

# A Bronze Age Ditch and Iron Age Settlement at Elms Farm, Humberstone, Leicester

by *Bethan Mair Charles, Andrew Parkinson and Stuart Foreman*

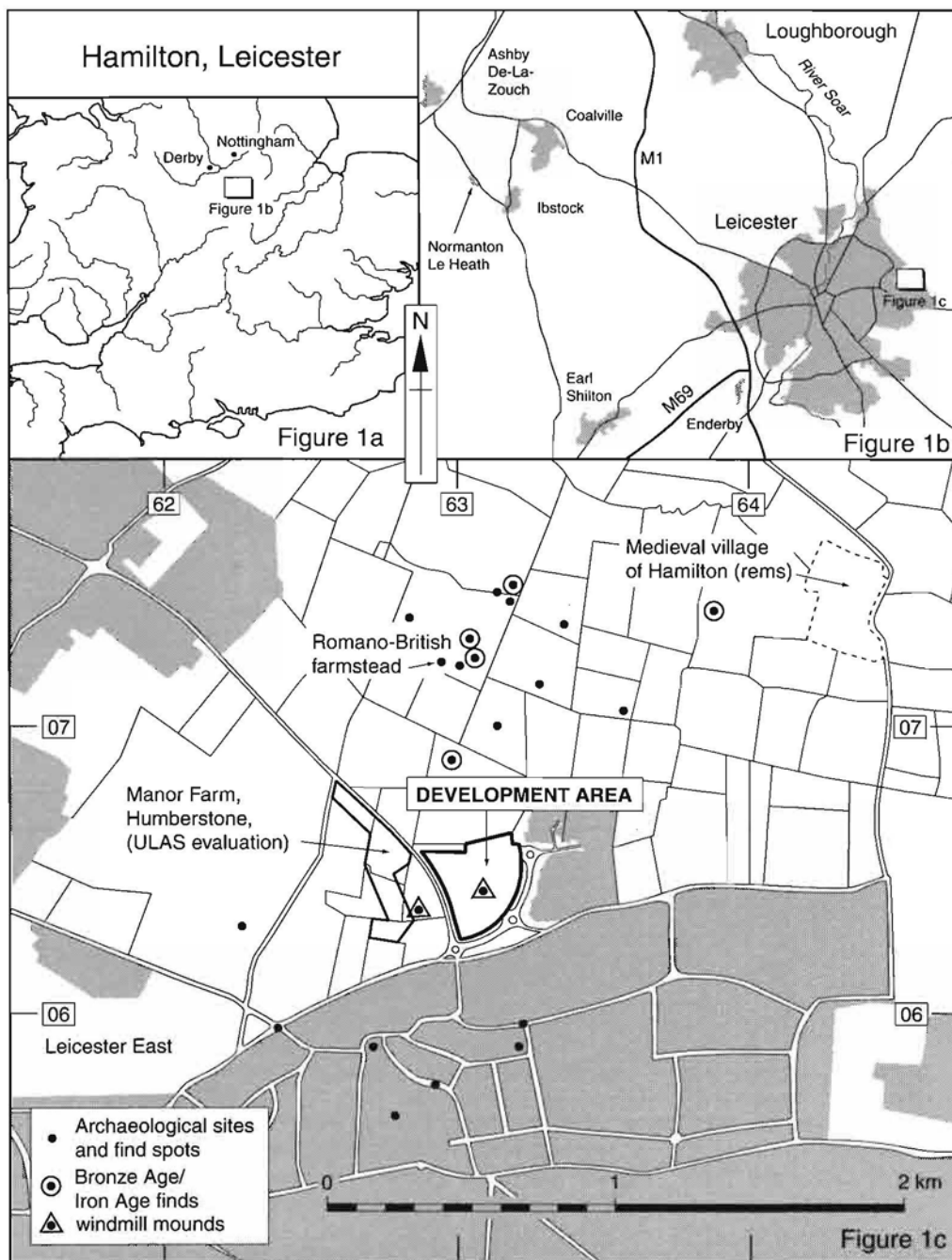
*with contributions from Carol Allen, Leigh Allen, Nancy Beavan, Paul Blinkhorn, Angela Boyle, Kayt Brown, Lynne Keys, Hugo Lamdin-Whymark, Peter Northover, Fiona Roe, Pat Marsden, Ruth Pelling, Adrianne Powell and Ian Scott.*

Excavations in 1997 and 1998 on the site of a proposed Tesco Store at Hamilton, Leicester, revealed a rectangular Bronze Age ditch and a complex of mid to late Iron Age structures and enclosures. Both types of site are unusual in the prehistoric landscape of Leicestershire. The Iron Age settlement consisted of three phases, each comprising a round house with a number of enclosures adjacent, of varying nature and function, and some four-post structures. An area of iron production was identified to the west of the site, and a substantial assemblage of pottery including scored ware was found. Radio-carbon dates from the site range between 415 and 46 Cal BC. Widespread trading links within the midlands were seen and two Roman Republican silver coins were also found.

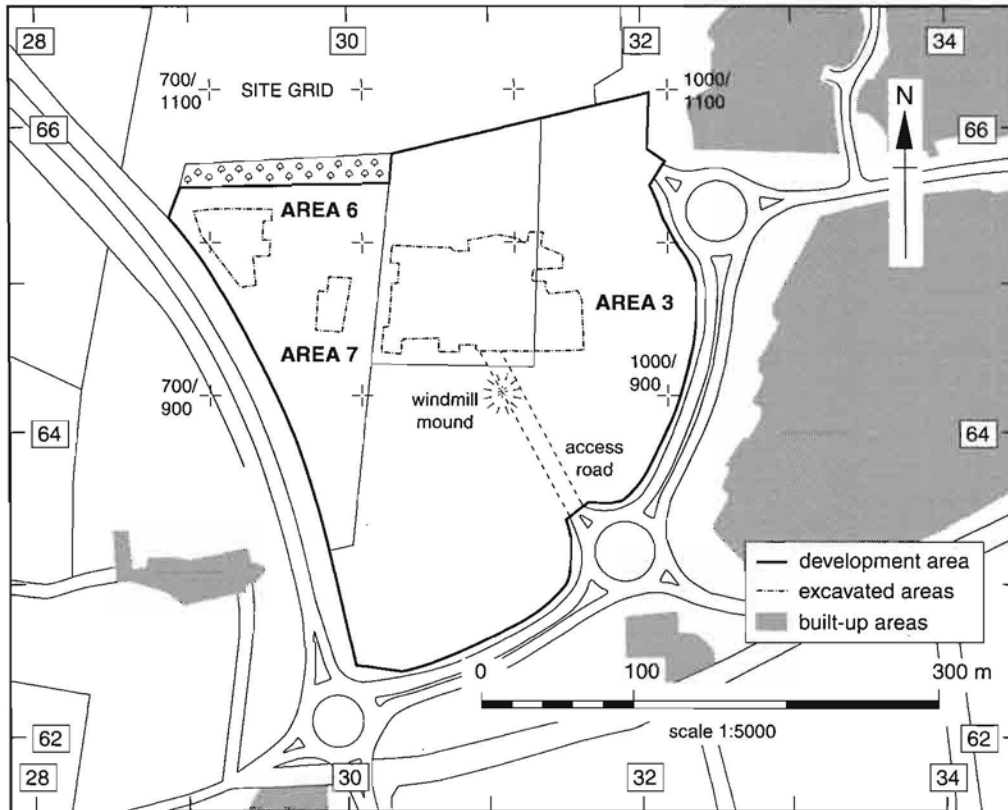
## **Introduction** (*illus. 1*)

The site of Elms Farm, Maidenwell Avenue, Hamilton, is located in the district of Humberstone, Leicester (SK 631 064). It lies on boulder clay on the top of a small hill at 101m Ordnance Datum (OD) approximately 5 km east of the city centre (*illus. 1a & b*). Finds and sites from a number of periods had been recorded around the development location on the Leicestershire Sites and Monuments Record, and these are indicated on *illus. 1c*. Much of this information reflected work carried out in advance of the development of the Hamilton Northern Housing Area (Liddle 1994). A small quantity of Bronze Age and Iron Age pottery was recovered 0.7 km north of the present site, and in the same area a Romano-British farmstead was excavated (*illus. 1c*: Liddle 1986, 78), with pottery indicating occupation of the site from the late Iron Age to the late Roman period. About 1.5km north-east of the development location lies the deserted medieval village of Hamilton, surviving as an area of earthworks, and ridge and furrow is also apparent throughout the area north of the site.

A geophysical survey and evaluation was also carried out by the University of Leicester Archaeological Services (ULAS) at Manor Farm about 30 m to the west of Elms Farm, and this identified an area of Iron Age occupation (Gossip 1999). The pottery from the Manor Farm site was broadly comparable to that from Elms Farm, and



1. 1a & 1b Elms Farm development area, location plan. 1c Archaeological sites and find spots around development area



2. Location of development site, excavated areas and windmill mound

dates from the mid to late Iron Age (Harvey 1999), and may therefore represent complementary activity to that at Elms Farm.

### Background to the excavations (*illus. 2*)

In August 1997 Oxford Archaeological Unit (OAU) carried out an evaluation at Elms Farm on behalf of Tesco Stores Limited, in accordance with the agreed methodology of OAU (1997). The evaluation identified the location of concentrated Iron Age activity and excavations of an area *c.* 130 x 80 m (area 3 – *illus. 2*) then commenced in Spring 1998, funded by Tesco Stores Limited. Two additional areas (6 and 7) were excavated in June 1998 following a second stage of evaluation. In 1998 a watching brief was undertaken during the initial topsoil stripping for the food store and further ditches were recorded to the east of area 7. Also, an access road cut a windmill mound and the windmill cross-trees and medieval pottery were recorded. This site is the subject of a separate short report (see *Archaeology in Leicestershire and Rutland 1999*, below).



3. Area 3. Ditches F5001, F5002, facing west. Showing the stripping of the site, with corrugated effect of ridge and furrow. Pennanular ditch F5003 of phase 3 in foreground

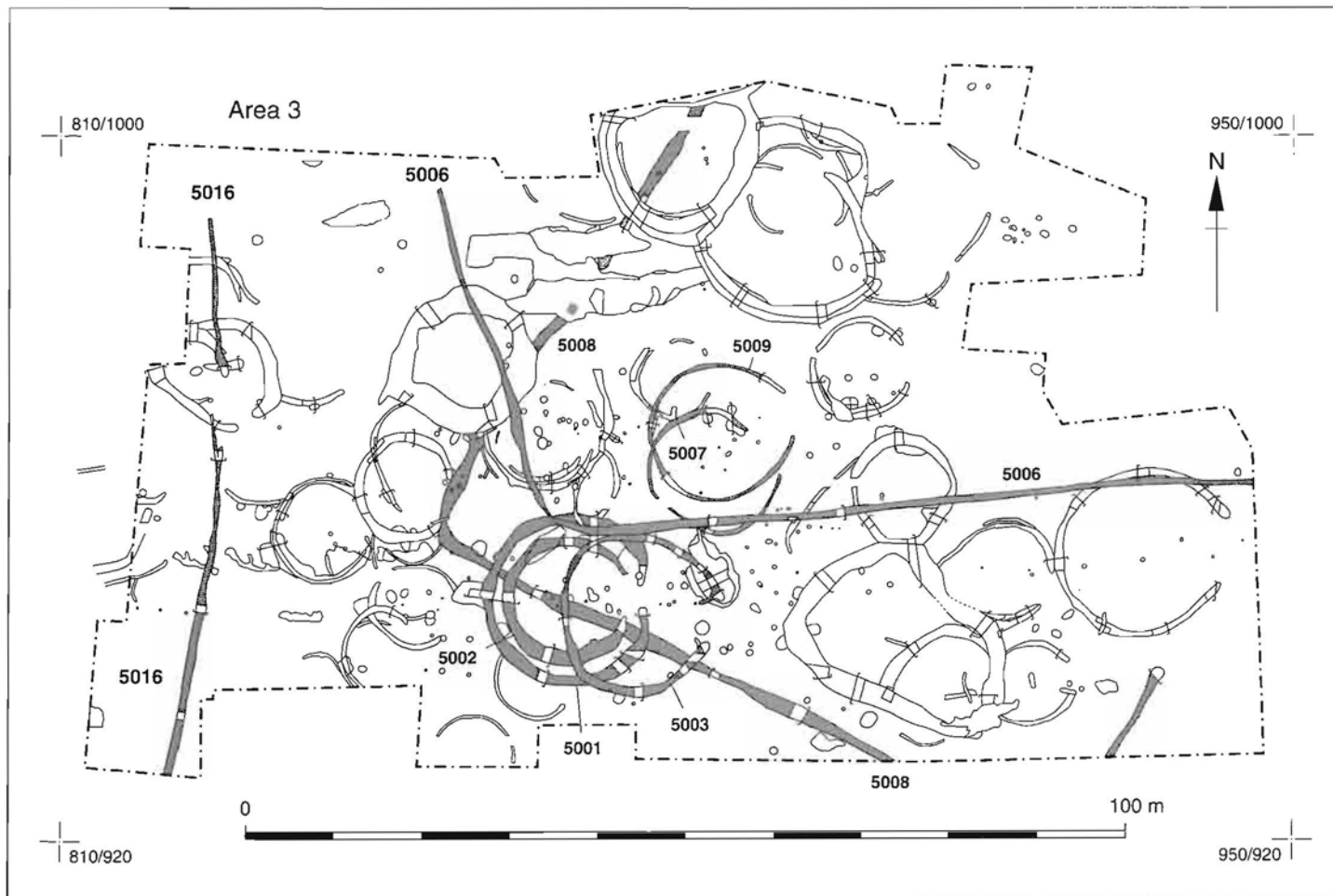
### **Excavation methodology**

The site was excavated in accordance with OAU's methodology (1997) and the standard fieldwork practices detailed. The site was mechanically stripped down to the first significant archaeological horizon. The direction of the stripping was at 90 degrees to the direction of the ridge and furrow to remove the deeper ploughsoil over the furrows, and to prevent over-excavating the ridges, producing a corrugated effect across the site (see illus. 3). Shallower features therefore generally survived in the base of the furrows, although diminished in size. This differential preservation influenced the positioning of the hand excavated sections, which were excavated on top of the ridges wherever possible to provide a more complete section. The OAU's single context recording system was used (Wilkinson 1992) and separate areas were assigned discrete blocks of context numbers.

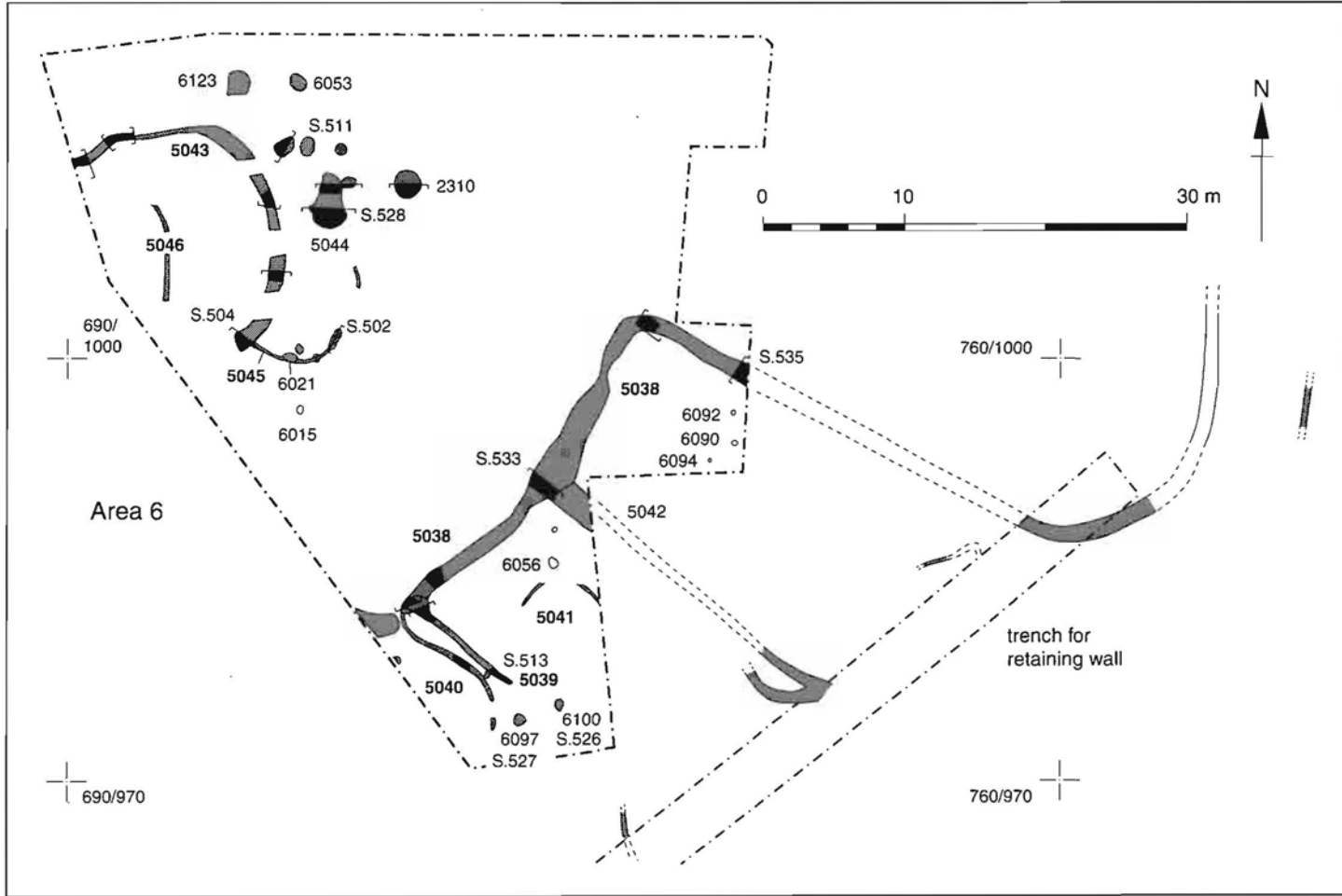
### **Phasing**

#### ***General (illus. 4, 5 & 6)***

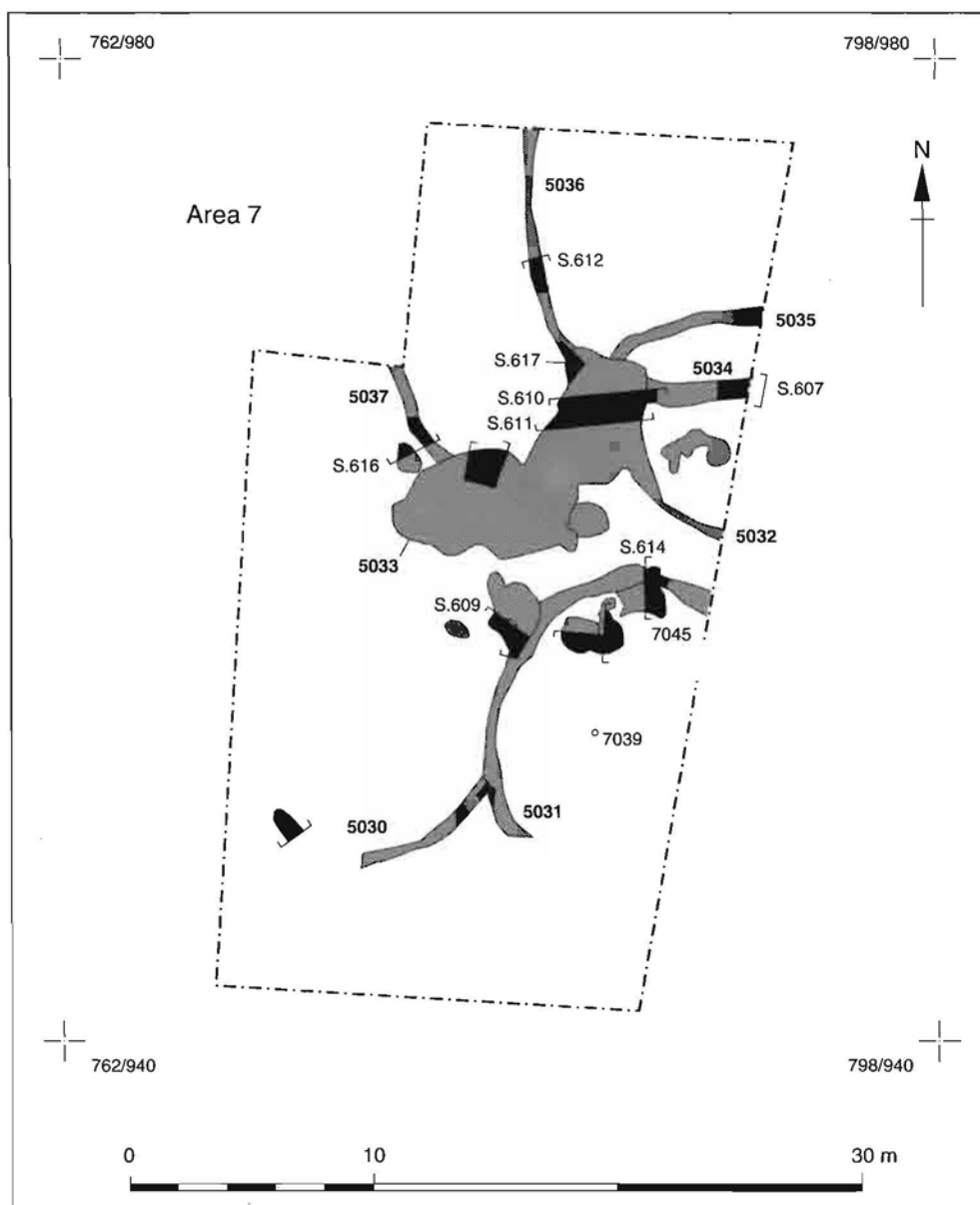
The site has been divided into four main phases to assist interpretation and discussion, largely determined on the basis of radiocarbon dating, pottery styles, and stratigraphic and spatial relationships. However, in each of the excavated areas (3, 6 & 7) there were a number of discrete, and in some cases undatable, features which could not be stratigraphically related to any particular phase, and therefore, a reasonable estimation



4. Plan of area 3 showing all excavated features, and their stratigraphic relationships



5. Plan of area 6 showing all excavated features



6. Plan of area 7 showing all excavated features

of their place within the phases has been made. It was not possible to determine the exact chronology of, or the interval between, the successive phases, mainly because the Iron Age pottery was not sufficiently closely datable to allow dating of features on ceramic grounds alone. The problems of placing features of this type into meaningful phases are common on sites of this period (Williams & Zeepvat 1994, 50).

### Area 3

#### ***Bronze Age – phase 1a (illus. 7)***

In this area pottery and radiocarbon dates provided a middle Bronze Age date for the stratigraphically earliest rectilinear enclosure (5008) on the site. No other features of the site could be securely dated to this phase.

#### ***Iron Age – phase 1b (illus. 10)***

Three groups of pits, a number of penannular ditches, and some enclosure ditches and gullies in the south-eastern corner of the area seemed to respect the location of the middle Bronze Age enclosure ditch, which suggested that the ditch, or at least parts of it, were still apparent in the earliest part of the Iron Age phase of the site. The pebbled roadway (3282) running between the western ditch terminals of the Bronze Age enclosure lay over the Bronze Age ditch, and this feature probably relates to the earliest of the Iron Age periods.

#### ***Iron Age – phase 2 (illus. 25)***

In the subsequent phases the stratigraphic relationship of features assisted with the interpretation of the site. The double gully ditches, of what appeared to be successive round houses (5001 & 5002), lay adjacent to the features of phase 1b and lay over the linear ditch of phase 1a but below the features of the following phase 3.

#### ***Iron Age – phase 3 (illus. 30)***

In this phase a number of the penannular ditches 5003, 5053 and 5007 overlay features of phase 2. In addition circular ditched enclosures 5018, 5069 and 5014 lay outside the previous core area of the settlement indicating the probability of some spatial development in this period.

#### ***Post-Iron Age – phase 4 (illus. 37)***

In this phase a rectangular linear enclosure 5006 overlay the Iron Age features of the site and clearly post-dated them.

### Areas 6 & 7

It was not attempted to phase these areas since they could not be immediately related to the features in area 3. However, on the basis on the finds, it was considered that they would sit comfortably within phases 2 and 3.

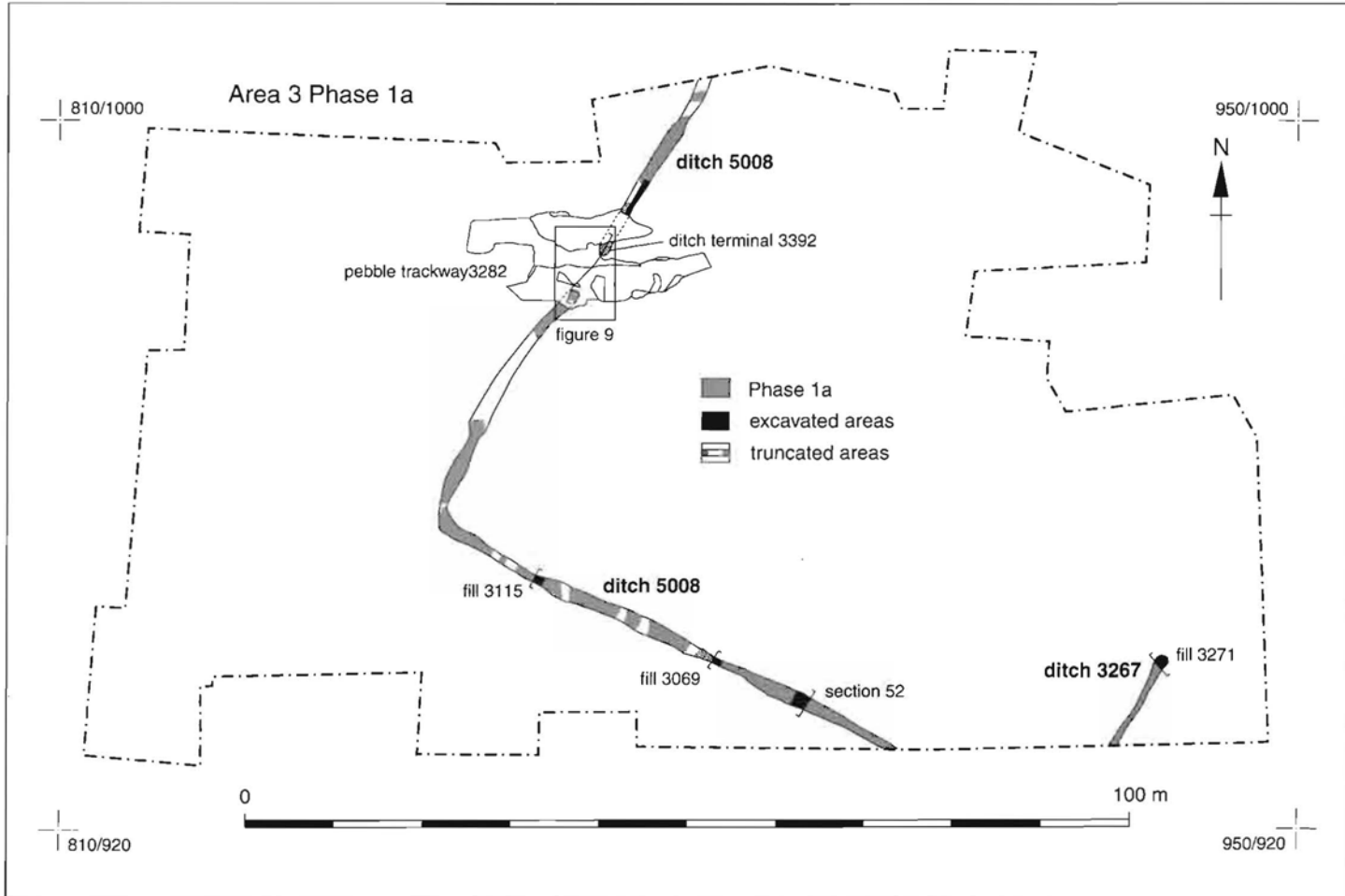
### Results of excavations – Area 3

#### ***Bronze Age – phase 1a (illus. 7, 8 & 9)***

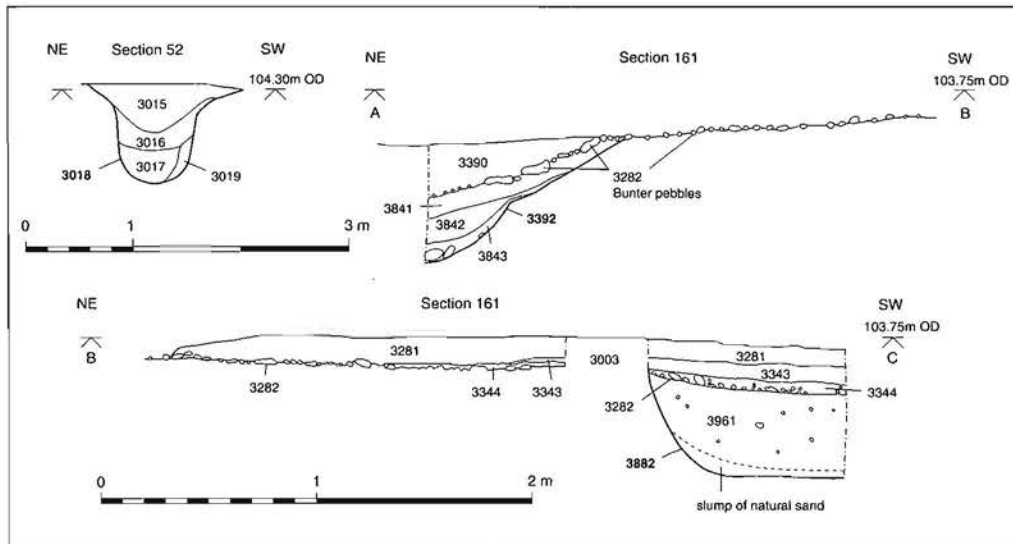
##### *Rectangular enclosure F5008*

A Bronze Age rectangular enclosure was aligned north-west to south-east (illus. 7), and appeared to extend beyond the limits of the excavated area. The enclosure was 79m in length from north-west to south-east and not less than 58m from north-east to south-west. The entrance on the western side was 4.7 m wide, and on the eastern side a terminal (3267) marked a gap or entrance not less than 20 m wide. Most of the 48 sherds of pottery (277g) identified as middle Bronze Age were recovered from ditch F5008 (illus. 47. 2, 3 & 4), although a few residual sherds were found in later phases (illus. 47. 1 & 5). In addition a fragment of bone from the ditch fill (3069, illus. 7) was dated to between 1448 cal BC and 1130 cal BC (95% confidence – 3076±60BP:





7. Area 3, phase 1a. Plan of Bronze Age features



8. Area 3, phase 1a. Sections through Bronze Age ditch

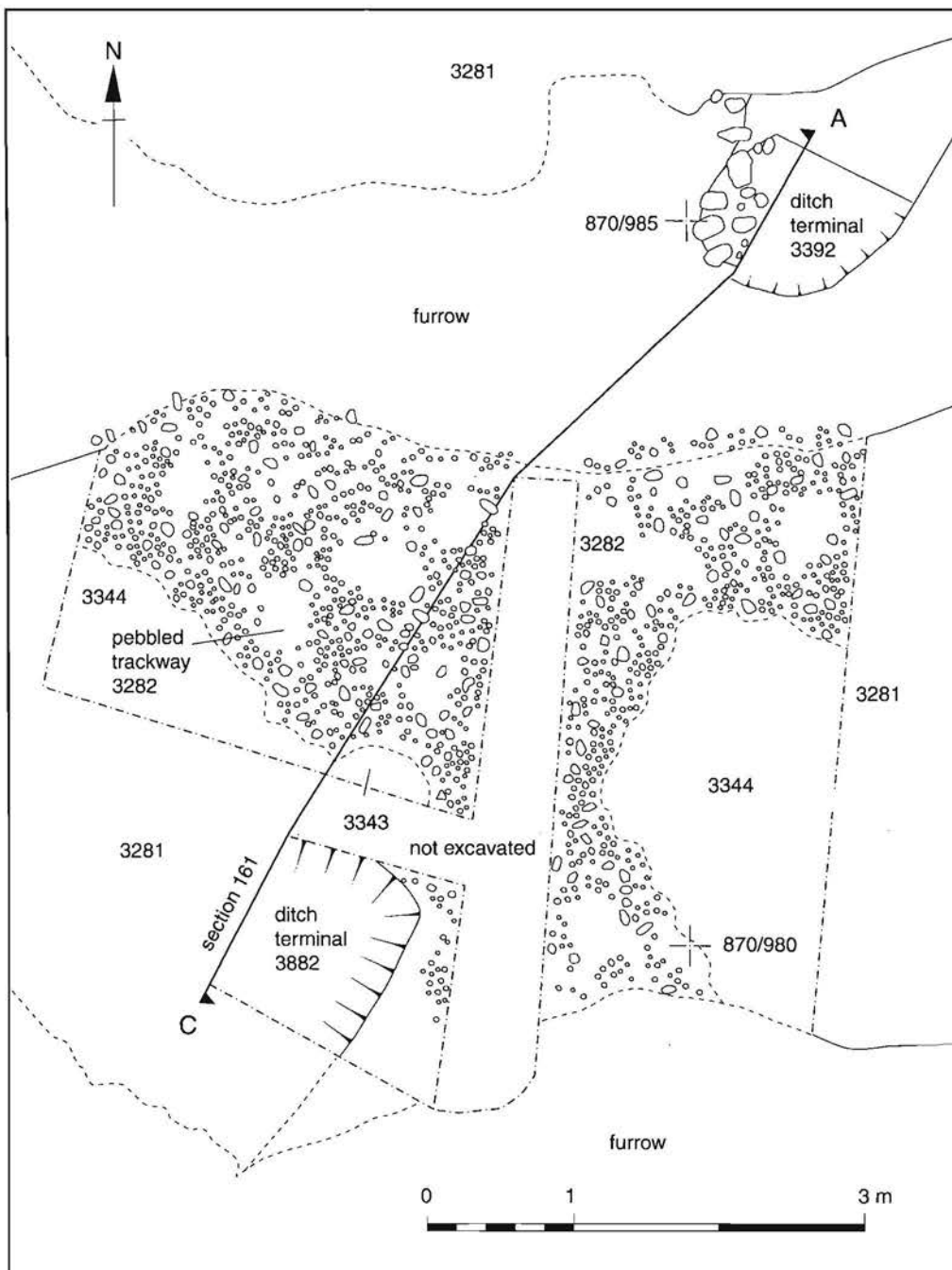
NZA10237). An unexpected date of 163 cal BC to 130 cal AD was obtained from a fragment of bone in a lower fill of the ditch (3271). This result is discussed in the report on radiocarbon determinations.

