoid jars or bowls, with round-shouldered vessels the next most represented type. Only small quantities of the remaining categories of vessel occur. This form repertoire and dominance of ovoid forms is typical of Scored wares in the region (Knight 2002, 134-135).

Rim Forms

Abbreviations:

RD plain rounded, typically upright or inturned rim (rounded direct)
RRE rounded, rounded externally
RPE rounded, pinched out externally
BEAD beaded rim
FD plain flattened, typically upright or inturned, rim (flattened direct)
FEE flattened, slightly expanded externally
FRE flattened lip, outer edge of rim rounded
FPI flattened lip, pinched out internally
FPE flattened lip, pinched out externally
FPEI flattened lip, pinched out externally and internally
EVR everted rounded
EVRRE everted rounded, rounded externally
EVF everted flattened

EVFE everted flattened, expanded internally and externally
EVFEE everted flattened, expanded externally
EVT everted tapered
FLE flanged externally
SIC single internal channel
TRIF triangular profile, with flattened lip

Most common rim forms are the plain or simple, typically upright or inturned, types (RD and FD) and everted (EVR and EVF). Variations on these are also present, with flattened lips (e.g. FEE and FPI) being apparently particularly common at Manor Farm. Rarer rim forms include flanged externally (FLE) and single internal channel (SIC), probably for a lid to rest upon.

Base Forms
These are almost exclusively flat (FLT) or flat and pinched out at the circumference (FLP). Only one vessel is present in another form, a solid pedestal base (SPED) from a vessel in fabric S1, produced by the re-cut into Enclosure C (Context 261).

Other Form sherds
Several lids are also present in fabrics R2 and S2. Two bases with perforations, which may be from strainers, are present (e.g. Figure 17.13).

Forms and function
The forms present are generally typical of vessels used in cooking and for storage purposes. The strainers described above are also likely to have been used in food preparation.

Scoring and other surface treatment
Scoring is present on 35.4% of the pottery by weight is scored. This consists of the following types: deep scoring (SCR), finely scratched lines (SCRA) and light brushing (BRL). These types are found singly or else have been used in various combinations. More regular scoring, including deliberate arcs, is found on three vessels (e.g. Fig. 16. 1, 3 and Fig. 17.12). Initially it was thought during the analysis that this might be of chronological significance, perhaps indicating a later Iron Age date, as in some cases it resembles decoration found in the early Roman period. However, the C14 dating of the structures in which the vessels were found is not particularly late : Roundhouse 2 (Fig. 17.12, 360-110 BC), Roundhouse 3 (Fig. 16.1, 260-90BC) and Roundhouse 5 (Fig. 16.3, 230-50BC). The 'neater' scoring could, reflect peculiarity associated with a particular potter or potters rather than being of chronological significance. In terms of other forms of surface treatment represented, a small number of vessels also display burnishing.

Decoration
This is mostly restricted to fingertip (FT) or fingernail (FN) impressions on the rim lip, which is typical of Scored wares. However, in some instances this may be part of shaping the rim and vessel manufacture rather than signifying any decorative intent on the part of the potter. Other vessels display incised diagonal lines (INC DL) on the rim lip and impressed diagonal motifs (IMP D) on the external rim surface. There is also impressed decoration (IMP) on the rim lip, such as the scored ovoid vessel in Roundhouse 5 (e.g. Fig. 16.3). Fine combing (CO) occurs on two vessels, both from RH13 (contexts 411 and 644 (the latter Fig. 19.29)). Another vessel displaying burnished grooves in circular patterns from the re-cut of Enclosure Ditch C (Fig. 17.10) is probably of the La Tène tradition and also later in date.

Ceramic styles and affinities
The pottery is typical of East Midlands Scored ware assemblages of the middle to late Iron Age, corresponding to Knight's earlier La Tène ceramic phase for the East Midlands (2002, 133-135) and previously discussed by Elsdon (1992b). The results of the C14 dating, partly from carbonised residues present on pottery sherds, are discussed elsewhere (see Discussion of C14 results above, p7) but mostly fall within a fourth to first century BC date range, typical of Scored wares. Vessel, rim and base forms and types of scoring are all generally characteristic of this tradition. Similar pottery has been found at numerous sites in Leicestershire and the region as a whole. Larger Leicestershire groups include that from Enderby (Elsdon 1992a), the recently excavated assemblage from Hallam Fields, Birstall (Marsden forthcoming) and the adjacent Elms Farm group (Marsden 2000). Two vessels from Elms Farm parallel those from Manor Farm. The almost complete ovoid jar from Roundhouse 13 (Fig.

19.30) is very similar in form and size to a vessel from Structure 5003 from Phase 3 (early first century AD) at Elms Farm (Marsden 2000, Fig. 51.29). Like Roundhouse 13 this structure produced considerable quantities of pottery (11926g). It is possible that these vessels were made by the same potter, although such ovoid forms are common amongst Scored wares. In addition, the mostly complete ovoid bowl-jar from Roundhouse 14 (Fig. 19.32) broadly compares in terms of form and size with another vessel from Structure 5022 from Phase 3 at Elms Farm (ibid. Fig. 51.30), though the Elms Farm example is lightly brushed and has a different type of base. The fact that these small jars and bowl-jars were found partially or almost entirely intact at both excavations may indicate a certain value to them or their associations, meaning they were selected for deposition. A very close parallel was also found between an ovoid scored vessel from a fill of Enclosure ditch C (Fig. 16.4) and one from Hallam Fields, Birstall (Marsden forthcoming, 34). In form, size and surface treatment, these are extremely similar to each other and it is tempting to point towards the common use of pottery makers between the sites. A comparable vessel was also recovered from an enclosure ditch at Gamston, Nottinghamshire (Knight 1992, Fig.16.6). Despite the closeness of the parallels between vessels from sites, however, caution should be exercised and coincidence cannot be ruled out, given the limited range of Scored ware forms.

Despite the fact that the majority of the pottery belongs to the Scored ware repertoire, and is difficult to date precisely, several other finer vessels probably belong to the late Iron Age period on the basis of factors such as form, decoration, surface treatment and fabric. Fragments of two vessels, both in fabric S1, came from the re-cut of Enclosure ditch C (Context 261). One is a beaded rim form from a probable wheel-thrown vessel (Fig. 16.9) most likely displaying the influence of the Aylesford-Swarling tradition of south-eastern England (Birchall 1965). The other is lightly burnished with tooled burnished grooves in curvilinear patterns, probably belonging to the La Tène tradition and late Iron Age in date (Fig. 16.10), although the problems with the dating of this ceramic style in Northamptonshire have been discussed by Knight (2002, 131-132). Both vessels show typological parallels with pottery associated with the fills of an enclosure ditch at Gamston, Nottinghamshire (Knight 1992, Fig.15.2, Fig.17.15-16 and Fig.17.14). Similar shell-tempered jars with beaded rims are also known from pre-Conquest and early Roman levels in Leicester, such as from Site 2 Phase 1 at Bath Lane (Clamp 1985, Fig. 31.22). A late first century BC to mid first century AD date range seems likely for the Manor Farm rim sherd. Another possibly later vessel, again in fabric S1, with a slightly everted rounded rim and burnishing, came from Enclosure G (Fig. 19.33). Two further vessels in fabric R2 display traits of later ceramics. One has an everted rounded rim and fine combed decoration (Roundhouse 13 Fig. 19.29) and another is a probable necked bowl or jar with an everted rim from Roundhouse 9 (Fig. 17.14). The combed vessel displays similarities to Thompson's Belgic ware small jars (1982 type C8) although lacking the stabbing on the shoulder and grog-tempered fabric. Thus a local vessel, again inspired by Aylesford-Swarling styles is suggested, and a date of late first century BC or perhaps more likely first century AD is possible. However, the C14 date for this Roundhouse 13 pottery deposit, based on a residue on a sherd from context 518, is 260-50BC, which could place the vessel earlier.

With the exception of the probable La Tène sherd, the small amount of late Iron Age pottery described above mainly suggests contact with the Aylesford-Swarling tradition. These vessels probably date to the late first century BC or first half of the first century AD. Vessels of a probable late Iron Age date, including 'Belgic type' pottery, were also recovered from the adjacent excavations at Elms Farm (Marsden 2000, 174) but there are no close parallels with the Manor Farm material. The probable La Tène piece from Manor Farm is potentially significant as La Tène decorated pottery of the Lincolnshire and Northamptonshire traditions has not been found in Leicestershire before (Knight 2002, fig.12.5). It should be noted that a possible La Tène vessel has also been found recently at Hallam Fields, Birstall, Leicestershire (Marsden forthcoming, 14).

Evidence of use

Carbonised residues are found on various vessels. This is often located on the external surface of the upper body in the rim and shoulder areas. Internal carbonised residues are also featured on some vessels. Limescale is found much more rarely and is usually internal. Such residues indicate use of the pottery as domestic vessels for cooking and boiling.

Major pottery concentrations (also see Table 2)

Area A

Roundhouse 2 195 sherds weighing 908g
This structure showed similar pottery concentrations of larger sherds to Roundhouse 3 in the northern terminal. Sherds from an ovoid or globular vessel with scoring in rough patterns were present in Context 58. Further sherds from this vessel also came from Enclosure ditch D and are illustrated (Fig. 17.12).

Roundhouse 3 274 sherds weighing 3148g
The ceramics include a large concentration of pottery (138 sherds weighing 2101g) from the northern terminal of the house. This includes a vessel in fabric S1 with scoring in arc patterns (Fig. 16.1) (see above, **Scoring and other surface treatment**).

Enclosure ditch C 438 sherds weighing 7407g
The second largest group of pottery from the excavations came from this enclosure, constituting 9.6% of all the pottery. A considerable number of rim and base sherds were recovered. The single largest concentration (199 sherds weighing 4349g) was recovered from 261, a fill of the re-cut in the north of the enclosure (Fig. 16.5-10). The pottery includes two vessels which probably belong to the late Iron Age as described above (see above **Ceramic styles and affinities**, Fig. 16.9-10). This later pottery may indicate a late date for at least this deposition, perhaps in the late first century BC or early first century AD. This date fits at the end of the C14 date range of 170BC to 10AD for the residue on a sherd from context 261. The later vessels bear typological similarities to one associated with fills of an enclosure ditch from Gamston, Nottinghamshire. In addition, parallels for the scored ovoid vessel from a fill of Enclosure ditch C (Fig. 16.4) were also found with vessels from Gamston and Birstall, Leicestershire (also see above **Ceramic styles and affinities**).

Enclosure ditch D 54 sherds weighing 1027g
Considering the size of the enclosure, the group was not large. However, it produced an ovoid or globular vessel with unusually well executed scoring (Fig. 17.12) and fragments of a possible strainer (Fig. 17.13). The context which produced the latter vessel (895) also contained a base sherd from a samian ware vessel, which is possibly in a South Gaulish fabric and therefore of a first century AD date. Another Roman base sherd, in an oxidised ware fabric, came from context 897. However, these Roman sherds may simply be the result of material entering the, perhaps by now disused, enclosure ditch during the early Roman period.

Area B

Roundhouse 10 102 sherds weighing 1873g.
Most of the pottery (68 sherds weighing 1413g) came from a pit containing large fragments of an S1 vessel with an external flange (Fig. 17.16).

Roundhouse 13 2115 sherds weighing 38, 553g
This structure, including the central feature, provided a large quantity of pottery, 50.0% by weight and 37.5.% by sherd number of the pottery from the site as a whole. Many particularly large sherds and more diagnostic pieces are represented amongst the Roundhouse 13 pottery (Figs. 18 and 19.18-31). They include large rim and upper body and base sherds. Particular concentrations were found in the northern part of the house in an area of an earlier entrance (845 sherds weighing 18, 311g), which makes up 47.5% of the Roundhouse 13 material by weight. Included in this pottery was an almost complete jar recovered from context 656 (Fig. 19.30) and various other rim, upper body and base sherds (Fig. 18-19. 20, 23, 26-27 and 29). It would seem to indicate deliberate placement of deposits at the time of house abandonment as discussed elsewhere (Woodward and Hughes 2007, 201 and Webley 2007, 139-141). Dating of the deposit is problematic. The vessel displaying fine combed decoration (see above **Ceramic styles and affinities** - Context 644, Fig. 19.29) may point toward a late first century BC to mid first century AD date for the pottery being deposited in the gully. However, the C14 date of 260-50 BC for a residue on a sherd from context 518 suggests an earlier date for the deposition, perhaps in the middle to late Iron Age.

Roundhouse 14 216 sherds weighing 2345g
This material includes a large amount of a bowl-jar from the fill of the ring gully (Fig. 19.32).

Enclosure F 328 sherds weighing 3610g
Though producing significant quantities of ceramics, there were no major concentrations in the fills of the enclosure.

Enclosure G 192 sherds weighing 2119g
The pottery includes an S1 fabric rim of late Iron Age date (see above **Ceramic styles and affinities** and Fig. 19.33).

Gully -Area B 148 sherds weighing 2777g.
These sherds are probably all from the same vessel in fabric R2 (Fig. 19.34).

Area A				Area B			
Structure / Enclosure	**Sherd number**	**Weight (g)**	**Average sherd weight (g)**	**Structure / Enclosure**	**Sherd number**	**Weight (g)**	**Average sherd weight (g)**
Roundhouse 1	15	62	4.1	**Roundhouse 8**	37	154	4.2
Roundhouse 2	195	908	4.7	**Roundhouse 9**	87	993	11.4
Roundhouse 3	274	3148	11.5	**Roundhouse 10**	102	1873	18.4
Roundhouse 4	58	412	7.1	**Roundhouse 11**	49	630	12.9
Roundhouse 5	97	819	8.4	**Roundhouse 12**	105	755	7.2
Roundhouse 6	4	79	19.8	**Roundhouse 13**	2115	38, 553	18.2
Roundhouse 7	-	-	-	**Roundhouse 14**	216	2345	10.9
Enclosure A	13	52	4.0	**Enclosure F**	328	3610	11.0
Enclosure B	20	177	8.9	**Enclosure G**	192	2119	11.0
Enclosure C	438	7407	16.9	**Enclosure H**	59	654	11.1
Enclosure D	54	1027	19.0	**Gully**	148	2777	18.8
Enclosure E	11	96	8.7				

Table 2 : Pottery totals for major structures, enclosures and features in areas A and B

Spatial trends
Spatial analysis of the pottery and other finds revealed several notable patterns. Overall most of the ceramics from structures at the site consisted of large and unabraded sherds. Generally more pottery and other finds came from Area B, with large groups coming from a number of structures (Enclosures F and G, Roundhouses 10 and 14 and a gully). But the largest amount by far was from the very large Roundhouse 13, notably the massive concentration in the northern section. This would seem to confirm the apparent importance of this structure to its Iron Age inhabitants. In Area A, as well as the large concentration of pottery in the re-cut into Enclosure Ditch C associated with the antler deposit, significant pottery groups, along with bone, were apparent in the northern gully terminals of Roundhouses 2 and 3. Another noticeable trend is that vessels displaying scoring in more regular patterns, especially arcs (see **Scoring and other surface treatment** above (Fig. 16.1, 3 and 12) are confined to Area A. Examples came from the pottery deposits from the northern gully terminals of Roundhouses 2 and 3 (Fig. 16.1) already described, but also Roundhouse 5 (Fig. 16.3) located to the

north-west. Meanwhile additional sherds, from the same vessel as from Roundhouse 2, came from Enclosure Ditch D (Fig. 17.12). The general distribution of this more regular scoring possibly indicates deliberate placement of more valued vessels, mostly in chosen structural locations. The fact that it is exclusively found in Area A, could also indicate a social difference between the enclosed area and the unenclosed Area B to the north. Although few patterns emerged amongst the distribution of the fabrics, it is noteworthy that quartz fabric Q4 was confined to the north-west of Area B. However, any conclusions about this should treated with caution due to small size of this fabric group (40 sherds weighing 1105g).

The Manor Farm and Elms Farm pottery and its deposition in a regional context

The adjacent unenclosed settlement at Elms Farm (Marsden 2000) produced large quantities of Scored wares (6709 sherds weighing 66579g) and included pottery from later Iron Age phases (Area 3 Phases 2 and 3). The average sherd weight for the Elms Farm material is 9.9g, which is lower than that for Manor Farm, of 13.6g. This would indicate that larger sherds were recovered from Manor Farm, and perhaps more of a tendency towards the deliberate placing of deposits in this area. The combined total for the Manor and Elms Farm excavations is 12,360 sherds weighing 143,626g. This places it amongst the largest groups of Iron Age pottery excavated in the East Midlands, comparable to Weekley (5864 sherds weighing 142,670g, Jackson and Dix 1986) and Crick, Covert Farm (10,671 sherds weighing 62,931g, Hughes 1998) in Northamptonshire and Cat's Water, Fengate, Peterborough (11,600 sherds, weight not available, Pryor 1984).

Much of the pottery from the Elms Farm excavations came from roundhouse gullies, including concentrations around the terminals. Most of the pottery from the Manor Farm excavations similarly came from roundhouses or other structural features, but with concentrations from some northern terminals, and a very large quantity from the northern gully of Roundhouse 13. This apparently reflects the significance of this structure to the Iron Age dwellers, which produced more pottery than many Iron Age excavations in the region. Depositions in roundhouse gullies and their terminals were relatively common during the Iron Age and have been found at numerous settlements. Examples are from Enderby, Leicestershire (Elsdon 1992a; Marsden and Morris 2004), Gamston, Nottinghamshire (Knight 1992), Empingham, Rutland (Cooper 2000) and Crick Covert Farm, Northamptonshire (Woodward and Hughes 2007). As mentioned above (Roundhouse 13) it has been recently suggested that such finds deposits reflect 'ritualized' house abandonment practice as opposed to 'accidental' deposition (*ibid.*, 201; Webley 2007, 139-141). The northern or 'left-hand' clustering in house terminals and northern concentrations generally, most notably in Roundhouse 13, at Manor Farm would seem to be unusual, however.

Conclusion

The pottery is generally characteristic of Scored ware assemblages from the region. The very small amount of probable late Iron Age pottery, Aylesford-Swarling tradition inspired and La Tène, may reflect cultural interaction with other areas and regions. Parallels with late Iron Age and Scored ware vessels from other sites also suggests close contact between enclosed settlement communities in the Soar and Trent Valleys. The general lack of Roman pottery from the site and the carbon 14 dating evidence would seem to point toward a cessation of activity before the Conquest.

Spatial analysis has identified some notable patterns. Concentrations of pottery and bone were present in the 'left-hand' (northern) gully terminals of roundhouses in Area A perhaps signifying deliberate patterns of abandonment practice. Meanwhile more regularly executed scoring, exclusively found on a small number of vessels from Area A, and including that from 'left-hand' (northern) gully terminals of roundhouses, could be socially significant and show difference between the enclosed and unenclosed settlement area. Meanwhile in Area B the huge ceramic deposit from Roundhouse 13 probably is evidence for the status of this structure.

The Iron Age pottery from Manor Farm represents a large regional assemblage. It reflects extensive settlement over a number of centuries during the middle and later Iron Age in Humberstone. The inhabitants apparently were connected to a complex cultural network and practised specific deposition rituals.

Catalogue of Illustrations

Area A

1. Rim and upper body, S1, flattened upright rim, scoring (SCR) in arcs on upper body, external carbonised residue in shoulder and neck area, Roundhouse 3 ring gully, 84.

2. Rim and upper body, R2, possible globular vessel with everted rounded rim, light scoring (BRL), patches of heavy abrasion on external surface, pit pre-dating Roundhouse 4, 230.

3. Profile of small vessel, Q1, ovoid vessel with flattened inturned rim and flat base, impressions of uncertain origin on rim lip, 'regular' scoring with arcs under rim, post-depositional abrasion on some sherds of upper body, Roundhouse 5 ring gully, 140.

4. Rim and upper body, R1, ovoid vessel with flattened inturned rim, body displays scoring (SCR), external carbonised residue on upper body, Enclosure ditch C, 74.

5. Rim and upper body, S1, flattened inturned rim, thick external carbonised residue, re-cut of Enclosure Ditch C, 261.

6. Rim and upper body, Q1, ovoid vessel with everted tapered rim, re-cut of Enclosure ditch C, 261.

7. Rim and upper body, R2, ovoid vessel with rounded slightly everted rim, light scoring (BRL), internal carbonised residue and limescale, external abrasion, re-cut of Enclosure ditch C, 261.

8. Rim and upper body, R2, rounded upright rim, deep diagonal scored lines (SCR), re-cut of Enclosure ditch C, 261.

9. Rim, S1, beaded rim form, abrasion on internal rim surface, probably wheel-thrown, re-cut of Enclosure ditch C, 261.

10. Upper body with decoration, S1, possible globular form, light burnishing on internal and external surfaces, tooled burnished grooves in curvilinear patterns, re-cut of Enclosure ditch C, 261.

11. Rim and part profile, Q1, ovoid vessel with flattened slightly inturned rim, small patches of external and internal carbonised residue, Enclosure ditch C, 262.

12. Base, Q1, possible strainer, large perforation, flat, pinched-out base form, Enclosure ditch D, 895.

13. Rim and upper body, R2, ovoid or globular vessel with flattened inturned rim with finger-nail impressions on the rim lip, scoring (SCR) on body in vertical, horizontal and circular patterns, external carbonised residue, same vessel in context 58 (Roundhouse 2), Enclosure ditch D, 894.

Area B

14. Rim, R2, probable necked bowl or jar, everted rounded rim, rounded externally, slight abrasion externally, Roundhouse 9, 474.

15. Rim and upper body, S2, small everted flattened rim with deep possible finger impressions on rim lip and underside, scoring (SCR) on outer body surface, external carbonised residue below rim, Roundhouse 9 slot, 607.

16. Rim and upper body, S1, bowl with rim with small external flange displaying impressed decoration, scoring (SCR) on upper body, external carbonised residue, Roundhouse 10 pit, 575.

17. Rim and body, R2, ovoid vessel with everted rounded rim, burnished on external and internal surfaces, Roundhouse 12 ring gully, 655.

18. Rim, Q1, rounded slightly inturned rim, Roundhouse 13 central feature, 2045 (evaluation).

19. Rim and upper body, R2, everted rounded rim, external carbonised residue, areas of internal abrasion, Roundhouse 13 central feature, 2045 (evaluation).

20. Rim and upper body, R2, ovoid wide-mouthed bowl with flattened inturned rim, external carbonised residue on upper body, abrasion on internal and external surfaces, Roundhouse 13 ring ditch, 421.

21. Base, S1, probable strainer with flat base, one perforation and one part perforation, Roundhouse 13 ring ditch, 422.

22. Rim and upper body, R2, flattened upright rim, scored (SCR) externally with finger-tip impressions on rim lip, Roundhouse 13 ring ditch, 423.

23. Rim and upper body and base, R2, ovoid vessel with everted rounded rim and flat base, burnished externally and internally, external carbonised residue, Roundhouse 13 ring ditch, 433.

24. Rim and upper body, R2, ovoid or elipsoid vessel with everted rounded rim, abraded internal and external surfaces, Roundhouse 13 ring ditch, 456.

25. Base and scored body sherd from large vessel, R2, flat base form, deep scoring (SCR) on body, internal carbonised residue, heavy abrasion on inside of base, Roundhouse 13 ring ditch, 456.

26. Rim and upper body, R2, everted rounded and everted flattened rim, thick external carbonised residue especially on rim, Roundhouse 13 ring ditch, 516.

27. Rim and upper body, R2, flattened upright rim with finger impressions on lip, scoring (SCR and SCRA) on body, external carbonised residue, Roundhouse 13 ring ditch, 517.

28. Rim and body, R2, ovoid vessel with flattened everted rim with finger impressions on lip, Roundhouse 13 pit, 542.

29. Rim and upper body, R2, everted rounded rim, fine combed decoration, external carbonised residue, Roundhouse 13 ring ditch, 644.

30. Almost complete jar, R2, ovoid form with ill-defined neck and everted rounded rim and flat base, external carbonised residue in shoulder area and limescale on internal part of the lower body, slight abrasion on internal surface and on underside of base, Roundhouse 13 ring ditch, 656.

31. Rim and upper body, R2, round-shouldered vessel with everted rounded rim, external carbonised residue in shoulder area, Roundhouse 13 ring ditch, 888.

32. Large part of bowl-jar including profile, R2, ovoid form with slightly everted flattened expanded rim and flat, pinched out base, external carbonised residue in neck and shoulder area, abraded external surface, Roundhouse 14 ring gully, 494.

33. Rim and upper body, S1, slightly everted rounded rim, externally burnished, Enclosure G square gully, 538.

34. Rim and upper body, R2, everted flattened rim, scored (BRL) body, external carbonised residue, gully, 700.

Unstratified

35. Rim and upper body, R2, ellipsoid or ovoid vessel with everted rounded rim, scored (SCR) body, external carbonised residue on rim and below, unstratified.

36. Rim and upper body, R2, rounded upright rim, unstratified.

Very Coarse Pottery

One sherd of Stony VCP or Cheshire briquetage weighing 6g came from the fill of Enclosure E in Area A (Context 303). These VCP containers were used for drying and transporting salt. The rock fragments present in these vessels are found in glacial deposits on the Cheshire Plain in the Nantwich and Middlewich areas (Morris 1985). Finds of Stony VCP from Cheshire have also been made at the Leicestershire Iron Age enclosures at Enderby and Huncote (Elsdon 1992a and Marsden and Morris 2004) and at Hallam Fields, Birstall (Marsden forthcoming). Further fragments have been identified in the East Midlands, for example at Crick in Northamptonshire (Hughes 1998) and Gamston, Nottinghamshire (Knight 1992b). Small amounts are typical and not surprisingly given the distance to Cheshire, show that the industry was at the periphery of its trading network.