The ditch, with fills of light to mid-grey clay, was 1.2 m wide and 0.68m deep with a near vertical sided U-shaped profile (illus. 8, section 52), which suggested that the main part of the ditch was open for a relatively short time and there was no attempt to re-cut it. A wider profile, up to 1.9m., was recorded at the ditch terminal (3392) by the western entrance and may suggest gradual silting over a longer period of time.

### ***Iron Age – phase 1b (illus. 10 & 11)***

#### *Pits*

There were few pits throughout this site, but three groups of pits, possibly lying in vague rows, were identified in this phase. Most were circular or oval in plan, averaged 1.2m wide and 0.36 m deep, and were assigned to this phase on the basis of their alignment with the middle Bronze Age rectangular enclosure F5008. As these pits and other features and enclosures in the south-east of the site appear to respect this alignment, it seems very likely that at least parts of the Bronze Age ditch were visible during the earliest phase of the Iron Age activity on the site. The fills of these pits consisted of grey-brown clays consistent with the fills generally encountered in this phase. One of the pits (3979) was also cut by ditch F5001 of phase 2, and pits 3273 and 4052 were cut by penannular ditch F5012 of phase 1b. None of the pits appeared to be for storage, and the majority were relatively shallow, but it is possible that they could have been dug for clay extraction, and then filled with rubbish. However, as the pits were widely spaced, they seem unlikely to represent boundary markers, and their alignment may have been solely dependent on the previously existing ditch and the pattern of movement and activity already taking place on the site. Pit 3355 was particularly interesting as it contained substantial metalworking debris including bottoms of smithing hearths and hammerscale (see report by L. Keys).



9. Area 3, phase 1b. Plan of pebbled trackway 3282 (see illus.7 for location of section 161)

Pit group F5083 (3323+3351, 3273, 3355, 4051, 4027)

The northern-most group consisted of 6 pits which varied from 14 and 18 m apart and were between 0.55 m and 1.58 m wide and none were deeper than 0.24 m. Three pits excavated contained 30 sherds (115g) of mid to late Iron Age pottery, but most was found in pit 3355 (illus. 12, section 154), which also contained a large assemblage of metalworking debris, including evidence for copper-alloy working. Pit 3323/3351 produced no finds although its kidney-shape is similar to a pit associated with metalworking in area 6 and to pit 3768 in pit group F5084 below.

Pit group F5084 (3809, 3802, 3042, 3768, 4018, 3662)

The second pit group lay inside the southern side of the Bronze Age enclosure, and the pits varied in size between 0.8 m and 1.9 m in width and 0.08 and 0.7 m deep. The eastern-most pit, 3809 (illus. 12, section 268) was 1.9 m wide and 0.7 m deep, and the largest of the pits in the group. It was an irregular oval pit with two fills which suggested it was only open for a short period before being back-filled. It contained 7 sherds (68g) of mid to late Iron Age pottery (illus. 49.2) and some animal bone.

Pit group F5085 (3012, 3963, 3979, 3647)

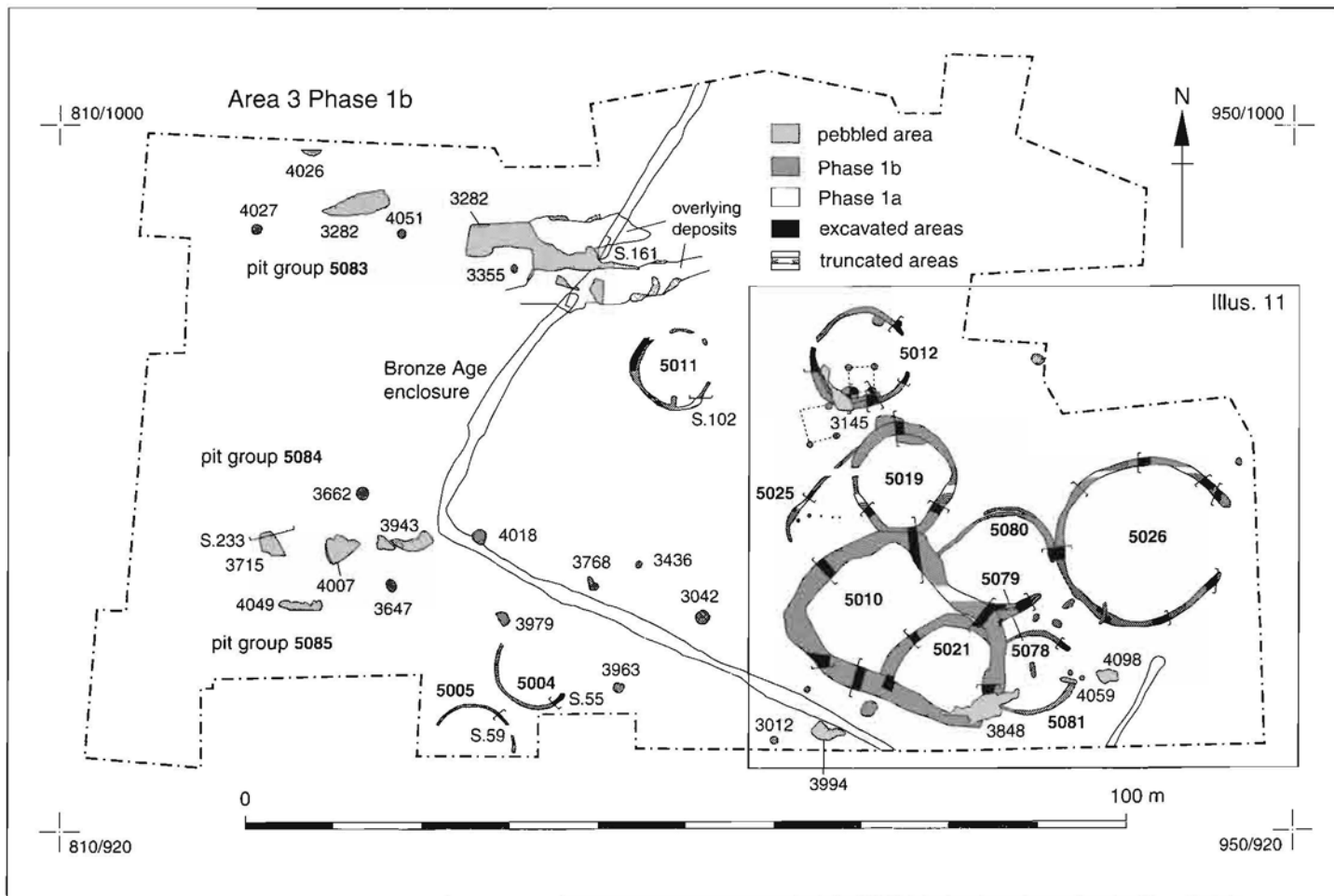
This group of pits lies 6 – 8 m south of the Bronze Age enclosure ditch, with pits spaced about 13 m to 18 m apart, and ranging from 0.9 to 1.6 m wide and from 0.18m to 0.4 m deep. Two of the pits were excavated and contained 36 (139g) sherds of mid to late Iron Age pottery. A cattle mandible was found in pit 3012.

*Ditches, gullies and four-post structures (illus. 11)*

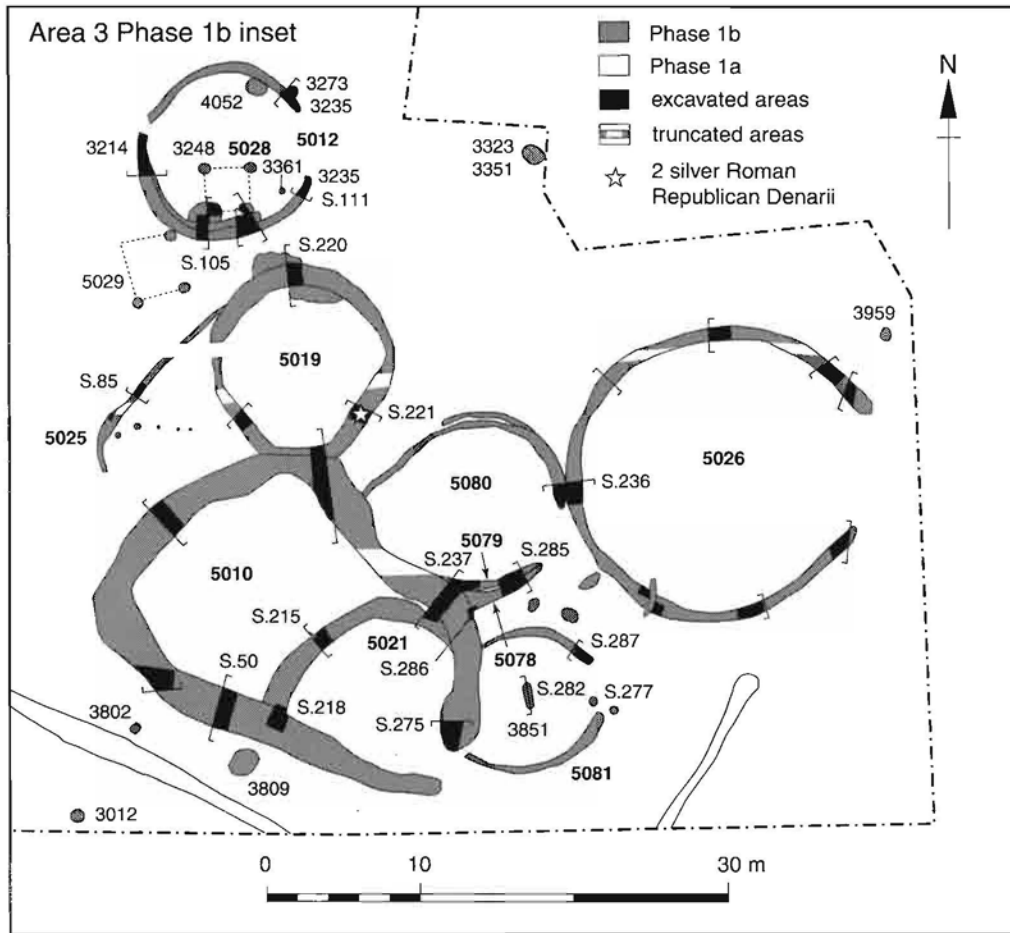
In the south-east corner of the excavated area a series of ditches and gullies, some post holes and two four-post structures were assigned to the first Iron Age phase of the site. A single large round structure, possibly a house represented by a penannular drainage gully, with an eastern facing entrance (F5026), lay alongside a number of penannular gullies and ditches (5081, 5019, 5025, 5080/5078/5079, 5021 & 5010). These appeared to indicate a gradual growth of a small home-stead with enclosures whose function, though unclear, was associated with the main building. A four-post structure (F5028) lay within a later penannular ditch (F5012), and an adjacent second four-post structure (F5029) probably also belonged to this phase. A penannular ditch (F5011) lay to the west and may represent a further enclosure associated with the structures in the south-east of the site. Only the penannular ditch F5081 had an internal feature, an elongated pit (3851) which contained Iron Age pottery, bone and stone, but its function was uncertain.

Within enclosure ditch F5019, two silver Roman Republican denarii (154 BC and 32-31 BC) were found lying one on top of the other at the level of machine stripped surface (illus. 15). The coins seem to have been deliberately deposited together (see report by P. Booth), and it is possible that other coins may also have originally been present. The layer in which the denarii were found (3607 – illus. 14, section 221) overlay a pebbled surface and continued over the latest fill of ditch F5019, although the precise stratigraphic relationship was not clear due to disturbance over the area. Just to the north, in the ditch of enclosure 5012 domestic activity was suggested by the concentrated deposits of pottery recorded in the northern terminal (3235 – illus. 48.5 & 49.6-8) and on the west side of the ditch (3214 – illus. 48.3 & 4). A substantial part of one of the vessels in the terminal survived intact (illus. 17). In the western ditch the pottery was scattered and fragmented extending for 1.9 m along the ditch (illus. 17).

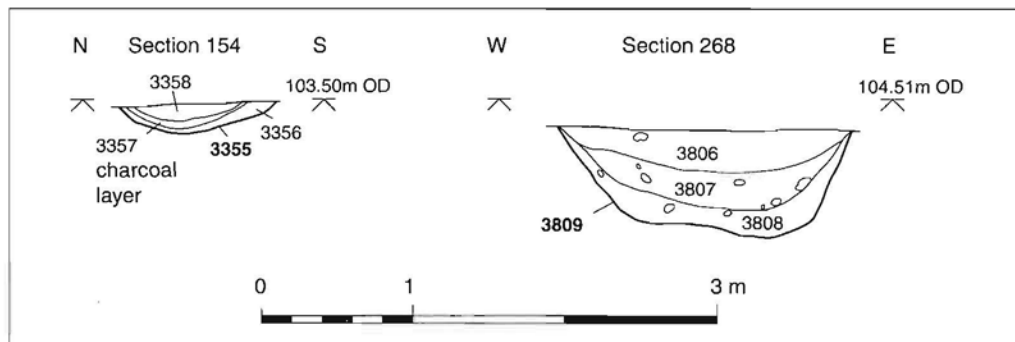
One post hole (3121) of a presumed four-post structure (F5028) measuring approximately 3 x 3 m, was cut by penannular ditch F5012 (3189 and adjacent ditch 3186 on illus. 18, section 105). This post hole appeared to resemble a large pit probably due to deliberate digging out and removal of the post prior to digging the later ditch. The remains of a second four-post structure (F5029), approximately 3.2 x 3.5 m was located 2 m to the south, and the fourth post hole of this structure had probably been removed by a plough furrow. 63 sherds of pottery (461g) were found within features of structure F5028 and 1 sherd (17g) within F5029. The fills of the post holes of F5028 were dark silty clay with charcoal, and environmental sampling from 3248 (illus. 18, section 114) produced over 350 grains of cereal, the largest amount recovered from any feature on the site (see report by R. Pelling). This represented clean, fully processed spelt grain, strongly



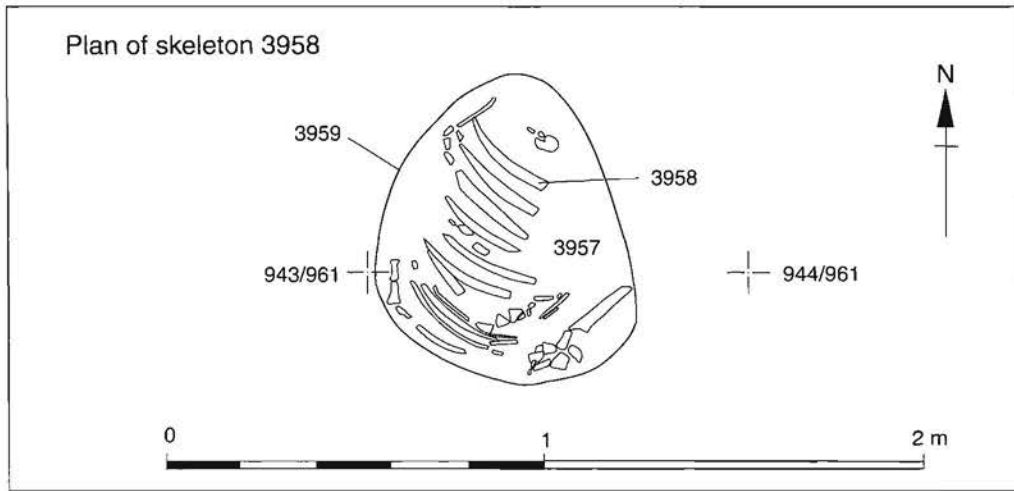
10. Phase 1b. Plan of features showing areas excavated and pebbled surfaces



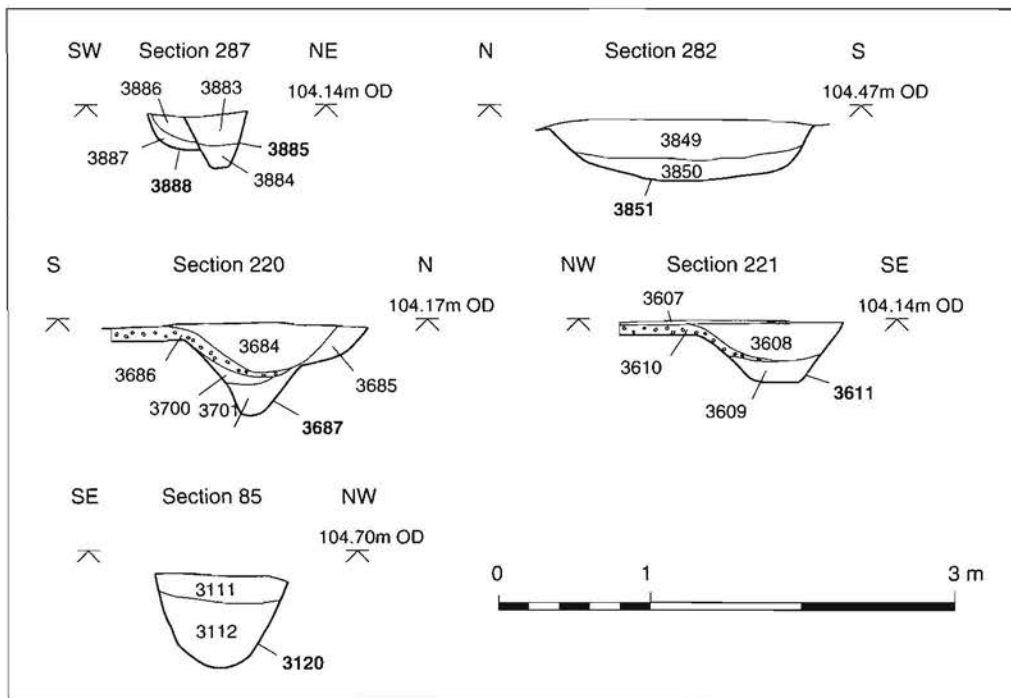
11. Phase 1b. Details of features indicating location of contexts and sections



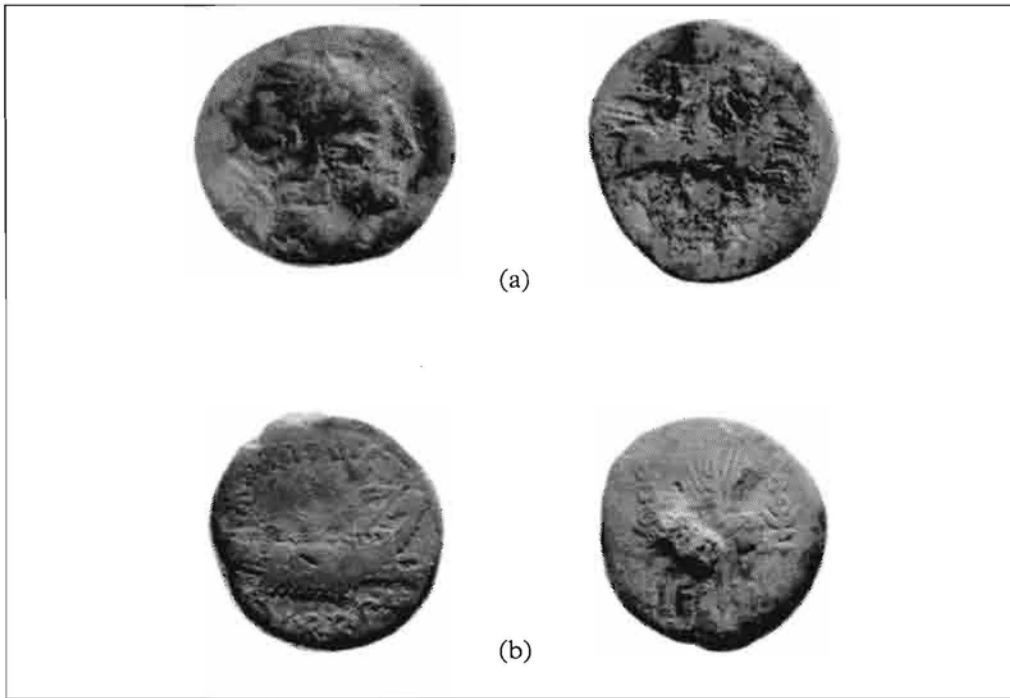
12. Phase 1b. Section of pits 3355 (plan 10) and 3809 (plan 11)



13. Phase 1b. Plan of cattle skeleton from pit 3959 (plan 11)



14. Phase 1b. Sections of ditches 287, 220, 221, 85, and section of pit: 3851 (plan 11)



15. Phase 1b. Roman Republican denarii from ditch of F5019. (a) obverse, helmeted head of Roma: reverse, dioscuroi galloping right, legend C.SCR beneath, and ROMA in the exergue, struck in Rome by C. Scribonius, 154 BC, maximum diameter 18mm, (b) obverse, galley, legend ANT.AUG above and III.VIR.P.C below: reverse, aquila between two standards, legend LEG III below, struck for Mark Antony, 32-31 BC, maximum diameter 15mm.

suggesting that this was a granary. The grain was radiocarbon dated to 416 to 198 cal BC (95% confidence – 2292±60BP; NZA10142).

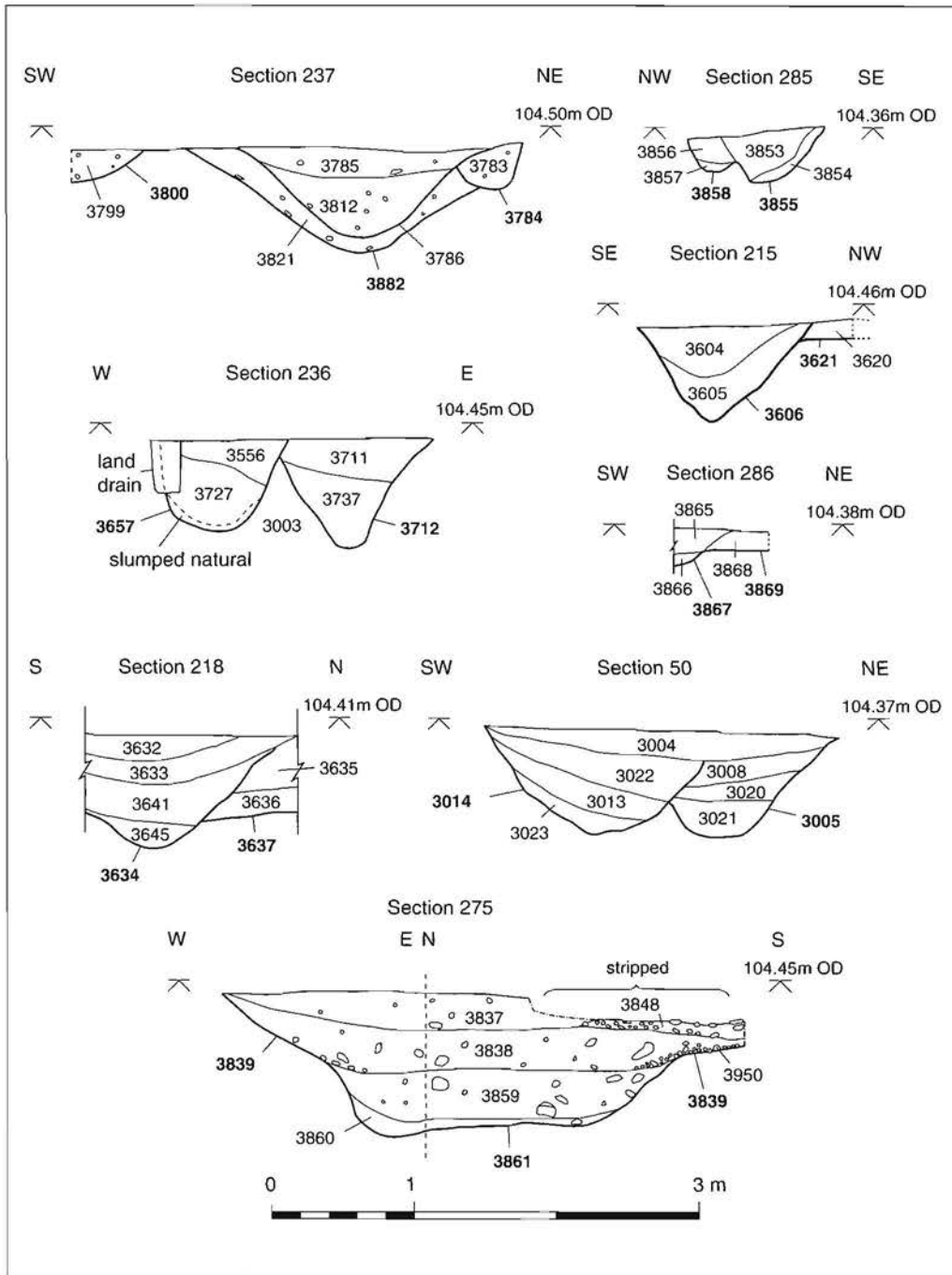
#### Penannular ditch F5026

The internal diameter was 18 m with a 7.3 m wide entrance on the east side. The ditch had a deep, steep-sided, flat bottomed profile which was typically 0.9 m wide and 0.54 m deep. The fills were light brown or light grey brown silty clay which produced a small quantity of mid to late Iron Age pottery and animal bone. There were no internal features. The southern side was cut by a short gully whose function is unclear. The western side of F5026 is cut by curving ditch F5080 (illus. 16, section 236), and a pit (F3959) lying to the north contained a partially articulated cattle skeleton (illus. 13). No associated pottery or other finds were found in the pit and the bone was in very poor condition. A line of post holes across F5026 continues across F5080 and may be associated with ditch F5006 of phase 4.

#### Penannular gully F5081

The gully enclosure F5081 was badly disturbed by land drains and plough furrows, and had an internal diameter of 8.6 m, with a 3.2 m wide eastern entrance. The ditch was 0.65 m wide and 0.35 m deep and had been recut once (illus. 14, section 287). The fills were light to medium grey brown silty clay and contained animal bone and 11 (262g) sherds of mid to late Iron Age pottery. The west side may have been cut by 5010. An elongated pit, 3851, (0.55 m x 1.80 m) was situated just north of the centre (illus. 14, section 282), and contained 23 sherds (209g) mid to late Iron Age pottery, a small amount of bone with one burnt fragment, and burnt stone, although





16. Phase 1b. Sections of ditches 237, 285, 236, 215, 286, 218, 50 and 275 (plan 11)

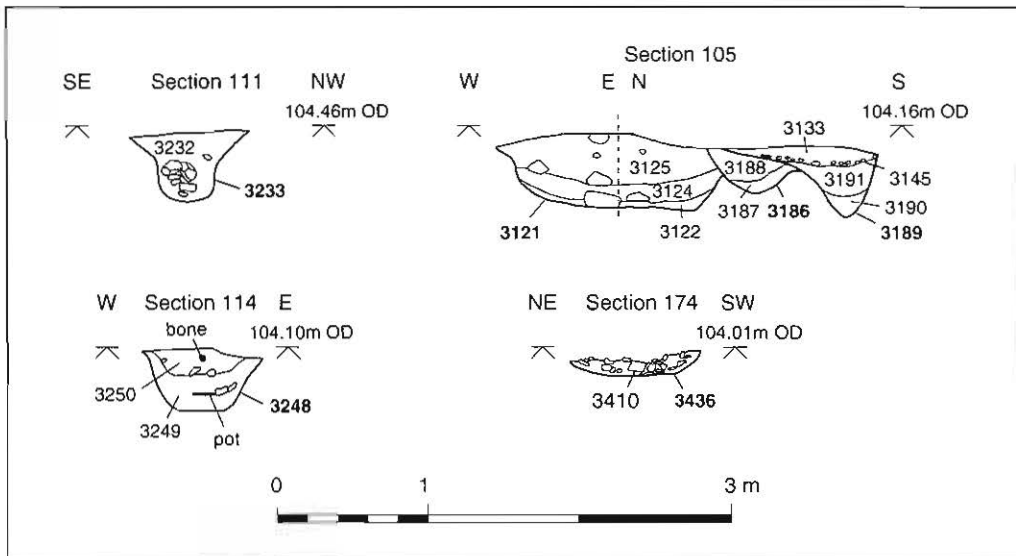


17. Phase 1b. Structure F5012 with figure standing in four-post structure F5028 (see plan 11). Pottery in illus.19 was found in ditch terminal bottom right and in illus. 20 from ditch behind figure

no *in situ* burning was evident. It is the only feature of its type and may have been a trough within a building, although no structural evidence for a building survives. Two post holes, about 0.50m in diameter, were located either side of the southern terminal. The southern terminal of the gully was sealed by a layer of bunter pebbles which formed a continuation of the surface crossing the entrance of enclosure F5010.

#### Enclosure ditch F5019

Ditch F5019 had an internal diameter of 10.5 m and was about 1 m wide and 0.42 m deep, with mid to light grey brown silty clay fill. Two areas of pebbles (3686, 3610) were located on the inside edge of the enclosure and sloping into the partly silted ditch (3611 and 3687) (illus. 14, section 220 & 221), and survive within an eroded depression which might be the result of animal trample. A similar deposit of pebbles was recorded within phase 3 enclosure ditch, F5018. Fifteen sherds (217g) of mid to late Iron Age pottery were found together with animal bone, including teeth and small fragments as well as part of a horse skull. A linear gully, 0.8 m wide and 0.23 m deep, F5025 (illus. 14, section 85) was situated at a tangent to F5019 on the west side. It was aligned south-west to north-east and ran for 13 m before turning slightly to the south-east where it terminates. If there was a corresponding south gully it may have been removed by F5010. The



18. Phase 1b. Sections of ditches 111 & 105 and post-hole 3248 (plan 11), and pit 3436 (plan 10)



19. Phase 1b. Pottery deposit in context 3235, in ditch of structure F5012



20. Phase 1b. Pottery deposit in context 3217, in ditch of structure F5012

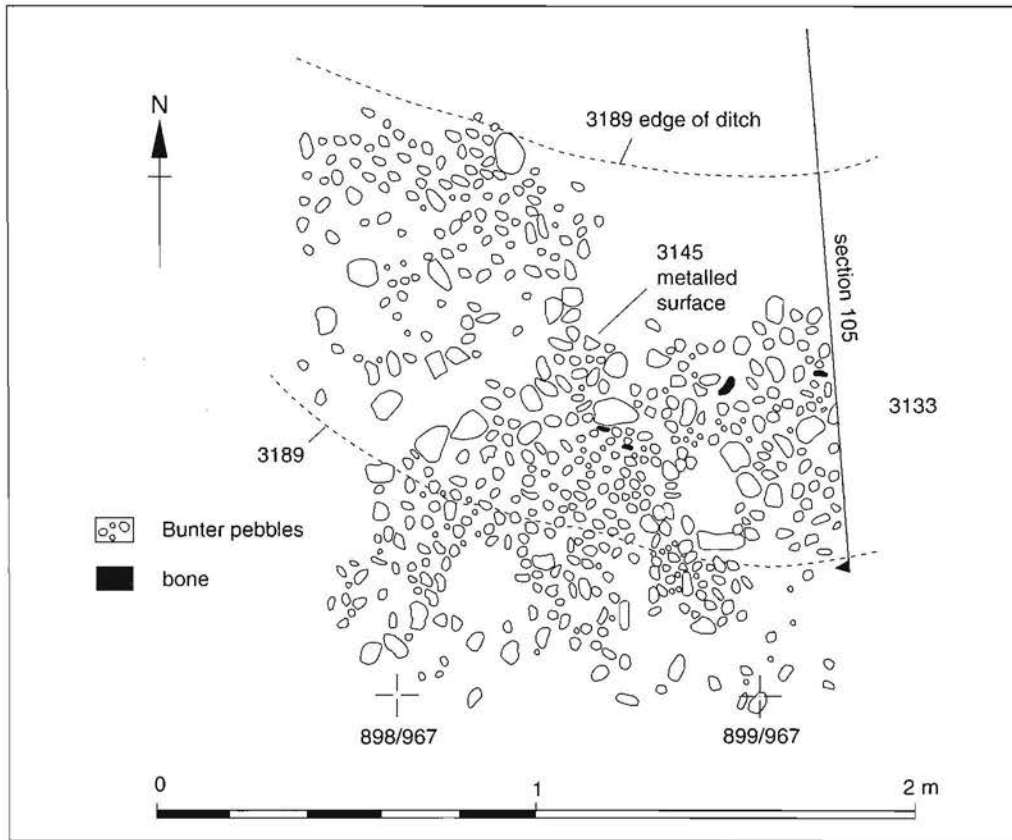
position of the gully suggests it is probably contemporaneous with enclosure F5019 serving as an annex, and within it a line of post holes may have represented a small fenced area.

#### Penannular ditches F5080, F5078, F5079

Ditches F5080 and 5079 form a penannular layout between F5010 and F5026. The internal diameter measured 10.2 m with a 3.8 m wide entrance on the east side. Ditch F5080 cuts F5026 (illus. 16, section 236), and had a steep-sided U-shaped profile (0.9 m wide x 0.7 m deep). The slightly asymmetrical shape suggests these ditches may have evolved over time. Stratigraphically the relationships suggest that F5080 and F5079 were dug as an annex to the earliest phase of F5010, and F5078 was dug slightly later. Enclosure F5010 was then enlarged cutting a number of features (illus. 16, sections 237 & 285). Finds from ditch F5078 included 87 sherds (1342g) of mid to late Iron Age pottery (illus. 48.1), an intrusive Roman grey ware sherd, animal bone, worked stone, metalworking debris, and fired clay.

#### Ditch F5021, F5010

F5021 was an approximately D-shaped ditched enclosure about 10m across, with a south entrance before the southern half was removed by F5010. The ditch was about 1.4 m wide and 0.6 m deep, with a steep sided profile (illus. 16, section 215), and it had two fills of yellowish brown silty clay followed by dark greyish brown silty clay. It produced 12 sherds (43g) of mid to late Iron Age pottery, animal bone, a copper-alloy rivet and a square washer from the base of the ditch (3606 – see report by I. Scott). A more substantial enclosure F5010 replaced F5021 (illus. 16, section 218), 22 x 14.5/10.5 m, and this maintained the D-shaped plan and a 2 m wide entrance in the south-east. Enclosure F5010 had been re-cut at least once, and was typically 1.6 m wide and 0.80 m deep (illus. 16, section 50). On the curving lengths of the ditch the re-cut was more substantial resulting in ditch profile generally 2.3 m wide and 0.80 m deep. The fills of the earliest cut were homogenous mid-grey clay, consistent with gradual silting under wet conditions. The re-cut consisted of fairly 'clean' yellowish brown clay fills consistent with rapid back-filling.



21. Phase 1b. Plan showing pebble surface 3145 overlying structure F5012

Finds from F5010 included 188 sherds (1144g) of mid to late Iron Age pottery, animal bone, charred cereal grain and a thin copper rod. Two spreads of Bunter pebbles were recorded in the terminal of the south-east entrance (illus. 16, section 275). The earliest pebble layer (3950) had been laid down half way through filling of the ditch and was sealed (3838). The ditch had mostly filled when a trackway (3848) of bunter pebbles was laid across the south-eastern entrance. There are fragmentary patches of the trackway to the east.

#### Penannular ditch F5012

The ditch was 10 m in diameter with a 4.2 m wide entrance to the east (illus. 17), and was generally 0.84 m wide and 0.44 m deep with a steep sided U-shaped profile (illus. 18, section 111). The single fill was comprised of dark grey silty clay with medium to large bunter pebbles in discrete clumps towards the base. The southern part of this ditch was well preserved (3189) and an earlier cut (3186) ran along the inside (illus. 18, section 105). The ditch cut a four-post structure (F5028 – 3121 on section 105). A single post hole (F3361) near the southern terminal produced 2 sherds (4g) of mid to late Iron Age pottery and animal bone. There were no other internal features to suggest a building, although domestic activity is suggested by the pottery recorded in the northern terminal (3235) and on the west side (3214). In total 474 sherds (9228g) of mid to late Iron Age pottery were found in F5012. There was very little bone present and environmental sampling revealed charred cereal grain and weeds (report by R. Pelling). The ditch was sealed by a pebble surface (3145 – illus. 21).



22. Phase 1b. Pebbled area 3282 looking west (plan 11)

#### *Other features*

Ditch F5011 was badly truncated by plough furrows and its full extent was unclear. The internal diameter is estimated to have measured 8 m with an entrance on the east side which was removed by a plough furrow. The shallow flat bottomed ditch was between 1.00 and 0.25 m wide and up to 0.20 m deep, with an orange grey and brown silty fill. The ditch contained 14 sherds (98 g) of mid to late Iron Age pottery and animal bone. Gully F5004 formed a semi-circular annex in the south of the site, with gully F5005 situated a little further south. Both were shallow and badly truncated by the ridge and furrow. There were 67 sherds (140g) of mid to late Iron Age pottery and a small amount of bone from F5004, and no finds from F5005. A pit 0.8 m in diameter and 0.12 m deep (3436 – illus. 10) was filled with fire cracked stone (illus. 18, section 174, and illus. 23).

#### *Bunter pebble surfaces (illus. 10)*

Four linear spreads of Bunter pebbles sealed the Bronze Age and earliest of the Iron Age features and were cut by later remains on the site. Some of these pebbles may represent a trackway, as at the western entrance of enclosure F5008 of phase 1a (illus. 22) where a loose pebbled surface (3282) had been laid down during the latter part of the silting of the enclosure. It consisted of Bunter pebbles, some burnt, as well as the occasional piece of limestone, typically 50 mm in size, with smaller stones filling in the gaps. A pebble spread (3145) overlay penannular ditch F5012 and covered an area 10 x 1.5 m, and a small quantity of residual struck flint was found in this layer. In the south-east of the site the remains of a further Bunter pebble surface (3848) were uncovered running obliquely over the entrance of enclosure F5010 (illus. 16, section 275). It was cut by medieval plough furrows, but isolated fragments (3994, 4059, 4098) suggest that this may have been part of a linear pebbled surface. In the south-western area of the site a further surface of Bunter pebbles was found represented by fragmented areas (3715, 3943, 4007, 4049). This may

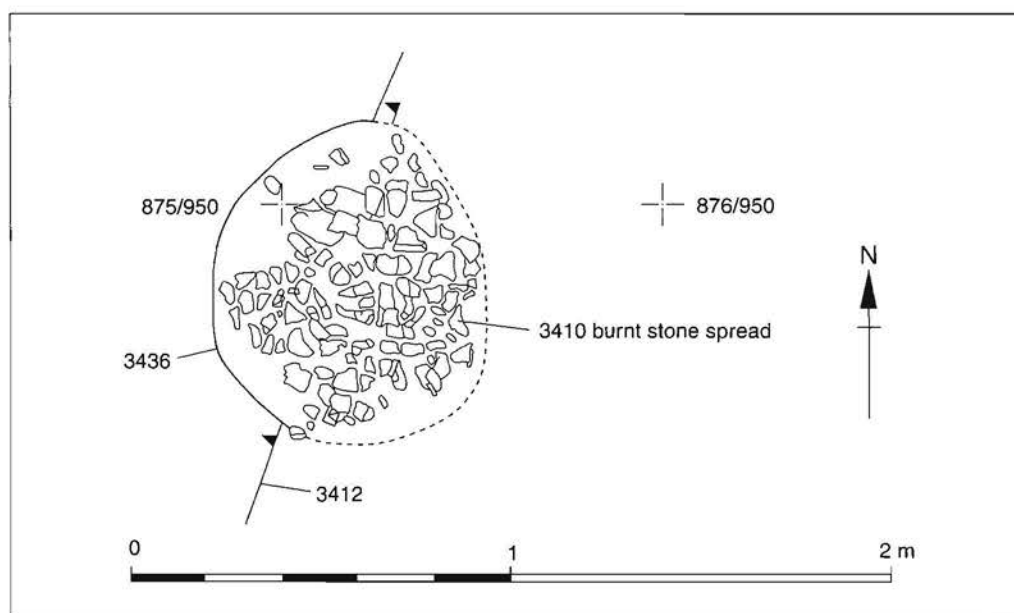
represent the remains of a pebbled yard area, and burnt stone and animal bone occurred among the pebbles. A well preserved area of 3715 occurred in a slight hollow which was cut by a ditch of phase 2 (F5063 – 3566, illus. 28, section 233 & illus. 29).

The pebbled entrance of F5008 (3282) had a slight camber and the sides sloped into the top of the terminals of the earlier enclosure (illus. 8, section 161 and illus. 9) which contained some of the larger stones (up to 0.3 m across) and was sealed by the latest ditch fill (3390). There was no sign of wear, or evidence of a well worn compacted surface. A well-preserved compacted surface, including larger pebbles, survived gently dipping over the eastern side of the southern terminal of F5008. These pebbles were sealed by (3344) a gritty grey clay deposit and this was overlain by a mixed layer of redeposited clay and bunter pebbles (3343) backfilling the terminal. The pebbled surface contained fragments of animal bone and a fragment of quern material but no pottery.

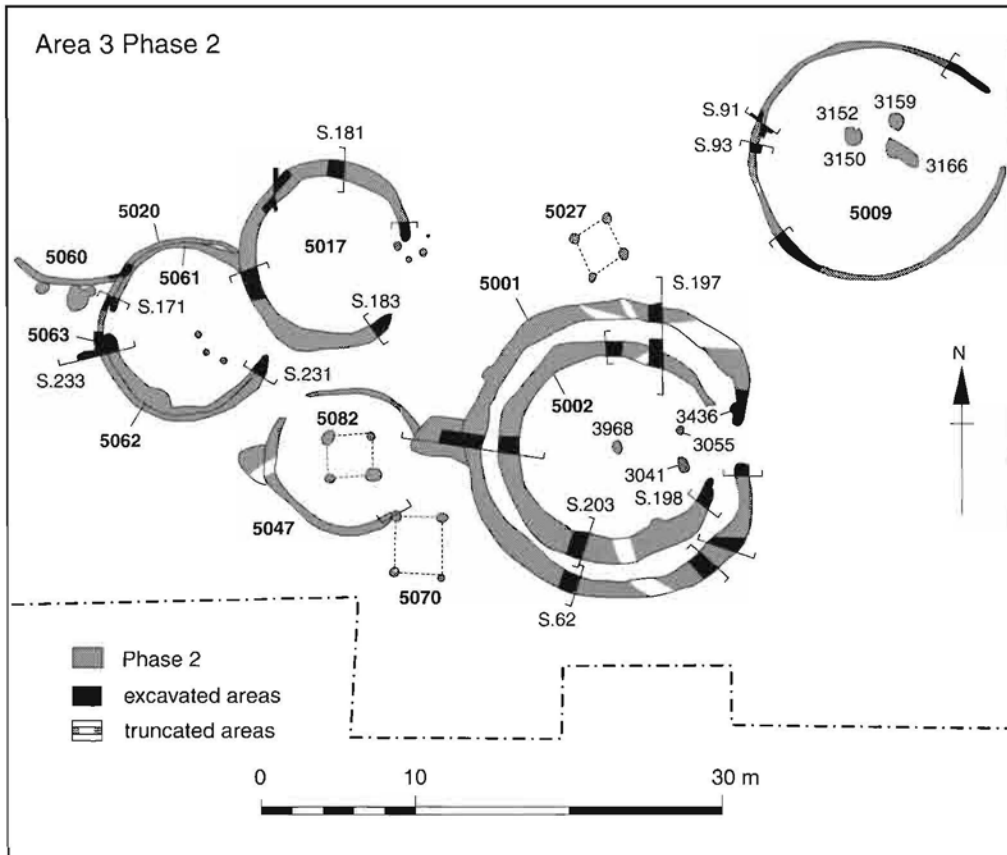
### ***Iron Age – phase 2 (illus. 24)***

#### *Large penannular ditches*

Two substantial penannular ditches F5001 and F5002 dominated this phase. The larger, F5001, enclosed an area 17.5 m in diameter with a 2.5 m wide entrance on the eastern side, and the interior ditch, F5002, surrounded an area 12m in diameter with a 4.1 m entrance on the east side. The ditches lay between 0.7 and 1.8 m apart (illus. 25, sections 203 & 62). The outer ditch (F5001) contained 312 sherds (2951g) of mid to late Iron Age pottery (illus. 49.10 & 50.15), together with animal bone, fired clay and metalworking debris. A fragment of bone (3046) taken from the ditch for C14 dating was dated to between 415 to 169 cal BC (95% confidence – 2270±70BP; NZA10236). Finds from ditch F5002 included 255 sherds (1233g) of Iron Age pottery (illus. 50.16), animal bone, fired clay and metalworking debris. The outer of the concentric ditches may be interpreted as a drainage gully and the inner as a construction trench for a round-house. This interpretation is considered further in the discussion.



23. Area 3, Phase 2. Plan of pit 3436 with burnt stone (plan 24)

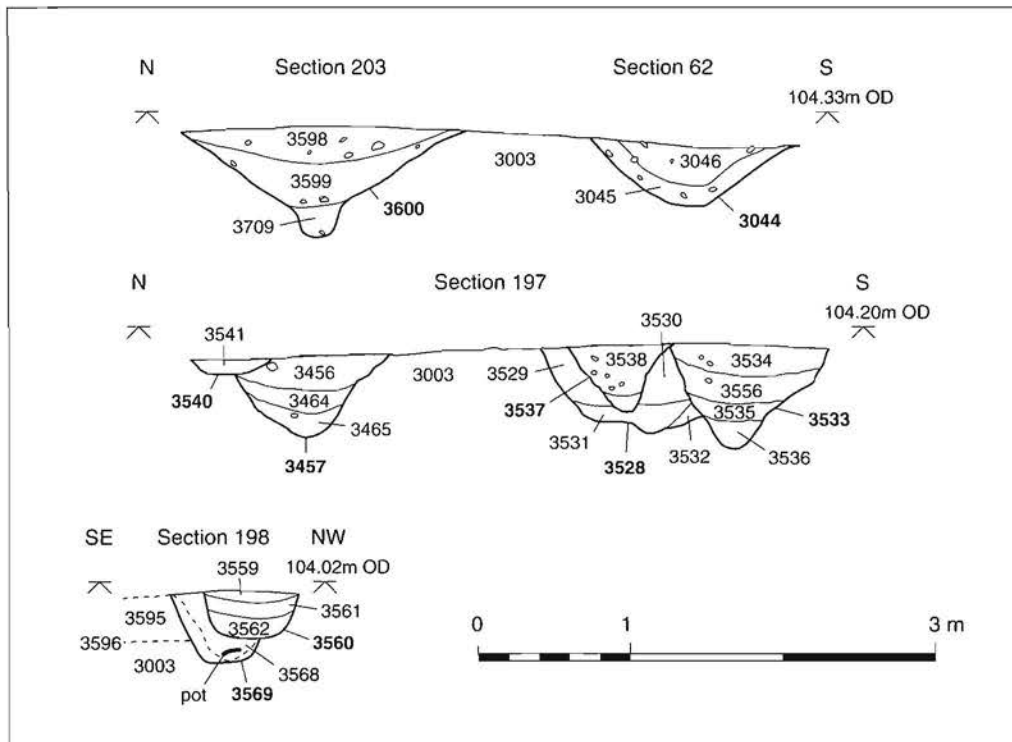


24. Phase 2. Plan showing location of features and sections

Within the area of these two ditches internal post holes were apparent. Two stone-packed posts (3041, 3055) up to 0.52 m wide and 0.45 m deep were set 2.2 m apart (illus. 26), and may be part of a porch or doorway. The stone fills included four fragments of worked stone including two fragments of quern, part of a saddle quern and part of a bun-shaped rubbing stone. A shallow flat bottomed pit (3698), 0.85 m wide and 0.1 m deep, in the centre of 5002, contained small fragments of fired clay and burnt and unburnt bone. This may have been the site of a hearth although the sides of the pit did not show any burning, and it is possible that this could have been the location of a central post-setting.

Ditch F5001 was approximately 1.10 m wide and 0.54 m deep. It was filled by a mid brown grey silty clay with olive green mottling (illus. 25, section 197). Ditch F5002 had a northern arm approximately 1 m wide and 0.58 m deep. The southern arm was slightly wider at 1.35 m and a re-cut (3560, illus. 25, section 198) was recorded at the southern terminal indicating the original entrance to be at least 4.9 m wide. The fill was similar to that of F5001 with mid brown grey silty clay with olive green mottling. The shallow penannular ditch F5047 seemed to form an annex on the western side of F5001. It had an internal diameter of 8.8 m with a 4 m wide entrance on the east side. A large unexcavated pit on the west side of F5047 may be a sump for the ditch. F5070 produced only two sherds (37g) of Iron Age pottery together with smithing slag.





25. Phase 2. Sections of ditches 203, 62, 197 and 198 (plan 24)

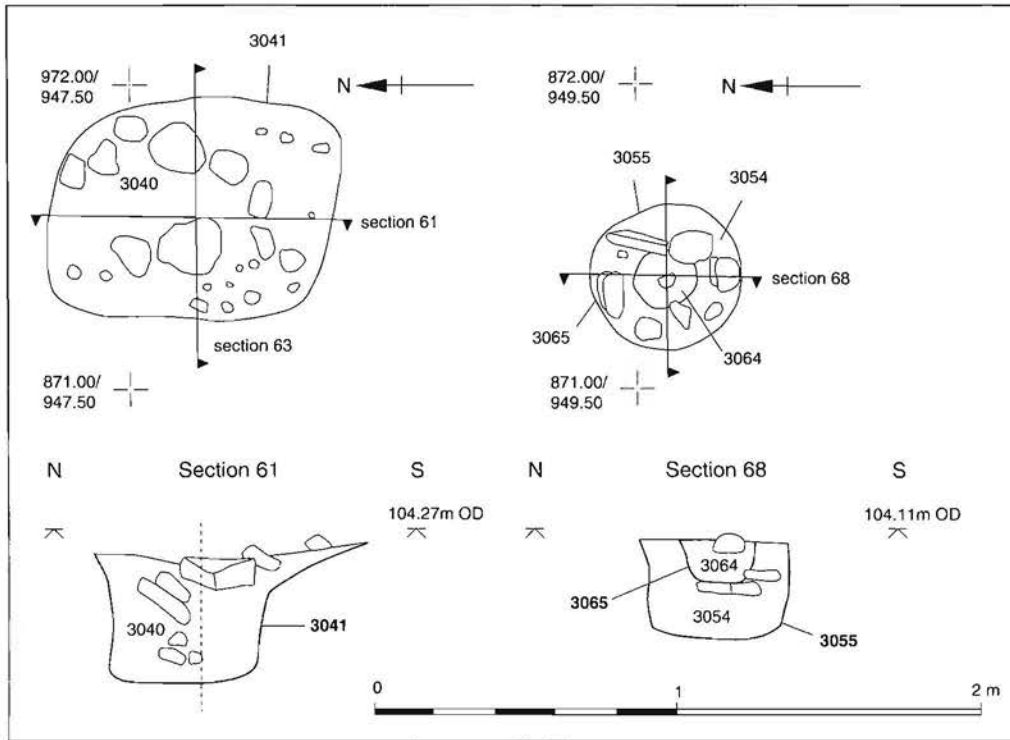
#### *Four-post structures*

Three four-post structures (F5027, F5082, F5070) lay to the north and west of the round-house. F5027 was situated north of penannular ditch 5001 and measured 2.7 x 2.6m. The upper part of the post holes (3707, 3836, 3826 & 3844) were wider in some cases suggesting that the posts had been deliberately removed (illus. 27, sections 219, 274, 269 & 273). Structure F5082 (2.7 x 2.7 m) lay to the west of F5001 and was enclosed by penannular ditch F5047, with which it was probably contemporaneous. Four-poster F5070 (3 x 3 m) may have been replaced by four-post structure F5082, as one of the posts cut into the southern terminal of F5047. There were few finds to assist interpretation of these features.

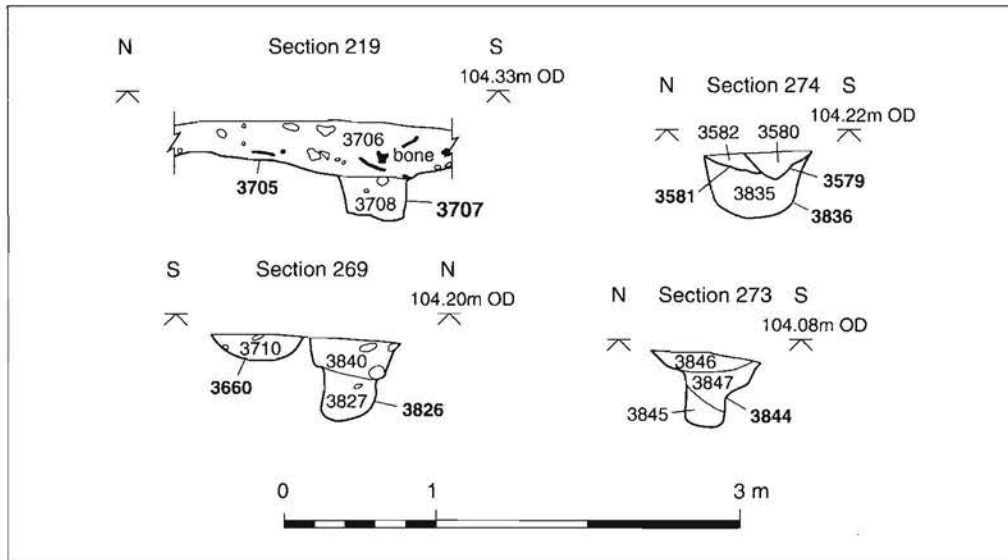
#### *Curved penannular ditches*

The group of curved and penannular ditches (F5017, F5020, F5061, F5062, F5063) appeared to be contemporaneous, although they had been modified and altered over time by a series of recuts. The ditches appeared to be associated with the larger penannular ditches F5001 and F5002, although their precise functions were not clear and there was no evidence for roofing or any internal features. However, the enclosures probably represent the gradual growth of the settlement area in this period, and the activities, domestic, agricultural and industrial, which took place within them.

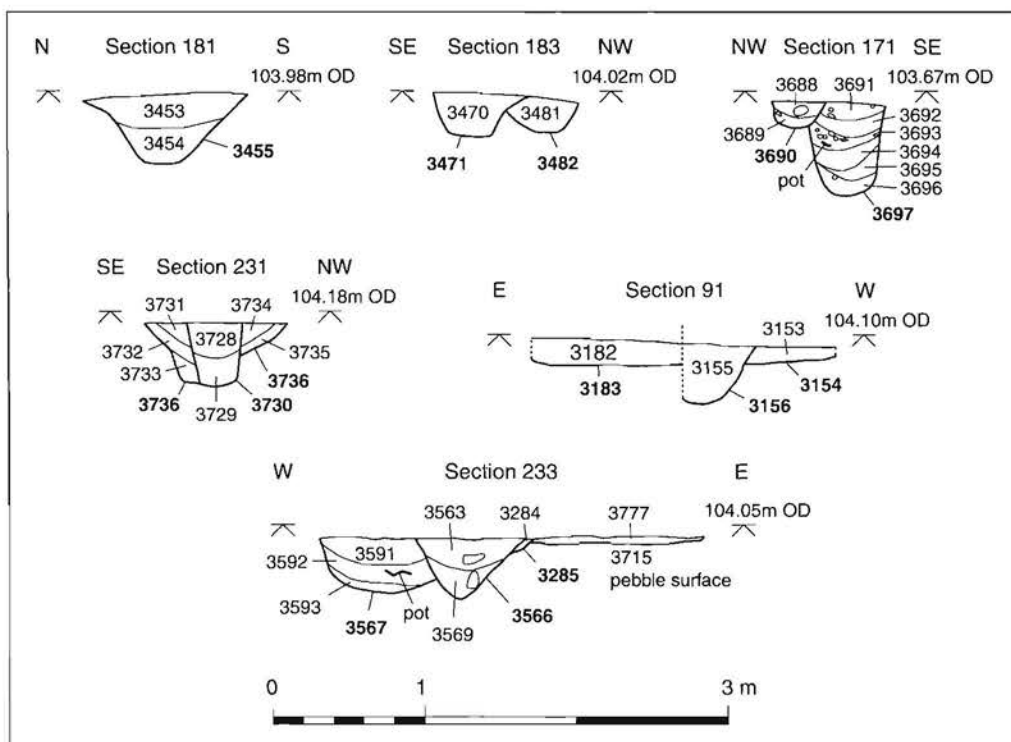
Ditch F5017 contained 344 sherds (1375g) of mid to late Iron Age pottery (illus. 50.12), and some animal bone along with fired clay and metalworking debris. A polished cattle scapula was also retrieved from the primary fill of the ditch (3454 – illus. 28, section 181 & illus. 53.1). Ditches F5061 and 5062 form a penannular area to the north-west of the larger ditches, and



26. Phase 2. Plan and sections of post holes 3041 and 3055



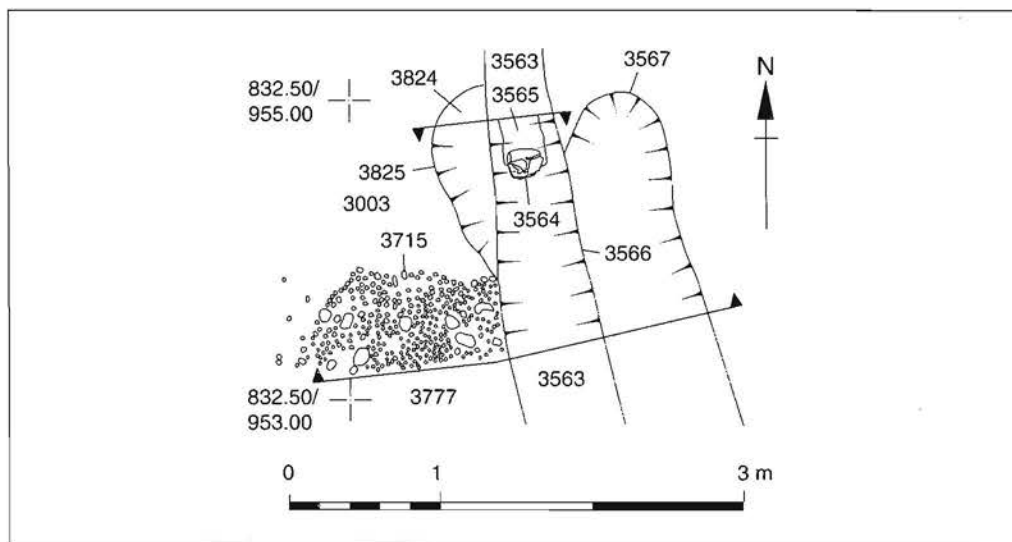
27. Phase 2. Sections of post-holes 3707, 3836, 3826 and 3844, of four-post structure F5027



28. Phase 2. Ditch sections 181, 183, 171, 231, 91 and 233 (plan 24)

F5063 may represent a recut of this ditch. F5020 was the final recut of the ditch which closed off the western entrance. 165 sherds (1633g) of mid to late Iron Age pottery including a near complete vessel (illus. 50.13), were recovered from F5020. It also produced a number of animal bones including a sheep tibia with a circular perforation, which were recovered from the top fill (3728) of the terminal of the ditch (see report by L. Allen). This was probably a small tool and other finds included fired clay and metalworking debris.

F5017 had an internal diameter of 10 m with a 4.7m. wide entrance on the east side. A single cut on the northern arm was 1 m wide and 0.45 m deep (illus. 28, section 181). The southern arm had been re-cut (illus. 28, section 183). The primary fill of F5017 was yellowish brown silty clay with grey patches and the upper fill was dark brownish grey silty clay. A curving ditch F5061 forms an annex on the west side which was up to 0.54 m wide and 0.64 m deep at the terminal (illus. 28, section 171). It contained fills of mid greyish brown silty clay and 11 sherds (35g) of Iron Age pottery. A corresponding curving ditch to the south (F5062) left a 1.4m entrance on the west side and a 1.4 m wide eastern entrance. The ditch was up to 1.10 m wide and 0.35 m in depth and contained silty clay fills of orangey, grey/brown, and 13 sherds (177g) of Iron Age pottery. Curving ditch F5063 was 0.27 m wide and 0.17 m deep, and probably represents re-cutting of F5062, although the relationship was obscured by later recut F5020 (illus. 28, section 233). Ditch F5063 had a single fill of mid grey silty clay. A Bunter pebble surface (3715) and a layer (3777) were cut by ditch F5063 (illus. 29) and patches survived inside the southern arm of 5062. Penannular ditch F5020 was 0.68 m wide and 0.42 m deep with a steep-sided U-shaped profile (illus. 28, section 231). Curving gully F5060 was cut by F5020, and was probably dug at the same time as enclosure ditch F5061 to provide drainage. The fill of the gully was similar in colour and composition to that of F5061. The gully was 0.44 m in width, 0.08 m in depth and contained a few fragments of animal bone.



29. Phase 2. Plan of pebble spread 3715 cut by ditch F5063

Ditch F5009, with an internal diameter of 14.8 m to 15.7 m and a 4.8 m wide entrance on the east side, seems to have replaced an earlier enclosure F5011 (illus. 28, section 91), but its shallow ditches 0.75 m wide and 0.35 m deep, suggested that this was not a house drainage gully, but its function remained unclear. Finds included 28 sherds (163g) of mid to late Iron Age pottery (illus. 50.17), and animal bone as well as a small amount of fired clay.

Ditch F5009 had steep sides and a gently rounded base, with a fill of mid greenish grey silty clay. A number of shallow features (3150, 3152, 3159 and 3166) were found in this area, and were filled with a light blue clay. These small pits contained 3 sherds (25g) of mid to late Iron Age pottery and small fragments of animal bone.