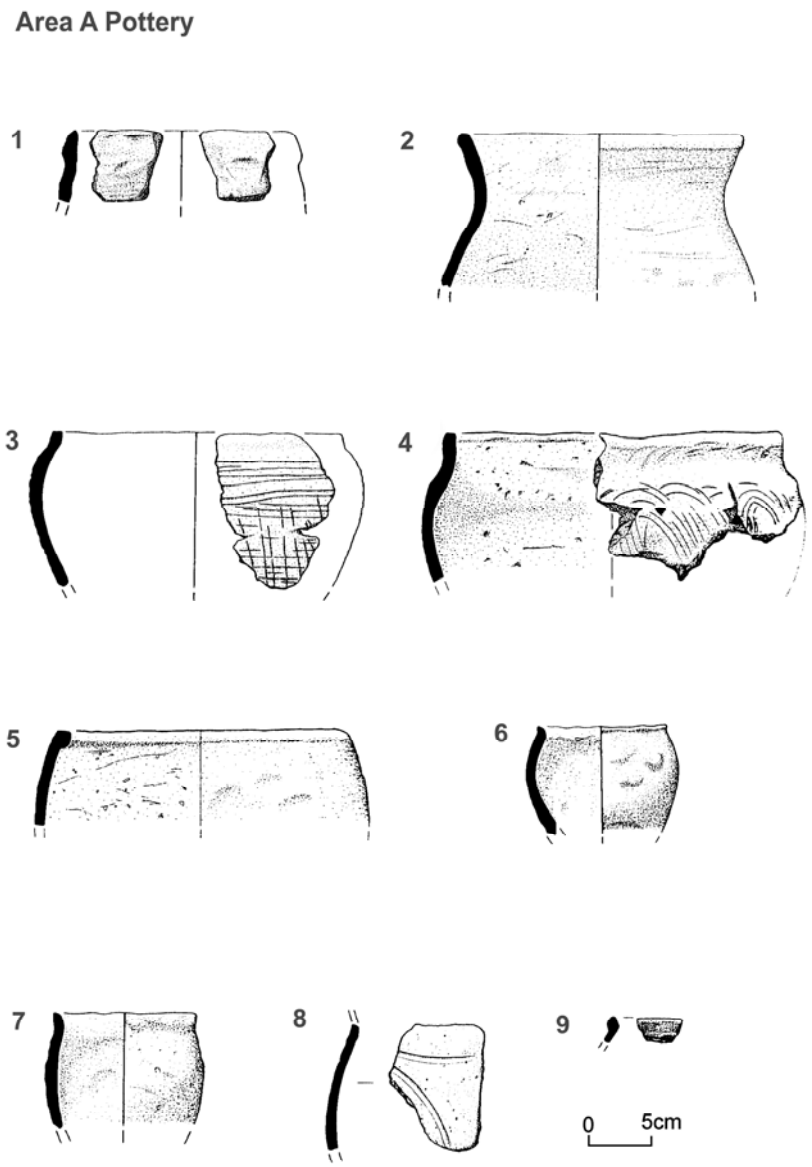

Figure 16 Prehistoric pottery

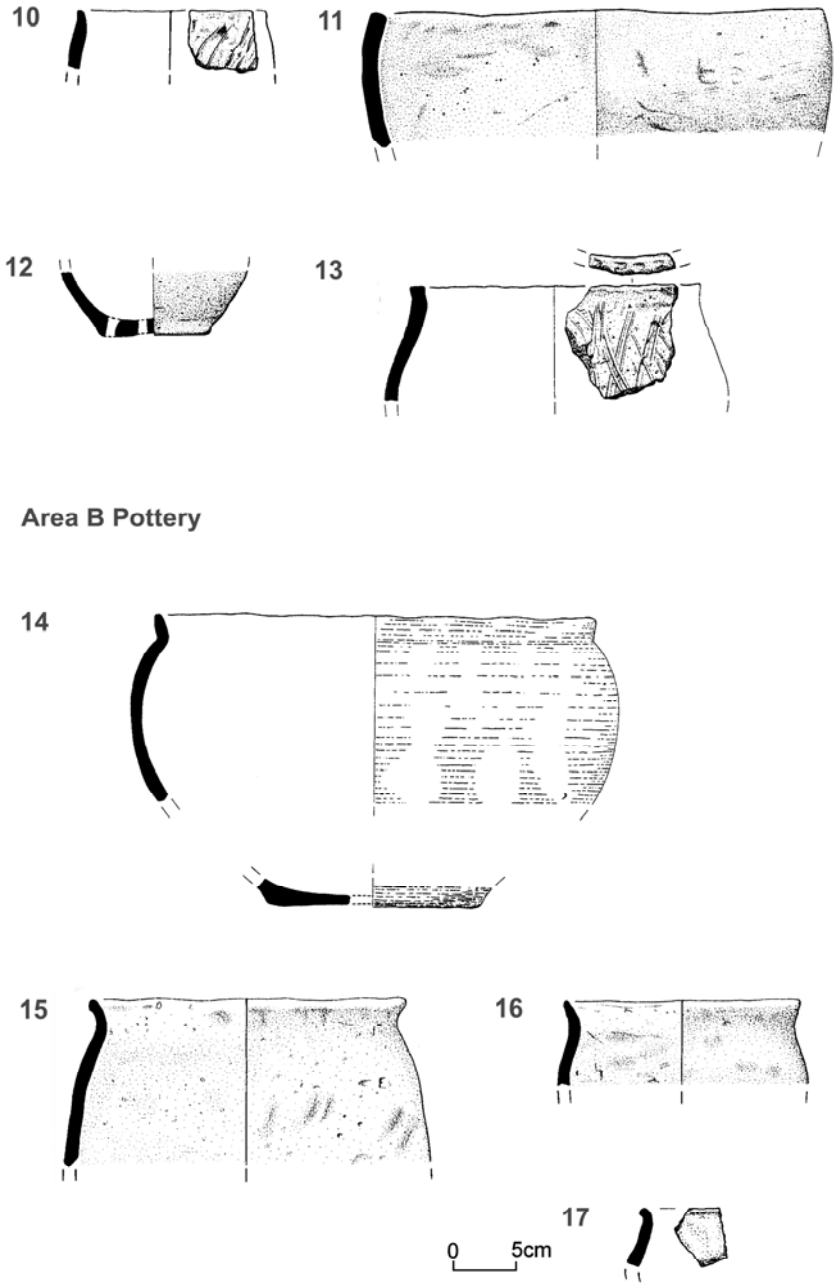

Figure 17 Prehistoric pottery

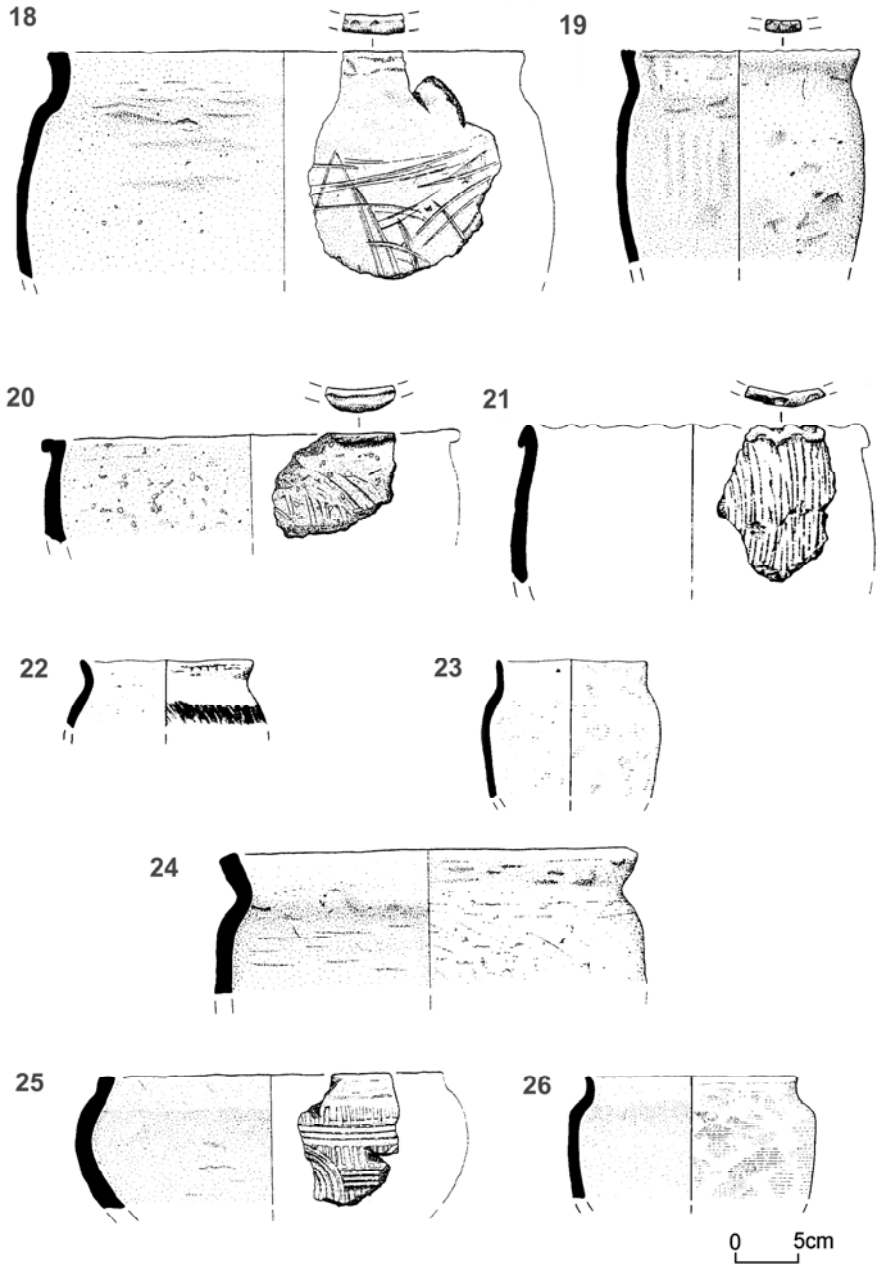

Figure 18 Prehistoric pottery

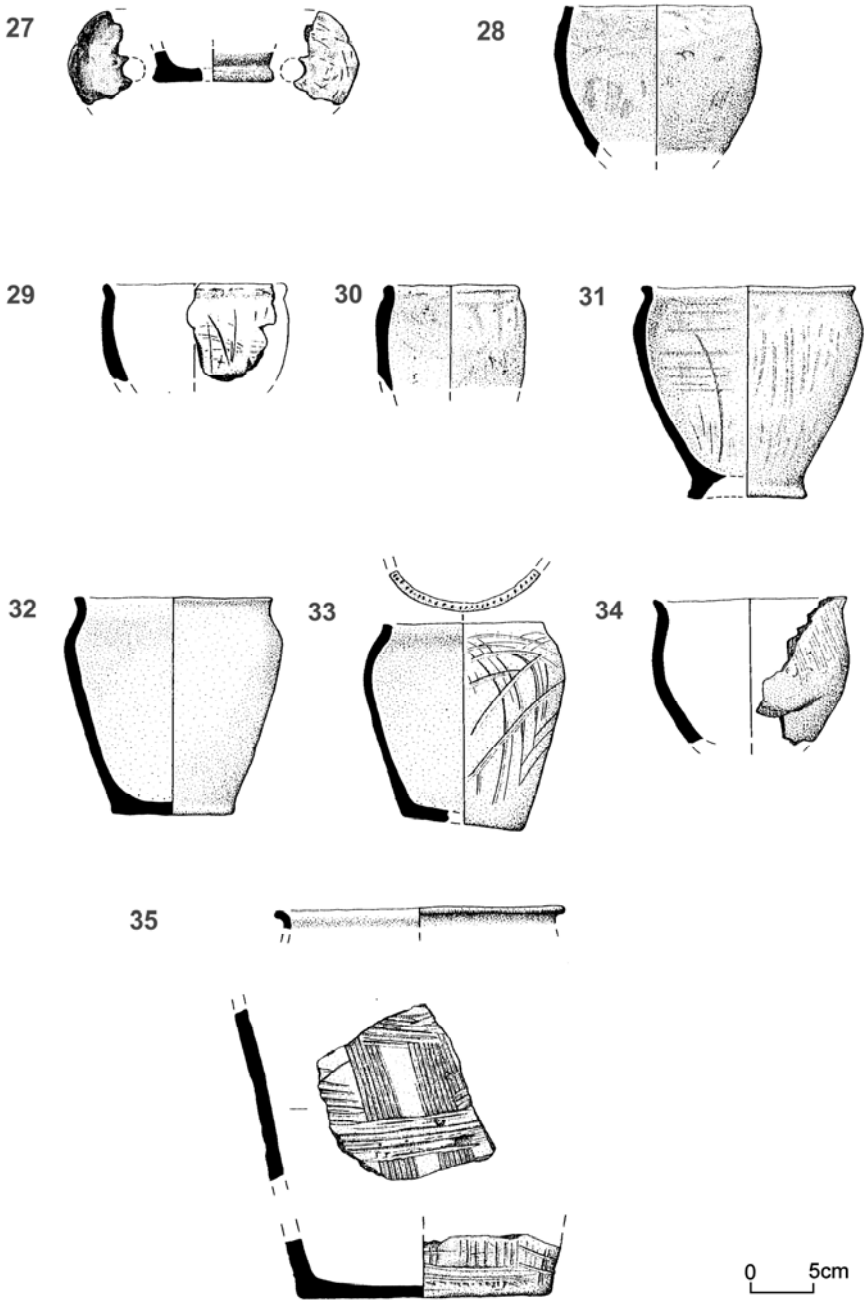

Fig 19 Prehistoric pottery

The Fired Clay and Daub - Nicholas Cooper

Introduction

Just over four kilograms of fired clay fragments were recovered by hand excavation. A further 1.24kg of fired clay fragments alongside 1.56kg of Iron Age pottery was retrieved from coarse fractions during the sieving of environmental samples. The excavated material is listed by context below and quantified by fragment count and weight. Table 3 lists the occurrence, from 23 contexts, of fragments which bear the diagnostic signs, such as finger marks/squeezes, wattle impressions or other perforations which indicate incorporation into building constructions such as walls or possibly perforated oven floors. No examples of loom weights were recorded. Table 4 lists the occurrence of undiagnostic fragments (usually too small in size) from other contexts. That retrieved from coarse fractions has been scanned for diagnostic pieces and for occurrence in contexts not previously recognised (detailed below).

Discussion

The overall impression from this assemblage is that most of the fired clay represents building debris accidentally fired during the razing of structures or other activities. This is supported by the general distribution pattern across the site which shows a marked association with the various roundhouses and associated structures in favour of other feature types.

Table 3 Catalogue of fired clay fragments with diagnostic features

Cut	Context	Frags	Weight	Comment/ FW?
415	433	1	32	Perforation or wattle impression
127	206	7	510	RH 5 Large frag with perforation: oven base?
127	136	>20	658	RH 5 Large curving frag formed by hand
127	137	2	58	RH 5 hand squeezed
63	218	>10	136	
29	28	11	150	Wattle impression and perforation (loomweight frag?)
7	16	1	22	RH 1 Nail impression
82	84	3	124	One piece hand formed
127	128	20	164	Hand squeezed
	202	55	182	Wattle impressions
	411	1	24	Smoothed flat
415	421	13	94	Joining hemispherical clod lightly fired grey clay
415	421	15	90	ENC 1. Perforation and smoothed
	427	6	32	Sooted/reduced flat surface (ie burnt wall daub?)
426	428	1	10	Finger or wattle impression
	495	13	102	Perforation and smoothed
	451	1	8	Wattle impressions and seed impressions
	478	1	14	Wattle impression/perforation
416	486	6	40	Finger smoothed
	515	17	192	Enc 1 Daub wattle impressions, smoothed
517	613	12	50	Flat surface finger impressions
628	635	1	2	Vitrified crucible frag?
	644	1	47	Smoothed frag

Table 4 Occurrence of undiagnositc fired clay fragments

5	3 and 4	c.100	282	
10	14	1	18	
10	15	2	34	
7	16	6	10	
	27	2	2	reduced
7	36	1	1	RH 1 reduced
10	31	4	10	
38	37	10	36	
42	41	1	1	
45	51	2	2	

	53	4	10	
	57	14	30	
	65	1	1	
63	69	6	46	
	77	4	4	
	78	4	12	
85	86	1	1	
	96	2	2	
82	97	1	1	
	98	2	4	
5	103	20	54	
	129	3	5	
	135	1	5	reduced
	154	2	2	
82	155	1	2	
	157	10	34	
167	166	1	2	
	190	4	16	One flat surface
63	218	5	16	
222	219	2	4	
	224	1	1	
	236	1	1	
265	261	4	21	
265	263	1	24	
	264	1	14	
	288	6	20	
302	303	7	80	
402	403	3	14	
414	404	1	2	
401	406	2	2	
	408	2	2	
	429	1	1	
	446	1	1	
	491	7	32	
490	492	2	8	
507	508	2	3	
	513	1	28	
	522	4	18	
	523	1	6	
527	528	1	1	
	529	7	28	smoothed
	538	2	10	
541	542	7	30	smoothed
	546	1	1	
553	556	1	1	
	575	3	18	
	583	1	2	
444	595	6	26	
444	596	1	5	
444	601	1	1	
444	604	1	1	
	612	1	2	
527	614	3	10	
	615	2	2	
490	627	1	1	
	629	1	1	
628	635	1	2	
	644	10	70	
648	649	5	36	
	650	4	16	
	655	2	2	
	661	1	5	
	666	2	12	
	668	1	4	

675	676	4	4	
675	677	1	6	
714	710	6	14	Light pink
	718	2	2	
	727	2	10	
730	729	1	1	
	750	1	1	
752	753	2	5	
	759	1	1	
	763	3	10	
	770	5	16	
	776	2	2	
	778	1	2	
	781	1	1	
	783	1	5	
	817	1	1	
822	823	1	1	
600	826	4	18	
	832	4	10	
834	833	10	24	
846	847	1	5	
	860	1	2	
861	862	1	4	
874	876	1	4	
	904	2	8	Smoothed frag
RH1	innergulley	1	3	
	US	1	5	

Fired Clay from Coarse fractions

Very many small samples (<10g) of fired clay together with a small number of samples between 10g and 200g (from cut 5) were recovered from the large number of environmental samples processed from the site. This material was scanned for diagnostic pieces and to note if samples came from contexts not already recognised from the hand excavated assemblage, to enable a fuller appreciation of the spatial distribution of this material. Diagnostic fragments were incorporated with the quantified list above, as was the undiagnostic material from contexts 3 and 4 (cut 5). The list of contexts yielding small samples of fired clay (<10g and often <1g), not already listed above is as follows.

34, 48, 52, 66,
100, 120, 121, 128, 134, 164, 169, 173, 199,
200, 203, 223, 225, 237, 262, 268, 293
316, 329,
400, 405, 412, 413, 418, 431, 432, 435, 445, 456, 478
512, 531, 537
607, 662, 664, 688, 690,
706, 713, 716, 769, 772, 796
808, 811, 815, 877, 878,
901, 903

The Animal Bone – Jennifer Browning

Introduction

The faunal assemblage recovered from Manor Farm, Humberstone totalled 5585 individual bones, representing one of the larger assemblages recovered from a mid-late Iron Age site in the area.

Methodology

Bone fragments were identified with reference to comparative modern and ancient skeletal material held by Leicester University, School of Archaeology and Ancient History. Species, anatomy, state of fusion, completeness and modifications by humans or other agents were recorded, to elicit information on species proportions, skeletal representation, age and condition. Where possible the anatomical part of each skeletal element was recorded using the 'zones' defined by Serjeantson (1996), with additional zones ascribed to mandibles, based on the system outlined by Dobney and Reilly (1988). Condition of the fragments was assessed on a scale of 1 to 5, with reference to Behrensmeyer (1978), where 1 denotes a bone surface with no cracking or flaking and 5 indicates that the fragment is disintegrating into splinters. When joining fragments were identified, the bones were re-assembled and the result counted as a single fragment. A record of the original fragment number was retained. Butchery marks were located by zone, where feasible and described using a simple code. The location and nature of modifications such as burning, gnawing and pathologies were also recorded. Measurements were taken as appropriate, in general following von den Driesch (1976) and Payne and Bull (1988) for pigs. Few of the bones within the assemblage could be sexed but it was possible to separate male and female pig canines following Schmidt (1972). Information was compiled within a *pro forma* computerised database (Microsoft Access).

Species proportions were calculated using NISP (Number of Identified Specimens). However, large mammal bones have a propensity to fragment into more pieces than their smaller counterparts and the result is also likely to be affected by large numbers of loose teeth. To help address this bias MNI (Minimum Numbers of Individuals) was also calculated, although its own drawback is that it tends to overemphasise less frequent species. MNI was calculated from the most frequently occurring zone of each bone element (after Serjeantson 1996). MNI was also used to assess the representation of skeletal elements. Age at death was estimated for the main species using epiphyseal fusion, following the figures from Silver (1969) and further assessed using tooth-wear patterns for cattle, sheep and pigs, following Grant (1982). The resulting mandible wear stages were then grouped into age categories following Hambleton (1999), where 'A' denotes the youngest and 'I' represents the oldest individuals, to investigate potential patterns of slaughter.

Attempts were made to separate the bones of sheep and goat using criteria defined by Boessneck (1969), paying particular attention to horn core, skull and teeth, scapula, humerus, femur, metacarpal and metatarsal. Sheep and goat bones are frequently difficult to distinguish, but where positive identifications were possible, no goats were confirmed. The possibility of goat cannot be entirely excluded: it is possible that goat bones remain unidentified due to the fragmented nature of the assemblage and there was one suspected goat bone. However, the lack of goat is consistent with the results from nearby sites, such as the adjoining Elms Farm (Charles 2000), where two horn cores were the only elements of goat recognised. At Grove Farm, Enderby (Gouldwell 1992), goat was nowhere identified. For these reasons (and to avoid excessive use of the cumbersome term 'sheep/goat') caprine bones will be referred to as 'sheep' throughout this report.

A visual estimate was made of the number of sieved fragments, noting the percentage of burnt fragments. The bones were briefly appraised as to whether undiagnostic fragments were likely to be from large mammal, small mammal, bird, or fish skeletons. Identifiable bones were recorded and the results incorporated into the main database. The sieved material (most of which was from the coarse fraction, along with a few flots) did not yield abundant remains of small *taxa* or provide much additional data on the main domestic species.

Results of the analysis

The Manor Farm animal bone was recovered during hand-excavation of features dating from the middle to late Iron Age. The site was divided into two main areas: A and B. The archaeology of Area A consisted of a series of sub-rectangular enclosures, defined by deeply cut ditches (Enclosures A-E). Within the enclosures were several ring gullies representing circular buildings. Pits, post-holes and gullies were also recorded both within and beyond the enclosed areas. A chronological development was identified beginning with an initial open phase, followed by successive phases of enclosure. Contexts in Area B have been grouped by spatial distribution only, as there are few stratigraphic relationships between features. The archaeology consists of numerous unenclosed ring gullies with a boundary ditch to the north. Although residuality is often a problem with animal bone assemblages, the pottery from the site suggests that residuality is low. A lack of stratigraphic relationships and the relatively undiagnostic pottery have made it unfeasible to divide the bone assemblage into clear phases of activity, therefore the following report should be considered to be a synthesis of several phases of activity.

The excavation strategy usually ensured that discrete features such as pits and post-holes were half-excavated. The percentage of ditch fills investigated, including ring gullies and enclosure ditches was necessarily smaller, with slots excavated at intervals and at terminals. Bulk samples were taken when deemed appropriate, from features that were discrete, well-dated and likely to be rich in environmental remains.

Number, fragmentation and condition

A total of 5585 bones was examined for this report, the vast majority of which were from the hand recovered assemblage. As Table 6 demonstrates, Area B yielded a far greater bone assemblage than Area A. 'Unidentified' bones mostly consists of shaft fragments but also include sheep-size and cattle size rib, vertebra and skull fragments not assigned to species. A large deposit of red deer antler from an enclosure ditch is not included in these tables since it would distort the species proportions, implying a greater economic emphasis on red deer than is warranted (see Discussion).

	Identified fragments	**Unidentified fragments**	**Total**
Area A	618 (35%)	1170	1788
Area B	1043 (27%)	2754	3797
Total	*1661 (30%)*	*3924*	*5585*

Table 5: Number of identified and unidentified fragments (% in brackets)

In addition to the hand-recovered material, an estimated 3500 fragments recovered during sieving of the bulk samples were scanned. Bones extracted from the coarse fraction consisted overwhelmingly of tiny, un-diagnostic mammal fragments. However, 59 'identified' fragments were added to the Area A results from along with a further 26 from Area B (table 7). These were frequently sheep and were mostly teeth and phalanges.

	Cattle	**Sheep**	**Pig**	**Other**	**Total**
Area A	10	34	15	1 (vole)	59
Area B	5	16	1	4 (2 vole, 1 *Gallus*, 1 red deer)	26
Total	15	50	16	5	85

Table 6: Identified fragments from the sieved samples

Bone surfaces were generally in a fair or good condition, with scores ranging from 1-3 on Behrensmeyer's (1978) index. However, the assemblage was extensively fragmented, which is shown by the high proportion of bone assigned to the 'unidentified' category (table 6). Some of the breakage was fresh and had probably occurred during excavation and processing. However, many of the bones are likely to have broken in antiquity, possibly partly due to the expansion and contraction of the clay fills from which they were excavated. Other taphonomic processes such as trampling, weathering and soil pH are also likely to have contributed to bone breakage. It was possible to assess the levels of fragmentation for Area A and Area B, using the 'zone' system outlined in the methodology.

Essentially, each complete bone consists of eight zones. Mean zone averages were calculated for each of the main domesticates; cattle, sheep, and pig, in addition to the total zoned fragments for each area. The differences were small. Area A bones, having an average number of 3.0 zones, were marginally less fragmented than those of Area B (average 2.7 zones). Sheep bones exhibited slightly less fragmentation than cattle and pig bones (average 3.3 zones compared with 3.0 and 2.9 zones). However, for Area B there was no difference in the fragmentation of cattle, sheep and pig, which all averaged at 2.8 zones. These results suggest that there are no significant differences in the treatment of bones, in terms of processing and disposal, between either the major species or between the two areas.

Species proportions

The remains of the following species were identified in the assemblage: domestic cattle (*Bos taurus*), sheep/goat (*Ovis aries/Capra hircus*), pig (*Sus scrofa*), horse (*Equus caballus*), dog (*Canis familiaris*), red deer (*Cervus elaphus*), roe deer (*Capreolus capreolus*), fox (*Vulpes vulpes*), water vole (*Arvicola terrestris*) bank/root vole (*Clethrionomys glareolus/Microtus oeconomus,*) bird (*Gallus* sp.) and hare (*Leporidae* family).

Both the NISP (Number of Identified Specimens) and MNI (Minimum Number of Individuals) show that sheep are most abundant species in Area A (tables 8 and 9). However, the NISP of cattle bones in Area B greatly exceeds the number of sheep. However, MNI suggests that cattle and sheep are represented in almost equal numbers (table 9). Pig bones are far less frequent than either of the other main species and are also less well-represented in Area B than in Area A. Small numbers of horse, dog and red deer are present in both areas. All other species are sporadic or isolated finds.

Species	**Area A**	**%**	**Area B**	**%**
Cattle	180	29	544	54
Sheep/goat	253	41	315	31
pig	94	15	59	6
dog	6	1	13	1
horse	62	10	60	6
red deer	18	3	19	2
roe deer	0	0	1	<1
vole	1	<1	2	<1
fox	1	<1	0	0
hare	1	<1	0	0
Gallus sp	1	<1	2	<1
Total identified	*617*		*1015*	
c-size	294		1000	
sheep-size	264		363	
small	5		3	
unident.	607		1388	
Unidentified bird	1		6	
Grand Total	*2405*		*4790*	

Table 7: NISP (Number of Identified Specimens)

Species	**MNI Area A**	**%**	**MNI Area B**	**%**
Cattle	5	25	12	35
Sheep/goat	8	40	13	38
Pig	4	20	4	12
Dog	1	5	2	6
Horse	1	5	2	6
Red deer	1	5	1	3
Total	20		34	

Table 8: MNI (Minimum Number of Individuals): calculated for frequently occurring species only

Cattle

Cattle bones were recovered from a wide range of features and deposits across both areas.

Skeletal Representation

All parts of the anatomy are represented in both Area A and Area B (figure 1). The shape of the two graphs is not dissimilar but elements are mostly better-represented in Area B, probably due to the higher number of bones. This is particularly the case for the hind limb. The distal humerus and proximal radius are very common on both areas, while phalanges and elements from the skull and mandible are rare. Metapodials are better represented in Area B than Area A. On the whole, the earlier fusing bones and more robust bones are present in greater numbers. This suggests that some of the differences in skeletal representation may be a result of poor preservation. Late fusing bones, such as the proximal humerus, femur, proximal tibia, and distal radius, are generally less numerous. As these elements remain immature for longer they are more prone to fragmentation and therefore destruction.

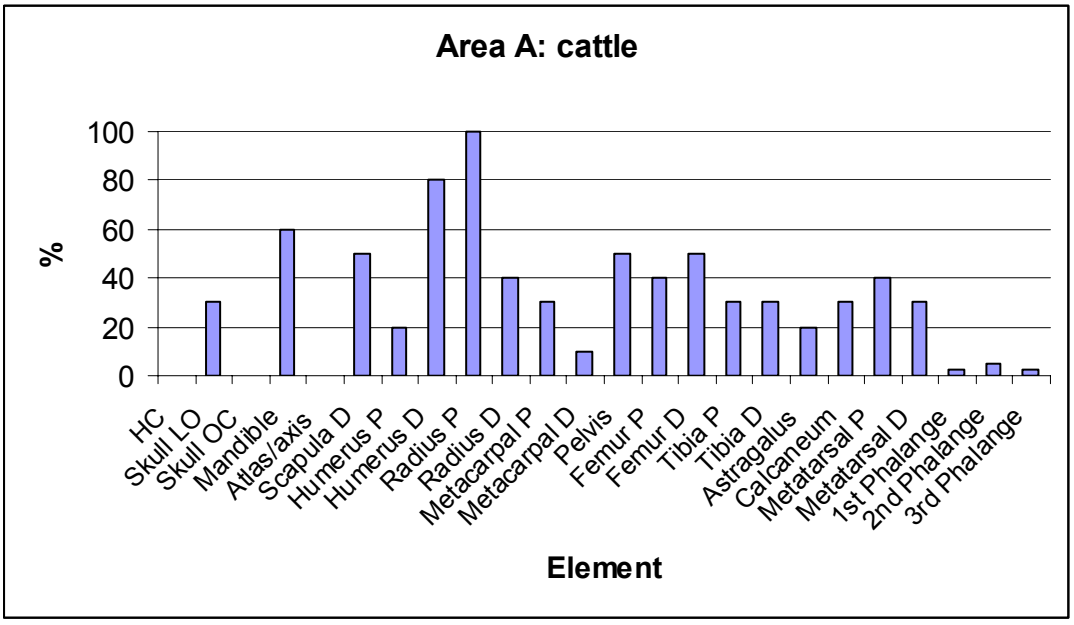

Figure 20: Representation of cattle skeletal elements from Area A

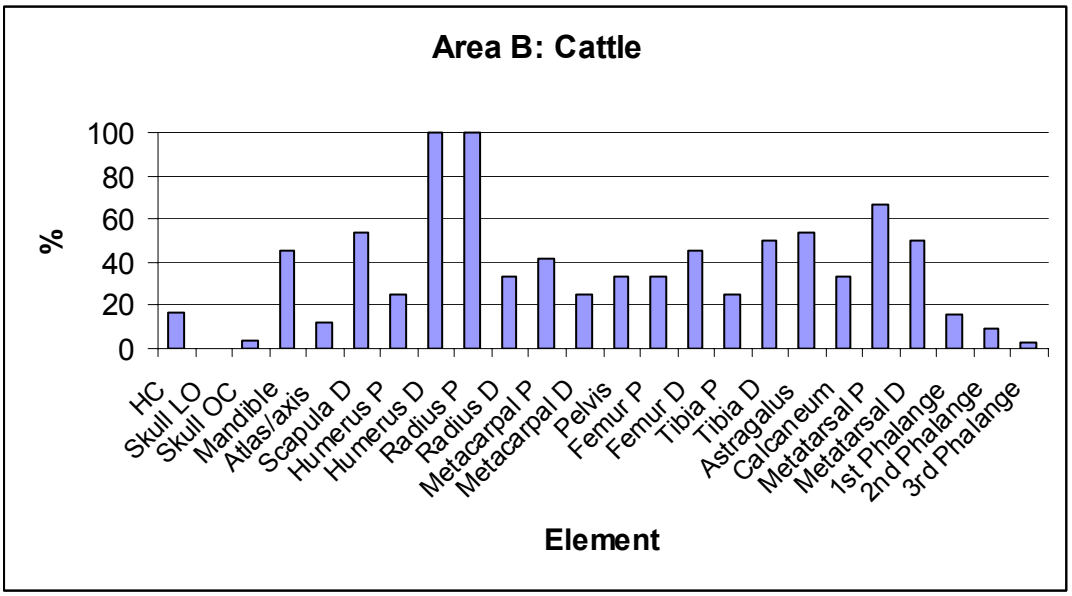

Figure 21: Representation of cattle skeletal elements from Area B

Despite the factors considered above, the data still suggests certain trends. There is a strong correlation between the occurrence of distal humerus and proximal radius, which are jointly the most common element, in the Area B assemblage. These form the centre of the upper forelimb and it is tempting to regard them as evidence for a favoured cut of meat. The distal humerus was a common site for butchery, which will be discussed later in the report. Skull, horn cores and phalanges are greatly under-represented in both areas, which may be partly a preservation bias but may also suggest that the waste from slaughter and primary butchery was dumped beyond the scope of the excavation.

Age Structure

Area A

Information from epiphyseal fusion amongst the Area A bone indicates that most cattle were surviving to at least three years in age. A rise in the proportion of unfused bones with closure times of between 36 and 48 months indicate a peak in slaughter at this time (table 10). Little tooth wear data was obtained for Area A but it supports the age structure suggested by the fusion data (figure 3). No elderly cattle are represented but mortalities are recorded in every age other category, with small peaks in categories D (18 to 30 months) and G (adult).

Area A				
Age (months)	**Bone**	**Fused**	**Unfused**	***% fused***
by 10 months	Pelvis (acet.) and scapula D	13	0	*100*
13-18 months	1st Phal P, Humerus D, Radius P, 2nd phal P	18	1	*95*
24-36 months	MetaC D, Tibia D, MetaT D	4	1	*80*
36-48 months	Femur P, Calc P, Radius D, Ulna P,	10	11	*48*
	Humerus P, Femur D, Tibia P			
		45	13	*78*

Table 9: Cattle fusion data from Area A

Cattle					
Age category	**Suggested Age**	**Area A**	**%**	**Area B**	**%**
A	0-1 mth	1	13	1	7
B	1-8 mth	1	13	1	7
C	8-18mth	1	13	0	0
D	18-30 mth	2	25	3	21
E	30-36 mth	1	13	2	14
F	young adult	0	0	2	14
G	adult	2	25	3	21
H	old adult	0	0	2	14
I	senile	0	0	0	0
		8		14	

Table 10: Cattle toothwear stages for Areas A and B (after Grant 1982, Halstead 1985, as defined by Hambleton 1999)

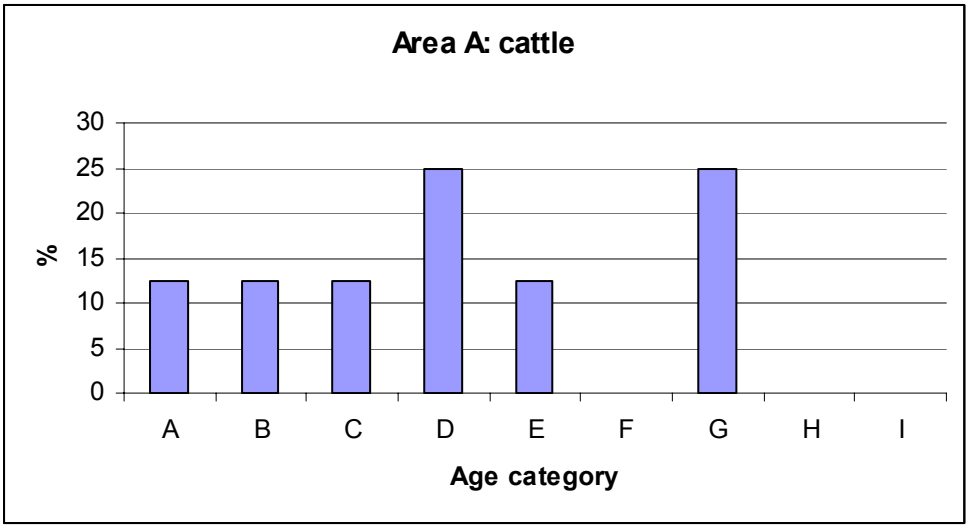

Figure 22: Cattle tooth wear stages for Area A
Key to Age Stages: A=0-1 mth; B= 1-8 mth; C=8-18mth; D=18-30 mth; E=30-36 mth; F=young adult; G=adult; H=old adult; I= senile.

Area B

The greater number of epiphyses in the Area B assemblage provides a more reliable interpretation (table 12). Unfused bones are present in all age stages, however, in total only 9% are juvenile, indicating that the majority of cattle survived to adulthood. There is a slight rise in the number of immature bones among those fusing between three and four years. The Area B assemblage yielded only 14 usable Mandible Wear Stages (MWS) but these largely support the evidence from epiphyseal fusion (figure 4). They indicate a low mortality rate amongst the juvenile animals but suggest steady slaughter from categories D through to H (18-30 months to old adult).

Area B				
Age (months)	**Bone**	**Fused**	**Unfused**	***% fused***
by 10 months	Pelvis (acet) and scapula D	23	1	*96*
13-18 months	1st Phal P, Humerus D, Radius P, 2nd phal P	68	5	*93*
24-36 months	MetaC D, Tibia D, MetaT D	26	1	*96*
36-48 months	Femur P, Calc P, Radius D, Ulna P,	30	8	*79*
	Humerus P, Femur D, Tibia P			
		147	15	*91*

Table 11: Cattle fusion data from Area B

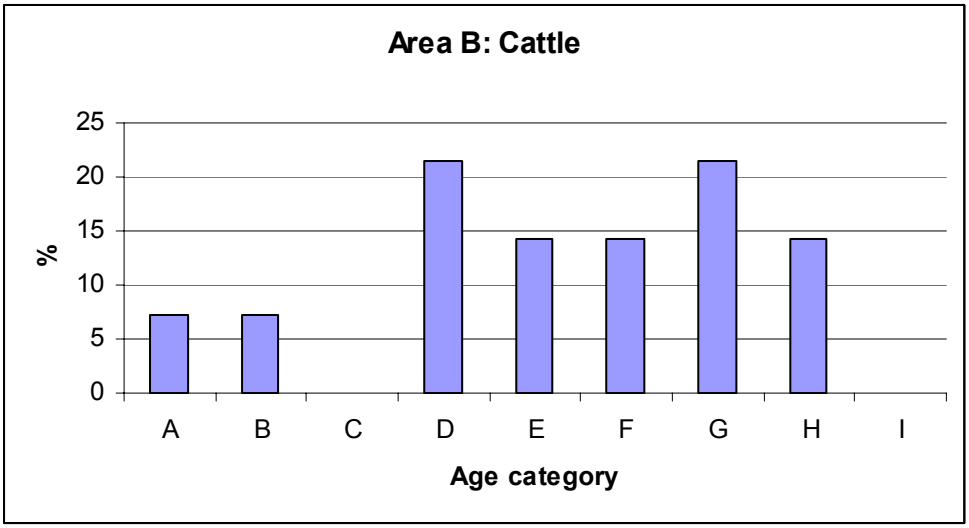

Figure 23: Cattle tooth wear stages for Area B
Key to Age Stages: A=0-1 mth; B= 1-8 mth; C=8-18mth; D=18-30 mth; E=30-36 mth; F=young adult; G=adult; H=old adult; I= senile.

Comparison of the results from the two areas indicates that the cattle represented in Area A were slaughtered at a slightly younger age than those in Area B. However, this is necessarily a cautious conclusion, as it is based on a relatively small number of bones.

Stature and Appearance

The low number of shoulder heights obtained is testament to the high fragmentation of the assemblage: whole bones are required in order to calculate the stature of an animal. It was only possible to calculate four heights for cattle; 1.04m, 1.07m, 1.08m and 1.13m; all typical shoulder heights for Iron Age cattle. A variety of measurements taken during the course of the analysis can be found in the archive. These are not sufficient to look at intra-site variation, although they may contribute in the future to inter-site comparisons.

Sheep and goat

Skeletal Representation

Most parts of the anatomy are represented in Area A at a low level but several are particularly well-represented (figure 5). Mandible and proximal tibia were the most frequent elements but distal tibia, proximal radius and distal humerus were also very common. Most of these elements are robust and tend to survive well, with the exception of the proximal tibia, which may have a bearing on their prominence. These bones are mostly from the more 'meaty' parts of the body but there is low representation of other 'meaty' elements such as scapula, proximal humerus, femur and pelvis.

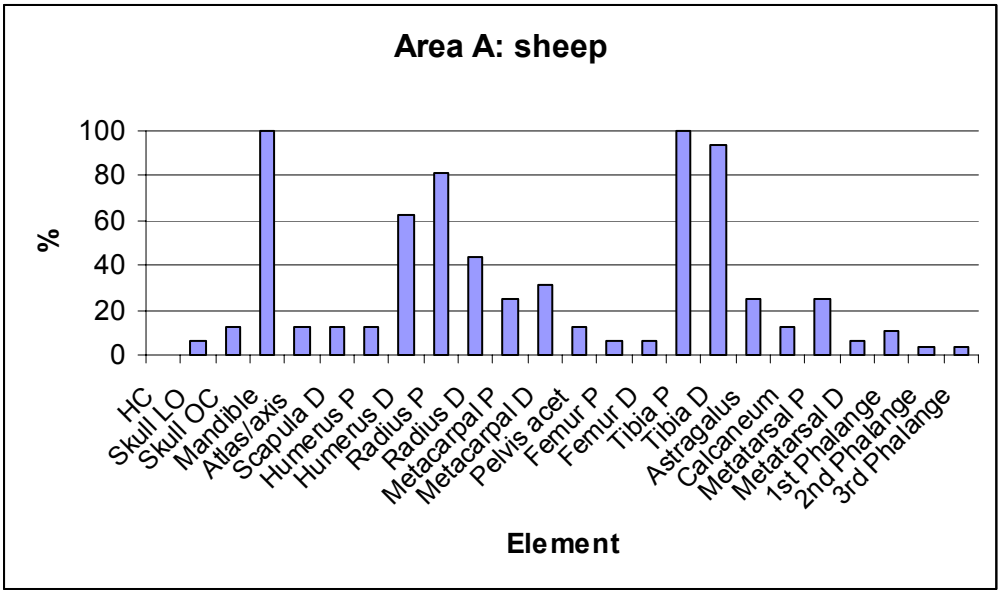

Figure 24: Representation of sheep skeletal elements in Area A

The mandible was the most frequent element in Area B; all other bones are greatly under-represented by comparison. The prominence of this element is slightly puzzling but is not unusual; Grant noted that the mandible was the best represented bone element for sheep in every large sample that she had studied (1984, 501). Similarly, mandibles were the most common bone at the adjoining Elms Farm site (Charles 2000, 207). Most other parts of the anatomy are represented to a lesser degree, with radius being the second most common element. Few phalanges were recovered but this may be result of excavation bias due to their small size.

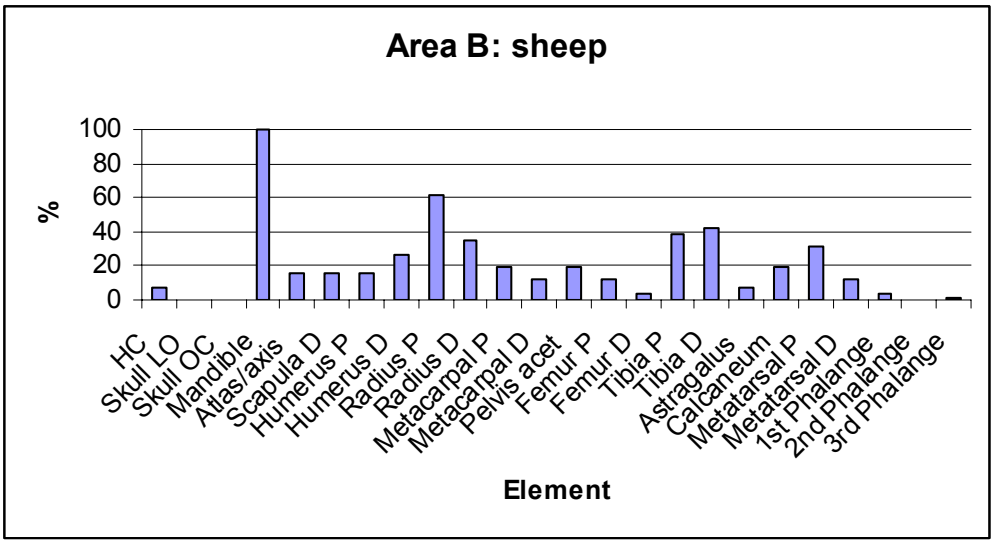

Figure 25: Representation of sheep skeletal elements in Area B

Age structure

Area A

There were low numbers of bones with epiphyseal surfaces, particularly in view of the apparent dominance of sheep in Area A. About a third of the Area A bones were unfused (table 8). The numbers of later fusing bones are very few but a slight increase in the proportion of unfused bones is discernable. The fusion data is not entirely inconsistent with the interpretation suggested by tooth wear.

MWS data from Area A indicated that sheep mortality occurred across the range of age categories from A (infant) to I (senile) (table 14). However, this was at a low level among juvenile animals, with a dramatic rise among category D animals (figure 7), which probably represent animals aged between 1 and 2 years old (Payne 1973 quoted in Hambleton 1999, 64). Mortality declines in category E but then remains reasonably steady until category G (representing animals aged between 2 and 6 years). If these results are typical, most animals were slaughtered from their second year onwards and only a small number survived into old age.

Area A				
Age (months)	**Bone**	**Fused**	**Unfused**	**% fused**
by 10 months	Pelv (acet), scapula D, Humerus D, Radius P	15	2	88
13-16	1st Phal P, 2nd Phal P	5	1	83
18-28	Metac D, Tibia D, MetaT D	6	2	75
30-36	Ulna P, femur P, Calc P, Radius D	2	2	50
36-42	Humerus P, Femur D, Tibia P	2	2	50
		30	9	77

Table 12: Sheep fusion data from Area A

Sheep					
Age category	**Suggested Age**	**Area A**	**%**	**Area B**	**%**
A	0-2 mth	1	4	0	0
B	2-6 mth	0	0	0	0
C	6-12 mth	1	4	1	4
D	1-2 yrs	8	32	2	8
E	2-3 yrs	4	16	5	19
F	3-4 yrs	3	12	9	35
G	4-6 yrs	5	20	6	23
H	6-8 yrs	0	0	1	4
I	8-10 yrs	3	12	2	8
		25		26	

Table 13: Sheep tooth wear stages for Area B (after Payne 1973, Grant 1982, as defined by Hambleton 1999)

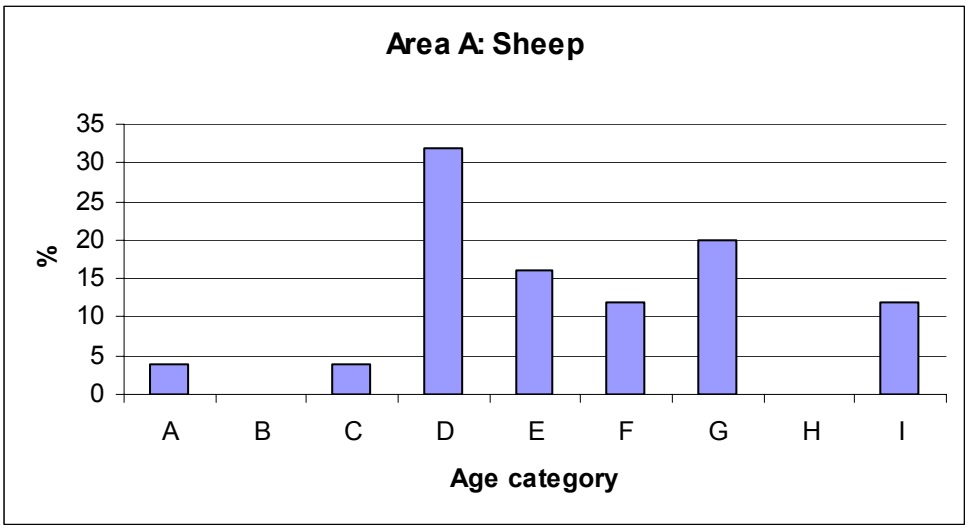

Figure 26: Sheep tooth wear stages for Area A (after Payne 1973, Grant 1982, as defined by Hambleton 1999) Age categories: A=0-2 mth, B=2-6 mth, C=6-12 mth, D=1-2 yrs, E=2-3 yrs, F=3-4 yrs, G=4-6 yrs, H=6-8 yrs, I=8-10 yrs,

Area B

A slightly larger pool of fusion data was available for the Area B assemblage, which indicated that half of the bones were unfused (table 8). Of the early fusing bones (prior to 10 months) 65% were fused, which suggests that there was significant mortality amongst the juvenile population but also implies that most animals were surviving beyond this age. Although the numbers are meagre, unfused bones outnumber fused ones in the succeeding age categories. A slightly different picture is presented by the tooth wear evidence, which indicates that the majority of animals were killed between the ages of 3 and 4 (figure 6). MWS scores were initially separated into those estimated from loose teeth (dp4 and m3 only) and those which were from mandibles, in order to check that they showed the same pattern. In theory a loose tooth could have belonged to a jaw with an incomplete tooth row. Scores with an overly wide range, crossing categories, were discarded. The mandible data indicated a wider age range than is shown by the loose teeth, but the pattern itself was identical. Infant and juvenile animals are not represented but animals are slaughtered from age category C (6-12 months) onwards. There is a distinct peak of slaughter centred upon age category F (MWS 37-40), which both Grant (1984, 504) and Hambleton (1999, 65) suggest represent animals aged between 3 and 4 years. A few immature sheep are represented and there are also a small number of elderly animals.

Area B				
Age (months)	**Bone**	**Fused**	**Unfused**	**% fused**
by 10 months	Pelv (acet), scapula D, Humerus D, Radius P	15	8	65
13-16	1st Phal P, 2nd Phal P	2	3	40
18-28	Metac D, Tibia D, MetaT D	4	5	44
30-36	Ulna P, femur P, Calc P, Radius D	6	8	43
36-42	Humerus P, Femur D, Tibia P	3	6	33
		30	30	50

Table 14: Sheep fusion data from Area B

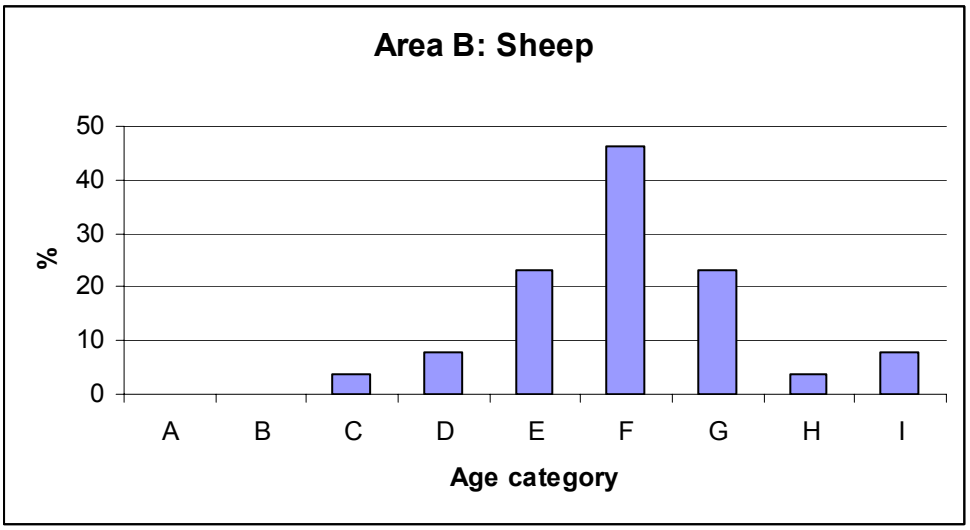

Figure 27: Sheep tooth wear stages for Area B (after Payne 1973, Grant 1982, as defined by Hambleton 1999) Age categories: A=0-2 mth, B=2-6 mth, C=6-12 mth, D=1-2 yrs, E=2-3 yrs, F=3-4 yrs, G=4-6 yrs, H=6-8 yrs, I=8-10 yrs,

Stature and Appearance

No horncores were recovered from Area A. Horncores from Area B were rare and mostly fragmentary. A badly fragmented horncore may belong either to a billy-goat or ram. Only one sheep withers height was obtained from a calcaneum in Area B: 0.67m.

Pigs

Pigs are considerably less frequent than both cattle and sheep, particularly in Area B. The NISP percentages for Area A and B is 15% and 6% respectively, while the MNI percent is 20% and 12%. The lack of whole bones prohibited the calculation of withers heights for pigs.

Skeletal Representation

Figure 9 shows the relative proportions of pig elements and adequately illustrates the paucity of pig remains on the site. Unlike cattle and sheep bones, the full pig anatomy is not represented in either area. The small fragment numbers make it difficult to assess whether the recovered elements are simply a consequence of poor preservation and recovery or if the particular anatomical parts are significant. The mandible is the most common element for Area A, while more scapulae were retrieved from Area B than any other bone. Both are fairly robust elements and scapulae are early-fusing, which tends to increase durability, since fragile juvenile bones generally have a lower survival rate. Phalanges are under-represented in both areas, which may be a recovery bias. Small numbers of metapodials were recovered from Area A but not from Area B.

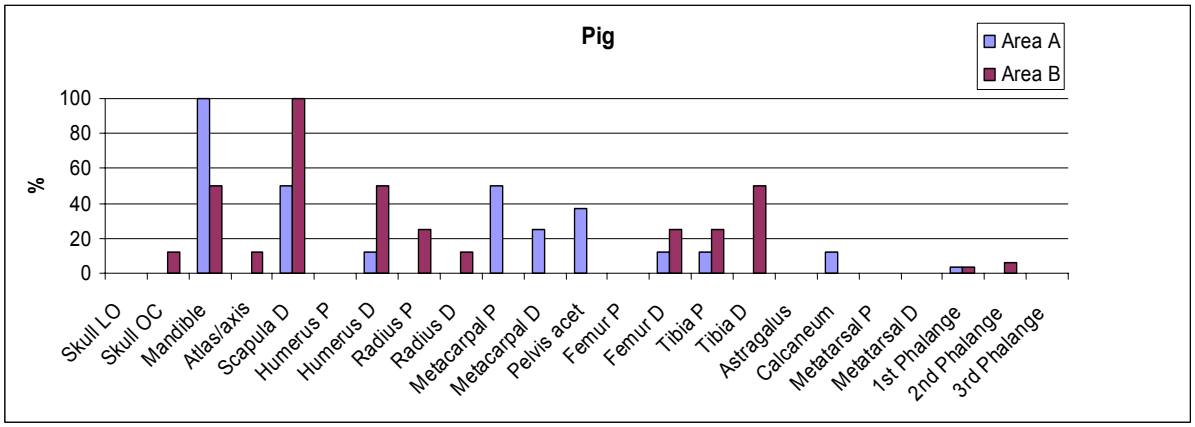

Figure 28: Representation of pig skeletal elements for both Area A and Area B

Age structure

There is an insufficient quantity of evidence to provide reliable information on age structure in either Area A or Area B. Data from epiphyseal fusion is scant but indicates that in Area A, two thirds of the bones are unfused. In Area B this rises to 50%. There were only seven MWS scores from Area A. These were reassigned to Hambleton's age categories, where most (6 out of 7) belonged to category D likely to range from 14-21 months (Hambleton 1999, 65). A single specimen was noted in age group E, 21-27 months (table 9). The similarly small numbers of age-able pig teeth and mandibles from Area B also indicate that the highest casualty rate was in age group D. Although tentative, this evidence hints at the familiar scenario of slaughtering pigs as soon as they are large enough to yield sufficient meat.

Pig					
Age category	Suggested Age	Area A	%	Area B	%
A	0-2 mth	0	0	0	0
B	2-7 mth	0	0	0	0
C	7-14 mth	0	0	0	0
D	14-21 mth	6	86	4	80
E	21-27 mth	1	14	1	20
F	27-36 mth	0	0	0	0
G	adult	0	0	0	0
H	old adult	0	0	0	0
I	senile	0	0	0	0
		7		5	

Table 15: Pig tooth wear stages for Area A and B (after Payne 1973, Grant 1982, as defined by Hambleton 1999)

Area A and B				
Pig				
Age (months)	**Bone**	**Fused**	**Unfused**	**% fused**
12	Scapula D, Humerus D, Radius P, Pelv, 2nd Phal	10	5	67
24	Metac D, Tibia D, 1st Phal P	4	4	50
24-30	Calc P, metat D	1	0	100
36-42	Ulna P Humerus P, Radius D, Femur P & D, Tibia P	1	3	25
		16	12	57

Table 16; Pig fusion data for Area A and B

Horse

Horse was the fourth most abundant species after cattle, sheep and pig and comprised 10% of the Area A assemblage and 6% of that from Area B (NISP, table 2). In both assemblages around 60 specimens were identified.

Horse bones were recovered from 13 different deposits in Area A, in Enclosure ditch C, roundhouse 2 and roundhouse 3. Most of the identified elements were from the head (skull, mandible or loose teeth). However, post-cranial fragments (humerus, radius, pelvis, femur, a metapodial and phalanges) were also identified. There were no unfused bones indicating the presence of young animals. Just over half of the Area B bones were from the cranial region, however femur, humerus, metapodials, phalanges, pelvis, scapula, tibia were also recovered. Unfortunately, no bones were complete enough to provide withers height estimations.

Dog

Dog bones were rare at the site, making up only 1% of the bone in the NISP count in both assemblages and 5-6% (slightly over-represented due to the quantification method) in the MNI. However, the prevalence of gnawed bones suggests that dogs were very much present on site.

Six dog bones were identified in the Area A assemblage; calcaneum, femur, maxilla, radius and two fragments of the same tibia. All of the bones were fused. It was not possible to obtain any shoulder heights but the tibia provided a minimum length of 160mm, which falls well within the observed range for Iron Age dogs (Harcourt 1974, 163). With the exception of the maxilla fragment, which was found in enclosure ditch D, all the dog bones were recovered from the fills of ring gullies. Four fragments were from roundhouse 6, comprising the partial hind leg (context 110) and one from roundhouse 3.

Area B yielded 12 fragments of dog bone from eight different deposits. Two were from pits, two from Enclosure G (a square-shaped gully) two from Roundhouse 13 and the remainder from a semi-circular gully. The fragments were mostly teeth, mandible and skull fragments. In addition, the remains of two fused scapulae were also recovered, in different deposits within the same feature. Both fragments were from the right side, therefore not from the same animal.

Wild Animals

With the exception of red deer, wild animals were extremely rare and generally comprised single, isolated specimens suggesting that they were an infrequent foodstuff and in many cases were probably incorporated into deposits accidentally.

Red deer

Red deer bones were found in both areas, but primarily consisted of antler, which in almost every case displayed cut, chop or saw marks. Only two non-antler fragments were recovered from Area A; a tooth and part of a radius, both collected in the ring gully of roundhouse 4. The ring-gully of roundhouse 13

yielded a red deer skull fragment; this comprised the only non-antler fragment from Area B. The evidence points strongly to the conclusion that deer formed a very insubstantial part of the diet.

Antler

In Area B, antler fragments derived from Enclosures D and F and Roundhouses 12 and 13, however a greater proportion was collected from Area A. A large group of red deer antler was recovered from Enclosure ditch C, the majority of which had apparently been placed as a single deposit. Associated pottery suggests that the deposit dates from one of the latest phases of the site (late Iron Age-Early Roman period). Where the base of the antler survives, it is apparent that the antler had been collected after it had been shed, rather than being procured from hunted animals. The antler deposit was highly fragmented into 150 pieces, partly as a result of modern machine damage during excavation. It was possible to re-assemble many of the fragments, which were found to represent a minimum of eight antlers, based on numbers of burrs. The presence of brow, bez, trez and in some cases further tines, suggest that they came from stags at least three years in age (Lawrence and Brown 1967, 131). Each year a stag grows new antlers, which are successively larger than those of the previous year. Red deer shed their antler in early spring, between mid-February and the end of March (Lawrence and Brown 1967, 135). A series of measurements were taken on the antler (see Appendix). The average circumference of the burr (measured on the bony coronet) was 227mm but they ranged in size from 203 to 270mm (based on nine examples). The Neolithic site of Grimes Graves revealed hundreds of red deer antler and therefore provides good comparative material (Clutton-Brock 1984). The Manor Farm antler had a larger mean average circumference, 212.97mm, although this is based on far fewer antlers and had a smaller range. At Grimes Graves the burr circumference varied from 133mm-280mm (Clutton-Brock 1984, 25). It seems possible that the Manor Farm antler were chosen deliberately for their large size. The antlers were also measured just above the coronet, which yielded an average circumference of 206mm, ranging from 147mm to 243mmm (based on seven examples). It seems possible that the antler was collected soon after it was shed, since it is well-documented that deer and other animals gnaw on shed antler in order to acquire calcium and other nutrients. Only a single example showed signs of gnawing and the marks more closely resembled those made by dog rather than deer teeth.

Almost every antler had at least one saw or chop mark. The saw is used much more commonly than the cleaver, which supports the observation that saws are rarely used on 'food' bones but frequently found on bones intended for tool manufacture (Grant 1987, 55). In most cases it appears that tines have been removed by sawing transverse to its axis. A smaller number of antlers were sawn through the beam. However, tines have clearly been carefully selected, as a surprising number still remain in place. This suggests that antler was available in abundance therefore the antler worker could afford to be discriminating about the chosen tines. One particular tine revealed a great deal about the intended use for the antler. The sawn end had a vertical groove, which indicated that the tine had been split axially. This appeared to have occurred prior to the sawing through of the shaft and suggests that the removed part of the tine would have been in two halves. These could have been used to haft a knife or similar metal object. Since the removed tines were different sizes, it seems likely that they were used for a variety of implements, rather than the bulk production of a specific type.

The deposition of such a large cache of antler within the enclosure ditch may represent a single archaeological event. There was no evidence for re-working. The dumping of such a large amount of potentially useful material strikes one as quite wasteful. It suggests that the antler was surplus to requirements and also hints that it was collected for artefact production at a particular time rather than being part of an on-going cottage industry.

Other wild animals

A fragment of skull, tentatively identified as roe deer, was retrieved from the fill of Enclosure G (Area B). A fused hare pelvis was recovered from the ditch fill of Enclosure C in Area A. This is likely to be brown hare, which is frequently found on Iron Age sites in southern England, although there is some question over exactly when it was introduced (Yalden 1999, 127). Part of the radius of a fox or very small dog was retrieved from the ring gully of roundhouse 3. A single small mammal bone retrieved from a pit sample in Area A was identified as water vole (*Arvicola terrestris*). Two vole bones were also recovered during sieving of samples from Area B. Their size and morphology suggested that one was likely to belong to Bank vole (*Clethrionomys glareolus*), while another closely resembled Root

vole (*Microtus oeconomus*). Both were from pit fills and are likely to have been incorporated accidentally.

Birds

Birds were extremely poorly represented in the assemblage. Amongst the hand-recovered bone, three specimens apparently belonged to domestic fowl (*Gallus* sp.), along with a few unidentified avian shaft fragments. The coarse fraction and flots did not yield any further remains. This observation is supported by the paucity of bird remains among the far larger Elms Farm assemblage, where only nine avian specimens were recorded (Charles 2000, 204). Birds evidently did not form a significant part of the diet at the settlement. However, the results might imply that the soils were not conducive to the survival of small bones.