#### *Post holes*

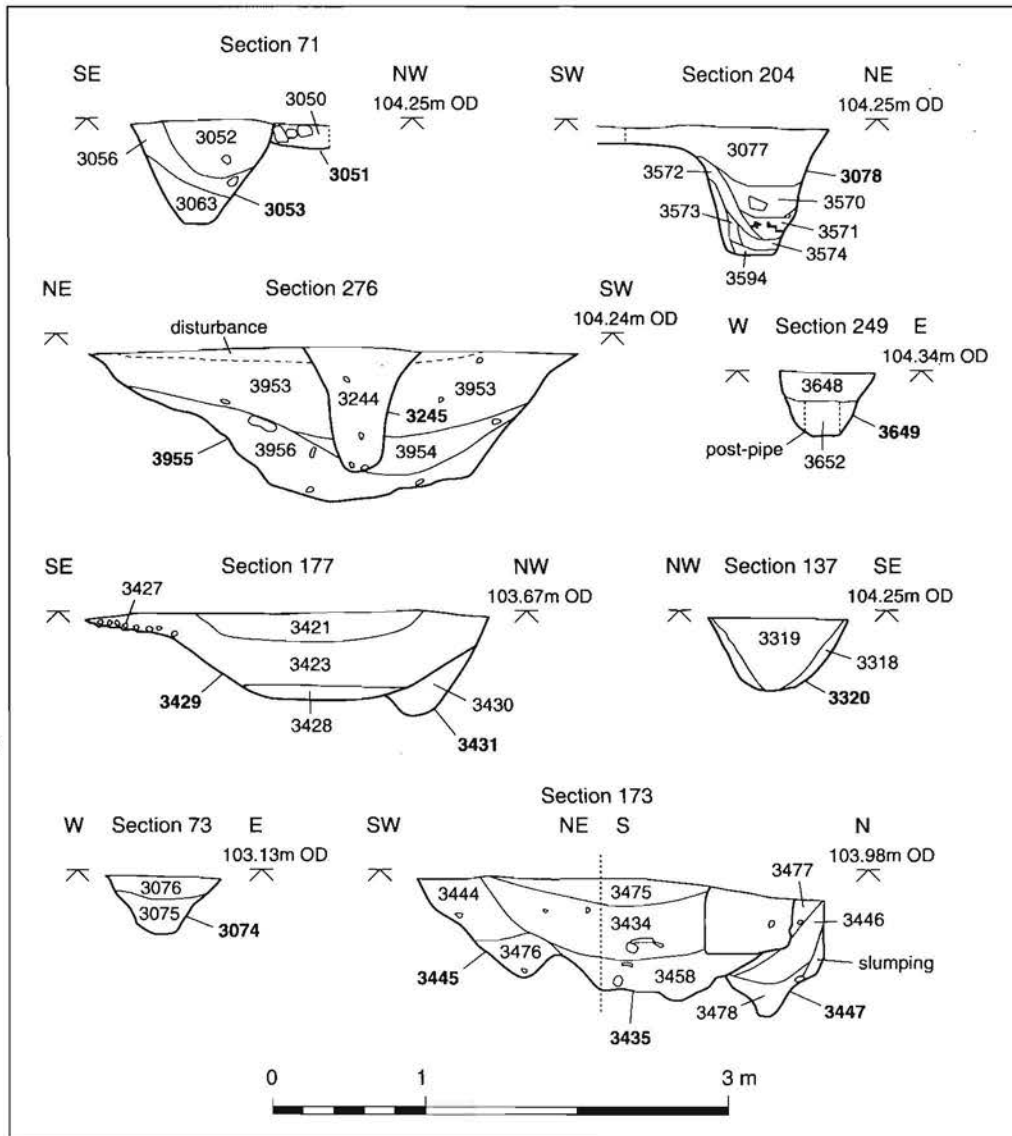
An arc of four post holes was found around the northern terminal of 5017. These were between 0.21 m and 0.59 m in diameter and no more than 0.29 m in depth and they may represent part of a fence or small structure. Another group of three shallow post holes (3721, 3723, 3725) was located within penannular enclosure F5020. None was deeper than 0.15 m, but 19 sherds (372g) of late Iron Age pottery from a single vessel were found in post hole 3725 (illus. 49.9).

### ***Iron Age – phase 3 (illus. 30)***

#### *Penannular ditches, enclosures and gullies*

In the south of the site the main feature of this phase was the penannular ditch F5003 with an internal diameter of 16.3m and a 5m wide entrance on the east side. This ditch, probably representing the drainage gully of a house structure, overlay structures of the earlier phase (F5001 and 5002) and seemed to show rebuilding about 8.5 m to the east. A large amount, 891 sherds (11,926g) of mid to late Iron Age pottery was found in this feature, and this represented 21% (by weight) of the total amount of pottery from area 3 (illus. 50.19-23, 51.24-29 & 32, 52.33 & 34). A substantial deposit of pottery and bone was found in the southern part of this ditch (illus. 32). A piece of bone was radiocarbon dated to 386 to 46 cal BC (95% confidence – 2167±60BP; NZA102382167), and an anvil, probably a reused quernstone, was also found here. The ditch had no internal features but a group of post holes (F5092) curved northwards from the south

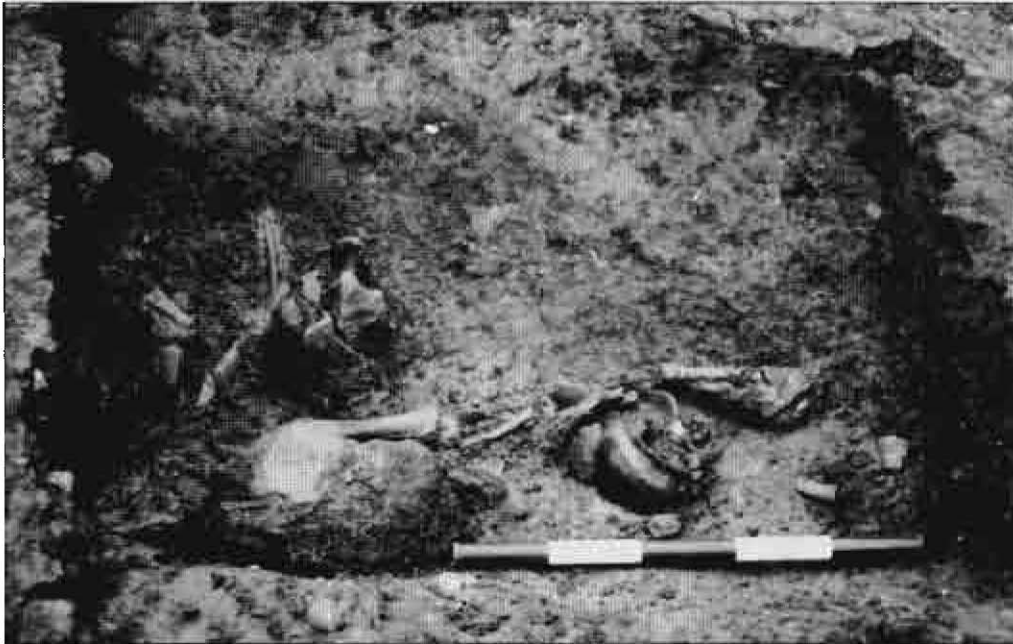




31. Phase 3. Sections of ditches 71, 204, 276, 177, 137, 73, 173 and section 249 of post-hole 3649 of four-post structure 5086

terminal and probably formed a windbreak around the entrance of the structure. Penannular ditch F5007 had an internal width of 12 to 14m with an entrance 6 m wide on the north-east and may have replaced structure F5009 of an earlier phase. The ditch measured 0.75 m. wide and 0.35 m deep. A residual piece of Bronze Age pottery was also found in this feature.

The dimensions of the ditch of F5003 varied with deep steep sided U-shaped profiles recorded at the terminals. The western side had a narrow U-shaped profile 0.74 m wide and 0.38 m deep (3074 – illus. 31, section 73). The southern half widened between 0.92m to 1.1 m. and 0.48 m to



32. Phase 3. Iron Age pottery deposit in context 3317 of structure 5003

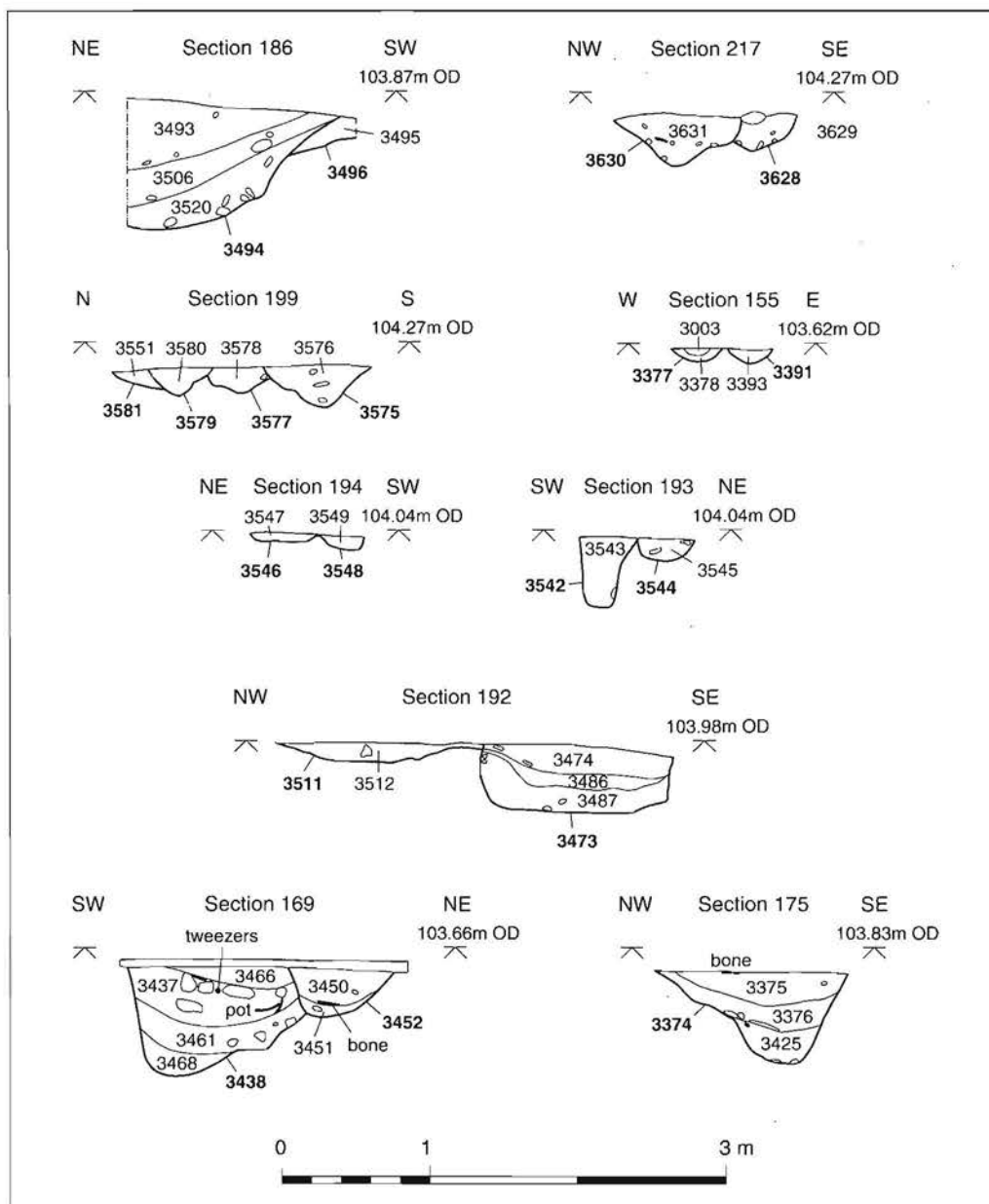
0.60 m deep (3320 – illus. 31, section 137), where a large deposit of pottery, 185 sherds (2692g) and bone was found. The northern terminal (3078) was 0.98 m wide and 0.83 m deep (illus. 31, section 204) and the southern terminal (3053) 0.9 m wide and 0.7 m deep (illus. 31, section 71), and fills from these features were mainly of mid greyish brown silty clay. A fall in the slope drained water into the terminals, and both terminals had gully offshoots to aid surface drainage around the entrance. None of the post holes of F5092 continues inside 5003 and most likely they formed a small fenced area about 11 x 7 m around the entrance. The northern arm of the ditch (3244) cut across an earlier pit (3955 – illus. 31, section 276). Pit F3955 was an irregular oval shape, 3.3 x 6 x 1 m deep. The pit may have been dug for earlier clay extraction but its function was unclear.

#### *Four-post structures*

Four-post structure F5086 (2.8 x 3 m) seemed to sit outside the entrance to the fence line of the post hole settings of F5092. The post holes of the four-post structure were between 0.68 and 0.40 m in diameter and approximately 0.16 m deep. Two similar post holes (including 3649 – illus. 31, section 249) and an unexcavated hole may have formed another similar feature F5087, about 2.5 m square. 21 sherds (210 g) of mid to late Iron Age pottery as well as animal bone were retrieved from one of the post holes (3554) in F5086. A total of 26 sherds (70 g) of mid to late Iron Age pottery was found within F5087, along with part of a small saddle quern, fired clay and iron rich cinder from another post hole (3649).

#### *Circular enclosure F5018*

The enclosure was 10 to 11m across with no entrance, with a ditch up to 2.6 m wide and 0.88 m deep in parts, which was therefore quite substantial. Finds from the ditch included 138 sherds (1061g) of mid to late Iron Age pottery, animal bone, including the skull and jawbone of a dog, and the complete upper part of a rotary quern made of Lincolnshire Jurassic limestone (illus.



33. Phase 3. Sections of ditches 186, 217, 199, 169 and 175, section 155 of pit 3377 with cremation burial, of pits 3511 and 3473, and post-holes 3546, 3548, 3542 and 3544 within ditches 5022/5023

54.1). This was recovered near to the base of the ditch (3458 – illus. 31, section 173). Two small fragments of human skull were retrieved from this feature in the same fill (3458) and also in fill (3493) on the west side of the feature. The only feature within the enclosure was a post hole





34. Phase 3. Iron Age pottery deposit in context 3374 in ditch terminal F5015

(3671), where a worked antler handle was found in the fill (illus. 53.2, see report by L. Allen). There is no indication of the function of the enclosure or how access was gained.

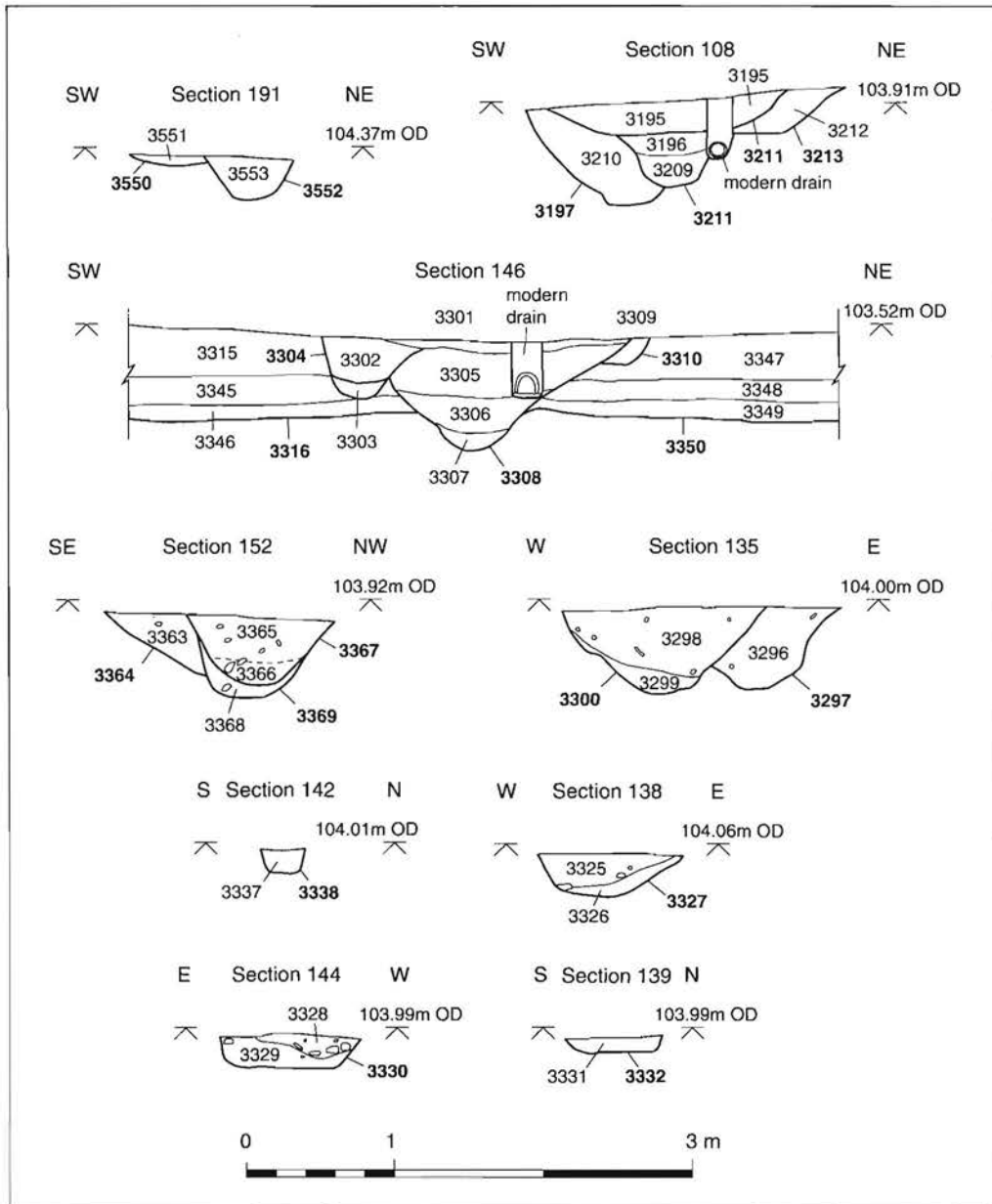
There was some variation in the fill of F5018; in the north it consisted of fairly 'clean' light grey clay and the latest fill was a dark silty clay; the southern side had dark grey clay fills throughout, which could be due to its proximity to the main area of occupation south of F5018. The ditch was up to 2.6 m wide and 0.88 m deep with a sloping U-shaped profile which had been re-cut at least once. Remains of a Bunter pebble surface (3427) were preserved within the eroded inside edge of the enclosure (illus. 31, section 177).

#### *Gullies*

Gully F5056 was situated on the south side of F5018, by which it was cut (illus. 33, section 186) and curved around to the east. It may have been an oval shaped annex approximately 13 m in length and 10 m wide. The ditch profile was up to 0.55 m wide and 0.3 m deep and produced 23 sherds (137 g) of mid to late Iron Age pottery and animal bone including the jawbones of a dog.

A number of gullies located on the north-western side of penannular ditch F5003 were badly truncated by furrows and their plan is incomplete. Curving Gullies F5024, F5052, F5053 were the earliest part of the layout and ran from north to south in an irregular manner suggesting they may have been for drainage and were not part of an enclosure. F5024 contained animal bone and 64 (700 g) sherds of mid to late Iron Age pottery. Gullies F5022, F5023, F5054 define a penannular arrangement with an internal diameter of 10.8 m and a 2.4 m gap on the east side. Gully F5022 contained 229 sherds (2934g) of pottery (illus. 51.30-31), animal bone and metalworking residue, and F5023 contained animal bone and 109 sherds (1003g) of pottery, together with finds of worked stone, fired clay and smithing slag.

Gully F5023 was up to 0.84 m wide and 0.36 m deep and cut 5024 (illus. 33, section 217). The fill was mid greyish brown silty clay. Gully F5022 was typically 0.6m wide and 0.18 m deep and had been recut. The fill from the first cut of the gully was mid grey brown silty clay. The re-



35. Phase 3. Sections of ditches 191, 146, 108, 152 and 108, and of pits 138, 139, 142 and 144 (plan 30)

cut contained mid yellowish brown silty clay with iron panning. Concentric gullies F5022 and F5023 are clearly associated (illus. 33, section 199). Gully F5054 was filled with grey brown silty clay with no finds. The relationship of F5023 with circular ditch F5018 was uncertain, although its position would suggest it is an annex to F5018 in the same manner as curving ditch F5056.

### *Pits and post holes*

The ditches between the large penannular enclosure and the circular enclosure were unusual as they enclosed a number of well defined pits and post holes. Within these features a number of interesting finds were uncovered: mid to late Iron Age pottery and animal bone, including broken skull fragments of cattle, and other burnt bone. Pit 3473 was more substantial and environmental sampling produced a small quantity of cereal grain, hazelnut and a sloe stone in addition to 113 sherds (903g) of pottery. There was also much fragmented animal bone including broken skull fragments from cattle and many fragments of burnt bone. It also held a hearth lining, fired clay and fuel ash slag.

A line of three double post holes (3542, 3544, 3546, 3548, 4002) (illus. 33, section 194), 3.7 m in length was found; post hole 3542 occupied the central position and was 0.48 m deep (illus. 33, section 193). Elsewhere on the site post holes of this depth were part of four-post structures. It contained brown black silty clay and 4 sherds (50g) of mid to late Iron Age pottery. The remaining double post holes are shallower ranging from 0.06 m to 0.15 m in depth. A similar linear arrangement of three oval post holes (3222, 3557, 4001) 3.5m in length, were approximately 0.70 m x 0.45 m x 0.34 m deep. 12 sherds (40g) of mid to late Iron Age pottery were found in post hole F3557. Three pits (3511, 3473, 3951) were situated slightly off the centre of the penannular gullies (illus. 33, section 192). Pits F3511 and F3951 were shallow (0.14 m) with a blue grey clay fill and a small amount of mid to late Iron Age pottery. Pit F3473 was a more substantial, being 1.28 m x 1.18 m x 0.47 m deep.

### *Ditches in the west*

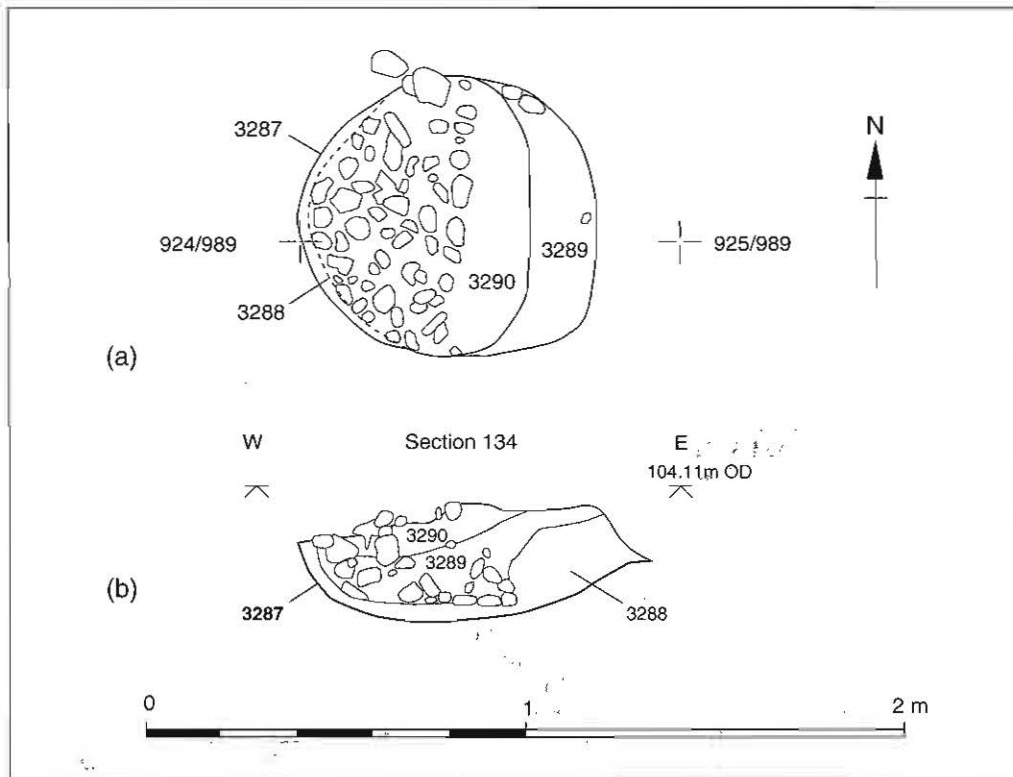
A series of ditches was found in the western area of the site (F5015, F5057, F5059, F5064, F5066). At least two enclosures were apparent with ditches F5057, F5064 and F5066 forming the earliest with an internal diameter of about 6 m and a 2.9 m wide gap in the south-east. These ditches contained 122 (1959g) sherds of mid to late Iron Age pottery (illus. 50.14) as well as animal bone and some fired clay. Some copper-alloy tweezers were found in ditch F5064 (illus. 33, section 169 & illus. 53.4). Such tweezers could be of Iron Age date (see report by I. Scott), and a pit (3377) with a human adult cremation (illus. 33, section 155) was located adjacent to gully F5066 and may be associated (see report by A. Boyle). Ditch F5015 formed an oval enclosure 11.5 m x 9.5 m, with a 2.1 m wide entrance to the south-east. Animal bone and 611 sherds (6251g) of Iron Age pottery were recorded from this ditch, particularly in the northern terminal (3374 – illus. 33, section 175; illus. 34, 49.11 & 50.18). A fragment of human skull was recovered from the western part of the feature (3452).

Ditch F5015 had three fills comprising mid grey/brown, mid yellow/brown and dark brown/black silty clay in ascending order, and a profile 0.85 to 1.3m wide and up to 0.58m deep. A shallow gently curving gully (F5059) extended off the east side of F5015 for approximately 7.5 m. The gully, only 0.07m deep and barely penetrating the natural clay, contained grey brown silty clay and 2 sherds (6g) of mid to late Iron Age pottery and a sheep tibia. The gully was cut by F5015, and may have been dug to provide additional drainage for F5015, and was also cut by an oval pit (F3552) on the south side.

### *Enclosures and gullies in the north*

An enclosure, composed of a series of ditches (F5014, F5067, F5068) may have been a paired enclosure with 5018 to the south-west. A sequence of ditches, the earliest on the inside and two recuts on the outside, defined a sub-circular enclosure about 12 m in diameter (illus. 35, section 146). Pottery and metalworking debris were found within the enclosure ditches but their exact function is unclear.

The earliest gully (F5068) was 0.60 m wide and 0.2 m deep and contained 9 sherds (83 g) of mid to late Iron Age pottery. This is replaced by a larger recut ditch F5014 which had a broad U-shaped profile, typically 1.6 m wide and 0.78 m deep, and containing 138 sherds (1200g) of mid to late Iron Age pottery and metal-working debris. This was replaced by ditch F5067 which was between 0.55 to 1.14 m wide and 0.45 to 0.55 m deep and contained two sherds (57g) of mid to late Iron Age pottery and metal-working debris. There were four post holes within the



36. Phase 3. (a) Plan and (b) section of clay lined pit 3287 with fire cracked stone

enclosure which may be related to the feature. Post hole 3669 was 0.55m in diameter with a depth of 0.12m with a fill of dark grey silty clay with charcoal and bunter pebbles. Three other post holes (4094, 4095, 4096) which formed a line running north-west to south-east could represent a fence within the enclosure. Just to the west of the enclosure was a shallow gully F5065, 0.34 m wide and 0.16 m deep, which terminated just short of F5067 leaving a 0.90 m gap. This contained one sherd (6g) of late Iron Age pottery (illus. 52.36).

A second series of ditches (F5013, F5069, F5071, F5072, F5073, F5075, F5076) formed an additional enclosure on the east side of F5067, although the relationship between the two series of enclosures was unclear. A sequence of three ditches (F5069, F5013, F5071- illus. 35, section 108) suggested a similar sequence of recutting to the adjacent enclosure to the west, although in this case the earliest was on the outside and the later re-cutting took place on the inside. Again the function is unclear.

The earliest ditch (F5069), 0.7m wide and 0.30m deep, contained no finds and ran for 7 m before it was cut away by F5013. Ditch F5071, 1.5 m. wide and 0.68 m. deep, curved to an entrance terminal on the east side with a gap of 1.8 m (illus. 35, section 152). It contained 22 sherds (125g) of Iron Age pottery and metal working debris. The corresponding terminal (F5072) (illus. 35, section 135) was substantially smaller 0.40 m wide and 0.30m deep and produced no finds. The terminals were recut (3369, 5073) and the entrance was abandoned with the latest recutting, F5013, which was between 1.0 to 1.6 m wide and 0.50 to 0.80 m deep and contained 118 sherds (695 g) of mid to late Iron Age pottery and fired clay. The northern side of this enclosure consisted of two curving ditches (F5075, F5076). The area was badly truncated by plough furrows and the ditches were not examined in detail. The relationship of ditch F5075, 1 m

wide and 0.44 m deep, with F5067 was unclear, although it was likely that they were contemporaneous. Ditch F5075 contained 26 sherds (114g) fragments of mid to late Iron Age pottery and a small amount of bone including two pieces of burnt bone.

Within the enclosures F5013 and F5075 there were a number of gullies (F4102, F4103, F4104, F4105, F4107), which were not investigated in detail due to plough furrows. Gullies F4102 and F4104 defined a penannular arrangement with an internal diameter of approximately 10m, and may have been an earlier phase of the enclosure, and the other gullies may have provided drainage for the main ditches. Gullies F3283, F5074, F5077 were segmented and typically 0.40 m wide and 0.20 m deep. At the west end curving gully F5074 was cut by ditch F5071 and to the east it curved northward to define a 1.4 m gap to the next segment of gully (F5077), and contained part of a mid to late Iron Age vessel. Gully segment F5077 was 6.8 m long and lay 5.2 m south of gully F3283. It contained six sherds (42 g) of mid to late Iron Age pottery. The northern gully segment (F3283) was badly truncated by a plough furrow, and contained 16 sherds (40g) of mid to late Iron Age Pottery.

#### *Pits and post holes east of F5077*

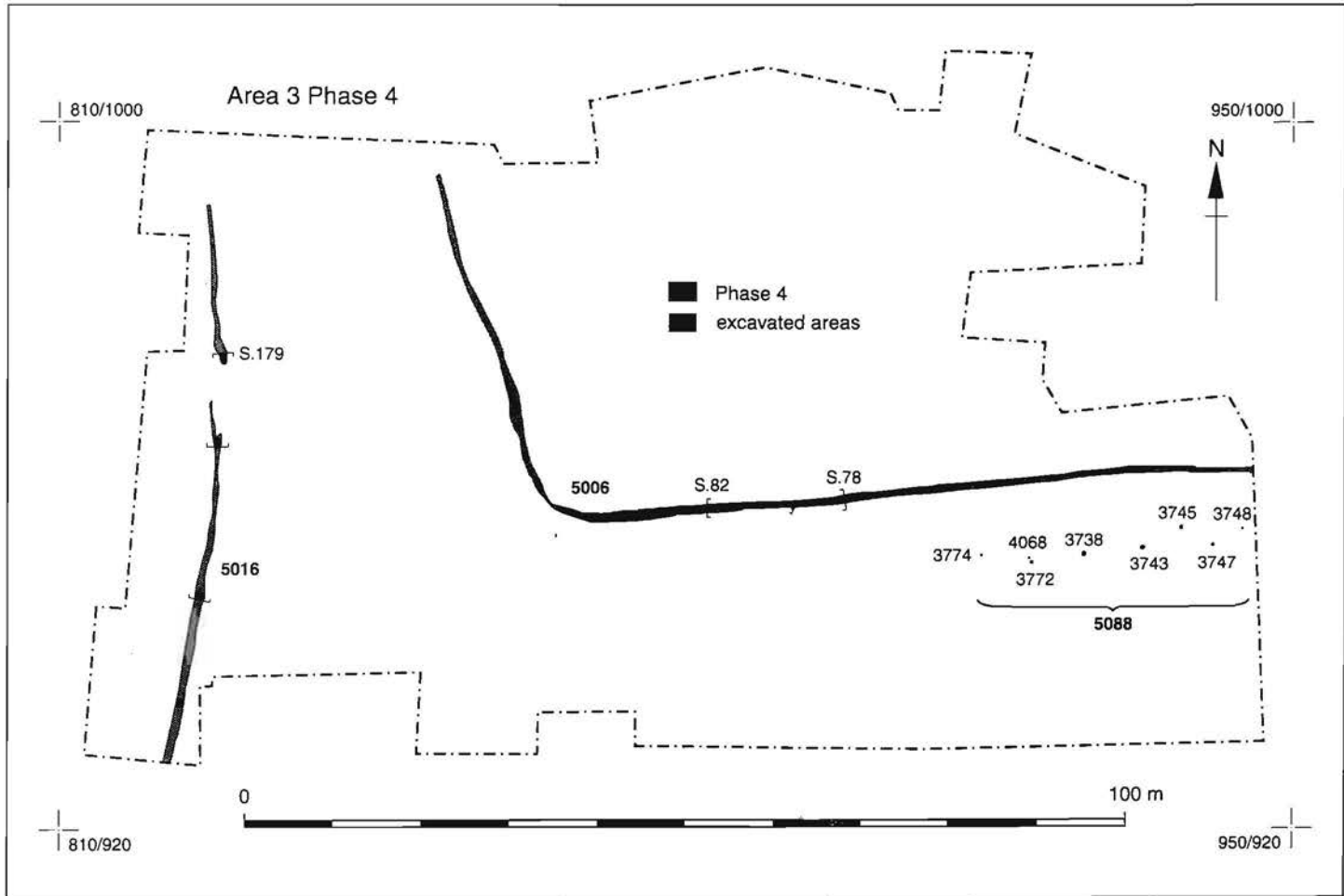
A dense group of pits and post holes was located 2 m east of gully F5077. Four large pits or post holes (F5093) define a rectangular area approximately 4.5 m x 2 m. Within this area a cluster of six pits, which paired up according to size, lay about 1.5 m apart. An isolated clay lined pit (3287 – illus. 36), filled with fire-cracked stone, was situated 2.5 m east of the main group. The larger pits were slightly oval in shape, typically 1 m across and 0.30 m deep (illus. 35, sections 138 and 144). The smaller pits or post holes were from 0.24 m to 0.65 m wide and from 0.1 m to 0.30 m deep (illus. 35, sections 142 and 139). The fills were a mid-grey clay with occasional burnt pebbles, although only one of this group (3327) produced any Iron Age pottery (5 sherds, 63g). These features appeared to represent a well defined area of activity associated with the clay lined pits filled with fire cracked stone, but the function is uncertain.