Butchery

Butchery marks occur during the following stages of processing a carcass; slaughter and primary butchery, which usually involves skinning and removal of the head and feet; dismemberment of the carcass and filleting of the meat from the bone. Recurring butchery marks were observed on particular elements, strongly suggesting a systematic approach to butchery. Cut marks are most common overall, indicating that much of the dismemberment was carried out with sharp knives to cut through tendons and ligaments. Chopping, with a tool such as a cleaver, seems to have been a less preferred method of disarticulation but was used to divide bones either transversely or lengthways. Few marks were observed on vertebrae, suggesting that carcasses were not hoisted and split. This approach is quite different to butchery often observed on Romanised sites, which is characterised by heavy chopping and splitting of the carcass. The use of the saw is only found on antler and not on food bones; observations on bone from the Iron Age to the medieval period suggest that saws are almost exclusively used for bones and antler intended for tool manufacture (Grant 1987, 55). Cattle bones were butchered more than any other species (table 18); the larger cattle carcass requires more extensive butchery to reduce it to manageable sized pieces.

Species	**Area A (no)**	**% of species**	**Area B(No)**	**% of species**
Cattle	43	24	96	18
Sheep/goat	20	8	11	3
Pig	5	5	4	7
Horse	-	-	1	2
Cattle-size	7	2	10	1
Sheep-size	-	-	3	1
Total	75		125	

Table 17: Numbers of butchery marks recorded

Cut and chop marks were found almost equally on cattle bones from Area A but knife cuts were slightly more common in Area B. The distal humerus was a very common site for butchery, especially in cattle, where it was also the most frequently occurring part of the skeleton. Overall 38% of humerii fragments were butchered. The marks were predominantly knife cuts concentrating on the medial face of the epicondyle and strongly resembling those noted by Binford (1981, 123), which had resulted during the dismemberment process.

Cattle astragalii also displayed characteristic butchery; discontinuous transverse cut marks, 'skimming' the bone, occurred on the dorsal and medial faces and almost certainly resulted from dismemberment (Binford 1981, 120). Similar marks were also seen on the bones of sheep. Out of 21 partial and whole astragalii, almost half were butchered in this way. These observations accord with the evidence from Elms Farm, where the humerus and astragalus were frequently found butchered in a similar manner (Charles 200, 205).

Marks on the mandible, particularly on the ramus and condyle, were reasonably common. These may have occurred during disarticulation or the filleting of cheek meat. Metatarsals also displayed cuts, which are likely to be a mixture of dismembering and filleting marks. Butchery relating to dismembering and filleting marks was also noted on the scapula. Metapodials, particularly in Area B,

were frequently butchered and a number of metatarsi had been divided down the centre (sagittal) line (nine examples were noted in Area B). Although the reason is not entirely clear, it may be related to the removal of marrow from the central cavity. Ribs showed occasional cut and chop marks, usually transverse; these would have resulted from dividing the ribcage into manageable portions and filleting the meat. A small number of long bones from Area A (n=5) showed signs of rough chopping, deliberate breakage or hollowing out, which suggested extraction of the nutritious marrow. These were the femur, humerus, metacarpal, radius and tibia. In Area B the same range of bones were observed but breakage of the humerus was especially common.

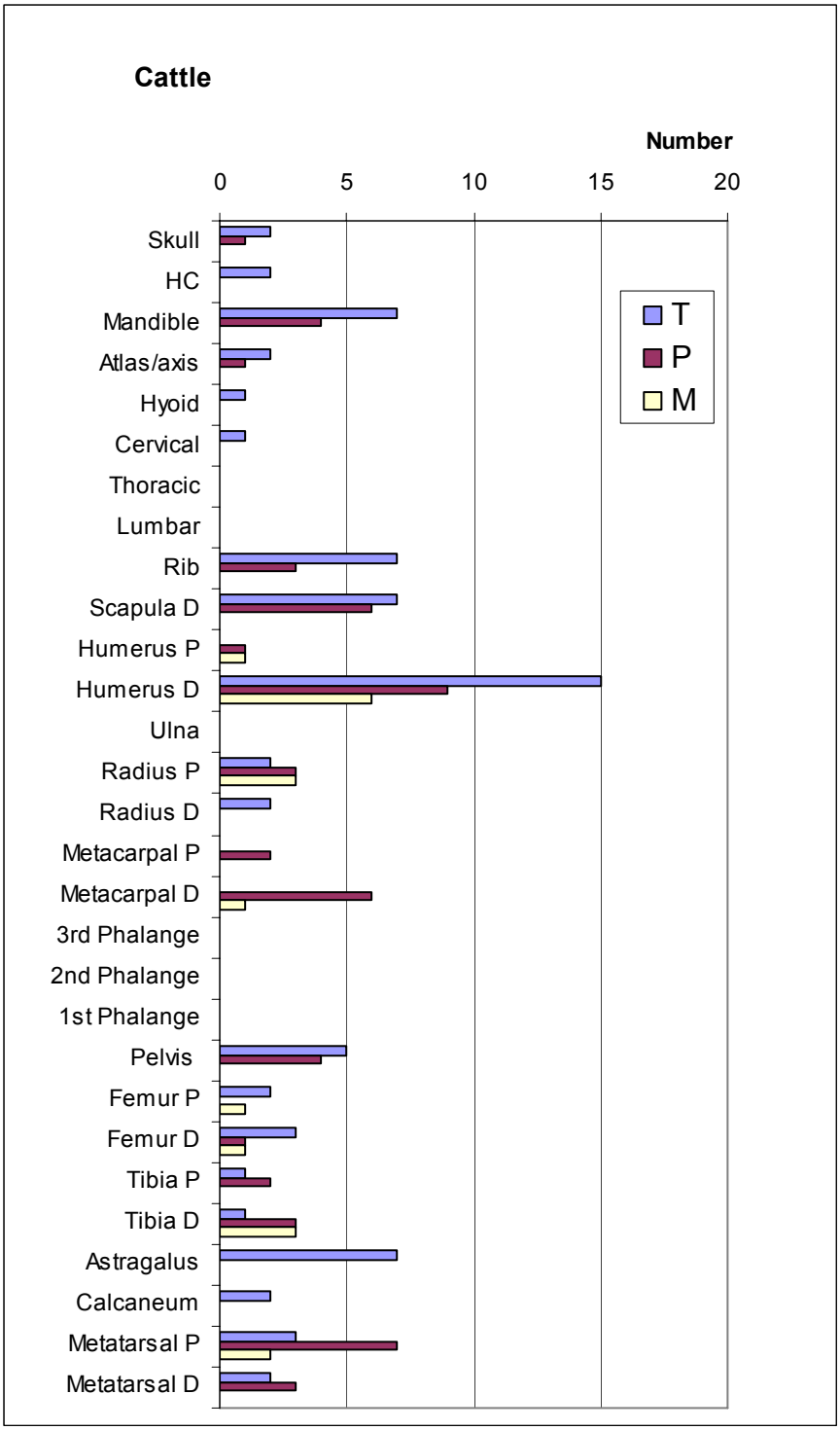

Figure 29: Distribution of types of butchery mark on the cattle skeleton (Key: T= cut, P=chop, M=marrow breakage)

Far fewer sheep bones were butchered, however butchery marks tended to occur in the same locations as on cattle bones (figure 11), suggesting that the carcass was butchered in a similar manner. Area A sheep showed almost equal numbers of chop and cut marks but chopping was often rough and sometimes could be confused with breakage. This may have been a result of processing for marrow.

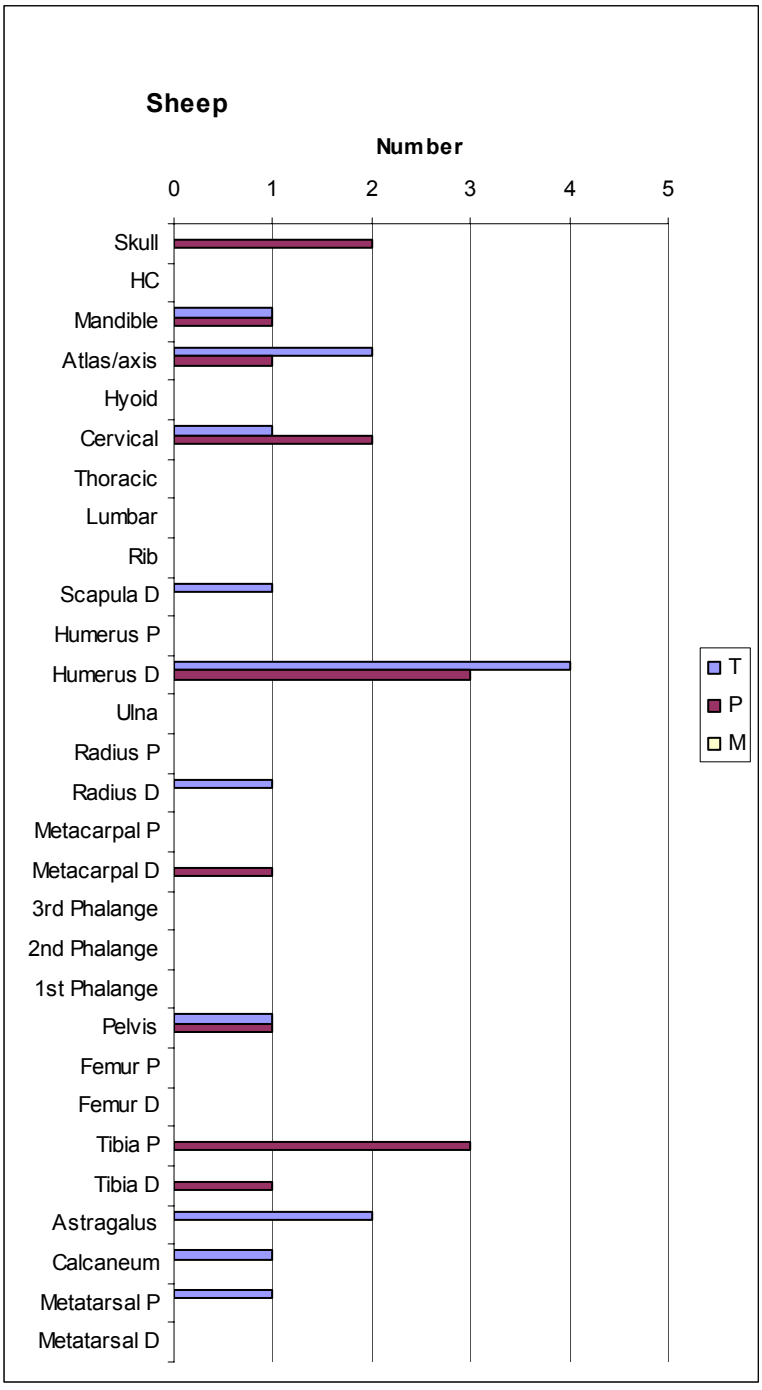

Figure 30: Distribution of types of butchery mark on the sheep skeleton (Key: T= cut, P=chop, M=marrow breakage)

Few butchery marks were observed on pig bones, unsurprising given the small size of the assemblage. There is not enough evidence to speculate on specific methods of processing the carcass, however, butchery occurred on the scapula, humerus, mandible, pelvis and metapodial. Cut marks, representing both disarticulation and filleting of the meat, were more common than chopping.

Burning

Burnt bone formed a comparatively small part of the assemblage, making up 3% of the Area A assemblage and only 1% of the Area B bone. Most of the burnt bone was charred and blackened but a small proportion was completely calcined, indicating exposure to very high temperatures. On average, deposits in Area A had greater concentrations of burnt bones. Context 36, a fill on the edge of the gully of roundhouse 1, contained a number of calcined bones. Most were undiagnostic but elements from a sheep hind limb were identified. A number of blackened bones were also recovered from context 84; a ring gully fill of roundhouse 3; which included a sheep mandible and scapula fragment. In Area B, burnt bones were generally isolated examples within mixed contexts (see Spatial Analysis).

Gnawing

Gnawing was almost exclusively canid and recorded on 2% of bone fragments from both areas. Gnawing typically occurred on the ends of the bones. Many bone fragments either exhibited clear tooth punctures or else were partially destroyed, with characteristic ragged ends. However, it is impossible to estimate how many bones may have been destroyed completely. It is also possible that splinters and chips generated by animal activity may not have appeared recognisably gnawed. For these reasons it is likely that the true numbers of gnawed bones were higher than recorded. Gnawing occurred more frequently on cattle and pig bones than sheep or horse - a pattern observed in both areas (table 19) - and this may be indicative of a difference in disposal practices of different species.

Species	Area A (no. frags)	% gnawed to ungnawed bones	Area B (no. frags)	% gnawed to ungnawed bones
Cattle	13	7	69	13
Sheep/goat	10	4	9	3
Pig	7	7	7	12
Horse	2	3	2	3
Cattle-size	1		5	
Sheep-size	1		0	
Total	34		92	

Table 18: Numbers and percentages of gnawed bones for each affected species

Pathologies

There were very few abnormal bones in the assemblage (a full list with basic descriptions is provided in the Appendix: table H). Pathological bones appeared to be isolated examples and comprised less than 1% of the total assemblage. Moderate calculus was noted on both cattle and sheep teeth but this is not unusual- a similar phenomenon was observed at Enderby (Gouldwell 1992). Only six bones with pathological changes were noted among the Area A material; predominantly sheep. The deciduous 4th premolar in a sheep jaw had been incompletely shed, so that a small stub remained trapped between the p4 and m1. Two extremely well-preserved sheep humeri appeared to exhibit a remodelled periosteal reaction on their caudal faces (possibly along the line of a muscle). However, the fact that both bones, almost certainly from the same individual, demonstrated apparently identical pathology, may suggest that this was not a pathological condition but rather surface morphology which was still visible on the immaculately preserved bone.

In Area B, a cattle incisor had a distorted root which appeared to be narrowed, with a 'waist' just above the enamel. A cattle proximal radius had a porous cavity and slight periostosis on the edges of the bone and a proximal metatarsal displayed porosity or thinning of the cortical bone on the articular surface. Two sheep axis had similar oval porous lesions on the ventral crest, cause unknown. Extra nodules of bone had formed on the 1st phalange of a horse, perhaps indicating an arthritic or age related condition.

Spatial Analysis at Manor Farm, Humberstone

In order to explore the patterning of finds at the site, spatial analysis was carried out using a GIS package (ArcGIS v9). The aims with regard to the animal bone were to look for patterning in terms of bone quantity, species and butchery, burning or gnawing and to look at how the bone related to other classes of material.

Area B provided a much larger quantity of bone than Area A. This was also true of other finds, particularly the pottery. As the two most abundant finds assemblages, pottery and bone were compared in terms of both fragment (and sherd) number. The average size of pottery sherd and bone fragments was also calculated, which can potentially suggest whether deposits are extensively re-worked or where material is comparatively fresh. Bone fragment size was calculated from zoned bones (see 'Methodology'), contrasting the average number of zones per bone with the average sherd weight (for pottery) for each feature. This implies that bone fragments are relatively larger than pottery sherds in Area A, perhaps suggesting that the bone was not as extensively re-worked as the pottery. Assuming that this is a valid trend, it also suggests that pottery and bone may have been subject to different depositional or taphonomic processes.

In Area A there were particular concentrations of bone in ring gullies 2 and 3, along with large groups of pottery (above p37-8). These are likely to be associated with the re-cutting of Enclosure E and may also be of a similar date to ring gully 5 in the adjacent enclosure, which also contained a significant amount of bone. However earlier ring gullies (RG4, RG6, RG7) also in Enclosure C contained much less material. This suggests a possible correlation between the quantity of material present and the phase of the feature. It is possible that the features with the most material represent those at the end of the stratigraphic sequence. Enclosures A, B and D are conspicuously empty, which implies that they may have had a different function. There was a greater finds density on the north side of the enclosure ditches, which may be significant; examples of this include the antler deposit in Enclosure C, which was also associated with a large quantity of pottery. Ring gully 1 in Enclosure A has several unusual characteristics; its location in the centre of the enclosure, orientation, and double concentric gullies. Although it contained very little bone, cattle, sheep and pig are represented. A significant proportion of the bone from the inner ring gully was burnt, including several calcined elements belonging to sheep or possibly goat.

Bone tended to be more evenly distributed across Area B, although concentrations were observed in ring gully 11, 12 and particularly 13. A sizeable quantity of pottery was also recovered from Ring gully 13 which seems to have been a particular focus for activity. Bones are scarce in the north-western corner of Area B, around ring gully 8

Work on spatial patterning of bones at other sites has suggested that the larger bones are located around the edges of the settlement and that fragments become smaller towards the centre (Wilson 1996, 14) because bones rarely remain where they were originally deposited but are likely to be re-worked within a settlement. Larger bones will have been removed from dwelling zones both by the human inhabitants and also by dogs and therefore moved outwards from the centre of the site. It is difficult to be certain whether Humberstone conforms to this pattern because the edges of the settlement are not easy to define, as it may form part of a larger settlement including Elms Farm (Charles 2000). The ring gullies, whether signalling dwellings or working areas, represent relatively intense activity. By contrast, the enclosure ditches do not generally seem to have been a focus for activity, except where they were used to dump quantities of material, such as the antler. Although this may be partially a consequence of the proportion of the feature excavated, it also reflects the deposition pattern.

Cattle and sheep bones are common in both areas and share a similar distribution, concentrated in the ring gullies. Fragments of sheep bone are marginally larger in Area A than Area B (average 3.3 zones, compared with 2.8 zones in Area B). The average number of zones for cattle and pig fragments varies little between the areas, suggesting that carcass processing and deposition patterns were not markedly different. In terms of fragment numbers, pig is slightly more prominent in Area A, although poorly represented in both areas compared to cattle and sheep. Pig is barely present at all in Enclosures F, G and H towards the north of the site. Horse bones do not generally occur in isolation but are found amongst large concentrations of bone. This may suggest that horse carcasses were processed in a

similar manner to other domestic mammals rather than being treated differently, when they might be expected to occur together, articulated or in particular types of feature. However, it is potentially significant that the only horse skulls found on site were associated with querns. Horse skulls were found in two locations on the site; a fill of Enclosure ditch C (context 64) and, a pit in Enclosure F (context 666).

Articulated bones are rare. In Area A, the hind leg of a dog was found in the ring gully of roundhouse 6 (context 110) and consisted of the left femur, tibia and calcaneum. In Area B part of the right cattle hock joint, comprising the astragalus, calcaneum, cuneiform and navicular-cuboid, was recovered from context 718, the ring gully of roundhouse 12. A right cattle humerus and ulna, apparently articulating, were retrieved from the roundhouse 13 ring ditch (context 447). Their significance is that they are more likely to be a primary deposit and may suggest areas where less re-working of deposits took place.

Burnt bone was found almost exclusively in the ring gullies and there is a tendency for it to be clustered in the entrances. It may therefore represent debris from the central hearths, which has been swept out and become incorporated into the ring gullies. A similar pattern is seen amongst the butchered and gnawed bone. Gnawed bone was also found primarily in the ring gullies but did occur in two of the enclosures, including Enclosure C. There is a greater quantity of gnawed bones in Area B, but this may reflect the larger numbers of bones recovered.

These trends suggest that the focus of activity were the ring gullies and also implies that the roundhouses were not all active at the same time.

Discussion

Faunal assemblages dating from the Iron Age were recovered during the excavations and contribute to current knowledge about exploitation of animals in the Midlands region during this period. Radiocarbon dates suggest an early and middle Iron Age date for other structures. Unfortunately phasing at Manor Farm was difficult to establish and the assemblage could not be closely tied into chronological phases, due to the lack of stratigraphic relationships or clearly defined pottery groups, particularly in Area B. Area A had a more perceptible chronological sequence, which was supported by radiocarbon dates. Ring gully 1 and Enclosure A were among the earliest features and were established in the Late Iron Age or Early Bronze Age (above p11-13). Enclosure ditch C was initially excavated in the mid-Iron Age but was re-cut in the later phases of the site. The antler deposit appears to be one of the last events at the site. Ring gully 13 in Area B had a mid-Iron Age date (above p23-4). Combining the Manor Farm assemblage with that from the adjoining site of Elms Farm creates one of the largest Iron Age assemblages in the Midlands numbering over 10 000 hand-recovered fragments (Elms Farm comprised a hand-recovered total of 5323, with a further 987 identified fragments recovered during sieving).

Iron Age sites in southern England, particularly Wessex, are usually characterised by the importance of sheep husbandry. However, recent research suggests that there are regional patterns in terms of species proportions, frequency of skeletal elements and mortality profiles (Hambleton 1999, 89) and in regions outside Wessex there was greater emphasis on the exploitation of cattle. The local evidence is relatively sparse compared with the southern regions and therefore the recovery of animal bone assemblages of this period are a research priority for the East Midlands (Monckton 2006, 272). At the middle to late Iron Age settlement at Crick, Northamptonshire, cattle were the most common species followed by sheep and then pig (Monckton 2006, 271) and this pattern is borne out at nearby sites such as Elms Farm (Charles 2000) and Enderby, Leicestershire (Gouldwell 1992, 60). At Manor Farm, cattle and sheep contributed most to the Iron Age economy, with pigs being of less importance, which accords with observations made at Elms Farm (Charles 2000, 205). Low frequencies of pig are consistent with other domestic British sites of the Iron Age, although this is not necessarily the case for other site types: a recent Shrine assemblage in East Leicestershire was composed almost entirely of pig (Browning forthcoming). Sites in Continental Europe tend to have far greater numbers of pig, which might reflect a greater consumption of meat (Albarella 2007, 395).

The variety of species identified at Humberstone is narrow. Wild species are very rare, which is not unusual for Iron Age assemblages; for example the settlement site at Crick had an almost total absence of deliberately deposited wild species (Hammon 1999, 29). There is little evidence for hunting at

Manor Farm, however, red deer antler was clearly utilised, providing an interesting contrast with the lack of evidence for venison. Similar observations at other sites include a complete shed red deer antler and cut antler tines recovered from late Iron Age pits on a settlement site at Earls Barton, Northamptonshire. It was noted again that this was not accompanied by any other deer bone, which might have indicated the exploitation of deer for food (Deighton 2005, 23).

Several significant differences were detected between the enclosed Area A and the open Area B at Manor Farm. Area B contained considerably more bone than Area A, which may suggest more intensive occupation. Hints that husbandry and disposal practices may have differed may also signal a difference in function. Sheep were clearly the dominant species in Area A. By contrast, the Area B bones present a less conclusive picture, with fragment numbers (NISP) emphasising the importance of cattle but the MNI (Minimum Number of Individuals) suggesting more equal numbers of cattle and sheep. However, even if sheep were more numerous, the larger body size of cattle increases their economic and dietary significance. In Area B, the importance of cattle and sheep is enhanced relative to species such as pig, horse and dog. The ground-plan of Area A suggests that these could be stock enclosures, but the ring gullies in Enclosure C and E provide evidence for associated occupation. If the enclosures contained sheep, they would be able to accommodate a sizeable flock.

Mortality data indicates that sheep in Area A at Manor Farm were killed at a younger age than those in Area B, perhaps indicating a preference for younger meat. Slight discrepancies between the data from epiphyseal fusion and from teeth could reflect the small assemblage size or may alternatively indicate different disposal patterns for the skull and the post-cranial bones. Tooth wear in Area A indicates that mortality is highest amongst animals aged between 1 and 2 years old but the Area B sheep were mostly killed between the ages of 3 and 4 years, although some animals were surviving to a greater age. The proximity of A and B and the fact that the two areas may have been occupied concurrently implies that they shared the same flock, therefore this difference is potentially very interesting. Was younger, more tender, meat deliberately selected for the inhabitants of Area A and might this suggest a difference in status? At Elms Farm few animals were killed prior to 2-3 years of age and many were kept until much later (Charles 2000, 202). Observations at other Iron Age sites, both early and late, suggest that a large proportion of sheep were slaughtered at a young age, often before reaching their full meat weight (Alberella 2007, 394). It has been suggested that this is associated with the difficulty of keeping large numbers of animals over the winter; therefore surplus would have been killed in the autumn before they lost their summer weight (Hambleton 1999, 70).

The mortality data for cattle also suggests the presence of more juvenile animals in Area A, although this conclusion is based upon a very small pool of data. In Area B, cattle were predominantly slaughtered from their second and third year onwards. Only a small number of very young individuals were present. This pattern therefore suggests that the animals were mostly raised for meat, although their importance for traction and manure should also be appreciated.

Evidence for pig mortality is scant at Manor Farm but does suggest that pigs were kept for meat and slaughtered as soon as they were sufficiently large. Tooth wear evidence suggests that this took place in their second year of life, although epiphyseal fusion indicates that some animals were kept to a greater age, perhaps as breeding stock. This follows the usual pattern at Iron Age sites, where the majority of animals were killed during their second and third year (Hambleton 1999, 69).

Around 2% of the Manor Farm bone was gnawed; a slightly greater percentage than was observed in the Elms Farm assemblage (Charles 2000, 198). Gnawing was more common on bones of cattle and pig than those of sheep at Manor Farm and also more prevalent in Area B.

A single Manor Farm horse bone was butchered, contrasting with Elms Farm, where butchery marks were often observed on horse bones (Charles 2000, 206). Butchery seems to have carried out in a similar manner in both areas and found most commonly on cattle and sheep bones. Particularly characteristic marks were observed on cattle bones around the humerus and the astragalus. There may have been a culinary preference for the front leg joint of beef, although this may be partially a consequence of differential survival of these elements.

The large antler deposit in Enclosure ditch C is of particular interest and provides evidence for antler working, possibly in the manufacture of handles for various implements. It appears to have been one of

the final acts of deposition at the site, which leads to the suggestion that it may have had symbolic value as a gesture of closure.

Appendix

Anatomical Representation

Element	Number	frequency	modified count o	%
HC	0	2	0	0
Skull LO	3	2	2	30
Skull OC	0	2	0	0
Mandible	6	2	3	60
Atlas/axis	0	2	0	0
Scapula D	5	2	3	50
Humerus P	2	2	1	20
Humerus D	8	2	4	80
Radius D	4	2	2	40
Radius P	9	2	5	100
Metacarpal P	3	2	2	30
Metacarpal D	1	2	1	10
Pelvis	5	2	3	50
Femur P	4	2	2	40
Femur D	5	2	3	50
Tibia P	3	2	2	30
Tibia D	3	2	2	30
Astragalus	2	2	1	20
Calcaneum	3	2	2	30
Metatarsal P	4	2	2	40
Metatarsal D	3	2	2	30
1st Phalange	1	8	0	3
2nd Phalange	2	8	0	5
3rd Phalange	1	8	0	3
Total	77		37	

Table A: Area A cattle.

Element	Number	frequency	modified count o	%
HC	4	2	2	17
Skull LO	0	2	0	0
Skull OC	1	2	1	4
Mandible	11	2	6	46
Atlas/axis	3	2	2	13
Scapula D	13	2	7	54
Humerus P	6	2	3	25
Humerus D	24	2	12	100
Radius P	24	2	12	100
Radius D	8	2	4	33
Metacarpal P	10	2	5	42
Metacarpal D	6	2	3	25
Pelvis	8	2	4	33
Femur P	8	2	4	33
Femur D	11	2	6	46
Tibia P	6	2	3	25
Tibia D	12	2	6	50
Astragalus	13	2	7	54
Calcaneum	8	2	4	33
Metatarsal P	16	2	8	67
Metatarsal D	12	2	6	50

1st Phalange	15	8	2	16
2nd Phalange	9	8	1	9
3rd Phalange	3	8	0	3
Total	231		105	

Table B: Area B cattle

Element	**Number**	**frequency**	**modified count o**	
HC	0	2	0	0
Skull LO	1	2	1	6
Skull OC	2	2	1	13
Mandible	15	2	8	100
Atlas/axis	2	2	1	13
Scapula D	2	2	1	13
Humerus P	2	2	1	13
Humerus D	10	2	5	63
Radius P	13	2	7	81
Radius D	7	2	4	44
Metacarpal P	4	2	2	25
Metacarpal D	5	2	3	31
Pelvis acet	2	2	1	13
Femur P	1	2	1	6
Femur D	1	2	1	6
Tibia P	16	2	8	100
Tibia D	15	2	8	94
Astragalus	4	2	2	25
Calcaneum	2	2	1	13
Metatarsal P	4	2	2	25
Metatarsal D	1	2	1	6
1st Phalange	7	8	1	11
2nd Phalange	2	8	0	3
3rd Phalange	2	8	0	3
Total	120		56	

Table C: Area A sheep

Element	**Number**	**frequency**	**modified count o**	**%**
HC	2	2	1	8
Skull LO	0	2	0	0
Skull OC	0	2	0	0
Mandible	26	2	13	100
Atlas/axis	4	2	2	15
Scapula D	4	2	2	15
Humerus P	4	2	2	15
Humerus D	7	2	4	27
Radius P	16	2	8	62
Radius D	9	2	5	35
Metacarpal P	5	2	3	19
Metacarpal D	3	2	2	12
Pelvis acet	5	2	3	19
Femur P	3	2	2	12
Femur D	1	2	1	4
Tibia P	10	2	5	38
Tibia D	11	2	6	42
Astragalus	2	2	1	8
Calcaneum	5	2	3	19
Metatarsal P	8	2	4	31
Metatarsal D	3	2	2	12

1st Phalange	4	8	1	4
2nd Phalange	0	8	0	0
3rd Phalange	1	8	0	1
	133		65	22

Table D: Area B sheep

Element	**Number**	**frequency**	**modified count o**	**%**
Skull LO	0	2	0	0
Skull OC	0	2	0	0
Mandible	7	2	4	100
Atlas/axis	0	2	0	0
Scapula D	4	2	2	50
Humerus P	0	2	0	0
Humerus D	1	2	1	13
Radius P	0	2	0	0
Radius D	0	2	0	0
Metacarpal P	4	2	2	50
Metacarpal D	2	2	1	25
Pelvis acet	3	2	2	38
Femur P	0	2	0	0
Femur D	1	2	1	13
Tibia P	1	2	1	13
Tibia D	0	2	0	0
Astragalus	0	2	0	0
Calcaneum	1	2	1	13
Metatarsal P	0	2	0	0
Metatarsal D	0	2	0	0
1st Phalange	1	8	0	3
2nd Phalange	0	8	0	0
3rd Phalange	0	8	0	0
	25		12	

Table E: Area A pig

Element	**Number**	**frequency**	**modified count o**	**%**
Skull LO	0	2	0	0
Skull OC	1	2	1	13
Mandible	4	2	2	50
Atlas/axis	1	2	1	13
Scapula D	8	2	4	100
Humerus P	0	2	0	0
Humerus D	4	2	2	50
Radius P	2	2	1	25
Radius D	1	2	1	13
Metacarpal P	0	2	0	0
Metacarpal D	0	2	0	0
Pelvis acet	0	2	0	0
Femur P	0	2	0	0
Femur D	2	2	1	25
Tibia P	2	2	1	25
Tibia D	4	2	2	50
Astragalus	0	2	0	0
Calcaneum	0	2	0	0
Metatarsal P	0	2	0	0
Metatarsal D	0	2	0	0
1st Phalange	1	8	0	3

2nd Phalange	2	8	0	6
3rd Phalange	0	8	0	0
	32		15	5

Table F: Area B pig

Measurements taken	**1**	**41**	**2**	**4**	**5**	**7**	**8**	**9**
	mm	*mm*	*mm*	*mm*	*mm*	*mm*	*mm*	*mm*
Antler No:								
1	229	224	73			99	28	165
2	203	188	69	91	30	75	22	135
3	208	205	64			95	29	131
4	270	243	86	130	40	108	30	
5	209		69	101	36	82	23	199
6	245	236	80	104	33	86	25	142
9	245	147	77					223
10	211	200	71					
14				108	38			
15	223		70	95	30	77	25	
	2043	1443	659	629	207	622	182	995
Mean Average:	227	206	73	105	35	89	26	166

Key to measurements (1-9 after Clutton-Brock 1984 and 41 after von den Driesch 1976):

1- circumference of burr (measured on bony coronet),
41- circumference above burr
2- diameter of coronet (anterior/posterior)
4- circumference of brow tine
5- diameter of brow tine
7- circumference of bez tine
8- diameter of bez tine
9- circumference of beam where trez tine starts

Table G: showing measurements taken on the antler.

Area	**Context**	**Frags**	**Species**	**Bone**	**Notes**
A	84	1	s/g	mandible	stubb of dp4 trapped between m1 & p4
A	78	3	c-size	rib	Bony deposit adhering to visceral and dorsal surfaces
A	183	1	s/g	m3	moderate to severe calculus
A	261	1	s/g	humerus	a periosteal reaction (possibly along the line of a muscle) on caudal face. However, very well-remodelled - recovery complete.
A	261	1	s/g	humerus	remodelling on bone in same areas as previous - same animal? Perhaps not pathology.
A	303	1	s/g	skull	strange porous appearance of left condyle- looks almost like acid erosion.
B	666	1	bos	incisor	root is distorted, has a pronounced 'waist' just above the enamel.
B	537	1	bos	phalanx1	pit on distal dorsal surface, rounded edges could be pathological or gnawing

B	644	1	bos	radius	cavity (destroyed bone) with some new formation at edges- 16mm
B	637	1	bos	metac	scar (lesion). Non metric trait on proximal surface.
B	641	1	equus	phalanx1	extra nodules of bone on side of bone
B	749	1	s/g	axis	area of bone loss/porosity, 6mm wide & high- bone is unfused.
B	655	1	s/g	axis	small hole/depression about 6mm diameter on centre of ventral crest. Bone loss/porosity? Cause unknown.
B	890	1	bos	m3	heavy calculus
B	884	1	bos	metat	porosity on proximal face esp towards the centre- bone loss/rubbing?

Table H: Description of various pathologies observed during the excavations.

The Worked Stone – Fiona Roe and John Thomas

Introduction

The worked stone assemblage from Manor Farm (summarised in Table 19) consisted of 23 examples, including both saddle and rotary querns and rubbing stones. These are summarized in the table below and described further in the catalogue. A further five fragments were examined but thought probably to be unworked.

	Quartzitic Sandstone	***Quartzite***	***Millstone Grit***	***Charnwood Agglomerate***	***Totals***
Saddle quern	12	-	-	1	14
Rubber	4	1	1	-	6
Quern or rubber	-	-	-	2	2
Rotary quern	-	-	2	-	2
Totals	16	1	3	3	23

Table 19 Summary of worked stone by object and stone type

The assemblage is dominated by saddle querns, with 14 examples. One of these may also have been re-used as an anvil stone (Figure 31.1). Rubbers were less easy to identify, and there are only six certain examples of these. Parts of two rotary querns were found, and two possible quern or rubber fragments complete the collection.

Methods

The worked stone was examined using a hand lens to make initial geological identifications. Measurements and descriptive notes were taken for inclusion in the catalogue.

Types and Materials

Materials available in the local Boulder Clay predominate. No less than 12 of the saddle querns and four of the rubbers are made out of cobbles of quartzitic sandstone, a less intractable material than quartzite, which was used for just one rubber. Three further quern or rubber fragments were made from pieces of igneous rock, which may also have been collected from the Boulder Clay. Part of a large rotary quern was made from Millstone Grit from the Pennines (Figure 33.4), while the other rotary quern fragment is probably also made from this type of stone, though not from a variety typically used for such querns.

The quartzitic sandstones from the Boulder Clay are tough and resilient, and as a result, five of the saddle querns from Manor Farm are complete or near complete, quite a high proportion for an Iron Age site (see Figure 32.3). One more saddle quern made from quartzitic sandstone is about half complete. One of the rubbers was made from quartzite, an even harder material not suited for making into saddle querns. Further quartzite cobbles may have been used as rubbers for saddle querns, without clear wear traces registering on this hard material (e.g. (810)). The rotary querns, made from a less durable sandstone than the Millstone Grit, are more fragmentary as are the three worked pieces of igneous Charnwood Agglomerate.

The boulders that were available from the Boulder Clay were relatively small for the required purpose, producing saddle querns that might at most measure only up to about 324 mm in length and 173 mm in breadth ((849) SF 56). In order to maximize the area that could be used as a grinding surface, this was sometimes worked diagonally across the cobble. This ingenious solution was noted on three of the saddle querns (SF 59, (729) SF 45 & (849) SF 56). Other saddle querns were made from unusually thick cobbles, which again did not provide a particularly large grinding surface, but they could conveniently be embedded in the floor of a roundhouse ready for permanent use (SF's 22, 23).

Context

Two of the thicker saddle querns, both made from cobbles of quartzitic sandstone, (SF's 22 & 23) were found face down in a central hearth feature inside Roundhouse 1, and this appears to be a deliberate deposit of some kind. One of these querns (SF 22 – Figure 31.1) showed traces on the underside of re-use as an anvil stone, so the deposit might also have a practical explanation. The one surviving terminal post-hole of Roundhouse 1 contained a remarkable collection of worked stone including a virtually complete saddle quern (SF 67), a complete rubber (SF 65), and several other broken quern and rubber fragments (SF 64, 66 and 70).

A saddle quern fragment ((447) SF 32) came from a similar position near the entrance to Roundhouse 13. The contexts for the other finds (where known) are much as would be expected from an Iron Age site. Four stone objects were found in pits, a saddle quern (SF 59), a rubber fragment ((483) SF 31), a saddle quern fragment ((644) SF 51) and a small saddle quern ((849) SF 56 – Figure 32.3). Other stone objects came from enclosure ditches or non-house gullies. A saddle quern fragment ((729) SF 45) came from the ditch of Enclosure F. Parts of both a saddle and a rotary quern ((91) SF's 10 & 11) came from a straight gully that formed the southern side of Enclosure E. Another rotary quern fragment (SF 63 – Figure 33.4), though not from the same piece, came from the northern corner of Enclosure E.

Discussion

The worked stone assemblages from this site adds significantly to the understanding of Iron Age quern use in Leicestershire, and represents an important group in comparison to other broadly contemporary settlements in the East Midlands. In particular it complements a similarly sized group from excavations at Elms Farm to the east (Roe 2000). The assemblage is particularly important given the predominance of saddle quern technology, as relatively few excavated Iron Age sites in Leicestershire have produced such evidence in quantity. Only a few contemporary finds, from Breedon-on-the-Hill (Wacher 1964, 132; 1978, 7), Wanlip (Marsden 1998), Gimbro Farm, Castle Donington (Derrick 1999), Elms Farm, Humberstone (Roe 2000) and the recently excavated Hallam Fields site at Birstall (Speed 2006) are available for comparison.

The overall size of the assemblage is comparable with those from Elms Farm, Humberstone (Roe 2000), Beaumont Leys Lane, Leicester (Thomas 2008) and Hallam Fields, Birstall (Thomas forthcoming), all of which were also dominated by saddle querns, utilising variable geologies as raw materials. The assemblages contrast sharply however, with other excavated Iron Age sites from the region which have produced far fewer querns. For example only four pieces were associated with the enclosed settlement at Gimbro Farm, two from Enderby I (Clay 1992), a single broken fragment from Hinckley (Chapman 2004) and none from the farmsteads at Enderby II and Huncote (Meek *et al* 2004). These larger groups are perhaps a reflection of the longevity of the sites, coupled with the apparently larger populations associated with them.

The assemblage from Manor Farm, when considered with that from Elms Farm, forms an impressive group, with 19 saddle querns, four rotary querns and nine rubbers represented. The worked stone group from Elms Farm is very similar to the Manor Farm collection in its overall make-up and

collectively is of particular local interest as the site is one of a small number in Leicestershire where both saddle and rotary querns have been found together. The same circumstances also prevailed at Wanlip (Marsden 1998) and Hallam Fields, Birstall (Thomas forthcoming). At Breedon-on-the-Hill a number of saddle querns were recorded (Wacher 1964, 132 & 1978, 7), but here too rotary querns were found (Kenyon 1950, 41), and these apparently occurred in some quantity (Liddle 1982, 25). Rotary querns at the two Humberstone sites appear to have been introduced in the later stages of occupation, suggesting a change in preference or, given that the rotary querns appear to have been imported, the development of new trade links. In general however the persistence of saddle querns on the site indicates a fairly conservative tradition, perhaps in-part driven by the local availability of suitable stone with which to make them. At the middle Iron Age settlement at Wanlip however, both saddle and rotary querns were apparently in contemporaneous use indicating that the initial adoption of new technologies was a gradual process, perhaps occurring according to particular local circumstances.

Quernstones may have had particular significance to Iron Age communities due to their role in food production, and they frequently occur in what have been described as 'structured' deposits (Hill 1995, 108, Willis 2006). The querns from Wanlip were found together in a pit alongside pottery and were thought to have been deliberately placed as a 'special deposit' (Marsden 1998, 63). In general it is difficult to firmly identify such practices from the site, however a number of situations where querns appear to have been given special treatment are worth highlighting. Roundhouse 1 displayed a particular association with querns. The entrance post-hole of this building was full of whole and broken quern and rubber fragments which were probably used as post packing although the deliberate selection of querns in this instance, at least one of which was still usable, suggests a symbolic association, perhaps related to a foundation deposit for the building. In a similar example from Elms Farm, entrance post-holes of Roundhouse 5001/5002 were also packed with broken quern and rubber fragments (Charles *et al* 2000, 16). Two large saddle querns were also found inverted in the central hearth of Roundhouse 1 and appear to have been deliberately placed. The inversion of the querns may have symbolized the end of their use although the re-use of one as an anvil may imply a more pragmatic explanation. Two querns at Manor Farm were also found in close association with horse skulls, both in boundary locations. Animal skulls, like querns, are also often found in apparently 'structured' deposits and the apparent association on this site may be significant.

Looking to the wider region, another large group of finds, including approximately 16 pieces of worked stone, came from the Mid-Late Iron Age site at Covert Farm, Crick, Northamptonshire (Hughes and Woodward 1998) and nine examples were found at Coton Park, Warwickshire (Chapman 1998). Both of these assemblages, while dominated by saddle querns, also included rotary querns. At Coton Park a complete saddle quern was found in a roundhouse ditch terminal.

Illustrated catalogue

Figure 31
1 SF 22 Saddle quern made from quartzitic sandstone boulder with an irregular four-sided shape. Almost complete with slightly concave grinding surface, originally prepared by pecking. The underside and lower part of the sides is roughly pitted with two large chips missing, probably from its re-use as an anvil stone. Context 4, Hearth Cut 5 (Roundhouse 1)

Figure 32
2 SF 31 Part of a rubber made from fine grained quartzitic sandstone. Burnt, typical plano-convex ('hogback') shape with slightly convex grinding surface, worn smooth. Context 483, Pit Cut 487.

3 SF 56 Small saddle quern made on a coarse-grained quartzitic sandstone cobble. Almost complete but for a large chip missing from grinding surface. Triangular cross section with some slight chipping around the edge. Grinding surface is slightly concave and has been worked diagonally across the cobble to maximise the grinding area. Context 849, Post-hole Cut 848.

Figure 33
4 SF 63 Fragment of rotary quern made from Millstone Grit. Upper part with partially surviving central hopper. Concave grinding surface. Context 98, Ditch Cut 265.

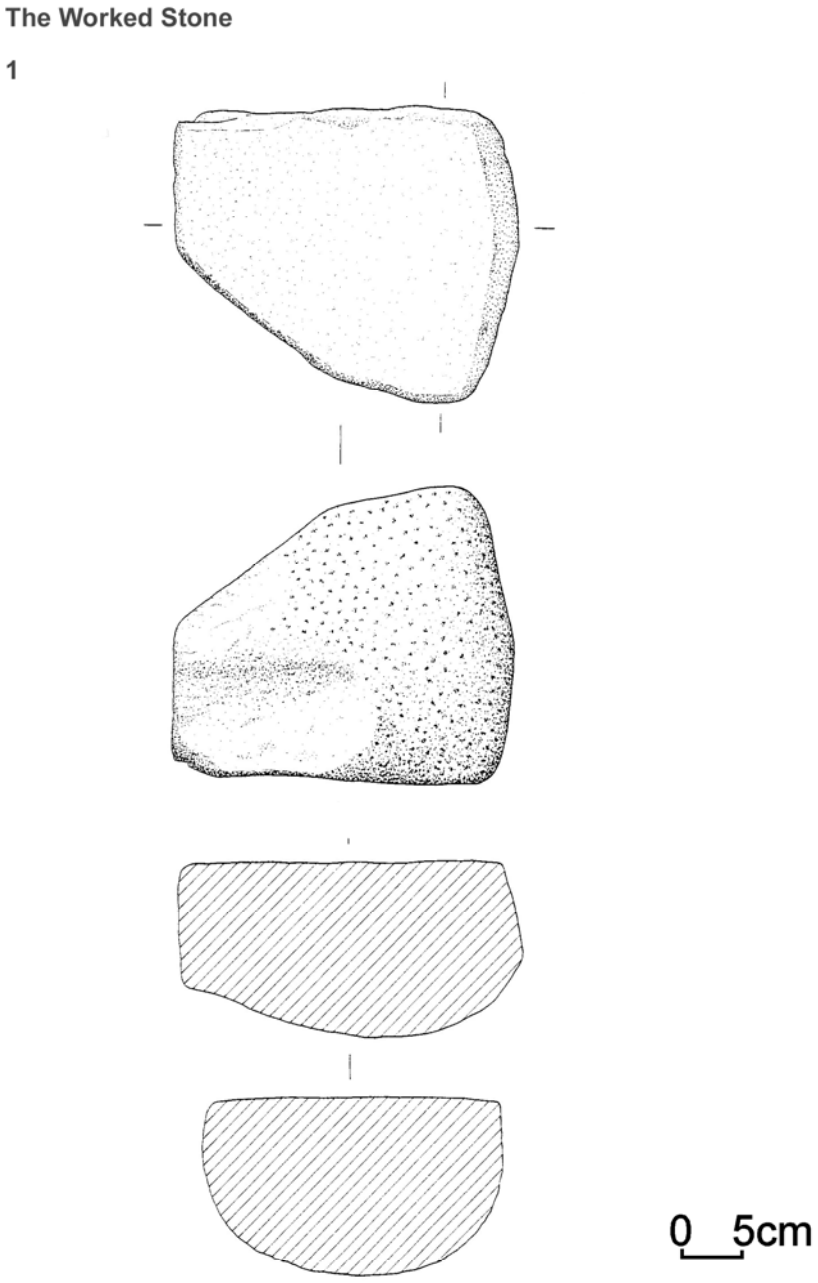

Figure 31 Worked stone

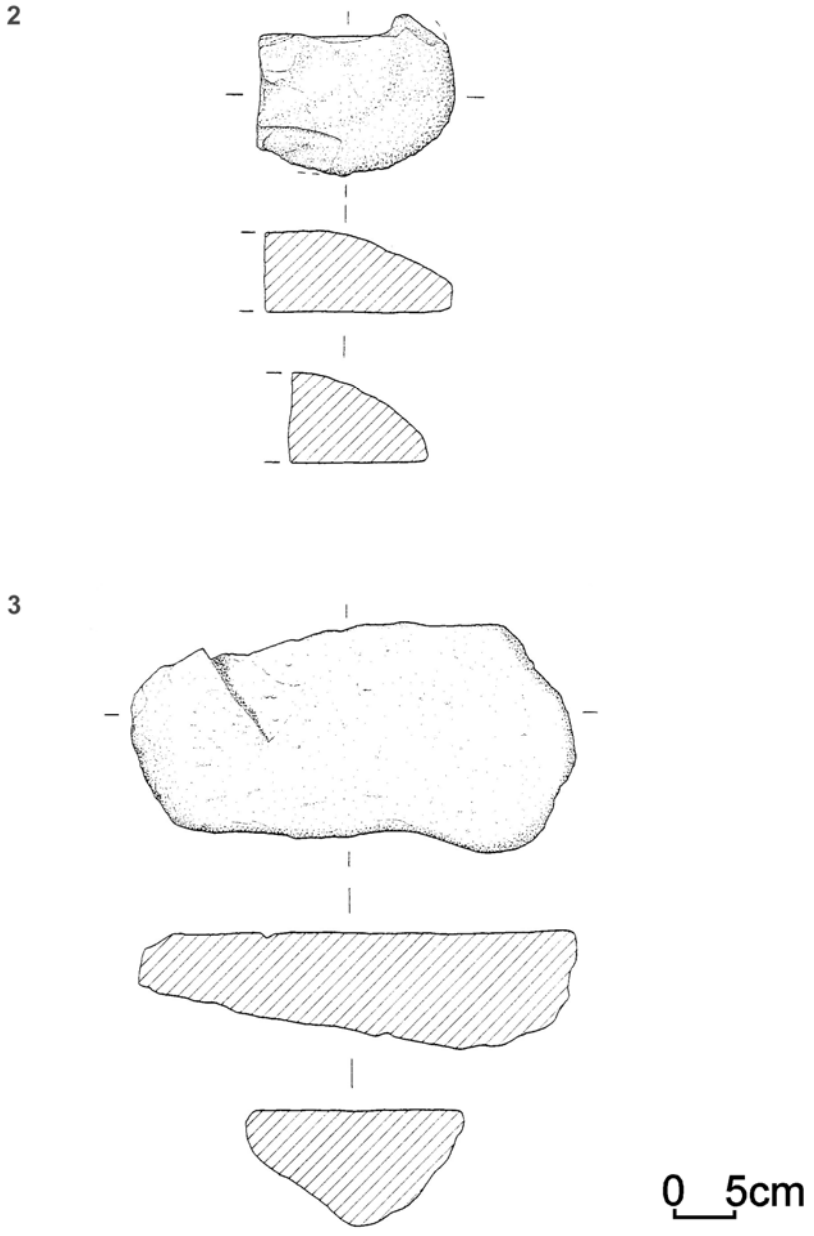

Figure 32 Worked stone

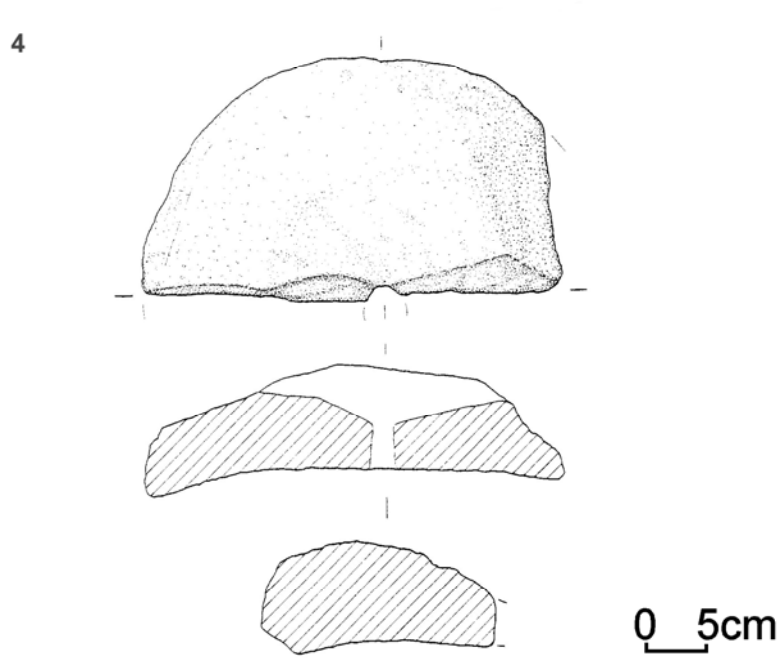

Figure 33 Worked stone

The Small Finds – Nicholas Cooper

Introduction
A total of 21 small finds, of either Iron Age date or intrinsic value, was recovered from Manor Farm. A number of unstratified metal objects of post-medieval and modern date retrieved during controlled metal detection survey were also recovered but are not discussed here. The assemblage is catalogued below and the notable objects discussed and illustrated in the foregoing section.

Discussion
Eighteen objects in the assemblage relate to the Iron Age occupation of the site. The paucity of objects when compared to typical Roman-period assemblages deposited just a century later is similarly demonstrated at the adjacent Elms Farm excavations (Charles *et al.* 2000), as well as comparable Iron Age sites nationally, for example at Salford, Bedfordshire (Dawson 2005); Fairfield Park, Stotfold, Bedfordshire (Webley *et al*. 2007), Claydon Pike, Gloucestershire (Miles *et al.* 2007) and Danebury, Hampshire (Cunliffe 1984). This paucity in turn can be compared with the complete lack of material culture other than ceramics and stone at the nearby Middle Iron Age site of Wanlip (Beamish 2000) and the low incidence at the potentially Earlier Iron Age site at Beaumont Leys Lane (Cooper 2008).

The assemblage has been divided into three broad functional categories; items of personal adornment and dress, objects relating to household and craft activities, and fasteners and fittings. Three of the four objects included in the personal category (Fig. 34.1-3) post-date the Iron Age occupation of the site and comprise a **headstud brooch** of 2nd century date; the lower part of an Anglo-Saxon **cruciform brooch** dating to the 6th century and a decorated **medieval buckle plate** fragment. The single Iron Age item is a **shale bead** from (101), an unusual find on a site of this date (Fig. 34.3).

Of the items relating to household and craft activities, five are of bone or antler (Fig. 34-35.5-9), and present an *ad hoc* range of tools probably made for a specific function but without strong typological affinities with objects from other site assemblages. Patterns of wear and polishing, suggest use in **textile manufacture** in nos.5 from (128), 6 from (522) and possibly 7 from (223), whilst 8 from (518) is an antler **tool handle** into which an **iron knife** blade similar to 11 from (98) might have been hafted. No.9 is a double perforated bone plate, which may have acted as a rope **tensioner** or fastener but is not closely paralleled elsewhere. Nos. 12-14 are undiagnostic iron blade or tool fragments, whilst 10 represents the only clearly Iron Age use of **lead** on the site.

The evidence for fasteners and fittings is highly fragmentary, comprising two possible **copper alloy stud** heads from (154) and (781), four **iron nail** fragments from (317), (53) and (48), and an iron rivet and sheet fragment from (57). Judging by assemblages from across the country, the use of iron nails in timber construction appears to increase during the later Iron Age, but is still very low when compared the Romano-British period, notwithstanding the likely higher proportion of recycling of scarce materials in the former period.

Catalogue

Objects of personal adornment and dress

1) Sfno. 8 US (Figure 34.1)
Copper alloy Roman headstud brooch.Hinged pin, head loop, foot of bow and catchplate missing. Small and poorly cast with hinge recess off-centre. Wings have vertical mouldings. Bow decorated with a central knurled rib flanked by grooves but no indication of enamelling. Headstud simple and integrally cast, indicating a date well into the second century AD. L. 31mm; W. 15mm.

2) Sfno. 15 US
Copper alloy decorated sheet fragment. Part of rectangular sheet plate, torn transversely at both ends. Decoration comprises pair of central longitudinally incised lines, with oblique incisions between, flanked by alternate triangles and rhomboids along the margins, the latter containing more intricate incised zigzags. Probably a plate from a buckle or composite strap end of medieval date. W. 21mm.

3) Sfno. 61 US Area B (Figure 34.2)
Copper alloy. Early Anglo-Saxon cruciform brooch.
Lower part of bow and upper part of foot present with catchplate damaged. Lower bow of plano-convex section decorated with a midline, countersunk, rib terminating in a transverse rib at the base of the bow. Top of foot plain with two rectangular lappets projecting, one with triangular facets, and giving way to a band of five irregular transverse ribs above a plain, slightly swollen, ground from which the 'eyes' of the horse head project, nostrils missing. Remaining L: 47mm, W: at lappets 26mm. Foot similar to an example from Fonaby, Lincs., belonging to Aberg/Leeds group IVa (Cook 1981, 40, Grave 43, fig.15.2), of 6th century date.

4) Sample 20 (101) (Figure 34.3)
Shale bead. One half of a presumably sub-spherical bead, damaged transversely. The remaining end is flat, through which straight sided central perforation has been drilled. D: 13mm. This represents an unusual find from a site of this date; a single example came from Salford, Beds. (Duncan and Mackreth 2005, 131, fig 3.31.39)

Objects relating to household and craft activities
(Bone and antler identifications by Jennifer Browning)

5) Sfno. 24 (128) Roundhouse 5 (Figure 34.4)
Pin beater or awl. Incomplete; joining tip and tapering shaft fragment with highly polished surfaces and ovoid section. Oblique angle of tip may indicate re-sharpening. Remaining L: 74mm, max. W: 10mm. The highly polished surfaces would suggest a weaving function, although it is not possible to tell if the object was a double ended pin beater of the kind recognised on Roman and Anglo-Saxon sites for example at Empingham, Rutland (Fraser 2000, 113, fig. 54.38-41), or whether it is better identified within a general category of awls or points recovered at Danebury (Sellwood 1984a, 387, notably Class 5 nos. 3.166-3.170) for which a general leather working and textile working function is assigned. The mid shaft fragment of a similar object came from Salford, Beds., identified as a weaving implement or bodkin (Duncan and Mackreth 2005, 133, fig. 3.13.36). Pin beaters, as such, do not appear to be recognised as an Iron Age artefact with MacGregor recording their production from the Roman period to the early medieval (1985, 188). This may be due to the lack of excavated examples or that combs were more usually used in the process of pushing down the threads of the weft.

6) Sfno. 33 (522) Roundhouse 10
A single short length of worked bone or antler of rounded section with pointed end. L: 12mm, Diam: 2mm. Most likely to be a broken tooth from a bone comb, of the type found in the adjacent excavations at Elms Farm (Allen 2000, 193, fig 53.3) and of which 39 came from Danebury and were used in weaving (Sellwood 1984a, 371). The rounded and polished surface of the tooth would tend to support this identification.

7) Sfno. 83 (223) Round House 4 (Figure 34.5)
Fragment of cattle long bone, one end of which has been shaped and then polished through wear. The worked end has been rounded into a thumb-shaped protrusion, the underside of which has been flattened and is more highly polished than the upper side which still maintains the convex shape of the bone. The polished zone extends as far as a notch in the edge of the fragment which corresponds to a slight groove running transversely across the underside. This would appear to have been caused by continuous rubbing of twine perhaps, although there is no such groove on the upper side. Both surfaces have fine diagonal striations visible under low power microscopy. L: 90mm (polished zone 30mm), W: 23mm, Th: 5mm. The exact function is unknown. Ten polished fragments of animal bone were recorded at Danebury, mainly from later Iron Age contexts (Sellwood 1984a, 395).

8) Sfno. 34 (518) Roundhouse 13 (Figure 35.6)
Antler tool handle. Six joining fragments from an incomplete tapering cylindrical handle, hollowed to accommodate a shaft or tang, removing the inner cancellous tissue. Manufactured from a tine, removed transversely, the wide end smoothed to form the butt of the handle. Surface probably scraped to remove ridges and subsequently polished through use. L: > 65mm, Diam: 22mm. A similar example came from the adjacent excavations at Elms Farm, Humberstone (Allen 2000,193, fig. 53.2) and supports the contention, from the faunal evidence from both sites that deer antler (rather than meat) was being harvested locally, primarily for the manufacture of tools used on the site.

9) Sfno. 12 (98) Enclosure E (Figure 35.7)
Bone tension plate: Manufactured from a short length of cattle rib which has been trimmed to expose cancellous tissue on three side and produce an ovoid plate, through which two perforations, positioned asymmetrically either side of the centre, have been drilled. L: 45mm, W: 29mm, Th: 5mm. A number of similar examples of plates made from short lengths of rib with two perforations, but not so centrally placed as in this example (Allen and Webley 2007, 83, fig. 3.12.4; Sellwood 1984a, 395, fig. 7.39 no.3.210). The form would suggest a function similar to metal or wooden plates used to tension guy ropes on tents for example. Although the surfaces of all the examples are polished, the lack of obvious wear around the perforations might suggest another function.

10) Sfno. 30 (895) [891] (Figure 35.8)
Lead rod of circular section, now bent. Squared off at one end. Other terminal rounded with an oval perforation through it. L: 85mm, Diam: 6mm. Given the softness of lead, it seems unlikely this was used for suspension, although this could explain the stretched appearance of the loop. One possibility is that it was a casting model for the production of a mould for casting a copper alloy object of the same form, although no such looped pins in copper alloy have been recognised from Iron Age sites.