#### *Post-Iron Age – phase 4 (illus. 37)*

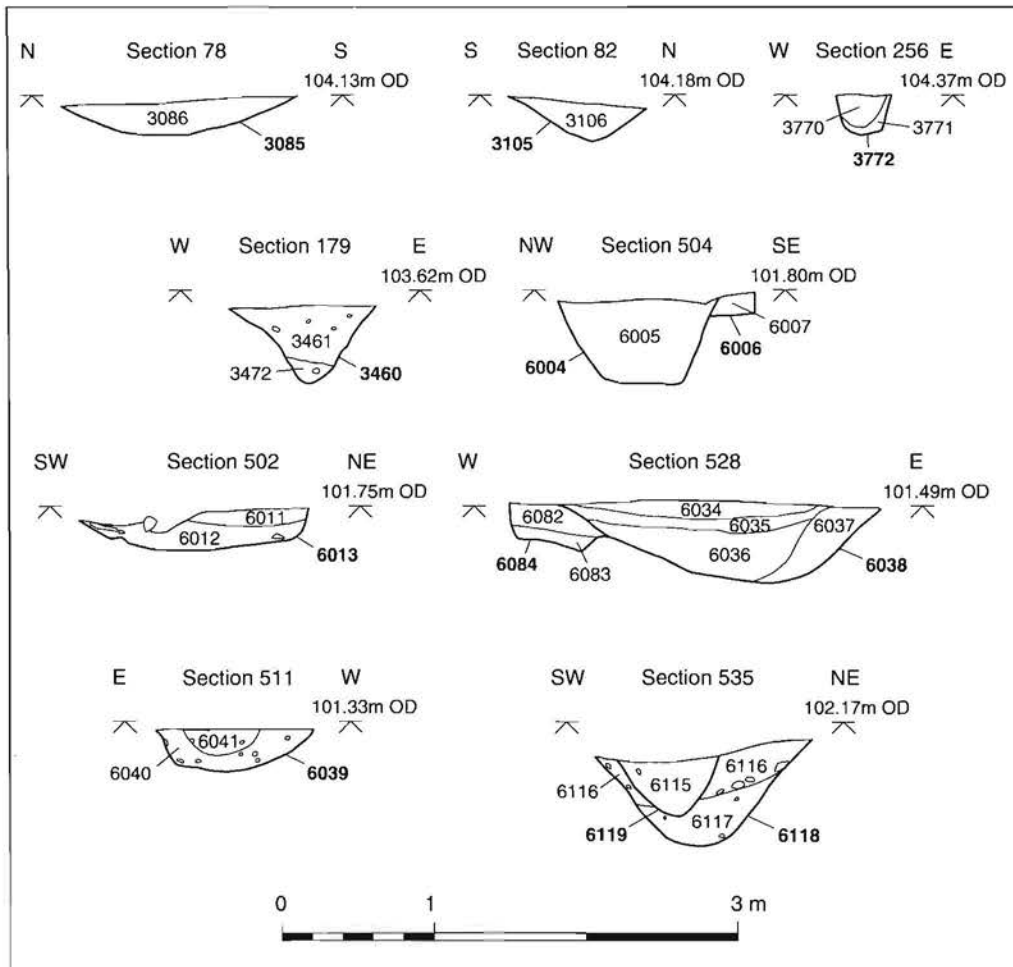
Rectangular enclosure ditch F5006 and north-south ditch F5016 may have been boundary ditches of field systems. These features contained Iron Age pottery and cut all the earlier phases in area 3, and therefore these must relate to the latest phase of use of the site. Ditch F5006 measured 79 m east to west and 45.5 m from south-east to north-west. The feature was clear on the east-west alignment but elsewhere fragmented due to later plough furrows. The ditch was typically between 0.84 and 0.90 m wide, widening to 1.56 m in segment 3085 (illus. 38, section 78), and 0.25 to 0.40 m deep (3135, illus. 38, section 82). Five fragments of unidentifiable bone were retrieved from this ditch together with eight sherds (83g) of mid to late Iron Age pottery, and a residual sherd of Bronze Age pottery (3136, illus. 47.5). On the western edge of the site ditch F5016 ran from north to south. The southern termination of the entrance forked with the addition of a gully, lengthening the ditch and reducing the entrance to 4.4 m. The alignment of the ditch suggested it might have been connected with F5006.

The primary fill of ditch F5006 (3086, 3090, 3106, 3136) consisted of mid brown orange/yellow silty clay with a few pebbles and stones. The top fill of 3135 (3137) was grey/brown silty clay with the inclusion of a small amount of flint stones. The width of ditch F5016 varied along its length from 0.40 to just over 1m, and the depth varied from 0.16 to 0.39 m. The northern termination of the entrance was deeper at 0.52m. The primary fills of the ditch (3472, illus. 38, section 179) were light grey with reddish brown mottles and their composition was silty clay and the top fill was mid greyish brown silty clay. Very few finds were found in this feature, although the primary context produced a small amount of bone, and the top fill (3461) produced a small amount of bone and 46 sherds (198g) of mid to late Iron Age pottery.

A vague line of post holes (F5088) was found and one sherd of mid to late Iron Age pottery was found in post hole 3772 (illus. 38, Section 256). The post holes were between 4 and 6 m apart and 0.20 to 0.55 m in diameter, with a depth of between 0.10 and 0.26 m. The fills were fairly homogenous, comprising of dark grey/brown silty clay.



37. Area 3, Phase 4. Plan showing location of features and sections

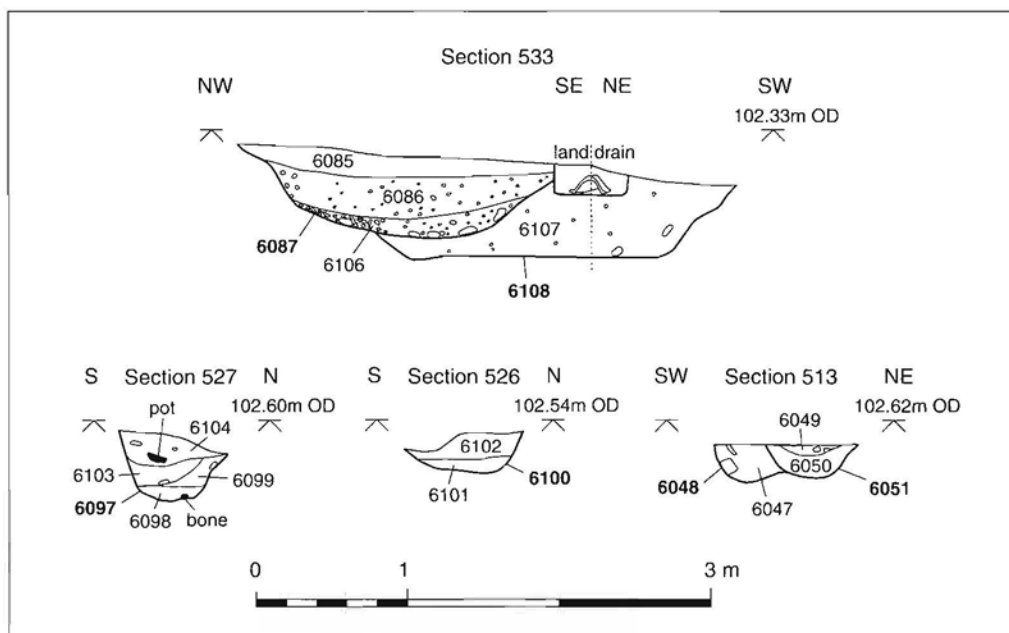


38. Area 3, Phase 4. Sections of ditches 78, 82, 179, and post-hole 256: and Area 6. Sections of ditches 504, 502, 511 and 535, and of pit 528

### Area 6 (*illus. 5*)

#### *Ditches, gullies, pits and post holes*

This area lay approximately 0.1 km to the west of the excavation of area 3. It was not possible to phase this area to concur with the features of area 3, partly due to the difficulties in closely dating the Iron Age pottery. The Iron Age activity may therefore have been either a contemporaneous or successive development. In the north-west of area 6 lay a series of curving ditches, some of which may represent structures, together with a number of pits. Around and within these features, particularly curving gully F5045 and pit F5044, substantial evidence for iron smithing was located. In the south-east of the area lay a number of parallel ditches cut by a later ditch at right angles, and two small drainage ditches were apparent in the south of the site. The larger ditches may be boundaries associated with the agricultural use of the location.



39. Area 6. Sections of ditches 533 and 513, and pits 526 and 527

Curving ditch F5043 was located at the western limit of the development. The western side of the ditch had been truncated by construction work. Finds included 79 sherds (818g) of mid to late Iron Age pottery, fired clay, animal bone, and a fragment of iron from the terminal. The dimensions of the ditch increased as it extended up slope to the north, and was between 0.65 to 1.3 m wide and 0.24 to 0.70 m deep. The fill was a homogenous dark grey to light grey clay. A small gully (F5046) was recorded within the ditch, which was 0.40 m wide and 0.20 m deep, with a yellowish brown silty clay fill. No finds were recorded from this feature.

#### *Metalworking*

A curving gully F5045 may have defined a building, which was the focus for an area of secondary iron smithing. Within the fills of this gully three smithing hearth bottoms were found together with slags and hammerscale, and some fragments of iron. A quartzite anvil (illus. 54.2) also came from this feature, and all the evidence indicates that smithing activity was taking place nearby. Most of the metalworking debris came from the northern terminal, together with 341 sherds (1774g) of Iron Age pottery, 18 fragments (75g) of fired clay, and some iron objects including a nail stem fragment. A cluster of pits to the north-east were also connected with the smithing, and one larger pit, F5044, contained slag, four smithing hearth bottoms and some hammerscale. Gully F5045 (6006) is cut by ditch F5043 (6004, illus. 38, section 504), although it does not continue to the east of F5043. Both features may be contemporaneous, although metalworking debris was noticeably absent from 5043.

Ditch F5043 formed a curving ditch, which may have been part of a penannular enclosure. It had steep sloping sides with a flat base and was typically 1.10 m wide and between 0.55 and 0.70 m deep. The fill was a dark brown silty clay and finds included 80 sherds (845g) of mid to late Iron Age pottery, animal bone and a small amount of fired clay. Gully 5045 was estimated to be 8.6 m across, forming a broad U-shape annex to F5043 with an entrance on the east side. It was up 0.2 m wide and 0.14 m deep and filled by a mid grey brown silty clay with a small amount of coarse gravel. The northern terminal (6013) consisted of an elongated sump 1.64 m long, 0.61 m



wide and 0.23 m. deep (illus. 38, section 502). There are three adjacent post holes associated with gully F5045, and one, F6021, produced two iron fragments and fired clay. These were probably connected with the nearby metal-working. Eight pits (including F2310, F6053, F6123, F5044) were located to the north of gully F5045. All of the pits (except for F5044) were similar in character, being circular or oval with a slightly rounded base, typically 0.85 m wide and 0.26 m deep (illus. 38, sections 511). The fills were a mid-grey brown silty clay which suggested they had been promptly backfilled. 11 sherds (104g) of mid to late Iron Age pottery was recovered from four of the pits, together with a small amount of animal bone. Fired clay and metal working debris, including a smithing hearth bottom, were found in two of the other pits.

Pit F5044 was an irregular oval shape 3.09 m long, 2.3 m wide and 0.7 m. deep. It had four fills (6034, 6035, 6036, 6037, illus. 38, section 528) of varying yellowish grey/brown silty clay. All, except the primary fill (6037) produced finds, which include 44 sherds (247g) of Iron Age pottery, a large amount of animal bone and fired clay and metalworking debris, mostly smithing hearth bottom.

#### *Ditches F5038, F5042 and gullies F5039, F5040*

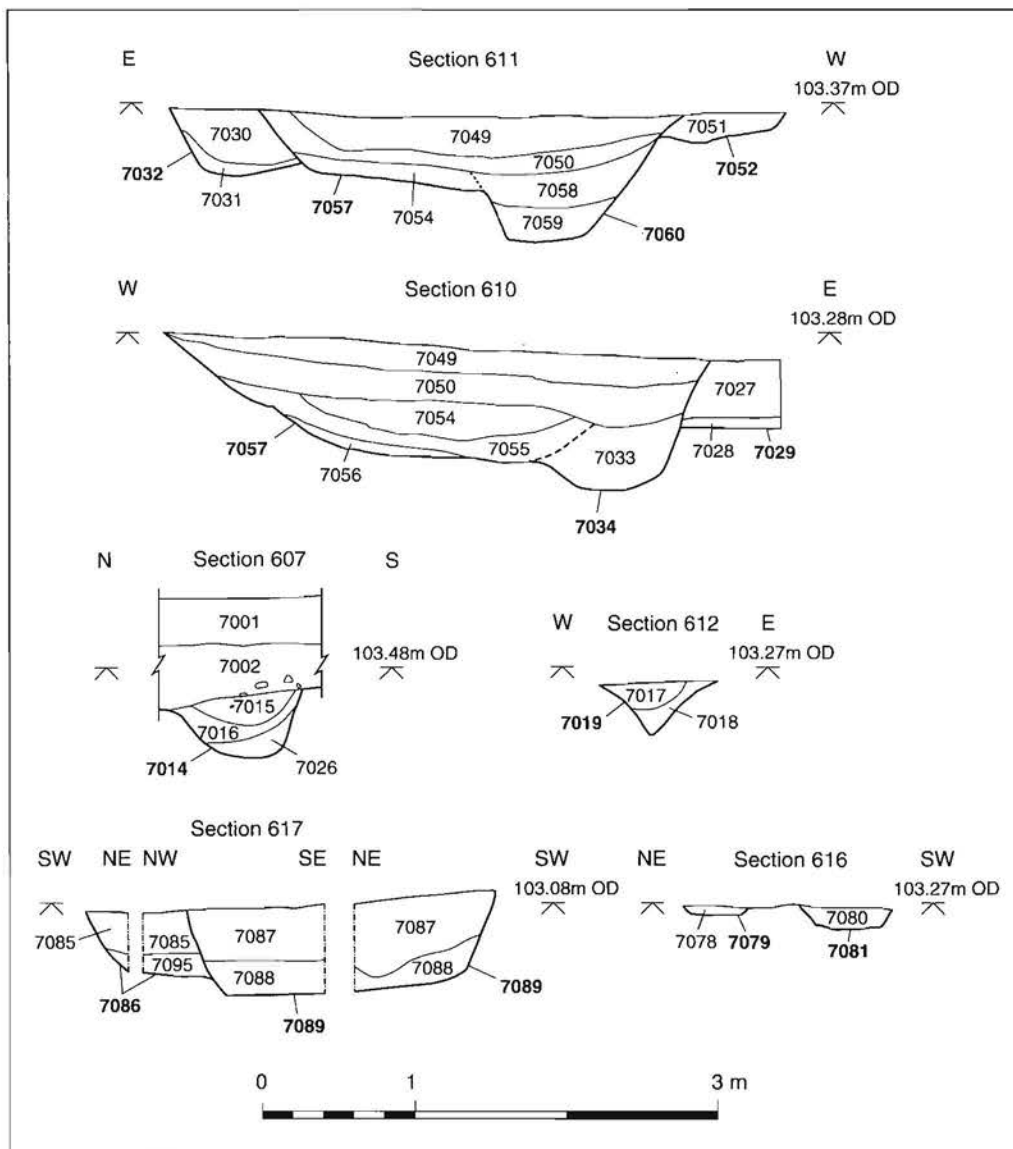
At the east end of Area 6 a rectangular arrangement of ditches were aligned north-west to south-east. The north-western side was revealed, but the south-eastern side extended beyond the area. The earliest ditch, F5042, was 2 m wide and 0.60 m deep and cut by ditch F5038 (illus. 39, section 533). It contained mid to late Iron Age pottery (illus. 52.37), and a bone weaving comb (see report by L. Allen) was found in the secondary fill of the ditch F5038 where it cut F5042. A watching brief in the area indicated that F5042 continued for at least 24 m to the south-east, although it was unclear whether it terminated or turned to the north. Ditch F5038 was up to 2.2 m wide and 0.85 m deep with a broad U-shaped profile, and appears to have been re-cut (6116) in the south-east (illus. 38, section 535). The watching brief indicated that F5038 extended for 32 m on approximately the same alignment as F5042 but then curved around to the north running down slope. In the excavated area the ditch turns a right angle to run 17 m north-east to south-west where it terminates. Two gullies (F5039, F5040) had been dug to drain into the south-western terminal of F5038 (6081). Gully F5040 produced 55 sherds (976g) of mid to late Iron Age pottery, mostly from one vessel. Gully F5039 was typically 0.6m in width and 0.22m in depth and cut pit F6048 (illus. 39, section 513). The earlier gully (F5040) had lighter mid-brown silty-clay fill, similar to the fill of F5038, whereas the later gully (F5039) had a darker grey-brown silty clay. Two pits or post holes (F6097 & F6100) situated south of the terminals of F5039 and F5040 had corresponding contrasting fills suggesting they were associated (illus. 39, sections 527 & 526). 43 sherds (321g) of mid to late Iron Age pottery were recovered from post hole F6097.

#### **Area 7 (illus. 6)**

##### *Ditches, pits and post holes*

This area lay between 3 and 6, approximately 0.05 km to the west of 3 (see illus. 2). This area revealed a complex of inter cutting pits (F5033) which formed an irregular layout approximately 12 m in length and 4 m across (illus. 40, section 611 & 610). A number of ditches were also apparent in this area, and although not completely excavated due to time restraints, it is thought that the ditches (F5032, F5034, F5035, F5036) were broadly contemporaneous with the pits. The original purpose of the pits was unclear, although their irregularity probably indicates clay extraction and subsequent use as a convenient drainage sump. The purpose of the ditches is also uncertain, although they may have functioned as drainage ditches possibly for one or more structures.

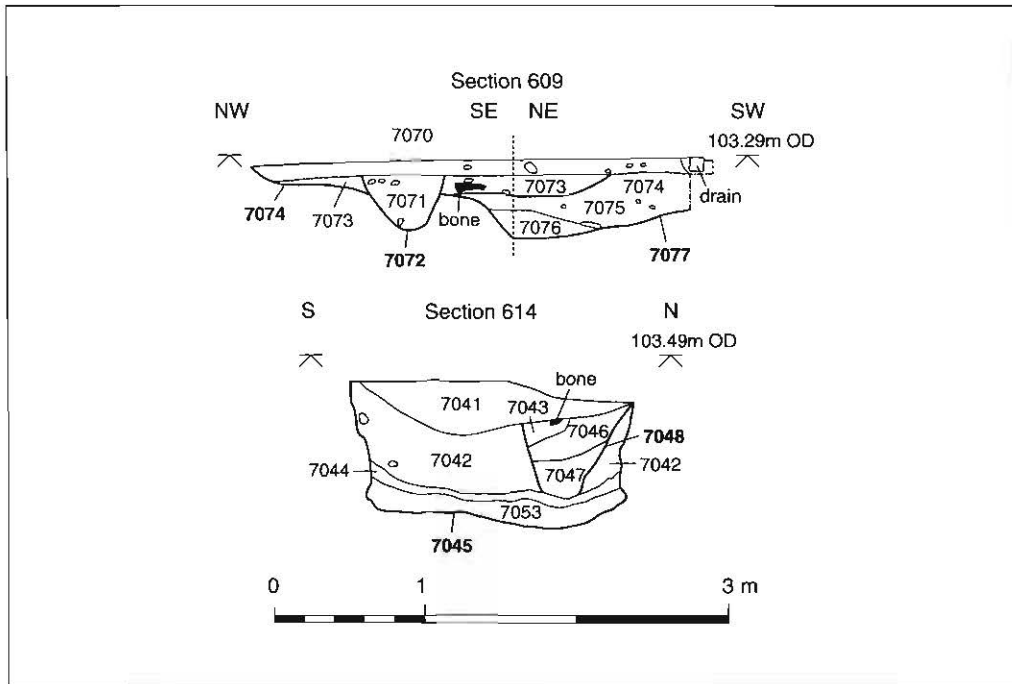
The pits ranged in depth from 0.20 to 0.81 m and finds from F5033 include 232 sherds (2831g) of mid to late Iron Age pottery (illus. 52.40 & 41), fired clay, animal bone and undiagnostic metalworking waste. Ditches F5032, F5034, and F5035 (illus. 40, section 607) entered the ditch complex from the east and were badly truncated by plough furrows. Ditches F5036 (illus. 40, section 612 & 617) and F5037 (illus. 40, section 616) ran to the north-west approximately 6 m. apart. The watching brief confirmed that F5036 continued down slope to the north.



40. Area 7. Sections of pits 611 and 612, and ditches 607, 612, 617 and 616

A small group of 6 pits was situated about 2 m south of F5033 (including 7077, 7072 & 7074, illus. 41, section 609). These pits were irregular in shape with flat bases and varied in size from 0.6 to 1.4 m across and 0.16 to 0.31 m deep. Finds from these pits amounted to 32 sherds (263g) of mid to late Iron Age pottery and a small amount of bone.

Pit F7045 (illus. 41, section 614) was 1.84 m wide and 0.94 m deep with vertical sides which were slightly undercut towards the base. It contained a small polished bone tip, 116 sherds (852g) of late Iron Age pottery (illus. 52.39), fired clay, undiagnostic metalworking debris, burnt and



41. Area 7. Sections of pits 609 and 614

unburnt animal bone, and charred cereal remains. It is possible that this pit may have been used for long term storage of some of the cereal crop. The cereal remains indicated processing waste, possibly being used as fuel, and indicated that de-husking of spelt wheat was taking place on the site, together with processing of barley (see report by R. Pelling). The presence of a large number of calcium-phosphate replaced mineralised weed seeds, together with the absence of edible species suggested that animal dung was present in the pit. Thus, this may have been a storage pit reused for rubbish.

F7045 was the second deepest pit on the site, and four fills were identified; the primary fill (7053) was a clean orangey grey clay with charcoal which was overlain by a thin dark grey deposit (7044) of clay and charcoal and burnt bone. The main fill (7042) was cut by curving ditch F5031, which was 0.58 m wide and 0.38 m deep with a steep sided U-shaped profile and contained 31 sherds (195g) of mid to late Iron Age pottery. Ditch F5030, was 0.5 m wide and 0.20 m deep, was cut by F5031, and contained 10 sherds (94g) of mid to late Iron Age pottery. A single post hole (7039) was located inside F5031.

## Undated features

### *Post holes*

Within area 3 a number of post holes were uncovered in the centre of the site within the penannular ditch F5009 and these appeared to form a semi-circular feature. Four more post holes were also apparent just to the east of ditch F5052 and appeared to form part of a semi-circle. Three post holes formed a line in the south-west of the site, and these may continue into area 7. None of these post holes were dated or associated with any other features on the site.

## Discussion

Carol Allen

The excavation of the site at Elms Farm presented an opportunity to gain valuable information regarding the nature of Iron Age settlements on clay sites in the Midlands. This site is of particular interest as it has a variety of enclosures from the Bronze Age to the later Iron Age. In addition a substantial assemblage of Iron Age pottery was uncovered together with a large collection of animal bone and evidence of a number of activities on the site, including farming and metalworking. The area excavated covered about 2.2 hectares in total, but it is possible that the area of the Iron Age settlement could have extended beyond that examined. Evaluation by ULAS about 30 m west of Elms Farm (Gossip 1999: illus. 1) confirmed the presence of Iron Age settlement just beyond the area excavated by OAU.

### **Bronze Age ditch**

The earliest feature from this site was the Bronze Age ditch F5008 (illus. 7, Phase 1a), a portion of which was apparent, measuring approximately 79 x 58 m. Sherds of an East Midlands type of middle Bronze Age Deverel-Rimbury pottery were found within the ditch, with a few sherds also being found in residual contexts. A radiocarbon date from a piece of bone found in the ditch was between 1448-1130 cal BC. A second radiocarbon date from a lower fill at the most easterly part of the ditch gave an anomalous result, thought to be due to the low collagen level of the sample. No other features could be definitely assigned to this period.

It is possible that this ditch represents part of a boundary enclosure, which may originally have been in the vicinity of a settlement, or it may be part of a field system. Bronze Age ditches without associated features have also been found at Ketton and Tixover, Rutland (Mackie 1993). However, these multiple ditches were much wider and better representative of the large boundary ditches found along the Jurassic way in the East Midlands (Pickering 1978).

This is the first middle Bronze Age enclosure to be excavated in Leicestershire and although some settlement evidence of this period is known elsewhere (Cunliffe 1991, 28) such sites are rare in the East Midlands (Clay 1999, 12). Middle Bronze Age burial sites are known in the region (Allen *et al* 1987) and enclosures of similar size and rectilinear form have been found in southern Britain (Cunliffe 1991, fig. 3.4). These were once considered to be devoid of interior features, but recent excavations have uncovered a number of occupation features within the enclosed areas (*ibid*, 32). Remains within the Elms Farm enclosure may not have survived the later activity on the site, or the area within the ditch may have had an agricultural function.

### **Iron Age settlement – Areas 3, 6 and 7**

#### *Dating*

The length of time between each phase of the Iron Age site is uncertain, but it is possible that the successive phases may be quite close in date. The scored ware pottery was dated to the mid to late Iron Age period, and overlapping radiocarbon dates were obtained for the successive phases of the site: from phase 1b – 416 to 198 cal BC, from phase 2 – 415 to 169 cal BC and from phase 3 – 386 to 46 cal BC. The two silver Roman Republican denarii found in circular ditch F5019 of phase 1b (illus. 15) may have been deposited in the later Iron Age or post-conquest period, and the copper-alloy tweezers found in F5064 of phase 3 could be of similar date. A fine bowl (illus. 51.32) of 'Belgic' style but local fabric, shows affinities to first century AD types. This suggests

that the settlement may have had a long life, possibly commencing in the fifth or sixth century BC and continuing into the first century AD as suggested by the successive phases of intensive use of the area (illus. 4). The features uncovered therefore indicate the gradual growth and expansion of the site, over several centuries. The areas 6 and 7 contained pottery of the same type as area 3. There was no stratigraphic relationship between the sites, but 6 and 7 on the basis of the pottery found and the features are thought to be comparable to phases 2 and 3 in area 3.

#### *Round houses*

In each phase of development of the site, a pennanular ditch considered to be the location of a round house was associated with a number of other enclosures, often of circular shape, and of varying sizes.

The major round house structures were:

Phase/ illus. no	Feature	Diameter (m)	Entrance width (m) & orient- ation	Ditch depth (m)	Ditch width (m)	Radio- carbon date cal BC
1b/ ill10	5026	18.0	7.3 – E	0.9	0.54	-
2/ ill24	5001	17.5	2.5 – E	1.1	0.54	415 -169
2/ ill24	5002	12.0	4.1– E	1-1.35	0.58	-
3/ ill30	5003	16.3	5.0 – E	0.74/0.92 -1.1	0.38 /0.48 -0.6	386-46

Structures 5026 and 5003 had no internal features that could add useful information to the form of the houses likely to have stood on the site. It has to be assumed that the excavated features represent drainage ditches and that the walls of the houses may have been made of stakes for wattle and daub, or of stacked turf, as suggested at Bancroft, Bucks (Williams & Zeepvat 1994, 51), but these have left no trace within the central area. Such slight interior features are unlikely to be visible within round houses, particularly if an area has been subject to centuries of ploughing (Allen *et al* 1984, 90). On sites where Iron Age round houses were built of stone, circular drainage gullies were still apparent (Sharples 1991, 88).

Structures 5001 and 5002 (illus. 24) could represent successive phases of a single house but it is more likely that the inner ditch was a foundation trench for building, although there was no indication of any features, as its size is more comparable with Iron Age round houses in the area, such as Enderby (Clay 1992, fig.6). The outer ditch, which is comparable in size with the other ditches shown above, is likely to have been the drainage gully for the house. Just inside the inner penannular ditch 5002 lay two stone-packed post holes (illus. 26) which are well located for a porch and a central hearth also lay within the inner ditch. Other double ringed round houses have been found in the Midlands, for example, at Enderby, Leicester (*ibid*, 20; Meek 1996), at Cat's Water, Fengate, Northamptonshire (Pryor 1984) and at Crick, Northamptonshire (BUFAU 1998). At Elms Farm all the round house entrances face to the east.

#### *Other enclosures*

In each phase a number of other enclosures were apparent, mostly about 10m in diameter with ditches between about 0.6 to 1.6m wide and about 0.35 to 0.8m deep.

The function of some of these enclosures was apparent, such as metalworking, but for many there is no indication of their use, and they may have been unroofed animal pens or storage areas. Most of the entrances of these penannular enclosed areas face to the south-east and in some cases to the east. The importance of the circular ditches as boundaries, of practical or of symbolic significance, is common on Iron Age settlement sites (Hill 1994, 6).

*Functions of the round houses and enclosures*

Within the outer ditch of the round house 5001/5002 of phase 2, 312 sherds of pottery, animal bone, fired clay and metalworking debris were found, and within the post holes of the interior two fragments of quern were found in the stone packing together with part of a bun-shaped rubbing stone. A shallow pit in the centre of 5002 contained fired clay and burnt bone, and may have functioned as a hearth.

Within enclosure ditch 5017 of phase 2 animal bone, fired clay and metalworking debris were found, and in adjacent enclosure 5020 with metalworking debris was a sheep tibia with a worked hole, possibly a small gouge. The fired clay may be the remains of furnaces for smithing. A number of possible loomweight fragments were identified distributed throughout the site in a number of phases (illus. 43), but the small total weight indicates that few weights are represented and limited textile production for domestic needs is suggested.

Other round houses and enclosures show similar finds to those described above (illus. 43) and therefore, these structures appear to represent the remains of dwellings and associated enclosures. Within the structures and enclosures, domestic processing of food, both meat and cereals, utilising the pottery, querns and hearths, and small-scale industrial activity, including metalworking and possibly woodworking were taking place. Within enclosure 5022 of phase 3 pottery sherds, animal bones, and metalworking residues were also found, suggesting a working area.

All of the round houses and many of the enclosures face to the east and some to the south-east. The eastern orientation of round house entrances is common in the Iron Age (Oswald 1997, 89), and has been noted on other Iron Age sites in Leicestershire, for example at Enderby (Clay 1992) and Wanlip (Beamish 1998, 32). The entrances would therefore have caught the light in the morning, and it has been suggested (Fitzpatrick 1997, 77) that this may have symbolic meaning, marking the dawning of light over dark. In a more practical manner it is possible that the entrances were positioned to avoid northerly and south-westerly winds (Lambrick 1978, 118). As Elms Farm Iron Age settlement site was situated on high ground, it is reasonable to suggest that the doorways into the structures would have faced away from the prevailing winds.

*Bronze Age and Iron Age pottery*

The middle Bronze Age Deverel Rimbury type pottery is an unusual find in this location, but similar sites and field systems are known in southern Britain, and similar pottery has been found on burial sites in the region (Allen *et al* 1987).

A total of 66.579 kg (6709 sherds) of hand-made Iron Age pottery was found on this site from all the areas excavated. This is the largest collection of pottery of this period found in Leicestershire. Of this total 30.379kg was represented by scored ware which is of mid to late Iron Age date. The presence of a Belgic style bowl in phase 3 suggested a possible early first century AD date for phase 3. The distribution of the major pottery deposits is indicated on illus. 42. It is apparent that most deposits lie within the ditches of the settlement and that much is concentrated in the terminals of the ditches, for

example 5003, 5012 and 5001. Finer vessels were mainly found in and near to the round house structures 5001, 5002 and 5003.

The imitation of a Belgic type of vessel suggests that this type of pottery was known in the vicinity. Other vessels on the site also show a refinement of pottery techniques in the later Iron Age, from the first century BC, which is not seen at sites elsewhere in Leicestershire at this time. However, no continental imports are apparent at Elms Farm.

The finds of pottery are mainly considered to be the result of domestic discard within the settlement, although the possibility that special deposits of pottery were made is considered below. When the pottery was broken or not required it was deposited mainly in the round house ditches, alongside other domestic debris.

#### *Human remains*

Two fragments of human skull were found in ditch 5018 of phase 3 (illus. 30). Also in this phase a fragment of human skull was found in enclosure 5015 in the west of the site. Pieces of human bone, particularly fragments of skull, are commonly found on settlement sites (Boyle this report: Cunliffe 1991, 506). Possibly these finds are the result of excarnation, or they may represent the selection and retention of certain bones that were eventually lost or buried on the site.

An adult cremation burial was found in pit 3077 in phase 3. Cremation burials are often found on such settlements sites, for example at Wanlip, Leicestershire (Beamish 1998), Snowy Fielder Way, Isleworth, London (Boyle 1998, 52), and at Yarnton, Oxon (Hey *et al* 1999), where the burials lay on the edge of the occupation area. As it seems likely that the area of the settlement may have been larger than that presently excavated (illus. 1c and 2), a higher proportion of human remains may have been expected on this site (A. Boyle pers. comm.). It is possible therefore that a hitherto unknown Iron Age cemetery may exist in the vicinity.

#### *Animal burial*

In phase 1b the remains of a cattle skeleton was excavated from pit 3959 (illus. 13). Animal burials are quite common on Iron Age sites, and often, as in this case, are not complete (see Charles this report). It is possible that tradition demanded the burial of part of an animal and retention of part for consumption.

#### *Special deposition*

It is thought likely that groups of material deposited within Iron Age sites may be interpreted as structured or special depositions (Hill 1995). Such groups of material were considered to have been recognised at Wanlip, Leicestershire (Beamish 1998, 40). These often seemed to comprise complete vessels together with animal bones, and may be symbolic or foundation deposits (Hill 1995, 109). At Elms Farm, in phase 1b, enclosure 5012 stood a little apart from the rest of the structures. Within the ditch two substantial pottery deposits were found together with animal bone, and these included near-complete pots (illus. 48.3 & 48.5). These depositions are shown in illus. 19 and 20. In phase 2 within ditch 5020 another near complete pot was found (illus. 50.13). In this case a sheep bone with a worked hole was found together with metalworking debris, and this may simply represent a working area. Complete or almost complete vessels were also found in phase 3 of the site. Within the pennisular round house ditch 5003, a complete, fine pot was found (illus. 32 & 51.29) together with animal bone, and this could represent a special deposit (3317 – illus. 42) made close to the ditch terminal. Another virtually complete pot was found in ditch 5022 together with animal bone and metalworking

debris. In 5015 to the west of the site in phase 3, a near-complete vessel (illus. 49.11) was found in the ditch. Human skull fragments were also found here and the ditch lies close to the cremation burial and tweezers found on the site, although there was no direct relationship.

Whilst these depositions may appear to be slightly unusual, the evidence from enclosure 5018 in phase 3 seems indicative of special use of this area of the site. The enclosure was circular, about 10 to 11 m in diameter and had an unusual ditch up to 2.6 m wide and about 0.88 m deep. In addition there was no apparent entrance to the enclosure, which must have been accessed by a some kind of bridge. Finds from the ditch included pottery sherds, animal bone, a piece of a loomweight, some metalworking debris and fragments of human skull. The skull and jaw of a dog were found, and the upper stone of a beehive quern made from Lincolnshire limestone (illus. 54.1). This was certainly not an ideal grinding material and its function could have been symbolic. Within the fill of a post hole of the interior of the enclosure, a worked antler handle was found. Just to the south of enclosure 5018 and cut by it, lay a curving gully 5056 (illus. 30). Within this gully, together with pottery and animal bone, another dog jaw was found.

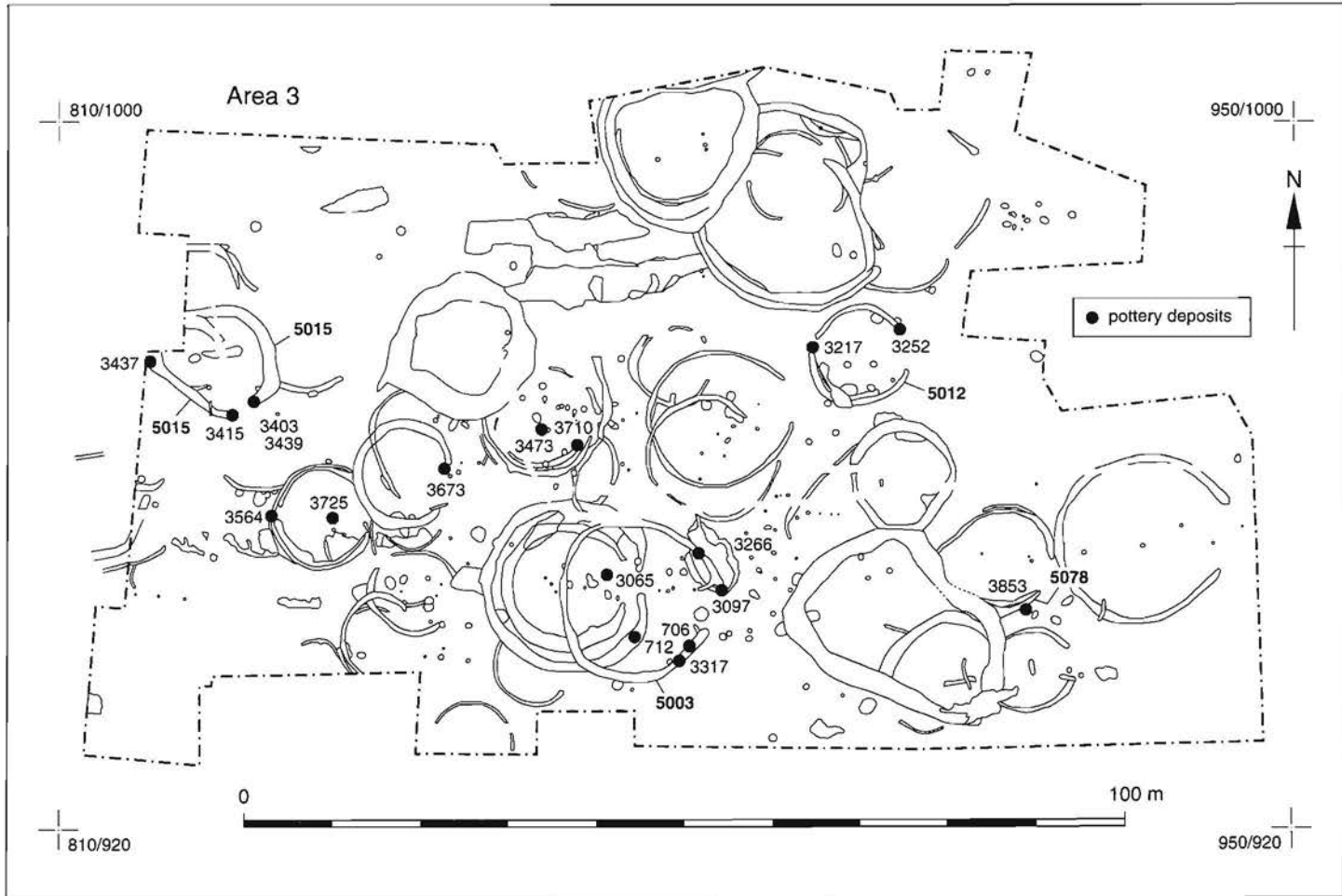
The uncommon form of enclosure 5018 suggests that access to the interior was restricted, and together with the unusual nature of the material found, this seems to suggest that the enclosure and adjacent gully may have had some special function. It is possible that meetings or ceremonies may have taken place there.

### *Metalworking*

The distribution of metal working debris, fired clay, slag and anvils found in the three excavated areas is indicated on illus. 45. Most of these finds lie within the ditches of the various structures and enclosures where the evidence has been preserved. In addition to the remains discovered within the round houses and enclosures of phase 2 and 3 detailed above, indications of metalworking were found in pit 3355 of phase 1b, where smithing hearths, hammerscale and remains of copper-alloy working were also found. With copper-alloy fragments found in 3355 were the remains of a mould, and the rim of a crucible. The evidence suggests small scale, perhaps one-off, casting. In enclosure 5078 metalworking debris was found with pottery sherds, animal bone, worked stone and fired clay. Again this appeared to be an area of industrial activity.

In area 6 a curving gully 5045 defined an area used for smithing, where 3 smithing hearth bottoms were found, together with slags, hammerscale and fragments of iron. The diagnostic slags found confirmed that secondary smithing or hot working of the iron to shape it into an artefact was taking place at this location. The size of the hearths found suggested only brief periods of iron smithing. This location in area 6 was the only place where evidence of smithing activity, as opposed to debris from the process, actually took place. The scale of the metalworking activity on this site suggests small scale production for domestic production of tools and essential repairs.





42. Area 3. Plan showing spatial distribution of main pottery deposits within features

*Four-post structures*

Also apparent in each phase of the site are a number of rectangular four-post structures.

Phase	Feature	Size in m	Radiocarbon date
1b	5028	3.0 x 3.0	416 – 198 cal BC
	5029	3.2 x 3.5	-
2	5027	2.7 x 2.6	-
	5082	2.7 x 2.7	-
	5070	3.0 x 3.0	-
3	5086	2.8 x 3.0	-
	5087	2.5 x 2.5	-

These are quite common features on Iron Age sites, and are remarkably consistent in size, at around or just below 3m square (Williams & Zeepvat 1994, 54). A number of suggestions have been made for the function of these structures (Knight 1984, 154f). If they were floored and roofed they could have been raised granaries for seed, or for storage for grain, straw, fodder or other food products. Other functions, such as huts for cooking or sleeping have been proposed, or their use as small shrines, although there is little evidence to support these ideas. If the structures were not roofed their use as watchtowers has been suggested, but seems unlikely at Elms Farm, due to their location within the site, but other ideas such as drying racks for commodities or platforms for exposure of the dead are possible.

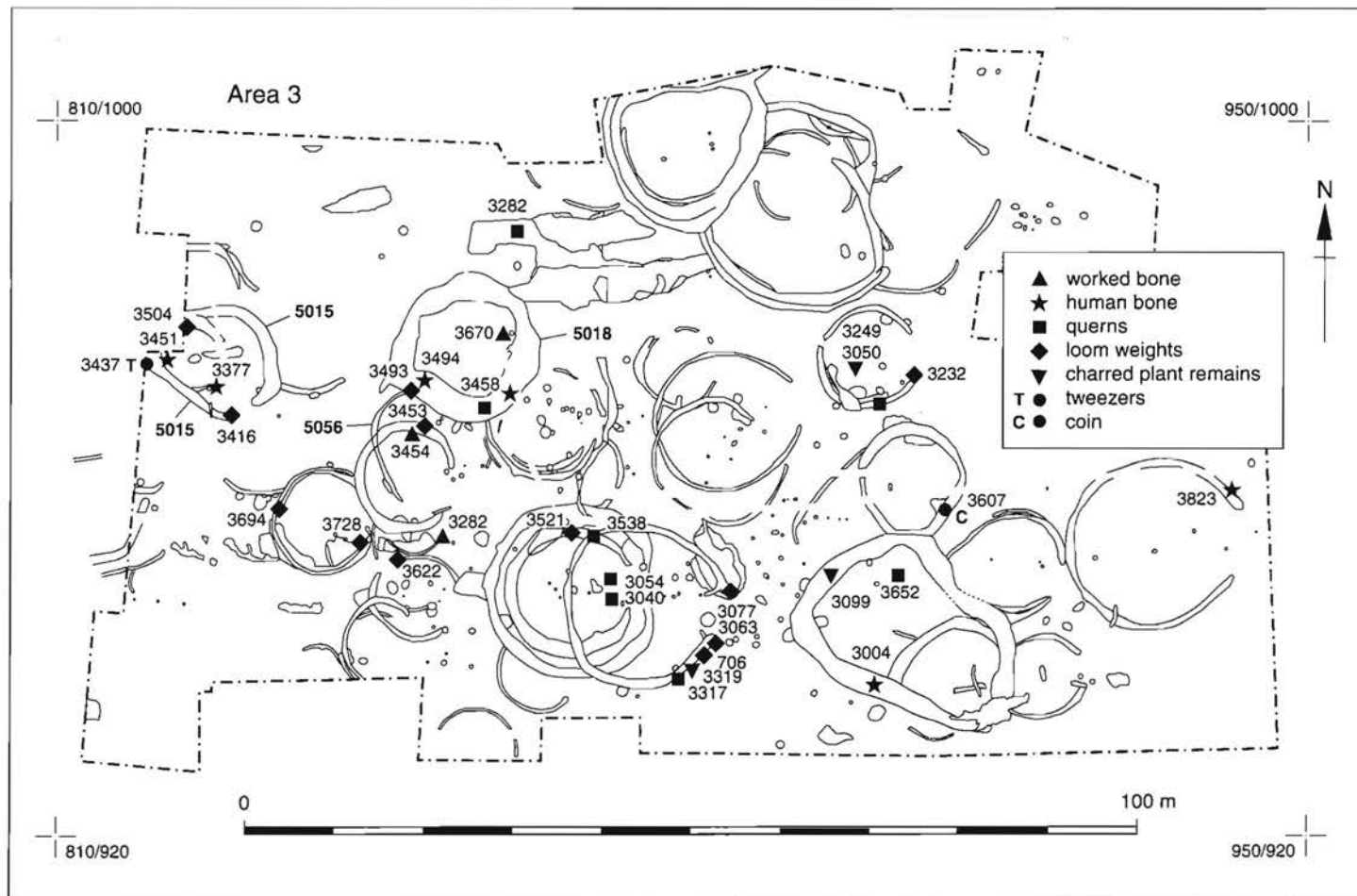
These structures need not all have fulfilled the same purpose, although the correspondence in size suggests a possible similarity in function. Within one of the post holes of structure 5028 cereal grain (spelt wheat) was found with little chaff or weeds. It was considered that this deposit represented clean, fully processed grain, and tends to confirm the idea that the four-post structure may have been the basis for a granary, which presumably had a floor and roof.

*Phase 4*

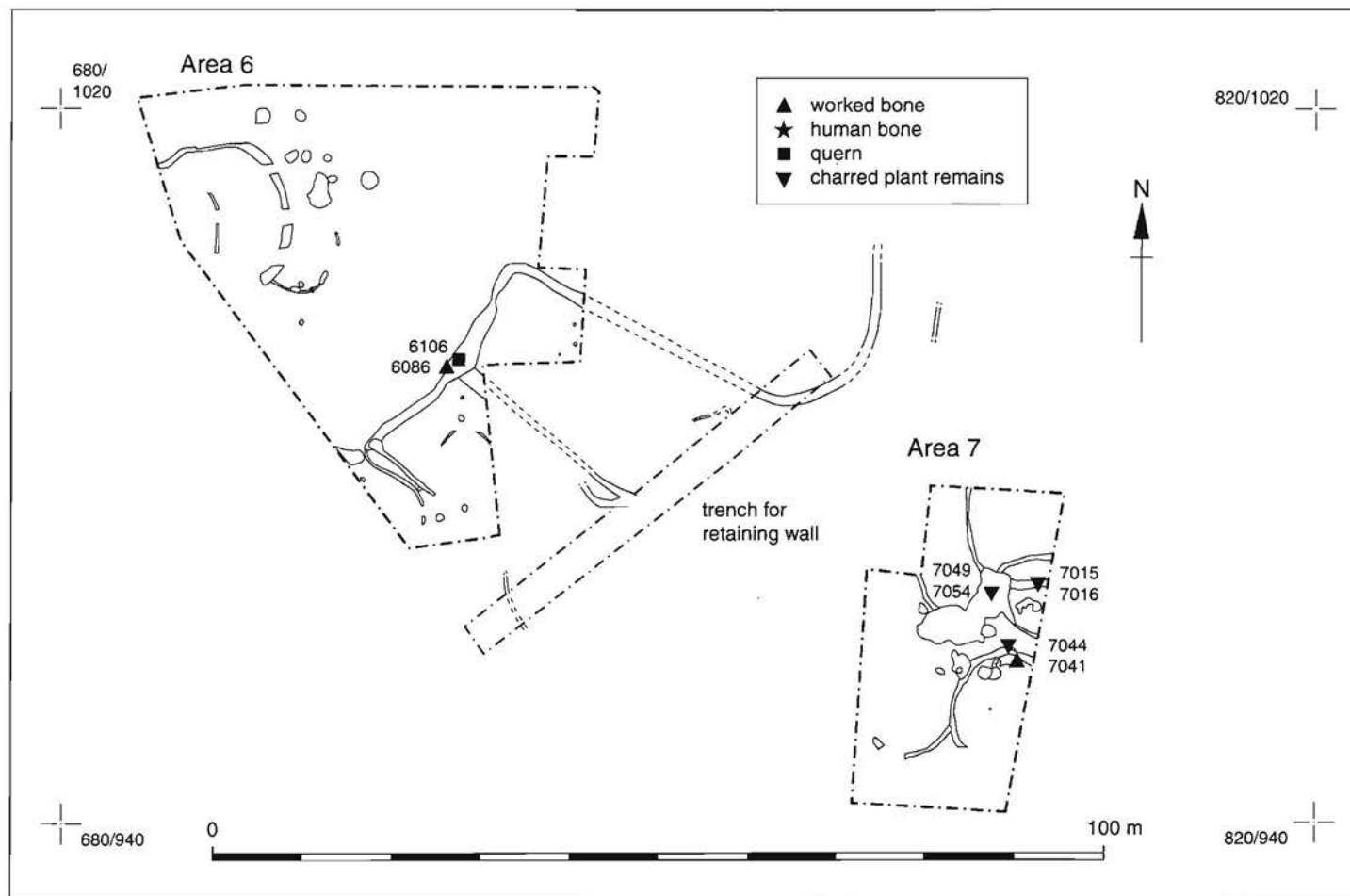
This phase of area 3 (illus. 37), which included two ditches and a row of post holes did not relate to the earlier phases of occupation on the site. The features may be Romano-British or later as there were few datable finds. A sherd of Bronze Age pottery was found and a small amount of mid to late Iron Age pottery, all of which may have been residual. It is possible that the enclosure ditches were related to the Roman farmstead 0.7km north of this site (Lucas 1986 & 1988).

*Iron Age economy of Elms Farm*

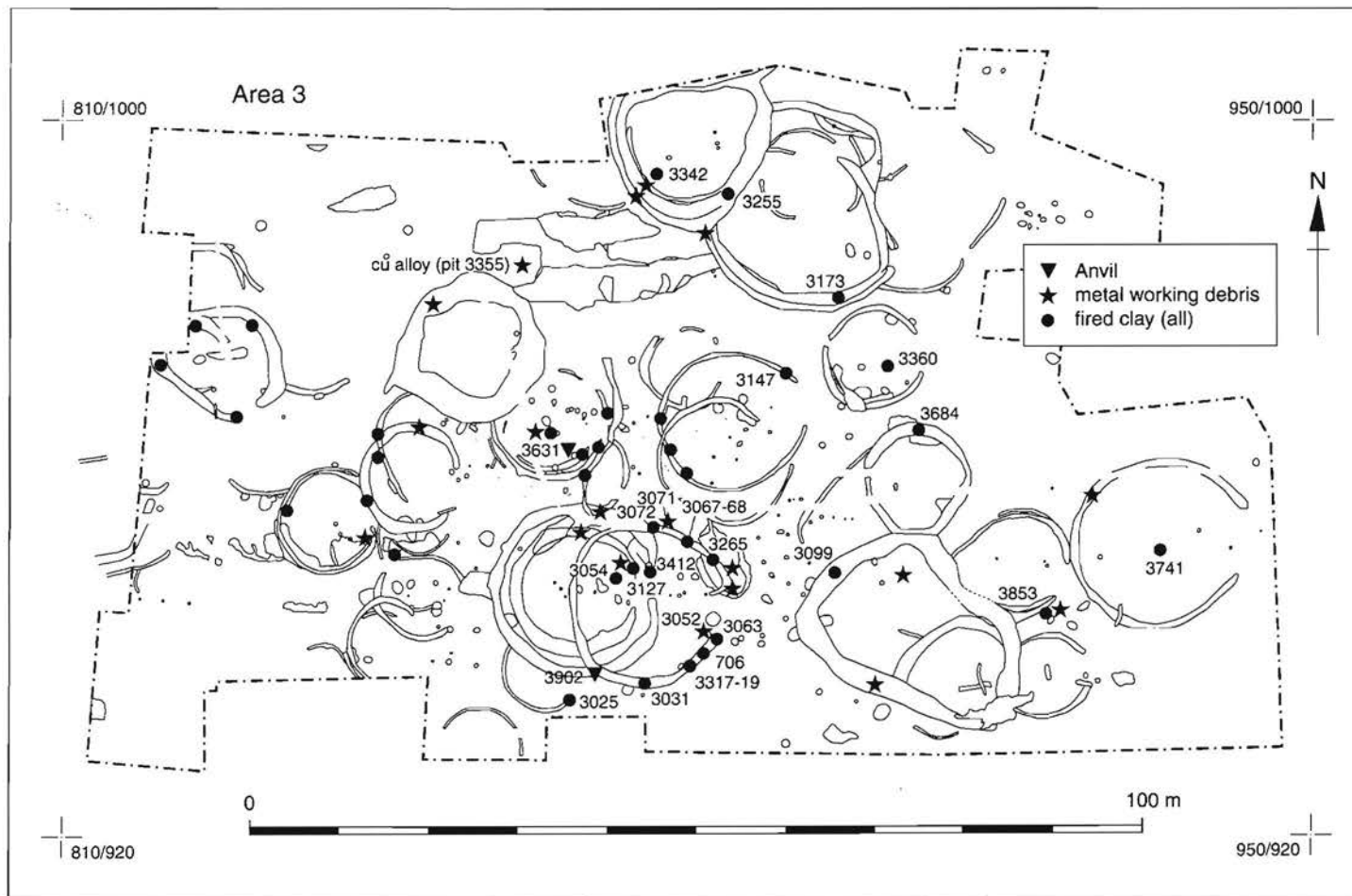
Plant remains on the site show that spelt wheat was the principal cereal crop, with hulled barley also present. Chaff was largely absent and may have been removed outside these areas and used for other purposes, such as animal feed. Only one pit, in area 7, may originally have been for long-term storage, and the presence of chaff suggested that there was some cereal processing in that part of the site. The four-post structures found in area 3 may have been for storage of cereals, perhaps on a shorter term basis, with easier and more frequent access. Querns for processing cereals, both saddle and rotary, were found on the site.



43. Area 3. Plan showing spatial distribution of worked and human bone, querns, loomweights, charred plant remains, tweezers and coins within features



44. Areas 6 & 7. Plan showing spatial distribution of worked and human bone, quern and charred plant remains within features



45. Area 3. Plan showing spatial distribution of slag, fired clay and anvils

Cattle and sheep bones survived well and provided interesting information. Cattle bones indicated that the animals were being used for traction and for meat. The ages of the cattle at death were variable, suggesting cattle were kept for meat not dairying. Cattle would also have provided hides and dung. Sheep were mainly between 2 and 3 years old when slaughtered and this suggests they were being kept for by-products including milk, wool, dung, and eventually for meat. Some butchered horse bones were found indicating their use for meat. Animal dung was present in the storage pit (area 7) and this could have been used for fuel as well as for fertiliser on the fields.

In addition, finds of deer, pig and fish bones, together with bones from birds, suggest that hunting was taking place. Plant remains of hazelnuts and sloe indicate that gathering from nearby woodland provided a supplement to the diet. Tree foliage could have been used as part of the feed for cattle and sheep (Grant 1984).

#### *Trading links*

Parts of rubbing stones of Millstone Grit were found on this site. In addition a rotary quern of Lincolnshire limestone was apparent. Some unworked pieces of Mountsorrel granodiorite may also have been intended for use as rubbing stones. Two saddle querns originated in the Northampton sandy facies.

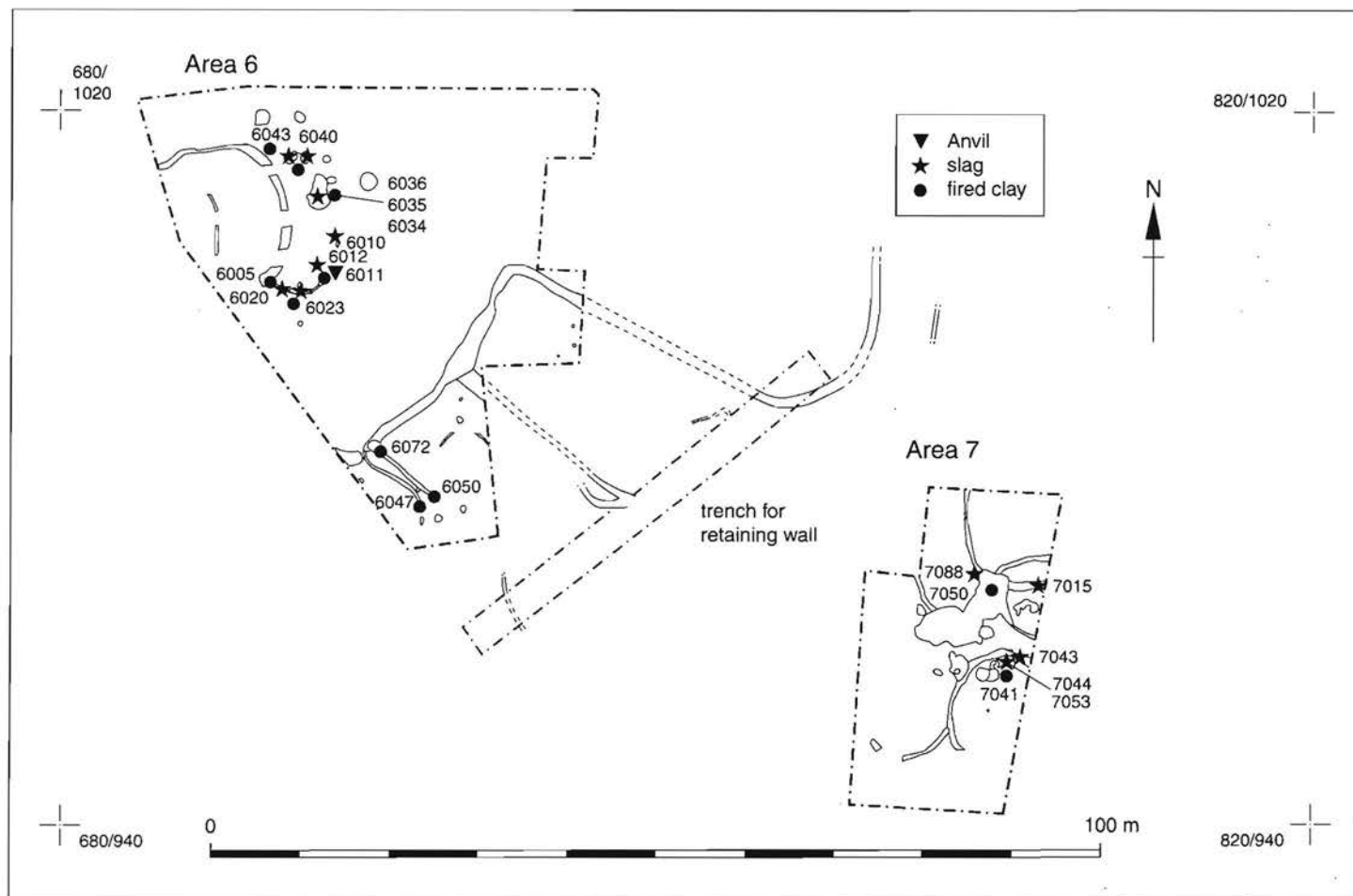
A piece of Coal Measure sandstone, of the type used for whetstones, may have been collected from an area north of Nottingham, perhaps from the area around Sheffield alongside the Millstone Grit. This is about 80km north of the site. A number of pieces of unworked ironstone were also found and these are considered to have originated in the Northampton Sand Ironstone field about 25 km to the south-east.

Within the pottery fabrics the igneous rock is likely to be of Leicestershire origin, as Mountsorrel granodiorite outcrops about 10km north-west of the site. Whilst small pieces suitable for tempering may have been picked up in the local boulder clay, the unworked pieces found were probably transported. There is evidence that this tempering has been used for pottery of this period found elsewhere in the region at Gamston, Notts (Knight 1992, 40) and Wanlip, Leics (Beamish 1998).

Shell tempering may have originated from Lincolnshire limestone along with the quern stone, although this is not confirmed, and sources elsewhere in Leicestershire have been suggested (Marsden this report). Jurassic limestone from Lincolnshire would need to be transported at least 30km west to Elms Farm. It is possible that such a site as Elms Farm would have traded with Lincolnshire for salt, and that raw materials for quernstones or tempering were then obtained. There is no evidence for salt containers on this site, but often only a single sherd is apparent, for example as at Gamston, Notts (Knight 1992, 65). Salt may have been transported in blocks, and single sherds could be accidental inclusions from broken salt evaporation trays.

It seems unlikely that raw materials were transported long distances for pottery tempering and much more likely that the vessels themselves were transported, either as useful commodities or for whatever they contained. A Belgic type vessel found indicates wider links in the area, but no continental links are apparent at this site.

Supplies of raw materials for the querns and tempering could have been transported by river. Millstone Grit could have been brought along the Rivers Derwent, Trent and Soar. Trade along the rivers of the East Midlands, from Charnwood and elsewhere, and with Lincolnshire was well-documented at Gamston in the mid to late Iron Age period (*ibid*, fig. 30). At Elms Farm the trading links are quite wide, from Derbyshire or south Yorkshire in the north, to Northamptonshire in the south and to Lincolnshire in the east of England. In return for much needed raw materials, for quernstones, for metalworking



46. 6 & 7. Plan showing spatial distribution of slag, fired clay and anvil

and for whetstones, and for pottery the Iron Age farmers of this area must have traded their agricultural produce.

The presence of two Roman Republican denarii on this site (illus. 15), probably deposited before AD 43, are most interesting, again suggesting some widespread outside contacts. It seems quite likely that these were precious objects deposited in the ditch, perhaps for safekeeping, and not retrieved. In the absence of any other clear post-conquest activity on the site, these coins are a good indication of pre-conquest connections between the Roman Republic or Empire and Iron Age Britain. However, the associations and links which brought these coins to the site are unclear.

### **Conclusions**

In the middle Bronze Age period an enclosure of unknown purpose was apparent at Elms Farm, but the main period of occupation at this site took place in the middle to late Iron Age when a farming settlement began and grew. The exact extent of the occupied area is not known, but the settlement developed and became well-established over several generations, as indicated by the development of a number of phases of occupation. It is not known whether a cemetery of the same period may have been nearby, as such remains would be difficult to locate. A single cremation burial was found on the settlement site in the later phase.