11) Sfno. 35 (98) Enclosure E (Figure 35.9)
Iron knife blade. Broken, tapering, tang almost continuous with the back of the blade. Blade edge convex; curving up to meet slightly convex back of blade, at right angles. Length: 80mm, W: 30mm, Th: 3mm. Although continuous whetting of blades can alter their profile over time, the shape of this blade conforms broadly with the commonest type from Danebury (Sellwood 1984b, 349, Class 2) which is tanged and where, most often, the tang is continuous with the back of the blade, and with the Manning's (1985, 109, Fig 28) Romano-British type 15. The chronological distribution of the 18 blades recovered at Danebury indicates that they are almost absent before the latest phases of occupation (Ceramic Phase 7 and 8) in the later Iron Age.

12) Sfno. 6. Corner of enclosure ditch. Enclosure E – (262=98) (Figure 35.10)
Iron blade tip. Broken tip from thick blade or tool. Blade edge flat; with back curving convexly to meet edge at an acute angle. L: 39mm, W: 25mm, Th: 8mm.

13) Sfno. 5 Ring ditch Roundhouse 2
Iron blade fragment. Three joining fragments. Concave blade edge; back of blade convex. L: 66mm, W: 24mm, Th: 3mm. The concave blade would indicate a sickle or billhook type tool of which 24 were recovered at Danebury, but only one of which was small enough to be comparable to the present example (Sellwood 1984b, 346, fig.7.8 no. 2.21)

14) (27) Evaluation Trench 28 (Same as 262=98)
Socket? Length of iron with semi circular section. Edges turned inwards to form an incomplete socket. One end truncated obliquely, other has a tapered, rounded terminal. L: 89mm, W: 26mm, Th: 6mm. Possibly a socket from a blade or tool.

Fasteners and Fittings

Only two small fragments of copper alloy were recovered from Iron Age contexts on the site.

15) Sfno. 25 (154). Cu Alloy: small stud, flat head torn. Diam: 4mm.

16) Sfno. 50 (781). Cu Alloy: small round fragment. Diam: 4mm.

Four fragmentary examples of iron nails conforming to Manning's Type 1b (1985, 134, fig.32), the commonest Romano-British type (predominantly between 40 and 70mm in length), and one rivet were recovered from Iron Age contexts.

17) (317) [318] Enclosure B Ditch fill
Nail shaft. Square section, pointed tip. L: 42mm, W: 4mm.

18) Sfno. 13 (98)
Head and upper shaft of nail. Square section. L: 34mm, W of head: 11mm, W of shaft 4mm.

19) Sfno. 9 (53)
Head and upper shaft of nail. L: 12mm

20) (48) Ditch 265
Shaft of nail; square section. L: 26mm, W: 3mm.

21) Sample 30 (57)
Head and upper shaft of nail or rivet perforating a fragment of iron sheet with curved edge. Diam of nail head: 12mm Diam of curving sheet 20mm. A total of 33 examples of perforated sheet fittings were recovered from Danebury (Sellwood 1984b, 366, fig.7.20) many with rivets *in situ*, and again mainly from later Iron Age contexts.

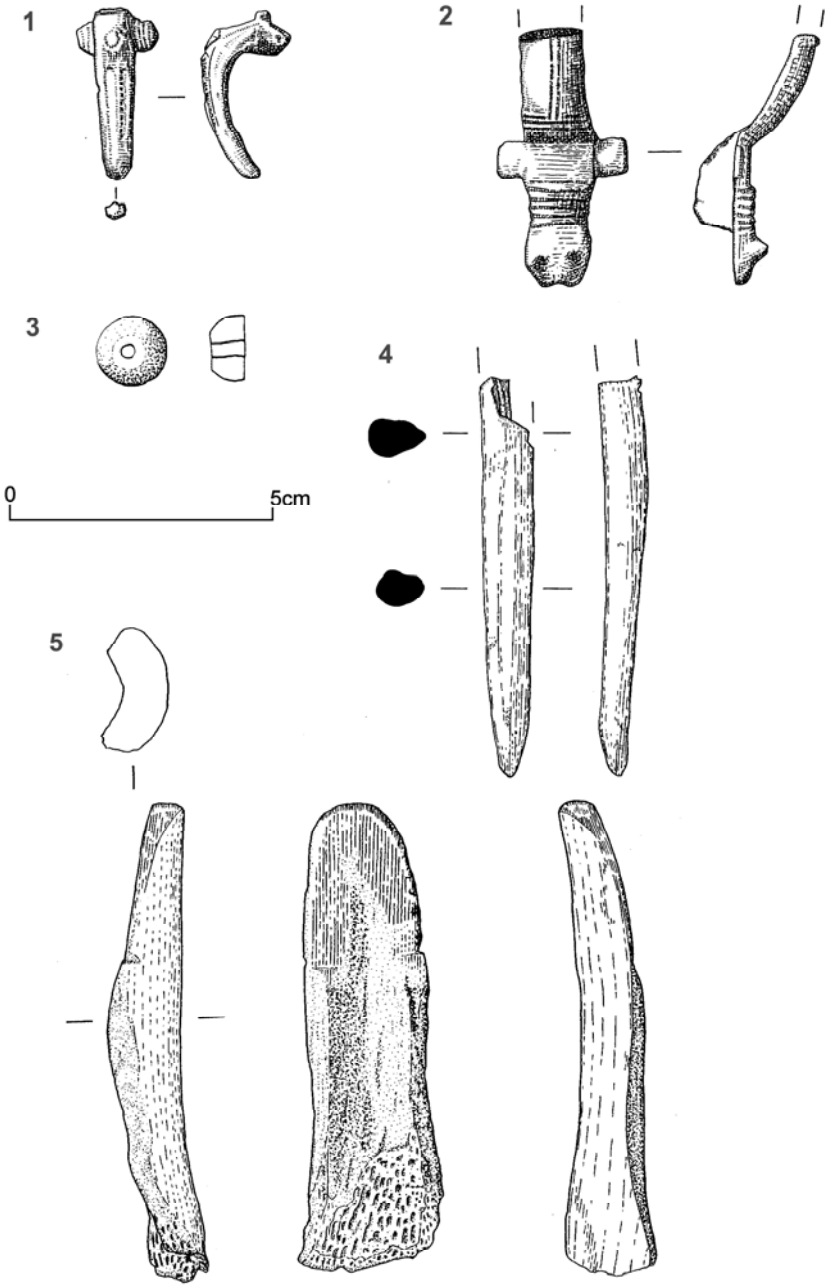

Figure 34 Small finds

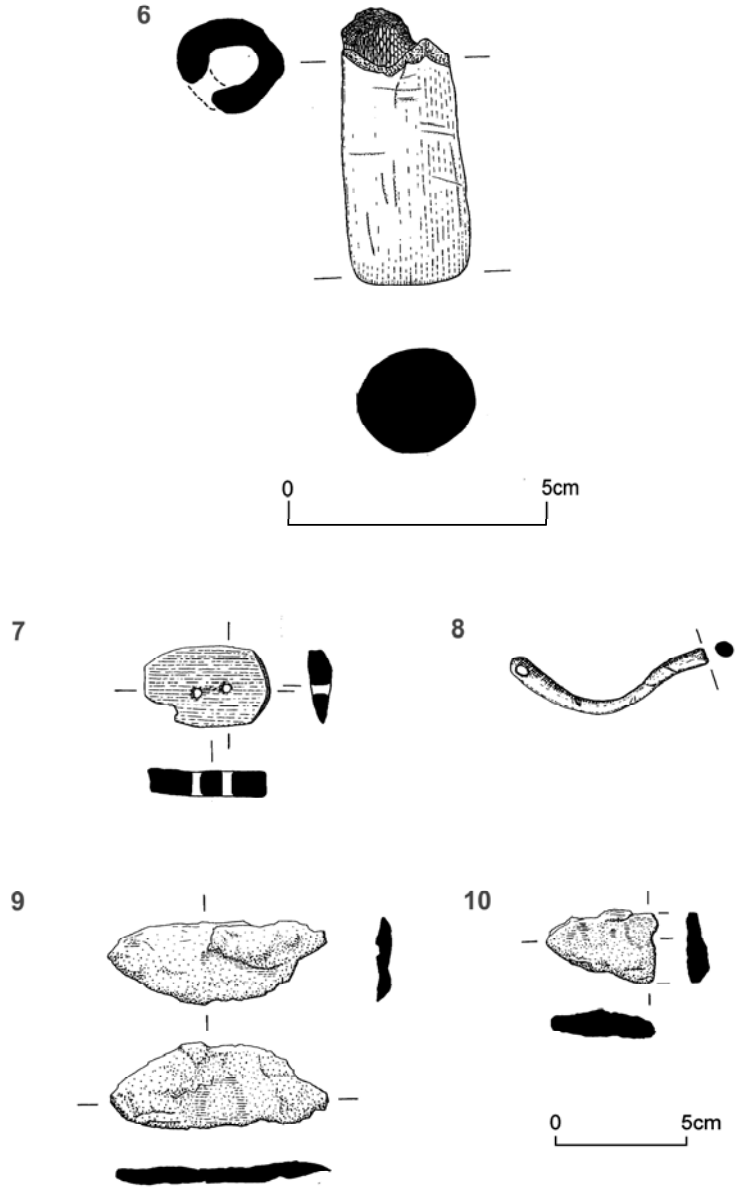

Figure 35 Small finds

The Iron Age Coin - Colin Haselgrove

(Standard references: BM = Hobbs 1996; VA = Van Arsdell 1989).

Sf 14. Cast bronze (potin) coin. Kentish Primary Series or 'Thurrock type'. BM 662, VA 1402f. Obv. Head of Apollo left; Rev. butting bull right, above pseudo-legend MA. Axis: 90°. Weight: 3.01gm. Roundhouse 13, context 440.

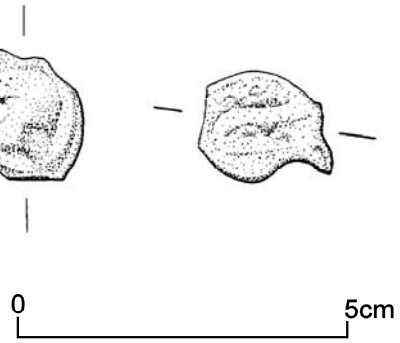

Figure 36 The Iron Age coin

These bronze coins were cast in inter-connected moulds as the tang on this example shows clearly and subsequently separated. They invariably have a high tin content and are consequently known by the French term, potin: surface EDXRF analysis of other examples has suggested a tin content as high as 50%, although the usual composition seems to be nearer 18–20% tin and 78–82% copper. When freshly cast, they will have had a glossy appearance, more like silver than base metal.

The type was defined in the 1980s following the discovery of the Thurrock hoard and was initially attributed to the Essex area (Van Arsdell 1989), but it has since become clear from the dozens of finds that have been made in Kent, especially in East Kent, that the series originated there (Haselgrove 2006). The type is derived from struck bronze issues of the southern French city of Massalia (Marseille) dating to the late 3rd or early 2nd century BC, hence the MA above the butting-bull, and was almost certainly the first major coinage produced in Iron Age Britain. Its dating has yet to be satisfactorily established, but is likely to lie within the 2nd century BC. At present, the earliest find of a Kentish Primary potin is from Maiden Castle (Dorset) in a context dating to the (earlier?) 2nd century BC, whilst a near identical but possibly unrelated series from the Paris area in northern France was in circulation by the end of La Tène C1 (*c.* 200 BC), showing that copying started at a date very close to that of the prototype.

With regard to the terminal date, the absence of Kentish Primary potins amongst the abundant coin finds from Canterbury indicate that they had effectively disappeared from circulation in their territory of origin by the mid 1st century BC, although some isolated site finds may be of slightly later date (Haselgrove 2006). Another sign of their relatively early date is provided by the recent discovery of British Flat Linear Class II potins – which are descended from Kentish Primary types via several intermediaries – in mid first century BC deposits at Corent (Auvergne) in central France (Gruel and Haselgrove 2007).

The context of the Humberstone coin unfortunately offers little assistance in clarifying the date of the series or when it reached the site. It came from the final fill of a penannular gully defining a large

circular building (Roundhouse 13). The radiocarbon dates of 400–200 cal BC and 360–50 cal BC for Phases 1 and 2 of the roundhouse respectively would work well with a 2nd century BC date for the coin, but the large later Iron Age pottery deposit from an equivalent context at the rear of the house includes some forms which are thought to date to the late 1st century BC or early 1st century AD.

More generally, the Humberstone coin must be seen in the context of a pronounced scatter of finds of Kentish Primary potins north of the Thames and into the East Midlands as far as the Humber and the Trent (Haselgrove 2006, Fig. 1). It is however only the third example to be found during archaeological excavations outside Kent the other two being from Maiden Castle, and, closer at hand, at Stanwick (Northamptonshire), where the coin in question was unstratified. For this reason, it is of considerable interest, Moreover, where Kentish Primary potins have been found outside Kent, it is noticeable that many of them come from places which were particularly important in their region and/or were involved in long-distance exchange (in addition to Maiden Castle and Stanwick, other findspots include Colchester, Stonea Grange, as well as Merthyr Mawr on the south Wales coast and South Ferriby on the Humber). Along with the two Roman Republican *denarii* found in a probable pre-Conquest context on the Elms Farm part of the complex (Charles *at al*. 2000, 124, 195–196), the presence of this Kentish potin at Manor Farm strongly suggests that in the later Iron Age, Humberstone, too, was a site of some standing regionally, whose inhabitants enjoyed contacts, whether direct or down the line, with leading communities elsewhere in Britain and perhaps further afield, a view which would be in line with the finds from the East Leicestershire hoard site, just 20 km away.

Roman coins

Identified by Richard Abdy (British Museum)

Unfortunately the Roman coins are badly decayed and are barely legible however sufficient information remains for identification.

Context 262 (?'purse' group)
SF1-3 1st/2nd century AD group showing laureate head of Nero.

Context 895
SF58 Possibly 1st/2nd century AD coin, similar to above.

Unstratified
SF7 and 21 Debased radiate of the later 3rd century AD.

The Metalworking Evidence – Sally Anne Smith and John Tate

Methodology
A total of 464g of material described as iron slag was recovered and categorised as below.
The finds in this assemblage were weighed, counted and examined by microscopy.

Iron working slags:
tap slag (13g)
furnace bottom (115g)
furnace slag (22g)
furnace lining (25g)
glassy furnace slag (45g)
Hearth/furnace lining (41g)

vitrified clay (114g)
fuel ash (15g)
iron objects (11g)
coke (6g)
natural mineralised organic matter (5g)
natural ironstone (32g)

Other debris:
natural limestone (20g)

This small assemblage of ironworking debris appears to represent industrial activity in this area in the form of smelting (reducing the iron ore to metal in a furnace) or primary smithing (hammering to refine the metal), both usually performed on the same site. The majority of the slag in this collection would indicate the use of a furnace (furnace bottom, lining and slag), but the absence of any large amounts of tap slag or iron ore suggests that the main smelting area was elsewhere.

Although this is a small assemblage, the evidence for hammerscale is quite representative of iron working taking place. Analysis of soil samples taken on site revealed evidence of flake hammerscale and spheroidal hammerslag. This is produced by smithing – hammering the smelted iron bloom whilst hot to consolidate the metal and expel any trapped slag. Spheroids consist of droplets of slag that are expelled mainly during primary smithing, whilst the flake hammer scale is produced in both primary and secondary smithing (forging of the iron into an artefact).

The remaining debris contained non-slags such as vitrified clay and fuel ash, which can be produced from any high temperature activity (e.g. domestic or accidental fires) not just from ironworking. The fragment of coke was found in an unstratified layer, as was the glassy furnace slag, both indications of later ironworking technology.

Manor Farm has comparable links to the Iron Age settlement found at Elms Farm, Humberstone, located *c*.30m to the east. Metalworking evidence found in Areas 3 and 6 at Elms Farm (smithing hearths, anvils and hammerscale) indicates the process of secondary smithing taking place (Charles *et al*, 2000). It is possible that the area between the two sites (cut through by the road A563 Hamilton Way) could have contained the smelting area that would have been producing the iron bloom for the smithing activity found on both sites.

Table 20: Hammerscale.

Sample	Context	Cut	Weight (Kg)	Volume (L)	Spheroids	Magnetite	Feature/Location	Site
1/	3//4	5	64.6	57.5	xx	xx	RH1 hearth	A
27/	48	38	31.5	28.5	xx		Stone pit N. of RH1	A
28/	52	45	19.6	15.5	xx	x	RH2 butt-end	A
66/4	128	127	9.8	7.5	x		RH5 butt-end	A
116/1	404	414	9.6	8	x	.	ENC1 butt-end	B
177/2	512	514	9	6.5	x	.	RH10 butt-end	B
264/2	655	653	10	8.5	xxx	xxxx	RH13 SE. side	B
285/1	706	705	8.8	7.5	.	x	RH13 PH	B
286/2	716	715	8.6	6	.	x	RH13 PH	B
309/1	769	768	8.6	6.5	.	xx	RH13 PH	B
310/2	772	771	8.8	7	x	x	RH13 PH	B
317/1	780	779	11.2	9	x	xx	RH13 WSW. side	B
388/1	845	844	9.6	7	x	.	PH N. of Enc1	B
402/2	864	863	10.2	9	x	x	Oval pit W. of RH13	B
non-enviro.	796	784		2	x	xx	RH13 W. side	B
non-enviro.	772	771		2	.	x	extra RH13 PH	B
non-enviro.	795	653		2	xx	xxxx	RH13 W. side	B
non-enviro.	718	653		2	x	xx	RH13 SW. side	B

. = < 2 flakes/spheres xx = > 5 xxxx = > 15
x = > 2 xxx = > 10

Methodology

The fine fraction residue (from wet sieving) was laid out as thinly as possible. A magnet was then run over and through the material twice. All the magnetic material was collected. This was then placed under a microscope (x10) and all magnetite flakes and spheroids were removed and collected.

Table 21: Catalogue of slag.

Item number	Context number	Cut number	Weight in grams	Number of pieces	Description
1	U/S		45	1	Glassy slag – high temp.extraction
2	U/S		6	2	Coke
3		Sf 38	19	2	Furnace lining
4	97	82	9	1	Tap slag
5	132	127	25	1	Natural ironstone/ore
6	404	414	5	1	Natural, mineralised organic matter
7	486	416	11	8	Fe.object
8	509	507	4	2	Fuel ash
9	649	648	5	1	Fuel ash
9a	649	648	9	1	Furnace slag
10	655	653	115	1	Furnace bottom
11	655	653	4	1	Tap slag
12	655		10	1	Furnace slag
13	718	653	5	1	Vitrified clay
13a	718	653	5	1	Natural ironstone/ore
14	750	751	3	1	Vitrified clay
14a	750	751	2	1	Natural ironstone/ore
15	750	751	20	3	Natural limestone
16	758	756	3	2	Fuel ash
17	780	779	9	1	Furnace/hearth lining
18	819	628	20	2	Furnace/hearth lining
19	819	628	3	1	Furnace slag
19a	819	628	2	1	Furnace lining
20	847	846	12	4	Hearth or Furnace lining
21	856	756	4	1	Furnace lining
22	865	863	3	1	Fuel ash
23	888	415	106	2	Vitrified clay
Totals			**464g**	**45**	

The Flint – Lynden Cooper

The assemblage comprises *c.* 300 pieces of worked flint, mostly from stratified deposits. The debitage is mostly flakes and shatter pieces, on the whole unpatinated and quite fresh. A considerable number of pieces are burnt, often quite heavily. A small group of blades, mostly patinated, are likely to be of an earlier date. Cores were very sparse, and those present very crude. There are very few tools, with only eleven scrapers, one arrowhead and a miscellaneous piece. The scrapers are quite variable in terms of typology and surface condition. They are likely to be from a considerable time period, perhaps from the Upper Palaeolithic to the ?Iron Age. The Neolithic arrowhead is exquisite and almost certainly exotic, contrasting with the material used for flake manufacture.

On balance the majority of the material is likely to be of later prehistoric date, and some of it quite possibly Iron Age.

The Environmental Evidence – Angela Monckton and Alistair Hill

Introduction

Samples were taken for the recovery of charred plant remains which can give evidence of diet, agriculture and activities on the site in the past. The features sampled included 13 roundhouses, enclosure ditches, pits and other features of Middle to Late Iron Age date. The area excavated was near to that excavated at Elms Farm, Humberstone (Charles et al 2000), and appears to be an additional part of the extensive settlement. It was hoped that environmental sampling would add to the information obtained there from charred plant remains, animal bones and other evidence.

Sampling

From previous results at Humberstone (Pelling 2000) it was expected that only occasional deposits would be productive, although it was necessary to sample a range of context types to cover the phases and areas of the site to indicate the scatter of remains, as well as to maximise the possibility that any productive deposits were sampled. The types of context with the most potential to produce plant remains are layers which contain other material such as animal bones and pottery fragments. As such deposits have been found to occur in ditch terminals on Iron Age sites these were sampled. In addition the most productive features of this date have been found to be pits (Monckton 1998). Obviously burnt features may contain charred plant remains although such deposits may consist only of charcoal from fires for industrial and other purposes.

In order to compare the roundhouses, the gullies, particularly the terminals, were sampled, although not all were complete. In order to study the distribution of remains in the roundhouse samples were also taken from the sides and back of the gully and any internal features. The strategy for examining finds distribution involved excavating each roundhouse gully in ten slots one metre in length with two slots situated at each of the terminals, two at each side, and two at the back of the gully. Recuts and inner gullies were excavated in the same way. On site it was decided to take samples for plant remains for comparison with the finds, resulting in ten samples from the gully with additional samples from the recuts and inner gullies. Pits and burnt deposits were also sampled. A total of 375 samples, mostly of 30 litres in size, were taken. After processing most of the samples from the first few roundhouses with poor results, it was decided to process only one sample from each of the gully terminals and one from each side of the roundhouses. Selected samples were also processed from other features with potential to contain charred plant remains such as pits and burnt deposits.

Methods

Samples were selected for processing from the range of features on the site. A total of 172 samples was processed amounting to 2985 litres of soil.

Samples were wet sieved in a York tank using a 0.5mm mesh with flotation into a 0.5mm mesh sieve. The residues were air dried and the fraction over 4mm sorted for finds. The fraction below 4mm was reserved for sorting during the analysis stage if required. The flotation fraction (flot) was air dried and packed carefully in self-seal polythene bags and submitted for assessment and analysis.

The analysis of the flotation fractions (flots) was carried out by scanning and 100% sorting each flot using a binocular microscope with magnification settings of between x7 and x45. The carbonised plant remains (except charcoal) were separated from the flots and stored separately as either cereal grain, chaff, nuts and weed seeds prior to being identified further. The University of Leicester's environmental laboratory's modern seed reference collection and reference manuals (e.g. Anderberg 1994, Berggren 1969, 1981 and Cappers *et al* 2006) were used to identify (subject to the degree of preservation) the morphological characteristics of the archaeobotanical evidence found in each of the samples. A summary of the samples processed by phase and groups is shown in Table 1.

Numerical quantification, by species, of the grains, chaff and seeds from each sample was carried out using the following methodology. For cereals, each grain present in the assemblage was counted as one. Where fragments of grain were present an estimate of the number of whole grains this would have represented was made by combining fragments. This method was also used in the counting of the chaff present in the assemblage. The weed seeds, although generally poorly preserved, in common with the rest of the archaeobotanical assemblage were counted as one unless they could be identified as fragments of a fractured large weed seed (following van der Veen 1992). The results of the analysis, by sample, was recorded using a Microsoft Excel spreadsheet and subsequently each sample was grouped

in line with the context features from the site with the item total and items/litre tabulated to illustrate the distribution of charred plant remains across the site.

The plant names follow Stace (1997).

Area	Phase	Group	No. of samples	Samp. Vol. Litres	Samp. with cereal (no.)	Samp. with chaff (no.)	Samp. with seeds (no.)	Samp. with fr/nut (no.)	Items total	Max. desity/ area
RH4	1	1	5	41	2 (2)	0	2 (3)	0	5	0.3
RH6	1	1	8	93.5	0	0	0	0	0	n/a
RH7	1	1	4	33	0	0	1 (2)	0	2	0.2
o/sEncA	2	2	4	84	2 (3)	1 (3)	4 (34)	0	40	0.8
Enc.A	2	2	9	186.5	2 (2)	0	2 (7)	0	9	0.1
RH1	2	2	16	510	8 (18)	2 (7)	8 (36)	0	61	1.5
RH5	3	3	4	51.5	2 (2)	0	2 (3)	0	5	0.2
Enc.A	3	3	1	13.5	0	0	0	0	0	n/a
Enc.C	3	3	2	21	2 (3)	2 (9)	2 (8)	0	20	1.0
Enc.D	3	3	5	69.5	1 (1)	1 (1)	1 (2)	1 (1)	5	0.2
o/sEnc.D	3	3	3	55	2 (12)	1 (14)	1 (17)	2 (3)	46	1.6
Enc.B	4	4	4	65.5	1 (1)	0	2 (5)	0	6	0.2
Enc.C	5	5	2	14.5	2 (2)	1 (2)	2 (3)	0	7	0.6
Enc.E	5	5	6	223.9	6 (19)	2 (3)	6 (20)	0	42	0.6
RH2	5	5	12	365	11 (45)	4 (9)	11 (51)	0	105	0.7
RH3	5	5	5	119	2 (7)	0	3 (39)	0	46	0.8
A	5	5	4	46	3 (14)	1 (1)	2 (15)	0	30	1.2
A		7	2	24.5	0	0	0	0	0	n/a
RH13	LBA	8	1	14	0	0	1 (4)	0	4	0.3
RH13		8	7	117.5	4 (18)	1 (12)	3 (24)	0	54	1.0
o/sRH13		8	3	30	3 (6)	2 (4)	3 (16)	2 (2)	28	1.1
Enc.1		8	15	184.4	10 (23)	6 (14)	10 (42)	0	79	1.4
RH8		9	1	12	1 (2)	0	1 (1)	0	3	0.3
w/Area B		9	3	30.5	1 (1)	0	1 (1)	0	2	0.2
Enc.F		10	6	75.5	3 (5)	1 (1)	5 (14)	0	20	0.5
B		11	2	22	1 (2)	0	1 (3)	0	5	0.6
RH9		12	1	11.5	1 (1)	0	1 (1)	0	2	0.2
Enc		12	2	24.5	1 (1)	1 (2)	1 (1)	0	4	0.3
RH14		13	1	13	0	0	0	0	0	n/a
Enc. H		13	4	53	1 (1)	0	0	0	1	0.1
Enc. G		13	2	29.5	0	0	1 (1)	0	1	0.1
RH10		14	6	58.5	4 (4)	2 (3)	0	0	7	0.3
o/sRH10		14	3	41	1 (5)	0	2 (6)	0	11	0.5
RH11,12		15	5	50	3 (8)	2 (2)	2 (2)	0	12	0.7
RH12/4P		15	4	80.5	4 (33)	1 (2)	3 (13)	0	48	0.9
NE 4 post		15	2	17	1 (1)	0	0	0	1	0.1
o/sRH11,12		15	4	57	4 (5)	2 (2)	4 (10)	0	17	0.5
eastA		15	4	49.5	1 (1)	0	0	0	1	0.1
Total No.			**172**	**2987.8**	**245**	**91**	**380**	**6**	**729**	

Table 22 – Summary of samples processed by Phase and Group

Results

About half of the samples examined contained some cereal remains. However the number of remains in each sample was small, mostly in single numbers, with only 22 samples having between ten and 40 items present (Tables 2 and 3). Hence there was little potential for detailed analysis of the remains to define activities on the site, although the cereals and their weeds were found and the distribution on the site could be considered.