Excavated evidence indicates a mixed economy, with cereals and animals being farmed. Cattle were also being used as draft animals, and horses although present, were being eaten. Cereals, particularly spelt wheat and barley, were processed on and nearby the site, and some hunting and fishing also took place to supplement the diet. The worked stone indicated widespread contacts with other areas up to 30km distance from this site, to the north, south and east.

A particularly large assemblage of mid to late Iron Age pottery was found, comprising mostly scored ware. Some fine vessels were apparent in this collection, and Belgic type pottery indicates wider links. The tempering materials may have originate both locally and up to 30km away in the Lincolnshire limestones. There is substantial evidence of metalworking although this is on a small scale, but ironstone was imported to the site from Northamptonshire, and whetstones from north Nottinghamshire.

A number of drainage ditches of round houses were apparent, together with other enclosures, which were probably used for domestic occupation and for keeping stock, for metalworking and other activities. One enclosure of the final Iron Age phase had no entrance, and a number of interesting artefacts were found within its ditches and interior. This enclosure may have been restricted for some special purpose, although the exact nature is unclear, this may have had some ceremonial or meeting function.

Small pieces of human bone were recovered from ditches, in common with other Iron Age sites, and possibly indicate that excarnation of bodies was taking place on or near to the site. Some special depositions of pottery and animal bones may also have taken place.

Elms Farm is of special interest due to its proximity to the prestigious late Iron Age site at Leicester (Clay and Mellor 1985), where evidence was located for the manufacture of coins and the importation of luxury goods through trading networks (Clay 1985, 30). Elms Farm is also relevant to the study of Iron Age settlements on boulder clay subsoils. Previous investigations in Leicestershire (Clay 1989 and 1992) and on similar settlements in eastern England (Knight 1984, 304), have shown that boulder clay areas were as well populated as areas with more favourable soil conditions, and this is certainly the case here too.



The excavated area of the Iron Age settlement at Elms Farm, Humberstone, Leicester, covered about 2.2 ha in total. The area investigated was therefore not as extensive as that examined at Crick, Northants, about 33 km to the south west of Elms Farm (BUFAU 1998), where about 16 ha of Iron Age occupation have been recorded. Other Iron Age sites have been investigated in the East Midlands at Enderby (Clay 1992) and Normanton Le Heath in Leicestershire (Thorpe *et al* 1994) and at Gamston, Notts (Knight 1992) but these sites were not as extensive as Elms Farm and were of different character. Elms Farm is unusual in showing organic growth from a farmstead to a farming settlement, and in providing good information on the economy of the later Iron Age in this area of Leicestershire. There is no indication of special prosperity at this site, although the presence of two Roman Republican coins, and fine pottery may suggest that some individuals had connections with nearby sites which had a higher status. It is of particular interest in this period that what appears to be a Leicestershire pre-conquest farming village, had quite widespread trading connections throughout the Midlands.

## SPECIALIST REPORTS

### Radiocarbon determinations

*Bethan Charles, Alistair Barclay and Nancy Beavan*

#### Introduction

Five samples, one on charred grain and four on animal bone, were submitted for AMS dating to the Rafter Radiocarbon Laboratory, Institute of Geological and Nuclear Sciences, New Zealand. The results are summarised in Table 1 below. The calibration programme used was developed at the Rafter Laboratory using the Intcal 98 calibration curves (Stuiver *et al* 1998).

Table 1: Summary of radiocarbon dating results

Sample	Con-text	Sample ID	$\delta C_{13}$ ‰	Result uncal bp	Calibrated date range (68% confidence)	Calibrated date range (95% confidence)	Comment
NZA-10142	3250	Charred grain	-22	2292±60 BP	399 BC to 357 BC & 281 BC to 252 BC	416 BC to 198 BC	Four-Post Structure F5028 (Phase 1b)
NZA-10236	3046	Cattle Radius	-21.6	2270±70 BP	396 BC to 282 BC & 314 BC to 207 BC	415 BC to 169 BC	Round house F5001 (Phase 2)
NZA-10237	3069	Cattle Radius	-21.7	3076±60 BP	1413 BC to 1264 BC	1448 BC to 1130 BC	Bronze Age Ditch F5008 (Phase 1a)
NZA-10238	3319	Cattle Meta-carpal	-21.6	2167±60 BP	357 BC to 282 BC & 243 BC to 152 BC & 136 BC to 117 BC	386 BC to 46 BC	Round house F5003 (Phase 3)
NZA-10447	3271	Cattle Phalanx	-24.9	1989±60 BP	45 BC to 46 AD	163 BC to 130 AD	Terminal of Bronze Age ditch F5008 (Phase 1a)

## Discussion

### *Bronze Age ditch – phase 1a*

The earliest radiocarbon determination NZA-10237 was obtained from bone from the primary fill of the enclosure ditch (5008). This result is consistent with the middle Bronze Age date of the pottery that was recovered from the lower ditch fills. However, the second radiocarbon determination, NZA-10447, on bone from the south-eastern terminal was much later than expected and is consistent with a late Iron Age to early Roman date. This bone was selected because it was in a fresh and unweathered condition, from near the base of the ditch and from the same level as the middle Bronze Age pottery. However, although the bone appeared to be in good condition there were low yields of collagen and very low yields from the gelatinisation process. The most significant factor regarding the sample was the low concentration of  $^{13}\text{C}$  compared to the other samples which casts doubt on the interpretation of the date as late Iron Age to early Roman and the reliability of the sample.

### *Middle to Late Iron Age settlement – phases 1b to 3*

The remaining samples were submitted in order to try and confirm the date range of the settlement. Of the three dates, NZA-10124 from charred grain from one of the post holes of a four-post granary, can be considered on taphonomic grounds to be the most reliable giving a result for phase 1b as early middle Iron Age or c. 400-200 cal BC. NZA-10236 on bone from phase 2 gave a very similar result, again consistent with an early middle Iron Age date and perhaps suggesting that the main phases of occupation were within a comparatively short time span. However, although this sample is well stratified there is the possibility that the bone could be redeposited from phase 1b and can be considered as providing only a *terminus post quem*. The final radiocarbon determination NZA-10238 for phase 3 has a date range that covers the middle Iron Age (400-0 cal BC) and again this date should be considered as perhaps providing only a *terminus post quem* for this phase. The three dates suggest that phase 1-3 fell more within the middle Iron Age.

## The prehistoric pottery

Patrick Marsden

### Introduction

Prehistoric pottery was recovered from a total of 396 contexts. A breakdown of the assemblage by date is given in Table 2, with 98.2% originating from prehistoric features.

Table 2: Pottery assemblage by date and quantity

<i>Date</i>	<i>No of sherds</i>	<i>Weight g</i>
Bronze Age	48	277
Late Bronze Age – early Iron Age	1	11
Iron Age	6709	66579
<i>TOTAL</i>	<i>6758</i>	<i>66867</i>

### Methodology

The pottery was examined and recorded using the Prehistoric Ceramics Research Group's guidelines for the analysis of later prehistoric pottery (PCRG 1992). The material was examined with a x10 binocular microscope and allotted to one of the fabric groups and types discussed below, based on the dominant type of inclusion. Form, decoration, surface treatment and evidence of use were also recorded, together with the estimated vessel equivalents (EVE), where possible, for vessels from selected groups.

### *Vessel and rim forms*

#### *Form types*

F1 Ovoid jar and bowl/jar, without neck, large (>180mm rim diameter)

- F2 Ovoid jar, without neck or neck inturned, small-medium (<= 180 mm rim diameter)
- F3 Ovoid jar, small-medium (<=180mm rim diameter) with upright, concave or everted neck
- F4 Ovoid jar, large (>180mm diameter) with upright, concave or everted neck
- F5 Round-shouldered jar, with everted neck
- F6 Ovoid bowl or bowl/jar, includes necked and without neck vessels
- F7 Cup with ovoid profile
- F8 Ovoid jar with long everted neck . Fine, possibly wheel-finished
- F9 Bowl with everted neck. Fine, possibly wheel-finished
- F10 Round-shouldered bowl/jar with everted neck
- F11 Ovoid bowl/jar with pronounced internal ledge
- F12 Carinated vessel, probably bowl or cup form
- F13 Open bowl
- F14 Strainer

#### *Rim forms*

Six rim types have been identified from the assemblage.

- R1 Rounded direct (Knight 1984, 21, no. 1)
- R2 Flattened direct (*ibid.* no. 2)
- R3 Rounded lip (*ibid.* no. 4/5)
- R4 Flattened and expanded (*e.g.* illus. 50.18)
- R5 Expanded, sometimes slightly concave (possibly for a lid) (*e.g.* illus. 48.3)
- R6 Angular 'square' shape (*e.g.* illus. 52.33)

#### *Bases*

All bases are flat and typical of those occurring on mid-late Iron Age vessels in the East Midlands (see Marsden 1998, 47).

#### *Lids*

Two probable lid fragments and another possible lid fragment are present. Two are in shell-tempered fabrics, S1 (illus. 52.41) and S2 and the third possible lid is in fabric Q1 (illus. 52.40).

*Bronze Age vessel Forms* are discussed in the section on Bronze Age pottery.

### **Summary fabric descriptions**

#### *Grog*

G *Grog-tempered ware* Rare-sparse sub-rounded grog (well-moderately sorted, 1-5mm), rare quartz sand and rare acid igneous rock fragments

#### *Quartz sand*

Q1 *Sandy ware* Moderate-very common sub-rounded-rounded quartz (well-moderately sorted, up to 1mm) and sparse-moderate angular quartz.

#### *Igneous rocks*

Q2 *Sandy ware with igneous rock inclusions* Moderate-very common sub-rounded-rounded quartz (well-moderately sorted, up to 1mm) and sparse-moderate angular quartz, with rare-sparse angular-sub-rounded igneous rocks (poorly sorted, most up to 3mm).

RQ1 *Igneous rock inclusions* Sparse-very common sub-angular igneous rocks (poorly sorted, most up to 5mm).

#### *Shell-tempered*

S1 *Fossil shell-tempered* Moderate-very common platy fossil marine shell (well-poorly sorted, up to 8mm).

S2 *Fossil shell-tempered with sand* Similar to S1 but more sandy.

S *Fossil shell-tempered* Fabric containing fossil shell but undiagnostic beyond this.

For detailed descriptions of similar fabrics published elsewhere for Q1, Q2, RQ1 and S1 see Marsden 1998, 45 and for S1 and S2 see fabrics CG1A and CG2A respectively in Pollard 1994, 73 and 114.

Table 3 shows the occurrence of Iron Age forms by fabric. Fabric Q1 contains the fine forms (F8 and F9), although these are also present in igneous rock (RQ1) and shell-tempered (S) fabrics. Generally the range of forms represented in the igneous rock (RQ1 and Q2) and shell-tempered (S, S1 and S2) fabrics is similar.

Table 3: Occurrence of Iron Age forms and fabric types

<i>Fabric</i>	<i>Forms represented</i>
Q1	F3, F8, F9, ?LID
Q2	F1, F2, F3, F4, F5, F6, F7, F11, F13, F14
RQ1	F1, F2, F3, F4, F9, F10
S	F2, F3, F5, F8
S1	F1, F3, F6, F7, F12, LID
S2	F3, LID

### ***The Bronze Age pottery***

A total of 48 sherds (277g) of Bronze Age pottery was recovered from the excavations, and were identified during the analysis phase. The most common Bronze Age fabric from the site (73.6% by weight) is at the coarse end of the igneous rock RQ1 group which was also used in the Iron Age (table 4). Most of the assemblage was recovered from the middle Bronze Age ditch (F5008), although some residual sherds were also present in Iron Age features. Two radiocarbon dates were obtained on animal bone from ditch 5008. One of these dates 1448-1130 cal BC (NZA-10237) would be consistent with the pottery, although a second date (NZA-10447) is much later than expected (see report on Radiocarbon Determinations).

Table 4: Fabric types of the Bronze Age Pottery

<i>Fabric type – inclusions</i>	<i>Sherd No</i>	<i>Weight g</i>
RQ1 – igneous rock	40	204
G – grog	7	65
S – fossil shell	1	8
<i>Totals</i>	<i>48</i>	<i>277</i>

Seven sherds are grog-tempered and are likely to be of early to middle Bronze Age date. One has an internal carbonised residue. Fragments of probable barrel and bucket urns of the East Midlands Deverel-Rimbury tradition (Allen *et al*, 1987) were apparent, both in coarse versions of the Iron Age fabric RQ1 (see illus. 47.2 and 47.4). Two other small rim fragments (R1 and R2) are present in fabric RQ1, together with an R1 rim in a shell-tempered fabric (S) and these may also be from barrel or bucket urns. The remainder of the Bronze Age pottery from Enclosure 5008 consists of body sherds. The thick-walled nature of much of the pottery, mostly between 10-14mm, is characteristic of middle Bronze Age pottery, especially bucket urns.

A residual decorated rim sherd (12g) is present in Phase 3 (see illus. 47.1). The fabric is a coarse version of RQ1 with large igneous rock inclusions. The form is closed and the vessel may be a barrel urn. However, there are diagonal lines of comb impressions below the lip of the vessel, which is a rare type of decoration on such urns. Another fragment was also recovered from linear ditch 5006 in Phase 4 (see illus. 47.5). This is also in a coarse version of fabric RQ1 and displays a row of finger-nail impressions. The decoration and shape of the piece suggest it is from a barrel urn. Features 5007 and 5006, which produced the pieces described above, are both in the area enclosed by 5008.

### ***The late Bronze Age – early Iron Age pottery***

A single sherd (11g) from the upper fill of the Bronze Age ditch (5008) displays finger nail impressions and is probably of this date (illus. 47.3). This is from the shoulder of a vessel belonging to Group 1 Midlands Assemblage dating from the later ninth to fifth centuries BC (Knight 1984, 39-41). Vessels belonging to this tradition have been found at other prehistoric sites in Leicestershire, such as the fragment from Wanlip (Marsden 1998, fig. 27.36).

### ***The Iron Age pottery***

#### *Nature of the Assemblage*

The Iron Age pottery from the site consists of 6709 sherds (66,579g) and includes middle-late and late Iron Age material. The pottery is typical of East Midlands scored ware. Nearly all of the larger diagnostic groups were recovered from penannular ditches and gullies and many contained at least 1000g of pottery. Most of the pottery is in a reasonably good condition, displaying little abrasion. Three radiocarbon dates (NZA- 10142, 10236 and 10238) were obtained on material associated with the pottery (see report on Radiocarbon Determinations). The Iron Age pottery is summarised in table 9, where fabrics and phases are indicated.

#### *Fabrics and trade*

The igneous rock fabrics (Q2 and RQ1) constitute 89.4% by weight of the total (table 9). The nearest igneous rock outcrops occur in the Mountsorrel and Charnwood Forest areas and south west Leicestershire. All of these sources are *c.* 10 km away from the site. However, large boulders of Mountsorrel granite are found locally in the Boulder Clay (Fox-Strangeways 1903, 53). Mountsorrel granite or granodiorite is probably the igneous rock present in fabrics Q2 and RQ1. The middle Iron Age site at Wanlip, Leicestershire, produced fabrics containing igneous rocks, likely to be Mountsorrel granite or granodiorites, now known as Charnwood igneous, which is perhaps unsurprising given that outcrops of these are only 5km away from the site (Marsden 1998, 45). Further afield, over 10km away from the outcrops, similar fabrics were also identified at the Iron Age site at Kirby Muxloe, west of Leicester (Cooper 1994). Evidence from Gamston in Nottinghamshire (Knight 1992, 42) also shows pottery containing granodiorite inclusions from close to Mountsorrel present amongst that found at that site, showing trading links over a distance of *c.* 35 km. It may be that the settlement at Hamilton was part of a trading network, importing pottery from the Mountsorrel area to the north west. The possible importation of Mountsorrel granite, including querns, to the site is discussed elsewhere (see report on worked stone by F. Roe), but the use of locally available rocks from the boulder clay is also suggested by the worked stone on the site. Boulders of Charnwood igneous, deposited during glaciation, from the vicinity of the Elms Farm settlement, may have been broken up and used as tempering materials by local potters.

The shell-tempered group makes up 8.3% of the fabrics (see table 9). Outcrops of Lincolnshire Limestone, the likely source of the fossil shell inclusions, occur in north east and south east Leicestershire, Rutland, south Lincolnshire and north Northamptonshire. Shell-tempered scored wares are known from Iron Age sites in these areas. The sites at Empingham (Cooper forthcoming) and Whitwell (Todd 1981, 23) in Rutland, for instance, produced these. However, similar fabrics may only be reaching Leicester in the late Iron Age and Roman periods. A late Iron Age date for the importation, over a considerable distance, of the shell-tempered pottery to the site is suggested. However, it is possible that trade networks established before the late Iron Age brought shell-tempered pottery into the area made by potters in limestone areas to the east, and that the networks used by settlements in the Soar Valley were different. In the latter case shell-tempered wares are not necessarily diagnostic of a late Iron Age date.

### ***Decoration***

#### *Scoring*

Scoring is by far the most common type of decoration and accounts for 45.6 % by weight of the pottery assemblage. Of the major fabric groups only 7.5 % of Q1 is scored, 49.2% of Q2, 44.4% of RQ1 and 33.3% of the shell-tempered fabrics (S, S1 and S2). The range of types identified is typical of those found on East Midlands scored ware pottery (Elsdon 1992a, 43; Marsden 1998, 47-48). The most common type is heavy scoring with a bunch of twigs (BR), sometimes accompanied by random heavy use of a single tool (SC). Other types include random heavy use of single tool alone (SC), light brushing (BRL) and incised single tool (SCR). A small number of vessels display regular combing (CO). Scoring is extremely rare on vessels in fabric Q1 (7.5 %), which is unsurprising given the generally fine nature of this group. Scoring is confined to forms F1-6. F3, the most common form, although usually undecorated, when scored is most commonly lightly brushed (BRL).

*Tooled lines*

Tooled lines are found occasionally, mainly consisting of diagonal lines along the lip. This technique is found on scored ware vessels at other sites (Elsdon 1992a, 43; Marsden 1998, 48).

*Typological affinities and dating*

With the exception of a small number of vessels discussed below the pottery is typical of East Midlands scored ware assemblages of the middle to late Iron Age. It belongs to Knight's Group 2 (1984, 40) and is characterised by scored decoration, mainly ovoid vessels and smaller amounts of round-shouldered forms (*e.g.* illus. 50.17). Other forms, such as open bowls, are also present (illus. 48.2). The pottery is similar to that found at other Iron Age sites in Leicestershire, including Enderby (Elsdon 1992a), Normanton-le-Heath (Elsdon 1994) and Wanlip (Marsden 1998), although the latter is middle Iron Age in date. The assemblages from the Northamptonshire sites of Weekley (Jackson and Dix 1986-87) and Aldwincle (Jackson 1977) are also comparable.

The fine Form 9 bowl (illus. 51.32) is 'Belgic' in style, although the fabric is local (a fine version of RQ1), and not the grog-tempered type usually associated with this pottery. The colour of the vessel is uniformly dark grey suggesting even firing conditions, it is highly burnished and it may be wheel-finished. In terms of form the vessel corresponds to Thompson's bowls with offset necks D1-1 (1982), such as those from Prae Wood and St Albans (*ibid.*, fig. 102.11; Anthony 1970, fig. 11.22). Both of these vessels date to the first century AD. As far as local comparisons go the bowl from Blackfriars Street, Leicester (Clamp 1985, fig. 32.28) may be of a similar form. However, any Leicester 'Belgic' style pottery is not in comparable fabric. Another sherd in a Q1 fabric consists of part of the shoulder and neck of a possible second F9 bowl (illus. 50.15).

Form 8 is of a probable late Iron Age date, two vessels belonging to this category. One is in a sandy fabric (Q1, illus. 49.9) and the other is in a fabric containing shell (S, illus. 52.39). Both are fairly fine, with burnished external and internal surfaces and may be wheel-finished. Form 8 seems to be following in the tradition of Forms 3-4 but is finer and more thin-walled than these, perhaps representing a later refinement of the scored ware forms. Parallels for such vessels occur at Little Waltham, Essex (Drury 1978). As is the case with F9 both of the Form 8 vessels are undecorated.

Two rim fragments in shell-tempered fabrics are from fine vessels with Rim form R5 (see illus. 50.16 and illus. 52.34). Similar rims have been found on shell-tempered late Iron Age vessels, such as west Leicester (Pollard 1994, 259). These may represent a predecessor of the lid-seated calcite-gritted jars that reached Leicester in the late Iron Age-early Roman period.

Another possible late Iron Age piece is part of a base and lower body or domed and flanged lid (illus. 52.40) (Thompson 1982, 557, L10). A carinated vessel fragment may also be late (illus. 52.36) and its shell-tempered fabric and fineness may add weight to this argument, although carinated vessels are found throughout the Iron Age.

These probable late Iron Age vessels are present in Phases 2 and 3 and area 7 suggesting a late Iron Age date for these. It should be noted that Phase 3 contains the 'Belgic' style F9 bowl (illus. 51.32), which is the most securely dateable to the late Iron Age, of a probable first century AD date. Within area 3 the late Iron Age sherds are concentrated in the south of the area, in penannular ditches 5001-3 and post hole 3725.

*Surface treatment*

Burnishing is the dominant form of surface treatment. Vessels in Fabric Q1 display a large amount of burnishing, 59 % by weight of them displaying this form of surface treatment. Forms F8-9 are characteristically burnished, whilst a number of vessels in forms F3-4 display burnishing. Wiping is also present on a small number of vessels.

*Method of manufacture*

All of the pottery is handmade, with a small number of the late Iron Age vessels possibly being wheel-finished (see Typological Affinities and Dating), and is coil or slab built. Finger impressions are present on top of some of the rims, where the potter has shaped the vessel. Colour variations on the surface of the pottery and fire spalling are characteristic products of open firing.

***Evidence of use and perforated vessels***

Carbonised food residues are present on a number of vessels, on the interior and exterior surfaces. These occur on vessels from all the major fabric groups (Q1, Q2, RQ1, S1 and S2). External residues are mainly situated below the rim and in the neck and shoulder areas of the upper part of the vessel. Forms F3-4, F6 and F13 display this. A small number of vessels display external sooting, including an F6 bowl in Q2 fabric. Limescale is present on the inside of a single vessel in RQ1 fabric. In general, the residues indicate the use of a significant number of vessels as cooking pots.

Four vessels display perforations. The F11 vessel (Fabric Q2) has a hole made before firing, most likely for suspension, below the rim and above the internal ledge (illus. 52.38). Another rim (R2) in fabric RQ1 displays a post-firing probable mending hole (illus. 51.31). An F3 form (Fabric Q2, see illus. 50.13) has a large hole, created after firing in the lower part of its body, of uncertain function. Fragments of a strainer base are also present with evidence of four perforations in fabric Q2 (see illus. 52.35).

**Discussion of site phases and areas, including key groups*****Area 3******Phase 1a (middle Bronze Age enclosure ditch)***

In addition to the Bronze Age and late Bronze Age-early Iron Age pottery described above this ditch produced 14 body sherds weighing 51g of a late Bronze Age-Iron Age date. Fabrics Q2 and RQ1 are both present.

***Phase 1b (mid-late Iron Age)***

This phase contains 22.4% by weight of the total Iron Age pottery assemblage. Over half of this total was from the two fills (Contexts 3217 and 3252) from structure 5012 (see below). Forms represented are F1, F3-6 and F13. Shell-tempered wares constitute 4.2% by weight. Approximately 65.4% of the pottery from this phase is scored. Four-post structure F5028 produced a middle Iron Age date of 416-198 cal BC (NZA-10142, see radiocarbon determinations). The Iron Age pottery from Phase 1b is typical of scored ware assemblages and is broadly of a mid to late Iron Age date. Details of selected groups from this phase are shown in table 5 below.

Table 5: Phase 1b – Iron Age Pottery, details of selected groups

<i>Feature</i>	<i>Context</i>	<i>Forms (F) % scored</i>	<i>Fabric</i>	<i>Sherds</i>	<i>Weight g</i>	<i>Illus.</i>	<i>Decoration &amp; Comments</i>
5078	3853	3 & 4 66.7%	RQ1, Q2	87	1342	48.1	Q2/F4 vessel has residue on outside average sherd weight 15.4g most vessels in ditch fill
5012	3217	1 98.5%	RQ1	136	3217	48.3	Large jar, 0.77 EVE, F1 & RQ1 pot scattered over 1.9m with 3 types of scoring BR, SC, BRL
		3	Q2			48.4	
5012	3252	6 94.9%	Q2 & S1	135	4691	48.5	81% is one Q2/F6 jar – 0.85 EVE SCR & SC dec – residue largest group of pottery on site min 6 pots – incl BR & SC
		3	Q2			49.6	
		4	Q2			49.7	
		5	Q2			49.8	

***Phase 2 (first century BC)***

Phase 2 contains 15.1% by weight of the total Iron Age pottery. Forms F3-10 are present. Shell-tempered wares constitute 15.6 % by weight. Approximately 50.2% of the pottery from Phase

2 is scored. Structures 5001 (2951g) and 5002 (1233g) produced 25.4% of the pottery from this phase. Two probable late Iron Age pieces were produced from these contexts. Form F9 in fabric Q1 came from 5001 (illus. 50.15) and a shell-tempered S1 R5 rim from 5002 (illus. 50.16). A probable late Iron Age F8 jar in Q1 fabric (illus. 49.9) was present in context 3726, a post hole. This vessel is discussed above in the section on typological affinities and dating. In summary, phase 2 produced three vessels probably datable to the late Iron Age as well as scored wares typical of a broader date range. A round-shouldered scored jar (Q2 F5) is present in 5009 (illus. 50.17). A first century BC date is suggested for the phase as a whole. Details of selected groups from this phase are shown in table 6 below.

Table 6: Phase 2 – Iron Age Pottery, details of selected groups

<i>Feature</i>	<i>Context</i>	<i>Forms (F) % scored</i>	<i>Fabric</i>	<i>Sherds</i>	<i>Weight g</i>	<i>Illus.</i>	<i>Decoration &amp; Comments</i>
3725	3726	8 0%	Q1	19	372	49.9	Contains 24.7% of IA pottery One pot -late IA
5001	709/713	3 & 7 72.2%	Q2	92	1100	49.10	rdc 415-169 cal BC: lid in S2 22.5% shell fabric: ave sh wt 12g
5017	3470	10 0%	RQ1	192	875	50.12	69% from one jar F10, only pot of this form; high firing temp
5020	3564	3 3.4%	Q1, Q2, RQ1	28	814	50.13	95.6% one burnished F3/Q2 pot with hole in lower body

### *Phase 3 (early first century AD)*

Phase 3 contains 43.8% by weight of the total Iron Age pottery. Forms F1-4, F6, F8-9, F12-4 are represented. Shell-tempered wares constitute 6.9% by weight. Approximately 37.5% of the pottery from the phase is scored. Structure 5003 produced 11926g of pottery, about 41% of the material from the phase. The five key groups from 5003 are described below. 5003 also produced a 'Belgic' style F9 vessel in RQ1 fabric and a probable late Iron Age R5 rim in S1 fabric, and 5015 part of the profile of an F3 jar in RQ1 fabric (50.18). Structure 5065 contained a carinated S1 vessel, also possibly of a late Iron Age date. These are discussed above (Typological Affinities and Dating, see illus. 51.32 & 52.34 & 36). Structure 5007 produced a piece of residual Bronze Age pottery (see illus. 47.1) and fragments of a strainer (F14, illus. 52.35). An early first century AD date is suggested for the phase as a whole. Details of selected groups from this phase are shown in table 7 below.

Table 7: Phase 3 – Iron Age Pottery, details of selected groups

<i>Feature</i>	<i>Context</i>	<i>Forms (F) %scored</i>	<i>Fabric</i>	<i>Sherds</i>	<i>Weight g</i>	<i>Illus.</i>	<i>Decoration &amp; Comments</i>
5003	704	1 & 3 2 & 3 61.9%	Q1 & Q2 S & RQ1	198	2007	50.19	residue on F3/Q2 jar scored SC F2/S pot highly burnished F3/RQ1 pot
5003	3063	3 45.7%	RQ1 & Q2	43	996	50.20 50.21	burnishing on F3/RQ1 jar residue on F3/Q2 pot
5003	3077	3 & 4 34.3%	Q1 & Q2 RQ1	48	1173	50.22 50.23 51.24 51.25	fine burnished F3/Q1 pot sooting upper body F3/Q2 pot int residue on Q2 scored sherd pot 0.17 EVE F4/RQ1
5003	3265	3 77.0%	RQ1 & Q2	53	1408	51.26 51.27 51.28	F3/RQ1 heavily burnished F3/Q2 pot Q2 scored BR & SC + int SC
5003	3317	3, 4, 6 30.0%	Q2	142	2460	51.29	F3/Q2 complete profile rdc 386-46 cal BC



Table 7 continued

<i>Feature</i>	<i>Context</i>	<i>Forms (F) %scored</i>	<i>Fabric</i>	<i>Sherds</i>	<i>Weight g</i>	<i>Illus.</i>	<i>Decoration &amp; Comments</i>
5015	3439	4 100.0%	Q2	24	2008	49.11	BR scoring, patches of burnt residue: ave sherd wt 83.7: one large jar + animal bone
5022	3710	6 49.8%	Q2 & RQ1 S1	202	2137	51.30 51.31	scored BRL jar F6/Q2 residue perforated rim R2/RQ1 18.1% one pot with scoring BR
5064	3437	3 41.4%	Q2, RQ1 S1	36	1093	50.14	F3/Q2 rim & base, 0.13 EVE burnt residues on 3 Q2 sherds incl a possible counter

*Phase 4, Post Iron Age*

This phase contains only 9 sherds of Iron Age pottery weighing 53g. Two sherds are scored and in igneous rock (Q2 and RQ1) and shell-tempered (S1) fabrics. These Iron Age sherds may be residual or represent a continuation of native scored wares into the early Roman period. A residual Bronze Age piece with finger-nail impressions weighing 37g is also present as discussed above (illus. 47.5).

**Area 6 – Mid-late Iron Age**

Area 6 contains 7.7% by weight of the total Iron Age pottery. Only forms F2 and F3 are present. 5038 contains a reasonable profile of an F2 vessel in fabric Q2 (illus. 52.37). Apart from this, few diagnostic pieces were produced by Area 6. Shell-tempered wares make up 10.1% by weight and 9.7% by sherd number of the pottery. 29.7% by weight of the pottery is scored. A middle to late Iron Age date for the area seems likely. Details of selected groups from areas 6 and 7 are shown in table 8 below.

**Area 7 – Later Iron Age**

Area 7 contains 8.7% by weight of the total Iron Age pottery. Forms F2-3, F8 and F11 are present. Shell-tempered wares make up 10.7% by weight and 14.5% by sherd no. of the pottery. Approximately 47.4% by weight of the pottery is scored. A possible late Iron Age piece, part of a base and body or lid in Q1 came from 5033 (see Typological Affinities and Dating and illus. 52.40) together with a shell-tempered (S1) fine lid fragment (illus. 52.41). A late Iron Age date seems probable for Area 7.