Sample No.	27	50	419	409	32	28	29	33	34	38	40	422	
Phase	2	2	3	3	5	5	2	5	5	5	5	5	
Period	EIA	EIA	MIA	M/LIA	M/LIA	M/LIA	M/LIA	M/LIA	M/LIA	M/LIA	M/LIA		
Area	o/s EncA	RH1	Enc.C	RH5	Enc.E	RH2	RH2	RH2	RH2	RH2	RH3	A	
Group	2	2	3	3	5	5	5	5	5	5	5	5	
Context	48	103	259	876	64	52	53	65	66	77	83	237	
Feature Type	Pit	Hearth	Ditch	Pit	Ditch	Gully	Gully	Gully	Gully	Gully	Gully	Ditch	
Grains													
Triticum cf. *dicoccum*													Emmer
Triticum spelta L.					2		2					1	Spelt
Triticum cf. *spelta*		1						2					Spelt
Triticum sp.		3		1			3		1			1	Wheat
cf. *Triticum*					4								Wheat
Hordeum				1				1	2	1			Barley
cf. *Hordeum*						1	2					2	Barley
cf. *Secale cereale* L.										1			Rye
Cerealia indet	2	2	1	8	5	4	8	1	1	3	5	7	Cereal
Total grains	2	6	1	10	11	5	15	4	4	5	5	11	
Cereal Chaff													
Triticum cf. *dicoccum* glume base													Emmer
Triticum spelta glume bases		1							1				Spelt
Triticum cf. *spelta* glume bases		1								1			Spelt
Triticum sp. glume bases		2							1	2			Wheat
Triticum sp. rachis frag.													Wheat
Culm nodes			1	12									Cereal stems
Culm bases			3	2									Cereal
Total chaff	0	4	4	14	0	0	0	0	2	3	0	0	
Berries, Fruit and Nuts													
Crataegus sp.				2									Hawthorn family
Prunus spinosa L.													Sloe
Total fruit/nuts	0	0		2	0	0	0	0	0	0	0	0	
Other plants													
Ranunculus sp.												1	Buttercup family
Urtica sp.			1										Nettle family
Montia sp.									1	1			Blinks family
Stellaria sp(p).	1				1								Stitchwart family
Chenopodium sp(p).				5									Goosefoots
Polygonaceae sp(p).											14		Knotweed family
Persicaria sp.									2	1			Knotweed family
Polygonum aviculare L.				2									Knotgrass
Fallopia convolvulus L.				2									Black-bindweed
Rumex asetosella L.							1						Sheep's Sorrel
Rumex acetosa L.													Common Sorrel
Rumex sp(p).				2							2		Docks
Fabaceae sp(p). small legumes	2				4		3						Small legumes
Vicia/Lathyrus sp.				1						1		1	Vetch/Pea family
Vicia sativa L.													Common Vetch
cf. *Vicia* sp.												1	Vetch family
Medicago sp.			1										Medick family
Apiaceae sp.											1		Carrot family
Sherardia arvensis L.													Field Madder
Galium aparine L.													Cleavers
Galium sp.												1	Bedstraw family
Valerianella sp.										1			Cornsalad family
Asteraceae sp.												1	Daisy family
cf. *Asteraceae* sp.				1									Daisy family
Carex sp.							3				10		Sedges
cf. *Avena*		1											Oat
Arrhenatherum elatius L.			1		1		1	6	1	1		1	Onion couch grass
Bromus hordeaceus/secalinus L		7		1	1	1							Brome grass
cf. *Bromus hordeaceus/secalinus* L					2								Brome grass
large grass		3	1	1	1	1			1	3	1	3	Large grass
small grass		3	1	2			1		1		1		Small grass
thorn									1				Thorn
indet	25	3	1			3		1					indeterminate
Total weed seeds	28	17	6	17	10	5	9	7	7	8	29	9	
Totals	30	27	11	43	21	10	24	11	13	16	34	20	
Sample vol.Lts.	38.5	18	11	26.5	34.5	15.5	35	29.5	32	39.5	41	16.5	
Flot vol.mls	1440	110	6	520	80	30	90	100	60	70	225	35	
Items/litre	0.8	1.5	1.0	1.6	0.6	0.6	0.7	0.4	0.4	0.4	0.8	1.2	
Average items/litre by period		**1.0**	**1.0**								**0.7**	**1.2**	

Table 23 – Charred plant remains from Phases 2, 3 and 5

Sample No.	2E	4E	377	136	137	138	7E	285	286	309	
Phase											
Period	M/LIA	M/LIA	M/LIA	M/LIA	M/LIA	M/LIA	M/LIA?	M/LIA?	M/LIA?	M/LIA?	
Area	RH13	RH13	o/s RH13	Enc.1	Enc.1	Enc.1	o/s RH10	RH12/4 Post	RH12/4 Post	RH12/4 Post	
Group	8	8	8	8	8	8	14	15	15	15	
Context	41	46	808	447	448	449	48	706	716	769	
Feature Type	Ditch	Pit	Pit	Ditch	Ditch	Ditch	Gully	P/Hole	P/Hole	P/Hole	
Grains											
Triticum cf. *dicoccum*							1			2	Emmer
Triticum spelta L.				1	1			12	1	3	Spelt
Triticum cf. *spelta*									1		Spelt
Triticum sp.		5	1			1	1		4		Wheat
cf. *Triticum*					2					3	Wheat
Hordeum											Barley
cf. *Hordeum*				5	2						Barley
cf. *Secale cereale* L.											Rye
Cerealia indet	5	6	2	1		2	3		1	4	Cereal
Total grains	5	11	3	7	5	3	5	12	7	12	
Cereal Chaff											
Triticum cf. *dicoccum* glume base			1								Emmer
Triticum spelta glume bases		1			1	1		1			Spelt
Triticum cf. *spelta* glume bases											Spelt
Triticum sp. glume bases		11			1	1					Wheat
Triticum sp. rachis frag.								1			Wheat
Culm nodes											Cereal stems
Culm bases											Cereal
Total chaff	0	12	1	0	2	2	0	2	0	0	
Berries, Fruit and Nuts											
Crataegus sp.											Hawthorn family
Prunus spinosa L.			1								Sloe
Total fruit/nuts	0	0	1	0	0	0	0	0	0	0	
Other plants											
Ranunculus sp.											Buttercup family
Urtica sp.											Nettle family
Montia sp.											Blinks family
Stellaria sp(p).											Stitchwart family
Chenopodium sp(p).					1						Goosefoots
Polygonaceae sp(p).			1		1						Knotweed family
Persicaria sp.											Knotweed family
Polygonum aviculare L.									1		Knotgrass
Fallopia convolvulus L.				1							Black-bindweed
Rumex asetosella L.											Sheep's Sorrel
Rumex acetosa L.						2					Common Sorrel
Rumex sp(p).	1	1	1		1						Docks
Fabaceae sp(p). small legumes				4	1	1					Small legumes
Vicia/Lathyrus sp.								1			Vetch/Pea family
Vicia sativa L.								1			Common Vetch
cf. *Vicia* sp.											Vetch family
Medicago sp.	2						1				Medick family
Apiaceae sp.											Carrot family
Sherardia arvensis L.				1							Field Madder
Galium aparine L.	1								1		Cleavers
Galium sp.											Bedstraw family
Valerianella sp.											Cornsalad family
Asteraceae sp.											Daisy family
cf. *Asteraceae* sp.											Daisy family
Carex sp.								1			Sedges
cf. *Avena*											Oat
Arrhenatherum elatius L.											Onion couch grass
Bromus hordeaceus/secalinus L		7			3						Brome grass
cf. *Bromus hordeaceus/secalinus* L			2	1	2						Brome grass
large grass	1	5		0	2	6	1	1	2	4	Large grass
small grass		1	2				1				Small grass
thorn											Thorn
indet		2					2	1			indeterminate
Total weed seeds	5	16	6	7	11	9	5	5	4	4	
Totals	10	39	11	14	18	14	10	19	11	16	
Sample vol.Lts.	18	39	8	14.5	13	13	19	22	13	21.5	
Flot vol.mls	45	216	20	110	90	110	85	85	50	60	
Items/litre	0.6	1.0	1.4	1.0	1.4	1.1	0.5	0.9	0.8	0.7	
Average items/litre by period						**1.0**				**0.7**	

Table 24 – Charred plant remains from Area B

Results by Context

AREA: A

Roundhouses 4, 6 and 7

Samples were processed from all parts of the gullies relating to the three roundhouses, RH4, RH6 and RH7. Of the 17 samples processed only two cereal grains (RH4) and five weed seeds (RH4, RH7) were found. The general absence of charred plant remains from these three structures suggests the possibility that their use was unrelated to any domestic activities.

Roundhouse 1

The samples from the roundhouse in this group, RH1, were all processed from an external and internal gully with the right-hand terminal absent. Only single numbers of charred plant remains were found in the samples. Cereals were present in the eastern terminal, samples 4 and 6 and the western terminal, sample 15 and surprisingly in the rear (northern) section opposite the door, sample 9. The inner gully had single numbers of remains in three samples, two to the rear and one on the western side, samples 11, 18 and 19. A central hearth was sampled, the upper layer containing little but the lower layer context (103) containing grains weed seeds and a few chaff fragments of glume wheat probably spelt. This was a small deposit with one 18 litre sample which contained 27 items (density 1.5 items/litre of soil). The remains suggest small-scale dehusking and cleaning of wheat for consumption. This may be a primary deposit representing this activity being carried out in the hut.

Other features of Enclosure A included gullies, ditches and pits. However evidence of charred plant remains were sparse with only two cereal grain fragments and seven weed seeds recovered from the nine samples analysed. Features outside the enclosure included a two-post structure (sample 22) containing no charred plant remains, while an elongated burnt pit (stone pit, cut 38 samples 26 and 27) contained abundant charcoal and single numbers of cereal grain, chaff with more weed seeds. The evidence of charred plants remains from this feature is thought to be insufficient to indicate that the feature was used for cereal processing, although the possibility cannot be excluded. Sample 194 from this deposit produced a seed of stinking mayweed which is an arable weed of clay soils and this may prove to be one of its earlier occurrences in the county.

Roundhouse 5

The four samples processed produced only two indeterminate cereal fragments and three weed seeds. Of the five samples taken from Enclosure D fence posts and pits only samples 106 (one wheat glume base and one sloe stone) and 108 (one indeterminate cereal fragment and two grass seeds) contained any evidence of charred plant remains. Outside the enclosure burnt pits cuts (874 and 879); (samples 409, 423 and 424 respectively) were analysed. Sample 409 contained abundant charcoal with quite numerous seeds and a few cereal grains and chaff including hulled barley. The second pit samples 423 and 424 contained only two cereal grain fragments and one sloe stone. Enclosure A sample 416 contained a moderate number of snails of a wet ditch prone to drying but no charred plant remains. Enclosure C samples 414 and 419 differed in being dry and contained a few charred plant remains including a glume and spikelet fork possibly of emmer while sample, 419 as well as some charred plant remains contained seeds of water crowfoot (*Ranunculus* subgen. *Batrachium)* suggesting that there may be some waterlogged preservation, possibly only of the more robust remains as there was little else in the sample. The presence of sloe stones in samples 106, 409 and 423 suggests that gather foods played a part in the domestic activities of the settlement.

Enclosure B

Samples from a pit and ditch within Enclosure B contained only one indeterminate cereal fragment, three grass seeds, one dock seed and one indeterminate seed.

Roundhouse 2

The samples from this roundhouse were all processed from ten slots of the ring gully. Charred plant remains were found in both the north and south gully terminals, samples 28 and 20 respectively, as well as in samples from both sides in samples 21, 29, 33, 34, 38, and 39, with most in 29. The rear western slots, samples 24 and 25 only contained one barley grain, one indeterminate cereal and one seed of ribwort plantain (*Plantago lanceolata* L.) The latter two samples (33 and 38) from the southern terminal were moderately productive cereal cleaning waste from probably domestic scale food preparation. Tubers of onion couch grass were noticeably abundant in this group.

Five samples from this roundhouse contained a small amount of cereal grains, including barley, weed seeds and a fruit stone of sloe as evidence of gathered food.

Ditch 265
The ditch cut 265 containing the antler deposit also belongs to this phase and the samples contained small amounts of cereal grains, chaff and weed seeds as well as snails. The snails found are similar to those found in ditches at Enderby (Monckton 1992) suggesting that the ditches were prone to drying, in an open environment with grassland, probably pasture nearby.

Enclosure E
The six samples taken from features within Enclosure E contained small numbers of plant remains with moderate amounts of cereal grains, some chaff and seed weeds in sample 32.

Unphased Features

The small group of unphased features contained no evidence of archaeobotanical material.

AREA: B

Roundhouse 13

Roundhouse 13 was a multi-phase structure which contained the most pottery and finds although this did not become apparent until late in the project. The samples processed from the ring ditch were from the south-eastern and north-western terminals, with the majority containing small numbers of cereal remains. The most items were from the central pit which was sampled in the evaluation cut 47E and which contained 39 items in a 39 litre sample. Glumes including those of spelt with a few cereal grains and weed seeds including brome grass (*Bromus hordeaceus/secalinus)* were recovered. This probably also represents domestic cereal cleaning for consumption probably burnt in the hearth and raked out and deposited in the pit at the same time as the other remains were deposited. The three samples from features outside of Roundhouse 13 contained small amounts of cereal grain and chaff, weed seeds and two sloe stones (samples 377 and 384).

Roundhouse 8

Four samples were processed from the poorly preserved Roundhouse 8 and nearby pit and post-holes. Only three cereal grains and two weed seeds were found.

Enclosure F

Enclosure F may be associated with Roundhouse 13. Six samples were processed and examined (271, 272, 273,281,283 and 284). Five of the six samples contained single numbers of cereal grains and weed seeds, sample 272 was the most productive containing wheat and barley with weeds including wild radish and vetch, and was probably part of the scatter of domestic waste.

Gullies 420 and 421

Two samples from intercutting gullies/ditches, samples 420 and 421, were examined. Only sample 421 contained any archaeobotanical remains (two cereal grains and three weed seeds).

Roundhouse 9

Roundhouse 9 was truncated and contained only one tuber and one cereal grain (sample 233). Pit samples 158 and 161, associated with the enclosure, were also found to contain only very limited archaeobotanical remains (one barley grain, two fragments of chaff and one sedge seed).

Roundhouse 14

Roundhouse 14 was incomplete and one sample 236 contained no charred plant remains. The four samples (114, 115, 123 and 124) processed from Enclosure H contained only one spelt wheat grain (*Triticum spelta* L.). Enclosure G samples 134 and 185 both from the left terminal contained only one brome grass seed (*Bromus hordeaceus/secalinus).*

Roundhouse 10

Roundhouse 10 was complete but truncated. Samples 177, 178, 187 and 188 represent both terminals and contained three cereal grains (one each of spelt wheat, barley and indeterminate cereal). Samples 189 and 219 were taken from northern and southern gully and southern terminal respectively and

contained only one indeterminate cereal grain. Three samples were taken from outside Roundhouse 10 and of these only evaluation sample 7E contained any evidence of cereal remains.

Roundhouse 12

All the processed samples from this group were examined totalling 19. Three samples (264, 317, and 323) from Roundhouse 12 contained a few cereal remains, while two associated post-holes (288 and 289) included a legume fragment possibly of bean. Samples from each post of a four-post structure within Roundhouse 12 were examined and were more productive. Sample 285 included prime grains of spelt, including two germinated grains, amongst 19 items including a few chaff fragments and weed seeds. The other post-holes (samples 286, 309 and 310) contained 11, 16 and two items respectively. The remains found here were insufficient to provide evidence to interpret the function of the feature but prime spelt grains were found in one of the postholes of the four-post granary at Elms Farm (Pelling 2000). Charred remains are only preserved by chance and do not always survive so this does not exclude the possibility of grain storage. However, the posts could be part of the roundhouse structure and the remains be left from food preparation in the house or perhaps from storage within the building possibly in the roof. Slag from the sample was identified as hearth slag from wood burning possibly on a domestic fire. Other samples from the group contained a scatter of cereal remains from gully samples 270, 304, 405 and 406, the latter containing a legume fragment. Samples 324, 398 and 402, from pit cuts 792, 751 and 863 respectively, contained only one wheat grain and one brome grass seed. The hearth context 770 (sample 311) only contained flecks of charcoal.

Discussion

The main cereal found was spelt wheat (*Triticum spelta)* with occasional remains of emmer (*Triticum dicoccum)*, with barley (*Hordeum* sp.), probably six-row hulled barley. Some chaff was present but sparsely represented on the site. Two fragments of larger legume, possibly pea or bean (*Vicia/Pisum)* were found representing another crop. A few sloe stones (*Prunus spinosa*) were the only evidence for the consumption of gathered fruits.

The charred plant remains were mainly a scatter of grains with weed seeds and a little cereal chaff probably from small-scale cereal processing for consumption. The grains of glume wheats, such as spelt, remain in the chaff after threshing and then require parching and pounding to free the grain, followed by fine sieving to remove the chaff and weed seeds before consumption. This is thought to have been done in small batches in the Iron Age. Final hand sorting was probably also carried out with the waste disposed of in the domestic hearth, with any grains spilled during cooking, perhaps becoming charred and raked out from the hearth for disposal, although some would form a scatter to accumulate in such open feature as gullies.

The small amount of cereal cleaning waste on the site may result from the waste chaff and seeds having been used as animal food. The weeds found are those of arable and disturbed ground, and include stinking mayweed (*Anthemis cotula)* usually considered to indicate the cultivation of heavy or poorly drained soils. This weed became prevalent in the medieval period but occurs sporadically from the Bronze Age onwards although this is an early occurrence for the county. Other weeds of wet soils such as sedges and spike-rush are notable by their absence. The weeds include cleavers (*Galium aparine)* usually associated with autumn sowing, and brome grass (*Bromus hordeaceus* or *secalinus)* a common weed of ancient crops although rare today. Tubers of onion couch grass (*Arrhenatherum elatius)* were found which also grew as an arable weed; the presence of tubers may suggest cutting low on the straw or some up-rooting during harvesting. It may, however, have been gathered as kindling. It has sometimes been suggested that it is edible, but it is tough and not thought to be worth the trouble (Robinson 1988 referred to in Greig 1991). Other weeds include black-bindweed (*Fallopia convolvulus)*, fat-hen (*Chenopodium album)* and knotweed (*Polygonum aviculare)*, possibly as weeds of the settlement or of the spring sown crops such as barley or legumes. Wild radish (*Raphanus raphanistrum)* and vetch (*Vicia* sp.) were additional weeds of the fields.

The results from this excavation differ from the previous excavation at Elms Farm. Here at Manor Farm although 90 samples from a total of 172 contained cereal remains only 22 contained over 10 items, and none have significant quantities of remains for analysis. At the Elms Farm excavation (Pelling 2000), from about 120 samples mostly of 40 litres in size some 45 of the samples contained plant remains including 15 with sufficient remains for analysis. The most significant samples were those from a four-post granary which contained numerous well preserved spelt wheat grains interpreted as fully cleaned cereal, possibly accumulated from processing wheat near the granary (Pelling 2000). Iron Age sites in the county have generally produced a low density scatter of charred plant remains (Monckton 1995) although charred cereal remains are usually found. A few exceptional samples have

produced more remains; in addition to those from the granary at Elms Farm mentioned above (Pelling 2000), these include a Middle Iron Age pit at Wanlip, a Late Iron Age pit with an inhumation at Rushey Mead, and Late Iron Age deposits at Ashby by-pass and Huncote. The latter was exceptional in containing numerous chaff fragments which are generally sparse in the county (Monckton 1998, Monckton 2000, Ciaraldi 2001, Jarvis 2001). There are however a larger group of Iron Age sites which have very sparse amounts of chaff and plant remains in general, for example the sites at Enderby and Kirby Muxloe (Monckton 2004, 157). Although it is likely that all Iron Age farmsteads carried out mixed farming it seems probable that there was a bias towards either arable or pastureoral depending on the suitability of the land; a bias towards a pastoral economy is suggested at these sites (Monckton 2004, 157). The Manor Farm results are comparable to these latter sites. However, the two excavations at Elms farm and Manor Farm appear to be parts of the same extensive settlement so it is suggested that the areas differed in function; Elms Farm being concerned with arable activities while Manor Farm may be more associated with crafts or pastoral activities. These differences may represent changes over time or spatial differences between the two parts of the settlement. The site at Beaumont Leys was different from the above settlement sites in having a large area of post-holes but produced only very sparse cereal remains (Hill and Monckton 2008). This may be because it was biased towards a pastoral economy or different activities were carried out there.

Conclusions

A large group of samples was examined but charred plant remains were found to be at a low density on the site as a scatter of probable domestic waste from cereal consumption. The foods consumed included spelt wheat, barley with possible legumes as an additional crop, and sloes as gathered food. Roundhouses 1, 2 and 13, provided the most remains, while the remainder were sparse. No changes were detected over time. The site was one of the less productive from the county with only 1.6 items of plant remains per litre of sediment as the maximum density found in a pit. The scatter of remains compares with other sites in the county which are thought to have a bias towards pastoral farming. However if this is part of the same settlement as the Elms Farm excavation where a granary was found, a difference of activities on this area of the site can be suggested.

AppendixII

AreaA

Samp. No	Phase	Group	Area	Cont. No	Feat type	Samp. Vol. Litres	Flot Vol. Mls	Gr.ch	Cf.ch	Se.ch	Fruit, nut ch	C'coal	Total	Items/ litre
80	1	1	RH4	159	Gully	12	35	1				fl	1	**0.1**
100	1	1	RH4	192	Gully	5	10					-	0	
101	1	1	RH4	164	Gully	11	10	1		2		fl	3	**0.3**
165	1	1	RH4	263	Gully	6	7			1		-	1	**0.2**
167	1	1	RH4	225	Gully	7	7					fl	0	
52	1	1	RH6	108	Gully	8	10					fl	0	
53	1	1	RH6	110	Gully	7	7					fl	0	
58	1	1	RH6	111	Gully	6	12					fl	0	
60	1	1	RH6	120	Gully	17.5	16					-	0	
61	1	1	RH6	126	Gully	6	10					fl	0	
62	1	1	RH6	121	Gully	15.5	19					fl	0	
64	1	1	RH6	123	Gully	15.5	19					fl	0	
65	1	1	RH6	124	Gully	18	16					fl	0	
82	1	1	RH7	168	Gully	5	20					fl	0	
83	1	1	RH7	169	Gully	10	25					fl	0	
84	1	1	RH7	170	Gully	12	50			2		fl	2	**0.2**
85	1	1	RH7	171	Gully	6	10					fl	0	
26	2	2	o/sEncA	37	Pit	26.5	370	1	3	3		+++	7	**0.3**
27	2	2	o/sEncA	48	Pit	38.5	1440	2		28		+++	30	**0.8**
194	2	2	o/sEncA	37	Pit	3	25			1		+++	1	**0.3**
195	2	2	o/sEncA	48	Pit	16	2040			2		+++	2	**0.1**
7	2	2	Enc.A	21	Gully	21	50	1				+	1	**0.0**
8	2	2	Enc.A	18	Gully	19.5	20					+	0	
12	2	2	Enc.A	25	Pit	14.5	20			2		fl	2	**0.1**
13	2	2	Enc.A	26	Pit	13	6	1				fl	1	**0.1**
16	2	2	Enc.A	28	Pit	36	80					fl	0	
22	2	2	Enc.A	41	Pit	14	20					fl	0	
23	2	2	Enc.A	49	Gully	36.5	100			5		fl	5	**0.1**
36	2	2	Enc.A	72	Ditch	18	20					fl	0	
425	2	2	Enc.A	328	Ditch	14	11					fl	0	
1	2	2	RH1	3	Hearth	57.5	120					fl	0	
2	2	2	RH1	6	Gully	17.5	15					fl	0	
3	2	2	RH1	8	Gully	27.5	25			2		-	2	**0.1**
4	2	2	RH1	11	Gully	37.5	100	2		1		+	3	**0.1**
5	2	2	RH1	12	Gully	39.5	20					fl	0	
6	2	2	RH1	13	Gully	43	70	1				+	1	**0.0**
9	2	2	RH1	14	Gully	45.5	50	2	3			fl	5	**0.1**
10	2	2	RH1	15	Gully	37.5	120			1		fl	1	**0.0**
11	2	2	RH1	16	Gully	33.5	200	1				fl	1	**0.0**
14	2	2	RH1	30	Gully	39.5	80					-	0	
15	2	2	RH1	31	Gully	27	80	3		3		fl	6	**0.2**
17	2	2	RH1	34	Gully	36	60			1		fl	1	**0.0**
18	2	2	RH1	35	Gully	33.5	30	2		3		fl	5	**0.1**
19	2	2	RH1	36	Gully	14.5	40	1		8		fl	9	**0.6**
35	2	2	RH1	59	Pit	2.5	15					fl	0	
50	2	2	RH1	103	Hearth	18	110	6	4	17		-	27	**1.5**
66	3	3	RH5	128	Gully	14.5	80	1		1		-	2	**0.1**
86	3	3	RH5	173	P/hole	13	10					-	0	
87	3	3	RH5	176	P/hole	10.5	10			2		-	2	**0.2**
94	3	3	RH5	134	Gully	13.5	10	1				-	1	**0.1**
416	3	3	Enc.A	316	Ditch	13.5	20					fl	0	
414	3	3	Enc.C	268	Ditch	10	30	2	5	2		+	9	**0.9**
419	3	3	Enc.C	259	Ditch	11	6	1	4	6		++	11	**1.0**
88	3	3	Enc.D	179	P/pit	14	15					fl	0	
89	3	3	Enc.D	181	P/pit	16	10					-	0	
106	3	3	Enc.D	199	Pit	8.5	10		1		1	fl	2	**0.2**
107	3	3	Enc.D	200	Pit	17.5	10					fl	0	
108	3	3	Enc.D	203	B/end	13.5	10	1		2		-	3	**0.2**
409	3	3	o/sEnc.D	876	Pit	26.5	520	10	14	17	2	-	43	**1.6**
423	3	3	o/sEnc.D	877	Pit	15	10	2			1	fl	3	**0.2**
424	3	3	o/sEnc.D	878	Pit	13.5	10					fl	0	
48	4	4	Enc.B	101	Pit	20.5	10					-	0	
54	4	4	Enc.B	106	Pit	21	10	1				-	1	**0.0**
127	4	4	Enc.B	219	Ditch	10	10			2		fl	2	**0.2**
426	4	4	Enc.B	329	Ditch	14	12			3		-	3	**0.2**
411	5	5	Enc.C	261	Ditch	8.5	15	1	2	2		+	5	**0.6**
413	5	5	Enc.C	264	Ditch	6	15	1		1		+	2	**0.3**
32	5	5	Enc.E	64	Ditch	34.5	80	11		10		fl	21	**0.6**
37	5	5	Enc.E	69	Ditch	45	60	2		2		fl	4	**0.1**
41	5	5	Enc.E	87	Gully	28	14	1	1	1		fl	3	**0.1**
42	5	5	Enc.E	88	Gully	86.5	50	2	2	4		fl	8	**0.1**
44	5	5	Enc.E	91	Gully	16.4	27	2		1		fl	3	**0.2**
126	5	5	Enc.E	218	Gully	13.5	35	1		2		fl	3	**0.2**
20	5	5	RH2	46	Gully	31.5	70	1		2		fl	3	**0.1**
21	5	5	RH2	47	Gully	34.5	50	2		3		fl	5	**0.1**
24	5	5	RH2	50	Gully	38	80	2		1		fl	3	**0.1**
25	5	5	RH2	51	Gully	33.5	50	2		1		fl	3	**0.1**
28	5	5	RH2	52	Gully	15.5	30	5		5		fl	10	**0.6**
29	5	5	RH2	53	Gully	35	90	15		9		fl	24	**0.7**
30	5	5	RH2	57	Hearth	31	150	2	2	5		fl	9	**0.3**
31	5	5	RH2	62	P/hole	3	20					fl	0	
33	5	5	RH2	65	Gully	29.5	100	4		7		fl	11	**0.4**
34	5	5	RH2	66	Gully	32	60	4	2	7		fl	13	**0.4**
38	5	5	RH2	77	Gully	39.5	70	5	3	8		fl	16	**0.4**
39	5	5	RH2	78	Gully	42	90	3	2	3		fl	8	**0.2**
40	5	5	RH3	83	Gully	41	225	5		29		fl	34	**0.8**
43	5	5	RH3	92	Gully	28	32	2		7		fl	9	**0.3**
45	5	5	RH3	96	Gully	32	50			3		fl	3	**0.1**
47	5	5	RH3	100	Pit	14	50					-	0	
99	5	5	RH3	196	P/hole	4	10					fl	0	
410	5	5	A	262	Ditch	15	22	1				fl	1	**0.1**
411	5	5	A	261	Ditch	7.5	40	2	1	6		fl	9	**1.2**
417	5	5	A	298	Ditch	7	24					fl	0	**0.0**
422	5	5	A	237	Ditch	16.5	35	11		9		+	20	**1.2**
380		7	A	811	Gully	15.5	10					fl	0	
381		7	A	802	P/hole	9	7					-	0	

Appendix II cont.

Area B

Samp. No	Phase	Group	Area	Cont. No	Feat type	Samp. Vol. Litres	Flot Vol. Mls	Gr.ch	Cf.ch	Se.ch	Fruit, nut ch	C'coal	Total	Items/ litre
135	LBA	8	RH13	435	Pit	14	20			4		-	4	**0.3**
1E		8	RH13	40	Ditch	17	15	1		3		fl	4	**0.2**
2E		8	RH13	41	Ditch	18	45	5		5		fl	10	**0.6**
3E		8	RH13	42	Ditch	12	5	1				fl	1	**0.1**
4E		8	RH13	46	Pit	39	216	11	12	16		++	39	**1.0**
125		8	RH13	421	Gully	8.5	20					fl	0	
193		8	RH13	542	Pit	13.5	110					fl	0	
213		8	RH13	573	Pit	9.5	60					fl	0	
377		8	o/sRH13	808	Pit	16	40	4	2	11	1	+	18	**1.1**
383		8	o/sRH13	813	Pit	4.5	10	1		4		fl	5	**1.1**
384		8	o/sRH13	815	Pit	9.5	45	1	2	1	1	++	5	**0.5**
116		8	Enc.1	404	B/end	15	17	1	3	3		+	7	**0.5**
117		8	Enc.1	405	B/end	12	14	2	3	4		+	9	**0.8**
118		8	Enc.1	412	Ditch	13.5	9			3		+	3	**0.2**
119		8	Enc.1	413	B/end	12	14		2	2		fl	4	**0.3**
136		8	Enc.1	447	Ditch	14.5	110	7		7		fl	14	**1.0**
137		8	Enc.1	448	Ditch	13	90	5	2	11		fl	18	**1.4**
138		8	Enc.1	449	Ditch	13	110	3	2	9		fl	14	**1.1**
142		8	Enc.1	440	Ditch	14.5	50	1				fl	1	**0.1**
143		8	Enc.1	441	Ditch	13	30	1				fl	1	**0.1**
156		8	Enc.1	456	Pit	9.9	6	1		1		-	2	**0.2**
157		8	Enc.1	433	Fill	10	80	1		1		fl	2	**0.2**
181		8	Enc.1	515	Fill	10.5	30		2			fl	2	**0.2**
183		8	Enc.1	517	Fill	11.5	30					fl	0	
246		8	Enc.1	644	Fill	12.5	30	1		1		fl	2	**0.2**
247		8	Enc.1	645	Fill	9.5	30					fl	0	
109		9	RH8	400	Gully	12	10	2		1		-	3	**0.3**
110		9	Pit	403	Pit	12.5	60	1		1		fl	2	**0.2**
388		9	P/holes	845	P/hole	11.5	70					fl	0	
390		9	P/holes	849	P/hole	6.5	30					fl	0	
271		10	Enc.F	531	B/end	14.5	11			1		fl	1	**0.1**
272		10	Enc.F	528	B/end	19.3	22	3		7		fl	10	**0.5**
273		10	Enc.F	529	B/end	14	30	1		6		+	7	**0.5**
281		10	Enc.F	666	Pit	11.5	27			1		fl	1	**0.1**
283		10	Enc.F	664	P/hole	5	20					+	0	
284		10	Enc.F	662	B/end	8.5	8	1	1	2		+	4	**0.5**
420		11	B	901	Gully	13	10					++	0	**0.0**
421		11	B	903	Ditch	9	12	2		3		fl	5	**0.6**
233		12	RH9	907	Gully	11.5	24	1		1		fl	2	**0.2**
158		12	Enc.	478	Pit	11.5	10	1	2	1		fl	4	**0.3**
161		12	Enc.	483	Pit	13	10					fl	0	
236		13	RH14	610	Ditch	13	14					fl	0	
114		13	Enc.H	417	Ditch	10	14	1				fl	1	**0.1**
115		13	Enc.H	418	Ditch	17.5	10					fl	0	
123		13	Enc.H	431	Ditch	13.5	10					fl	0	
124		13	Enc.H	432	Ditch	12	10					fl	0	
134		13	Enc.G	445	Gully	14	10					fl	0	
185		13	Enc.G	537	Gully	15.5	40			1		fl	1	**0.1**
177		14	RH10	512	Gully	11.5	10	1	2			fl	3	**0.3**
178		14	RH10	513	Gully	10.5	10	1	1			fl	2	**0.2**
187		14	RH10	522	Gully	12	10					fl	0	
188		14	RH10	523	Gully	6	7	1				fl	1	**0.2**
189		14	RH10	524	Gully	7	7					fl	0	
219		14	RH10	588	B/end	11.5	18	1				fl	1	**0.1**
215		14	o/sRH10	575	Pit	10	20					fl	0	
250		14	o/sRH10	659	Pit	12	13			1		fl	1	**0.1**
7E		14	o/sRH10	48	Gully	19	85	5		5		+	10	**0.5**
264		15	RH12	655	Gully	17	50	3	1	1		fl	5	**0.3**
288		15	RH12	713	P/hole	4.5	15	3				+	3	**0.7**
289		15	RH12	722	P/hole	4	6			1		fl	1	**0.3**
317		15	RH12	780	Gully	15.5	22	2				fl	2	**0.1**
323		15	RH12	796	Gully	9	15		1			fl	1	**0.1**
285		15	RH12/4P	706	P/hole	22	85	12	2	5		++	19	**0.9**
286		15	RH12/4P	716	P/hole	13	50	7		4		++	11	**0.8**
309		15	RH12/4P	769	P/hole	21.5	60	12		4		+	16	**0.7**
310		15	RH12/4P	772	P/hole	24	220	2				+	2	**0.1**
427		15	NE 4post	716		5	30					fl	0	
428		15	NE 4post	772		12	80	1				fl	1	**0.1**
304		15	o/sRH11,12	758	Gully	16.5	55	2	1	2		+	5	**0.3**
402		15	o/sRH11,12	864	Pit	17.5	40	1		1		fl	2	**0.1**
405		15	o/sRH11,12	860	Gully	10	9	1		4		fl	5	**0.5**
406		15	o/sRH11,12	862	P/hole	13	50	1	1	3		fl	5	**0.4**
270		15	eastA	690	Gully	12.5	12	1				+	1	**0.1**
311		15	eastA	770	Hearth	17	24					fl	0	
324		15	eastA	800	Pit	13	15					fl	0	
398		15	eastA	750	Pit	7	10					fl	0	

Discussion

The discovery of the settlement at Manor Farm has complemented and built on contemporary evidence to the east at Elms Farm, Humberstone and despite being physically separated by the A46/47 link road, appears to form part of the same spread of occupation. The settlement as a whole has added significantly to our understanding of Iron Age settlement in the region and has added to a growing number of 'aggregated' sites in the East Midlands. Importantly the site plan from Humberstone clearly offers a different model of settlement morphology to those previously recognised, indicating larger population groups and greater longevity of occupation. The site also contributes to increasing evidence of later prehistoric settlement of the region's claylands, helping to revise ideas that such soils were avoided in prehistory (Clay 2002).

Chronology

Establishing a chronology for the site, as with other Iron Age sites in the region, is problematic given the conservative nature of the Iron Age Scored Ware pottery tradition (Elsdon 1992 and Knight 2002) and general lack of intercutting features. This latter point was especially relevant for the remains in Area B where very few stratigraphic relationships existed. Several phases of recutting evident in the development of the northern boundary to the site however provided a more tangible indication of the settlement's development and repeated use of the area. The overall chronology of development in Area B is somewhat easier to determine due to the existence of more stratigraphic relationships although to some degree similar problems exist. The limited stratigraphic information, coupled with a reasonably understandable radiocarbon sequence has enabled an outline chronology of the sites development to be presented.

The information from radiocarbon dating suggests that the main period of occupation lasted for a period of between *c.270 and 430 years*, beginning in the middle Iron Age and lasting until the late 1st century BC or early years of the 1st century AD (*420-300 cal BC to 40 cal BC-cal AD 10*). Evidence for the end of occupation at Humberstone presents several interesting points. At Elms Farm two Roman Republican denarii from a securely dated Iron Age context offer one of the only such examples of stratified pre-Claudian imports from the country. Taken alongside the presence of copied Gallo-Belgic pottery and a pair of tweezers from the same part of the site this suggests a terminal date very close to the Roman Conquest. Several late radiocarbon dates as well as wheel thrown pottery in Late Iron Age forms provide comparable evidence from Manor Farm.

Landscape setting

Evidence from the county as a whole suggests that the landscape would have been substantially cleared by the time the Humberstone settlement was occupied (Clay 2001, 2). Pollen evidence from Croft and Kirby Muxloe together with land snail evidence from Tixover show an increase in woodland clearance from the Later Bronze Age with a related rise in the presence of grassland, a pattern that appears to continue throughout the 1st Millenium BC (Monckton 2004, 157). Evidence from plant remains and land snails at Humberstone suggests a broadly similar picture with areas given over to arable and pastoral use probably existing within the environs of the settlement. The amount of timber required for building and fuel must also indicate that areas of woodland existed in the vicinity, which may even have been maintained by the communities as an important commodity. The presence of antler provides further indication that areas of woodland existed close to the settlement.

The settlement occupies a prominent clay ridge on the eastern side of the Soar valley and there is some suggestion, from the broad landscape position, that the linear landscape boundary was helping to parcel up or demarcate areas of the local landscape perhaps according to distinct uses. The boundary at Humberstone follows the orientation of the ridge, effectively dividing it in half lengthways. In contrast the boundary at a recently excavated similar site at Beaumont Leys crosses the ridge at right angles to the overall landform, perhaps deliberately marking out the northern end of the ridge (Thomas 2008).

It is evident that the settlement grew in a landscape with a long history of previous occupation. A background scatter of worked flint provides evidence for earlier use of the area before the establishment of the Iron Age settlement. At Elms Farm a large ditched enclosure dating from the middle Bronze Age must have survived as an earthwork and became the focus of occupation in the Iron Age. A pit containing pottery and animal bone provided further evidence of Late Bronze Age occupation at Humberstone.

Size, and Organisation

One of the defining characteristics of the Humberstone settlement is its size in comparison to other sites that have previously been revealed in the region. Due to their size, and the often piece-meal nature of their discovery, defining the true edges of these larger settlements is problematic (Willis 2006, 110). Currently the known overall area covered by the settlement is more than 8ha. Occupation appears to be carrying on to the west of the excavated areas, but it is unclear if the eastern limits of the settlement were revealed on the Elms Farm site or not.

Manor Farm
The earliest settlement at Manor Farm consisted of a small open settlement made up of a cluster of buildings in Area A. This appears to represent a single household settlement with the two roundhouses perhaps adopting the 'paired' pattern recognised on other comparable sites where it has been suggested that each building was related to different activities (Clay 2001, 8, Meek et al 2004). With this view in mind, there was stronger evidence for domestic use from Roundhouse 4. It is possible that Roundhouse 6 represented an ancillary building for food preparation, storage or animal shelter although very little evidence was found for the buildings use. The semi-circular structure may have supported a curved hurdle fence to provide shelter for particular activities. Establishing a date for this settlement is problematic although on the basis of surrounding evidence a Late Bronze Age or Early Iron Age date seems likely.

Settlement on the site developed further with the construction of a square enclosure, possibly with two entrances, in the Early Iron Age. A single roundhouse lay in the centre of the enclosure. A length of gully, probably supporting a fence or hedge formed an internal division in the north-western corner of the enclosure, effectively dividing this area off from the area occupied by the roundhouse. Metalworking was clearly an important aspect of occupation in this phase, with evidence to suggest that smithing was being carried out on the outside of the enclosure and within the roundhouse.

The main phase of settlement was represented by a linear spread of roundhouses, small enclosures, pits and other features adjacent to an east-west aligned linear boundary. The development of the settlement has strong similarities to that on the slightly earlier settlement at Beaumont Leys to the west (Thomas 2008), clearly respecting and following the alignment of the boundary that defined the northern edge of occupation. Also in common with Beaumont Leys, there was no evidence of activity beyond the boundary, suggesting that it marked a clear division between activities. The attraction of the boundary appears to have been strong enough to have caused a distinct, but invisible, southern limit of occupation. Whilst this side of the site might feasibly have been constrained by hedging or another boundary that would be difficult to see archaeologically, it seems likely that this phenomenon was caused by a desire to maintain contact/proximity with the northern boundary. The orientation of the boundary, coupled with a strong preference for easterly facing roundhouses also seems to have been a factor in the linear development of the settlement, a phenomenon also recognised on other similar Midlands sites such as at Crick, Northamptonshire (Woodward and Hughes 2007), Coton Park, Warwickshire (Chapman 1998). Stanwick, Northamptonshire (Crosby and Muldowney forthcoming) and Salford, Bedfordshire (Dawson 2005).

Occupation in Area B was characterised by distinct clusters of roundhouses and small enclosures with associated groups of post-holes and pits. Such clustering was also a characteristic of the settlement evidence from Elms Farm, where one or two distinct clusters formed the basis of the site over several generations (Charles *et al* 2000). This phenomenon is also seen on similar sites such as Crick (Woodward and Hughes 2007) and Coton Park (Chapman 1998), but can also be seen on smaller enclosed sites such at Enderby (Meek *et al* 2004). At Manor Farm two main clusters occupied the western area of the site, both consisting of a roundhouse and associated enclosures. Roundhouse 13 and Enclosure F appear to have been related, although Roundhouse 14 was apparently replaced by Enclosures G and H which appear contemporary. It is also possible that Roundhouse 9 was associated with these latter enclosures given the spatial arrangement. The western side of the site was also characterised by a spread of post-holes, some of which may relate to fences, two, and possible four-post structures, or animal pens. Unfortunately the overall patterning of these smaller features has been significantly disturbed by ploughing making it difficult to arrive at any clear interpretation. The central area of the site is less densely occupied which might be possibly explained by the presence of a large

semi-enclosed space within which small-scale pitting was evident. A single roundhouse (Roundhouse 10) represented the only recognisable evidence for occupation in the central part of the stripped area. A cluster of buildings on the eastern side of the excavated area clearly represented two phases of use, the first related to domestic occupation and the second indicating a focus on metalworking. In contrast to the western side of the stripped area, this part of the site was also characterised by a distinct clustering of pits and short gullies, perhaps reflecting a series of fences demarcating activities in this part of the site. The evidence for metalworking in this area corresponds with similar evidence from a nearby area revealed on the Elms Farm site to the east, suggesting a degree of zoning for particular activities within the organisation of the settlement. Roundhouse 11 was eventually replaced with a 4-post structure indicating another change of use for this area.

Broadly contemporary activity in Area A was characterised by the creation of three large rectilinear enclosures (Enclosures B, C and D). Enclosures C and D were conjoined and of broadly similar size and orientation, with east-facing entrances. Located to the east of these, Enclosure B was slightly larger and oriented at right angles to the others, but may also have had an east facing entrance. It was attached to the largely infilled remains of Enclosure A, perhaps showing a reference to past activities on the site. The internal areas of all three were apparently empty and their ditches were relatively finds-free suggesting they lay away from the main areas of occupation. The size and nature of these enclosures suggests that they may have been used for corralling livestock, possibly during the winter periods when breeding and the culling of older animals could have taken place in a controlled area. The orientation of the enclosures, facing the occupation to the north, suggests that both areas were used contemporaneously and adds further evidence to the notion that specific areas or zones of the site were allocated to specific activities.

After the enclosures had gone out of use the focus of activity in Area A was radically reorganised and it became the focus for domestic occupation based on a series of smaller, loosely enclosed areas containing three broadly contemporary roundhouses. A linear boundary ditch formed the spine of this new complex, which by its position, made explicit reference to the remains of the earlier enclosures and was perhaps indicative of a very visual link to past activities. Interestingly the organisation of this new area of settlement had striking similarities with the layout of occupation in Area B.

Settlement architecture

Boundaries

The Area B settlement remains at Manor Farm have a distinct relationship with a significant linear landscape boundary. It is unclear if the boundary was a feature in the landscape before the settlement was founded or if it was created at the same time as occupation began. Evidence from Manor Farm suggests that some form of settlement (the early phases of Area A) was in existence some distance from the location of the boundary and the main Iron Age phases of settlement in Area B seems to be more integrally related to the linear boundary. Here the overall development of the occupied area appears to have been informed by its proximity to the boundary, resulting in the characteristic linear spread of settlement remains. It is difficult to assess how much of a bearing the linear boundary had on development of settlement at Elms Farm, or even if it existed on this part of the settlement. Clearly the early focus of settlement on this part of the site was related to the remains of a Bronze Age enclosure, with buildings and enclosures fitting comfortably within the earlier earthworks. Evaluation trenches to the north of the main excavation area at Elms Farm suggested the presence of a linear boundary but on the strength of current evidence it is difficult to argue for a continuation of the Manor Farm feature.

The landscape boundary was clearly a significant feature given the way that settlement appears to have developed in response to it in Area B, and may well have been one of the earliest elements of the site. It is possible that the creation of the boundary was part of an increasing trend towards 'bounded' landscapes where tenurial rights were more clearly defined by groups, effectively 'formalising' what had previously been a fairly fluid system (Wells 2007). In similar situations from other parts of the country the creation of landscape boundaries often incorporated, or lay close to earlier monuments as a way of legitimising claims to land (For example in East Yorkshire - Giles 2007, 111). With this in mind it is perhaps significant that early settlement focussed on the remains of an ancient enclosure at Elms Farm, which either lay in close proximity to the linear boundary or may even have marked its eastern limit. This suggests that the enclosure, which may have been an important landmark helping to define territory in a fairly open landscape, was being integrated into a more formal statement of access to land.

The form of these large landscape boundaries is difficult to judge on the basis of ploughed out evidence but it seems fairly likely that their creation would have made imposing, if not monumental changes to the landscape. It is likely that they were also accompanied by a bank, probably external to the settlement given the proximity of some of the buildings to the ditch, and maybe even a timber palisade. The creation of each boundary would have involved a considerable commitment to labour over long periods of time, and for the groups responsible for its creation may have been more important than the end result. The ditches may have been the result of the combined labour of several different family groups, each responsible for a defined stretch, ultimately becoming the result of a community project and testimony to shared resources. Maintenance and recutting of the boundary over time would have served to reinforce this community identity and would have added legitimacy to claims on land.

Buildings

The roundhouses at Manor Farm were characterised by an encircling eaves drip gully and very little evidence for the structure itself which compares well with the building evidence from Elms Farm (Charles *et al* 2000, 157). The roundhouses were generally large, ranging in diameter from *c.*9.5m and *c.*13m and had entrances that generally faced in an easterly to south-easterly direction although one building (Roundhouse 4) appears to have faced to the east-north-east. Roundhouse 1 had the most well-preserved structural evidence and was unique on the site in having a complete internal wall slot, presumably to hold a sequence of timber posts or wattle panels to form the walls. Other roundhouses in Leicestershire have shown similar methods of building such as at Wanlip (Beamish 1998) or Enderby II (Meek *et al* 2004) although the latter example is probably later in date to Roundhouse 1. Roundhouse 13 in Area B also had vestiges of the structure remaining which consisted of a partially defined circle of post holes and shallow slots. In other roundhouses however the only real evidence of the structure within the eaves drip consisted of paired entrance post holes, several examples of which were revealed. The lack of structural remains at Humberstone is in contrast to the evidence from the recently excavated site at Beaumont Leys (Thomas 2008) although there was virtually no evidence for eaves drip gullies at this site. This disparity suggests that alternative building methods may have been employed at Humberstone. It is possible that stacked turf or cob walling may have provided the basis for the Humberstone buildings, or that structural timbers used were not substantial enough to penetrate the subsoil (Knight 1984, 143). None of these techniques would be archaeologically visible unlike the often deeply cut gullies that surrounded the Humberstone roundhouses.

The presence of such imposing features seems at odds with the lack of evidence for the actual roundhouse but it may suggest that more emphasis was placed on defining the household in other ways, perhaps by effectively 'enclosing' it. Patterns of settlement architecture across the country from the earlier to the later first millennium BC indicate a growing emphasis on enclosure, and more permanent statements of ownership (Haselgrove 2004, 20). This phenomenon was not restricted to an upsurge in enclosed sites however, and can also be seen through changes in household architecture. The increasing trend for bigger and deeper eaves drip features around houses effectively placed each building in its own 'enclosure' clearly defining the household within (Moore 2007 270-71). At Humberstone many of the roundhouses were defined by very deep eaves-drip features that were more characteristic of ditches than gullies – an extreme example being the ditch surrounding Roundhouse 13 which effectively lay in its own enclosure. Such features would undoubtedly have had important practical functions such as for drainage and keeping livestock away from the buildings. It also seems likely however that their creation involved other concerns relating to social concepts of space (Bowden and McOmish 1987, Hingley 1990). A roundhouse surrounded by a large ditch, at times full of water, would have been an imposing spectacle to outsiders, and the boundary between the outside and inside of the building would have been clearly drawn. The creation of large eaves drip features then may also have had important symbolic aspects relating to an increased emphasis on the importance of kin groups and the definition of the household as a discrete part of the landscape (Moore 2007, 273).

Enclosures

A range of enclosures or pens was represented at Manor Farm, many of which may have related to the containment of livestock. It is possible that such enclosures related to the management of some of the smaller animals kept in the settlement but also possible that they served as areas for particular necessary daily activities such as milking. This might be particularly appropriate given the proximity of the enclosures to probable dwellings, apparently forming parts of the distinctive clustering of features relating to particular households. The enclosures appear to have undergone several phases of renewal over time, often showing evidence of slight modification but maintain the same position on the site, reflecting repeated use of the same part of the settlement for particular activities. Although there

appears to have been a strong relationship between certain roundhouses and the small enclosures there is a marked variation in orientation between the two structure types. Roundhouses are predominantly east facing while the entrances to the small enclosures face a variety of directions. If the interpretation of the function of these enclosures is correct, the contrast in orientation may imply that different 'rules' applied to structures used for animals.

Interestingly there is also a contrast in the orientation of the smaller enclosures to the much larger, more uniform enclosures in Area A, which may also have been primarily used for stock control. These enclosures are some of the more monumental constructions on the site and appear to have many similarities with enclosed settlements of the Later Iron Age period (Willis 2006, 101) however the evidence suggests they were never occupied. It is tempting in the light of this evidence, and the suggestion that cattle played an important role in the daily lives of the occupants, to interpret these enclosures as large corrals. It is possible that cattle were kept in these areas over the winter months where they could be fed, watered and their health checked in a contained environment to ensure the success of the herd. A smaller, but similar enclosure excavated at Wanlip displayed no direct evidence that it had been used for human occupation and was interpreted as a stock management feature (Beamish 1998, 39).

DAILY LIFE

Early Iron Age

The early phases of activity at Manor Farm do not offer a large amount of evidence but suggest that cattle, sheep, pig and dogs were being kept. There is little evidence to suggest arable production on a large scale although it is also evident that these were small communities, probably based around a single household, so crop growing may have been undertaken at a cottage garden scale. The central hearth of Roundhouse 1 produced grain weed seed and probable spelt fragments. This house was also associated with a number of quernstones, providing further evidence of cereal processing, although this seems unlikely to have been beyond what was needed for household consumption. It is also clear that the inhabitants of Roundhouse 1 were involved in small-scale iron production, most likely also on a self-sufficient level.

Mid to Late Iron Age

Pastoralism seems to have continued to be an important part of life as the settlement progressed through the Iron Age. The bulk of material evidence for mid-late Iron Age activities was recovered from the settlement focus in Area B. A similar range of species to Beaumont Leys was represented in the animal bone assemblage although in considerably larger numbers. Cattle and sheep appear to have been kept in fairly equal numbers although slight differences are apparent in different areas of the site. At Manor Farm the dominant species was cattle which contrasts with evidence from Elms Farm where cattle and sheep were thought to be fairly equally represented. The importance of cattle to the settlement may also be reflected by the provision of the large enclosures in Area A, which may have been used for over-wintering of the herd. As well as meat, it is evident that the animals at Manor Farm were utilised for a variety of other purposes. It is likely that cattle would have been used for traction, as well as for providing milk and leather. Objects of bone were also found on the site including dress fastenings and knife handles indicating that all parts of the animal were considered for use. Evidence also suggests that a proportion of the settlements sheep were kept beyond their fouth year, perhaps as providers of wool. Slight evidence for spinning/weaving was found from certain roundhouses in support of this. In the later stages of the settlements life a significant change in husbandry and depositional practices can be seen, linked to a reorganisation of Area A for domestic purposes. In contrast to the patterns from Area B, sheep were clearly the dominant species of this new area of occupation although cattle and pig were still also present. There seems to have been a strong preference for consumption of younger animals on this part of the site, perhaps indicative of changing dietary tastes or perhaps even status. There is very little evidence for the consumption of wild species at Humberstone, a common phenomenon on Iron Age sites across the country. Occasional deer bone was found, perhaps suggesting that limited hunting took place however the majority of deer remains consisted of shed antler that must have been collected. The main concentration of antler, a deposit in the later phases of occupation in Area A, indicated that it was being selectively used to produce composite handles for knives or other implements. Evidence for metalworking is relatively widespread during this phase of the settlement with slight evidence represented in most parts of the site. It is clear from comparable and neighbouring evidence at both Manor and Elms Farm however that a specific zone of the site was responsible for this craft at some point. This appears largely to have been

concerned with iron working but may also have involved some copper alloy production (Northover 2000, 192).

Evidence for crop production at Manor Farm was slight in comparison to that from Elms Farm, perhaps also suggesting different functional areas of the site. In support of this idea, only one four-post structure (a possible raised grainstore) was found at Manor Farm in contrast to the relatively abundant examples from Elms Farm. In spite of this it is clear from the large quernstone assemblage that crop processing, presumably for domestic consumption, was happening. In common with the Elms Farm assemblage (Roe 2000) the majority of these objects were saddle querns, although a few examples of rotary quern were found. The overall composition of the quern assemblage from the two areas perhaps also shows the longevity of settlement on the site, allowing later innovations to be represented. Despite the presence of rotary querns, one of which must have been imported being made of Millstone Grit, the majority of the assemblage represents opportunistic use of locally available stones from the clay. Humberstone is one of the few Iron Age sites from the county where both saddle and rotary querns have been found together and therefore has the potential to provide information on the change in technology when rotary querns became more frequently used. Similar situations have also been seen at the middle Iron Age site at Wanlip (Marsden 1998) and at Breedon-on-the-Hill (Wacher 1964 132, Liddle 1982, 25). The problems with precise dating of the settlement phases make it difficult to add significantly to this question although it would seem that rotary querns were finding their way onto the site towards the end of the settlements period of use, towards the end of the 1st century BC. The fact that rotary querns were in use at the middle Iron Age site at Wanlip (Marsden 1998) may suggest a somewhat conservative attitude towards technological advances at Humberstone, or that locally available material was in sufficient supply. Certainly the presence of the Millstone Grit quern indicates contact with wider areas was established before the end of the settlement.

Deposition

A pattern of finds distribution was obtained from the excavation and the relatively greater overall size of the Humberstone assemblage made it easier to distinguish patterning at this site. Broadly speaking concentrations of finds centred on the main building remains which contained mixed assemblages that were relatively fragmented and perhaps characteristic of midden accumulations. The positioning of the main artefact groups in these situations probably provides a good reflection of the location of these middens in relation the associated building (Woodward and Hughes 2007, 196) and may also provide a broad indication of activities associated with particular structures.

Broad trends from the Humberstone material indicated a significant rise in deposition of finds as the site developed over time. Although finds were associated with the earlier phases in Area A the assemblages were markedly smaller than finds groups associated with later phases. There was also a noticeable difference in deposition between the two areas. Area B was richer in finds than Area A, reflecting the division between living/working areas of the site for the majority of the sites use. The majority of finds associated with Area A were related to the later phases when the area was reorganised for habitation. Generally finds concentrated on the main roundhouses and associated features, reflecting the main foci of activities. In addition the evidence from Humberstone revealed an emphasis on certain areas of some buildings for deposition with a particular trend towards the front areas, possibly indicating that middens accumulated outside the entrances.

Two particular deposits at Manor Farm stood out as 'unusual' in terms of the relative scale of deposition in other areas of the site. Roundhouse 13 in Area B appeared to have been a particularly busy part of the site and was the focus for large deposits of pottery and other finds after it had gone out of use. A similar deposit was located in the ditch adjacent to Roundhouse 5 in Area A. This consisted of large amounts of pottery and animal bone but was of particular interest for an assemblage of approximately twelve red deer antler that had apparently been deliberately deposited as a group when the ditch was going out of use and settlement on the site coming to an end. Although partially worked this would seem to be a waste of usable material. Both deposits appear to have occurred towards the end of a particular phase of the sites life, and may be interpreted as being involved with symbolic acts of 'closure'.

Quernstones appear to have been given special treatment in some instances. At Manor Farm Roundhouse 1 had a strong association with quernstones. Two large saddle querns had been placed face down in the central pit or hearth and the remaining entrance post-hole was packed with broken quern fragments and rubbing stones. The apparently deliberate inversion of the querns may have had a

symbolic element to it, and compares with the inversion of querns at Beaumont Leys. One of the querns in Roundhouse 1 had also been re-used as an anvil however, hinting at pragmatic re-use of available objects. The connection between crop processing and metalworking is interesting however and may have held some significance as both involved transforming natural resources. A similar connection was apparently being made at Garton Slack where a pit contained a set of blacksmiths tools that had carefully been covered with a deposit of grain (Giles 2007, 396). In other areas of the site a connection between deposited querns and horses skulls was apparent, perhaps reflecting a particular association that was chosen for deliberate burial.

Conclusion

The Humberstone settlement represents an important addition to archaeological understanding of later prehistoric occupation in the region. Importantly the Manor Farm excavation offers comparable and related evidence to that recovered from the nearby site at Elms Farm (Charles *et al* 2000), which when combined occupy an area of over 8ha. The site represents one of the largest Iron Age settlements discovered from Leicestershire and is therefore of regional importance. The size and character of the site is quite distinct from the majority of Iron Age sites previously discovered in the county, and can be compared with a growing number of what have become known as 'aggregated' settlements from the East Midlands (Willis 2006, 109). These sites are characteristically long-lived, show evidence of 'specialised' areas and are made up of both 'open' and enclosed areas (Kidd 2004, 56). One of the defining characteristics of the development of occupation at Manor Farm is the distinct relationship with an important linear boundary, which clearly influenced the way in which the buildings were organised. Morphologically the site has similarities with other settlements from the East Midlands that also appear to have developed alongside a linear boundary. Locally a similar situation has been revealed at Beaumont Leys to the west of Manor Farm (Thomas 2008), but other examples are also known at Crick (Hughes and Woodward 1998; Woodward and Hughes 2007) and Stanwick (Crosby and Muldowney forthcoming) in Northamptonshire, Coton Park, Warwickshire (Chapman 1998) and Salford in Bedfordshire (Dawson 2005). Evidently the settlement form at Humberstone was part of a wider phenomenon of such sites in the region.

The longevity of such sites, as demonstrated at Humberstone appears to have resulted from several phases of repeated occupation, as witnessed by the overlapping recuts of the boundary ditch and shifting 'clusters' of buildings. Whether this repeated use represented seasonal, or part-seasonal occupation, as has been suggested at other similar sites (for example Crick, Northamptonshire – Hughes and Woodward 1998) is unclear, although the apparent 'permanence' of some aspects of the settlement may tend to argue against it. Inevitably the resulting ground plan of sites such as Humberstone may give the impression of almost 'village-like' scale however it is clear that the mobile nature of these settlements ultimately create a palimpsest of occupational remains. In contrast to the smaller enclosed sites such as Enderby and Huncote (Meek *et al* 2004) however, it is probable that populations were significantly greater – with anything up to six discrete clusters recognisable at Humberstone, all of which could have been occupied at any one time.

The existence of what appears to have been a specialised metalworking area at Humberstone indicates that particular households on the site performed essential roles within the community. This is further hinted at by the apparent emphasis on pastoral activities at Manor Farm and arable activities at Elms Farm, perhaps suggesting a broader division of labour between different areas of the site.

The nature of occupation on the site appears to have consisted of domestic and agricultural activities, perhaps with a bias towards pastoral farming. The large finds assemblages are evidently the result of longevity of occupation on the site, probably by several households at any one time. Despite the size of the assemblages the groups are essentially utilitarian in nature although it is clear that the occupants also had access to a range of 'exotic' materials given the imported querns and pottery, probably acquired through a network of trade and exchange links involving other communities. Quite how the Humberstone site fitted into the wider Iron Age settlement hierarchy is uncertain. However the presence of the potin, and the Republican coins, potentially items of some status, suggests that certain people on the site had significant contacts during the life of the settlement. This raises an interesting question over how the site relates to nearby settlement at Leicester (Clay and Mellor 1985; Clay and Pollard 1994). Although the two sites would appear broadly contemporary, there is a distinct lack of the Gallo-Belgic imported pottery associated with the early phases of Leicester's development. This may indicate that successful Late Iron Age settlements such as Humberstone were declining as

Leicester grew – perhaps in response to this growth. The apparent shift in emphasis between Areas A and B in the later stages of occupation may indicate a significant contraction of settlement on the site in its later stages. Alternatively it may be that settlement at Humberstone had already ceased before Leicester developed as a centre. It is clear that further areas of the Humberstone settlement survive and future work on the site may help to provide additional evidence with which to address these questions.

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