Table 8: Areas 6 and 7

Phases 2/3 – Iron Age Pottery, details of selected groups

<i>Feature</i>	<i>Context</i>	<i>Forms (F) %scored</i>	<i>Fabric</i>	<i>Sherds</i>	<i>Weight g</i>	<i>Illus.</i>	<i>Decoration &amp; Comments</i>
<i>AREA 6</i>							
5040	6077	5.8%	Q2	55	976		Q2 pot with base
5045	6012	3 53.8%	Q2	300	1667		with metalworking debris small & abraded scored BRL
<i>AREA 7</i>							
5034	7015	3 & 11 87.1%	RQ1 & Q2	91	1291	52.38	RQ1 pot with BRL scoring F11/Q2 with suspension hole
7045	various	3 & 8 18.7%	S, S2, Q1	119	860	52.39	F8/S burnished vessel

Table 9 : Iron Age pottery, indicating fabrics, phases, areas and scored pottery

Phase/ Area	Q1		Q2		RQ1		S		S1		S2		Phase/ Area Total sh. no.	Phase/ Area Total wt (g)	Scored pottery wt (g)
	sh. no.	wt (g)	sh. no.	wt (g)	sh. no.	wt (g)	sh. no.	wt (g)	sh. no.	wt (g)	sh. no.	wt (g)			
<i>Ib</i>	54	256	634	9554	332	4470	57	129	115	497	1	6	1193	14912	9752
2	34	477	734	6169	314	1839	127	826	139	680	10	68	1358	10059	5053
3	55	560	1770	21390	676	5191	22	102	233	1803	13	117	2769	29163	10935
4	0	0	7	42	1	5	0	0	1	6	0	0	9	53	7
Area 6	17	98	478	3427	120	1055	7	82	40	193	19	240	681	5095	1511
Area 7	10	110	306	3320	159	1749	28	204	49	362	4	60	556	5805	2748
<i>Unphased and post</i>															
LA	5	13	88	935	25	382	2	9	19	117	4	36	143	1492	373
Total	175	1514	4017	44837	1627	14691	243	1352	596	3658	51	527	6709	66579	30379

### Unphased

A gully produced a complete base in fabric Q2 with a highly burnished external surface.

### Discussion of prehistoric pottery

The pottery represents one of the largest prehistoric ceramic assemblages from the East Midlands. It is certainly by far the largest group ever excavated in Leicestershire. The previous excavations of Iron Age sites at Enderby (Elsdon 1992a) and Wanlip (Marsden 1998) produced 1925 sherds weighing about 35,000 g and 2,335 sherds weighing 31,435 g of Iron Age pottery respectively. The assemblage compares favourably to large regional sites, notably Crick (10,671 sherds weighing 62,931g, BUFAU 1998) and Weekley in Northamptonshire (5864 sherds weighing 142,670g, Jackson and Dix 1986-87) and Cat's Water, Fengate, Peterborough (11,600 sherds, weight not available, Pryor 1984).

Bronze Age pottery is rarely found on settlement sites in the East Midlands. All of the pottery of this period was from the fill of Enclosure 5008 or was residual in later features in the area enclosed by it. The grog-tempered pottery probably represents the earliest activity in the area, in the early to middle Bronze Age. The middle Bronze Age pottery from Enclosure 5008 confirms the C14 dating from this feature. The thick-walled sherds are probably all from barrel or bucket urns. The use of a coarse version of the RQ1 fabric, which was also present in the Iron Age, represents a similar use of igneous rock inclusions, perhaps originating from local boulders, in the pottery of both periods.

As described above most of the pottery is typical of East Midlands scored ware assemblages of the middle to late Iron Age, corresponding to Knight's Group 2 (Knight 1984, 40). The dating of this is problematic, and the site appears to confirm the longevity of forms and decoration throughout the middle and late Iron Age with no significant trends appearing spatially or temporally. The pottery is similar to that found at other settlement sites in Leicestershire and the East Midlands region (Elsdon 1992b).

Phase 1 contains mid-late Iron Age scored wares and diagnostically later Iron Age forms are absent. This is confirmed by the radiocarbon date of 416-198 cal BC (NZA-10142). Phase 2 has a broadly similar radiocarbon date to Phase 1 of 415-169 cal BC (NZA-10236). However, as described above, the radiocarbon date is of limited reliability, as the bone from which it came may be residual, and the three diagnostically later Iron Age vessels indicate a probable first century BC date for Phase 2. Phase 3 produced a radiocarbon date of 386-46 BC (NZA-10238). Thus a first century BC date is possible but, as with the date for Phase 2, the bone may be residual in any case. Significantly, the phase contains a 'Belgic' style bowl (illus. 51.32) and other later Iron Age forms. The pottery therefore suggests a probable early first century AD date for Phase 3. A later date seems unlikely given the complete absence of Roman pottery.

The small number of finer vessels described above (see Typological Affinities and Dating) are atypical of the assemblage as a whole. These were concentrated in features in the south of Area 3,

from or close to penannular ditches 5001, 5002 and 5003. Such vessels were not present at the middle Iron Age site at Wanlip (Marsden 1998), the late Iron Age site at Normanton le Heath (Elsdon 1994) or the mid-late Iron Age site at Enderby (Elsdon 1992a). However, at Kirby Muxloe, Leicestershire (Cooper 1994), although it is fragmentary, similar pottery appears to have been used at the site during the 'conquest period' in the first century AD. Also in the earliest pits of the Jewry wall site in Leicester, some dating to pre-25 A.D. (Jarvis 1986; Kenyon 1948) 'Belgic' pottery was found alongside local scored wares. However, it should be noted that the settlement at Leicester was receiving quantities of continental imports in the form of Gallo-Belgic wares, not represented at Elms Farm, in the pre-conquest period.

One vessel from Elms Farm is 'Belgic' in form, if not in fabric, (illus. 51.32) with a parallel in terms of form from Leicester (Clamp 1985, fig. 32, no. 28). The bowl is clearly imitating 'Belgic' pottery and probably dates to the first century AD. This certainly shows cultural links beyond local ones. In addition, the other vessels in this group may show a refinement of pottery techniques in the late Iron Age, from the first century BC, not paralleled at sites elsewhere in Leicestershire at this time. This may point toward close contact with the Iron Age settlement at Leicester itself, which dates from at least the first century BC, (Clay 1985; Clay and Pollard 1994). However, there was no secondary movement of continental imports from Leicester to the Elms Farm settlement, implying a different status.

In terms of trading networks the igneous rock fabric pottery is likely to be of a local origin, with the potters using local boulders, or the wares may originate from areas of Charnwood igneous outcrops, such as Mountsorrel c. 10 km to the north west. The shell-tempered group may show links with social groups in a broadly eastwards direction in south-east Leicestershire, Rutland and the fringes of Lincolnshire and Northamptonshire. These networks were probably becoming well established by the later Iron Age.

The assemblage may represent domestic discard of pottery with other materials such as animal bone and worked stone. It should be mentioned, however, that elsewhere features containing similar deposits have been interpreted as representing 'structured deposition' (Hill 1993), although these sites often have other evidence of ritual activity, such as Wanlip in Leicestershire (Beamish 1998). The major deposits are concentrated in penannular ditches associated with round houses, including those found near terminals. Similar patterns of deposition are relatively common during the Iron Age and have been found at numerous settlements. Examples of this have been produced by sites at Enderby, Leicestershire (Elsdon 1992a and Meek 1996), Gamston, Nottinghamshire (Knight 1992), Empingham, Rutland (Cooper forthcoming) and Crick, Northamptonshire (BUFAU 1998).

Thus the pottery was used for domestic purposes, including cooking (see Evidence of Use and Perforated Vessels), by the inhabitants of settlement. When broken or unwanted it was deposited, mainly in round house ditches, along with other domestic debris such as animal bones and querns (see The Animal Bone and The Worked Stone). These inhabitants were probably trading with other settlements to the east and the relative sophistication of some of their pottery at this time is notable and may show external influences during the later Iron Age. Although not as significant as the settlement at Leicester, with its continental trading links, the assemblage adds weight to the argument that an Iron Age 'village' of considerable size and importance was in existence at the Elms Farm site. The pottery shows activity in the area beginning probably in the middle Bronze Age. However, it also indicates that the major settlement development did not take place until the late Iron Age, in the first century BC and early first century AD.

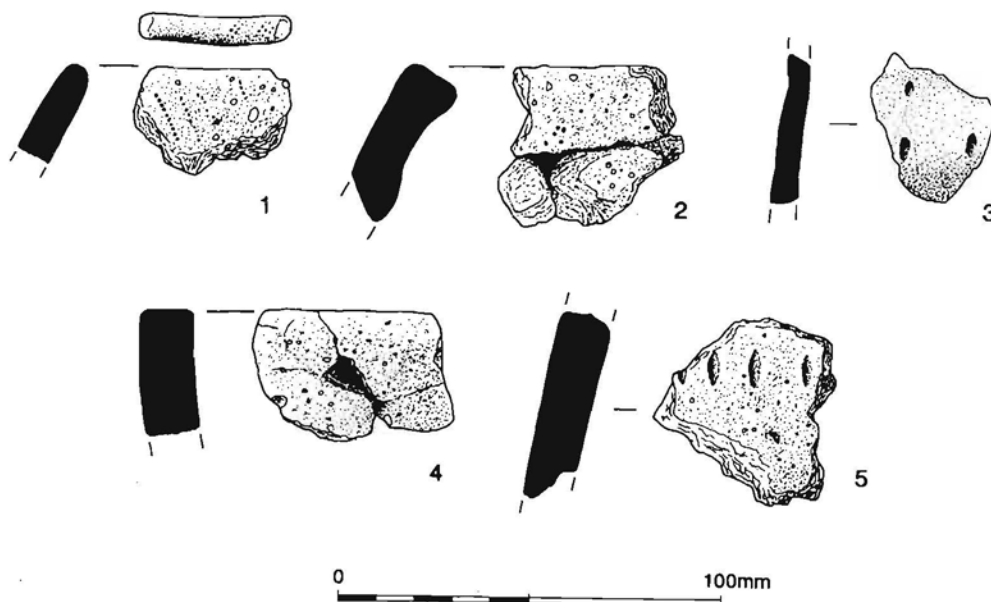
### *The illustrated pottery*

#### *Area 3 - Phase 1a*

#### *Middle Bronze Age pottery*

illus. 47

- |   |      |   |
|---|------|---|
| 1 | 5007 | Rim, RQ1, R1, fabric very coarse, barrel-shaped urn with diagonal lines of comb impressions, Phase 3, 3084. |
| 2 | 5008 | Rim, RQ1, R4, coarse fabric, barrel-shaped urn, Phase 1, 3444.  |
| 3 | 5008 | Shoulder, Q2, with finger-nail impressions, Phase 1, 3267.  |



47. Middle Bronze Age pottery, Area 3: 2-4, Phase 1a: 1, Phase 3: 5, Phase 4

- 4 5008 Rim, RQ1, R2, coarse fabric, bucket-shaped urn, Phase 1, 3115.  
 5 5006 Body, RQ1, coarse fabric, with finger-nail impressions, probable barrel urn, Phase 4, 3136

*Area 3 – Phase 1b*

*Iron Age pottery*

illus. 48

- 1 5078 Rim, RQ1, F3, R4, scoring on body and neck (SC), 3853.  
 2 5084 Rim, S1, F13, R4, internal groove, 3807 (fill of pit 3809).  
 3 5012 Rim and body, RQ1, F1, R5, scoring on body (BR, SC and BRL), 3217 (from fill 3215 of cut 3214).  
 4 5012 Rim, Q2, F3, R2, 3217.  
 5 5012 Rim and body, Q2, F6, R1, part of body displays scoring (SCR and SC). Carbonised residue on external surface, 3252 (from fill 3236 of cut 3235).

illus. 49

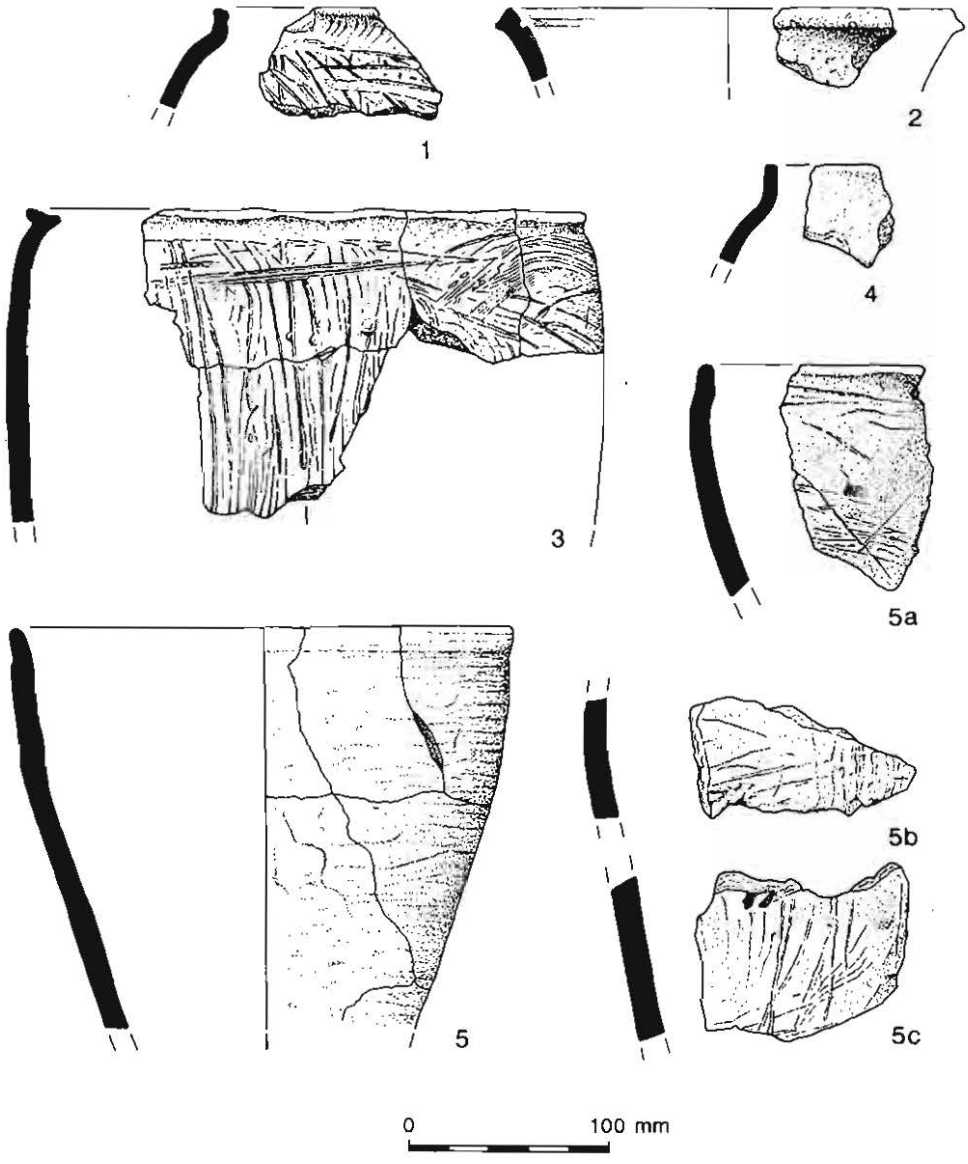
- 6 5012 Rim and body, Q2, F3/F6, R1/2, very light vertical scoring (BRL), 3252.  
 7 5012 Rim and body, Q2, F4, R2, deep mainly vertical scoring (BR and SC), carbonised residues on inside and externally in neck area, 3252.  
 8 5012 Rim and body, Q2, F5, R1, 3252.

*Area 3 – Phase 2*

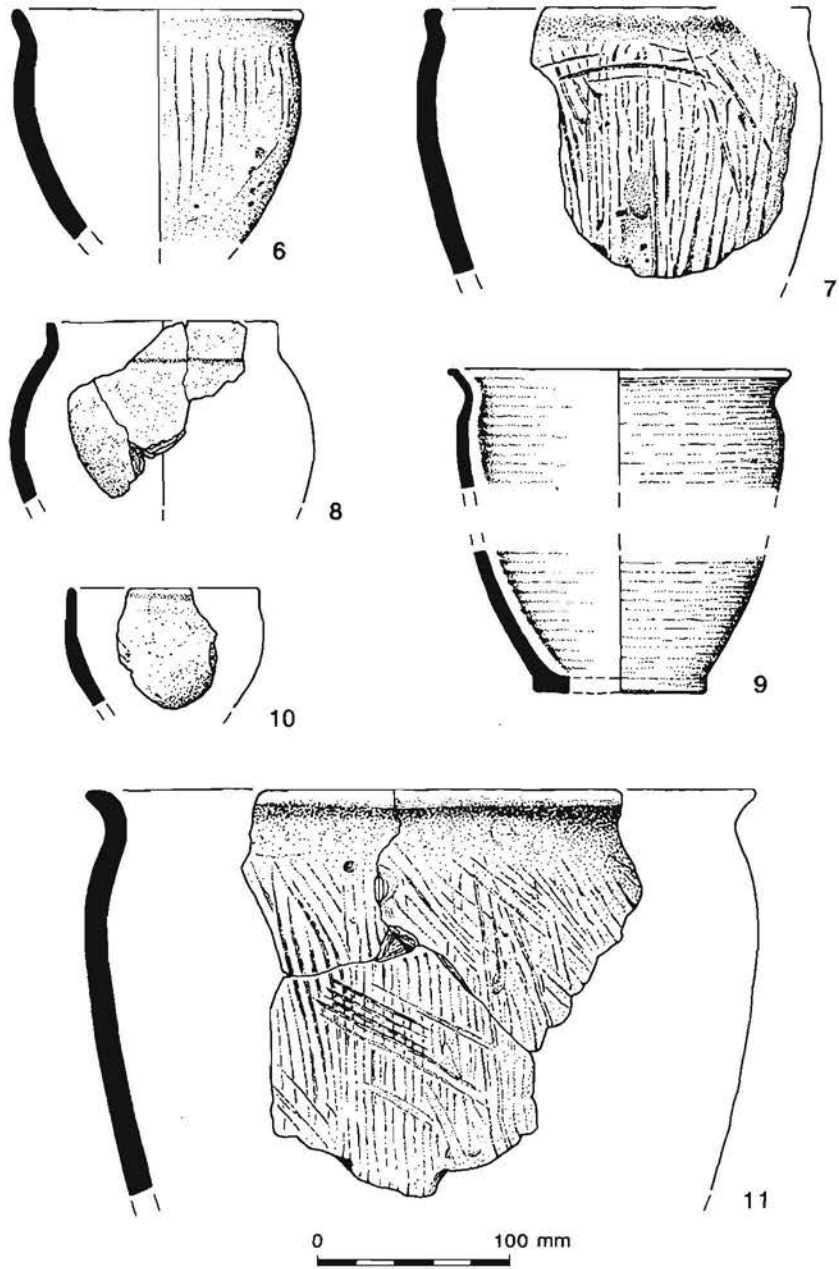
- 9 3725 Rim and base, Q1, F8, R1, burnished external and internal surfaces, 3726.  
 10 5001 Rim and body, Q2, F7, R2, 709.

*Area 3 – Phase 3*

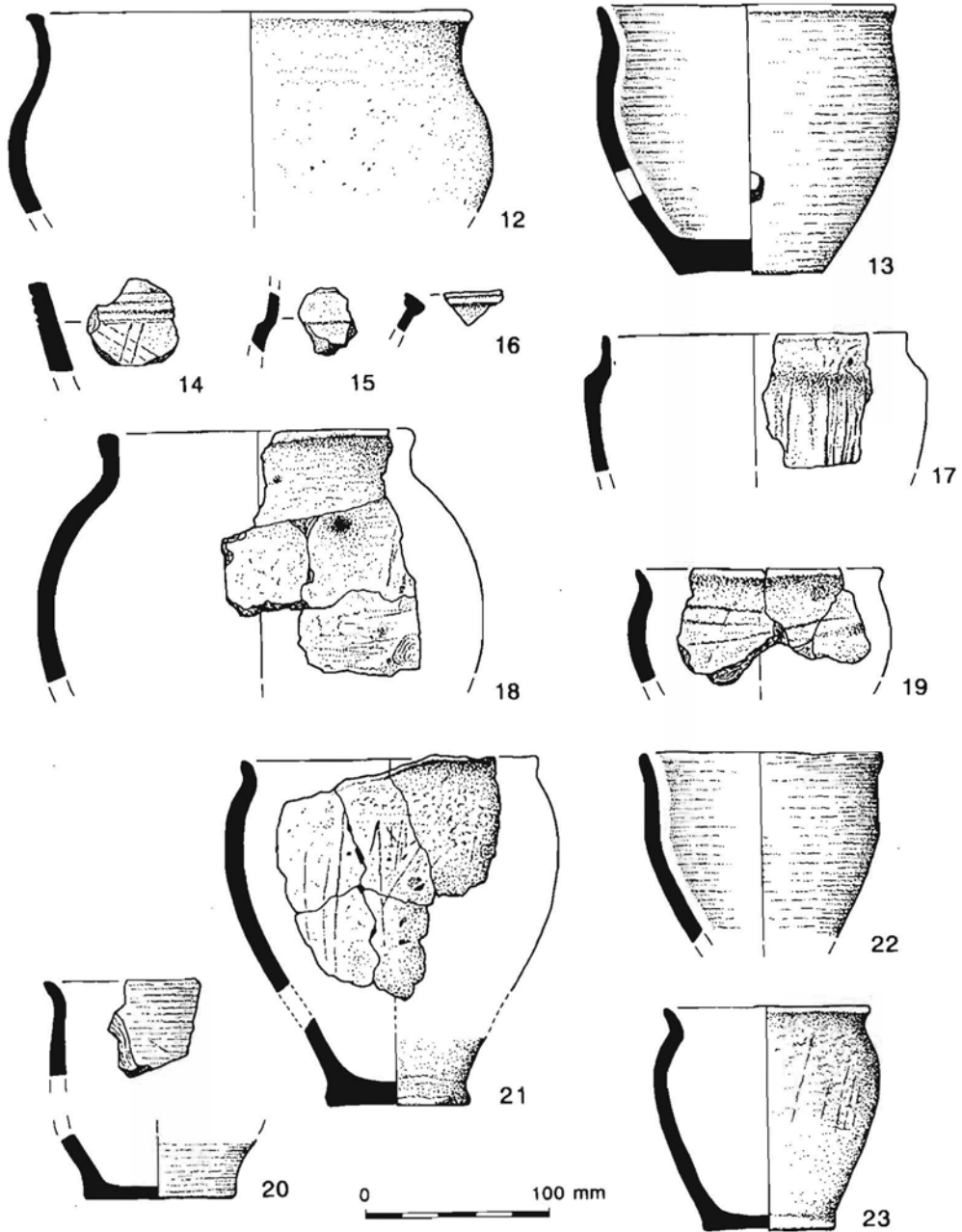
- 11 5015 Rim and body, Q2, F4, R1/2, scoring (BR) and patches of carbonised residue on outside, 3439.



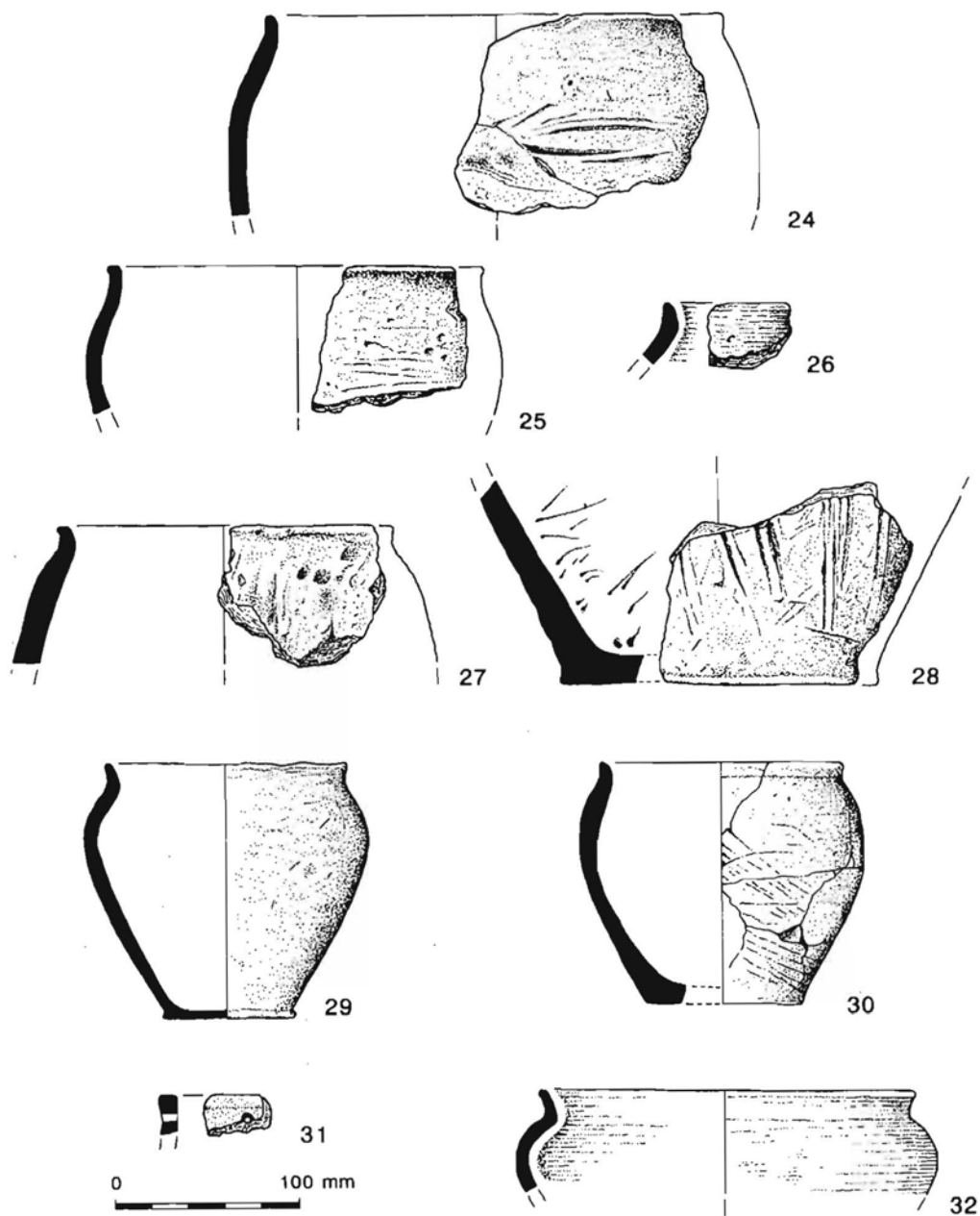
48. Iron Age Pottery, Area 3 : 1 - 5, Phase 1b



49. Iron Age Pottery, Area 3 : 1 - 8, Phase 1b: 9 & 10, Phase 2: 11, Phase

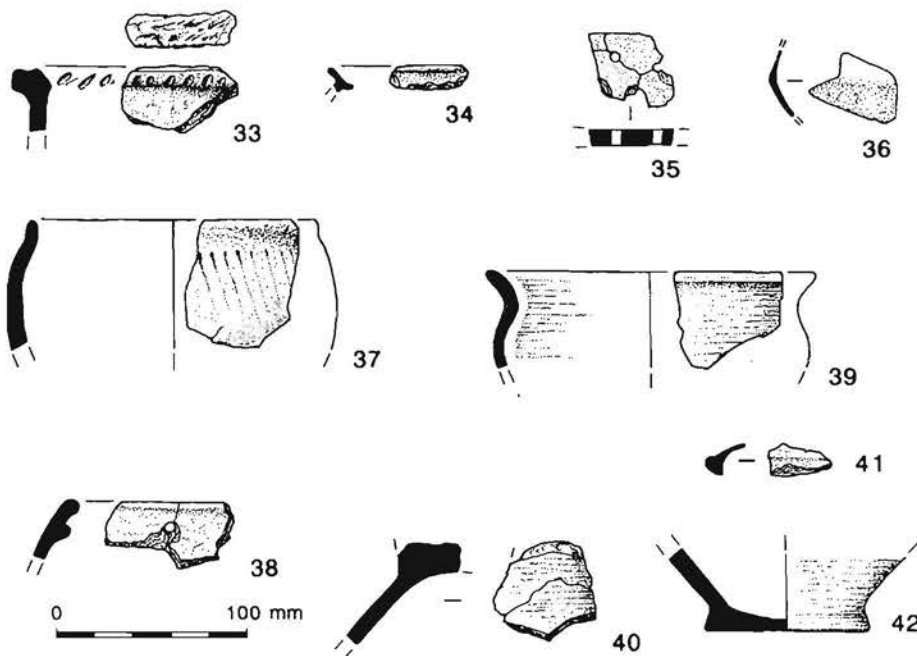


50. Iron Age Pottery, Area 3: 12 & 13, 15 - 17, Phase 2: 14, 18-23, Phase 3



51. Iron Age Pottery, Area 3: 24 - 32, Phase 3





52. Iron Age Pottery, Area 3: 33 - 36, Phase 3: Area 6, 37: Area 7, 38 - 41

*Area 3 - Phase 2*

illus. 50

- 12 5017 Rim and body, RQ1 (very coarse), F10, R4, 3470.  
 13 5020 Complete profile, Q2, F6, R1, burnished external and internal surfaces, hole in lower half of body, 3564.  
 15 5001 Part of neck and shoulder, Q1, F9, burnished inside and outside, 3047.  
 16 5002 Rim, S1, R5, 3568.  
 17 5009 Rim and body, Q2, F5, R1, deep vertical scoring (BR), 3134.

*Area 3 - Phase 3*

- 14 5064 Re-worked sherd, possible counter, Q2, scored (BR and SC) with external burnt residue, 3437.  
 18 5015 Rim and body, RQ1, F3, R4, external residue, 3415.  
 19 5003 Rim and body, Q2, F3, R1, thick carbonised residue inside and outside in shoulder area, 704.  
 20 5003 Rim and base, RQ1, F3, R1, highly burnished on internal and external surfaces, 3063.  
 21 5003 Rim and base, Q2, F3, R1, scored (SCR), burnt residue in area below rim, 3063.  
 22 5003 Rim and body, Q1, F3, R1, burnished internally and externally, 3077.  
 23 5003 Whole profile, Q2, F3, R1, carbonised residue present on external and internal upper part of body, 3077 and 3570.

illus. 51

- 24 5003 Rim and body, Q2, F4, R1, scored (SC), small patch of burnt residue in shoulder area on outside, 3077.

25	5003	Rim and body, RQ1, F4, R2, 3077.
26	5003	Rim, RQ1, F3, R1, highly burnished inside and outside, 3265.
27	5003	Rim and body, Q2, F3, R1, 3265.
28	5003	Base and body, Q2, scored externally (BR and SC) and random internal scoring (SC), 3265.
29	5003	Complete profile, Q2, F3, R2, shows evidence of fire spalls on inside and outside, 3317.
30	5022	Complete profile, Q2, F6, R1, with light scoring (BRL) and residue in shoulder area on outside, 3710.
31	5022	Rim, RQ1, R2, with probable mending hole, 3710.
32	5003	Rim and body, RQ1, F9, R2, burnished on internal and external surfaces, 3244.
illus. 52		
33	5003	Rim, S1, R6, diagonal tooling on rim, residue on outside, 3244.
34	5003	Rim, S1, R5, 3067.
35	5007	Strainer base, Q2, F14, 3084.
36	5065	Carinated body, S1, F12, 3417.
<i>Area 6</i>		
37	5038	Rim and body, Q2, F2, R1, 6086.
<i>Area 7</i>		
38	5034	Rim, Q2, F11, R2, part of internal ledge and suspension hole, 7015.
39	7045	Rim, S, F8, R1, burnished on inner and outer surfaces, 7042.
40	5033	Part of body and lid (or unusual base), Q1, burnished on outer surface, 7042.
41	5033	Lid, S1, 7054.

## The struck flint

*Hugo Lamdin-Whymark*

66 pieces of struck flint were recovered, including a small number from sieving. The raw materials used were all available locally, either from the river gravels or the boulder clay on which the site is situated. The majority of the flint is of fresh uncorticated condition, although a few pieces exhibit heavy cortication. The only datable artefact was a fragment of a transverse arrowhead, dating from the later Neolithic. Technologically, the rest of the material could date from the late Neolithic to the Bronze Age. The flint was found in 45 Iron Age contexts, and appears to represent the incorporation of flints as a residual element in the fills of features.

Table 10: The struck flint by category

<i>Category Type</i>	<i>No. of Flints</i>
Flake	35
Blade	3
Blade-like flake	2
Irregular waste	2
Chip	5
Bashed lump/tested nodule	3
Single platform flake core	2
Multi-platform flake core	3
Transverse arrowhead	1
Side scraper	1
Side and end scraper	1
Other scraper	1
Notch	1
Miscellaneous edge retouch	6
<i>Grand Total</i>	<i>66</i>

## The burnt and fired clay

*Kayt Brown*

### **Introduction**

952 fragments of burnt and fired clay weighing 4237g, were found within 117 contexts, with the majority (814 fragments, 2474g) being recovered during the processing of environmental samples. The assemblage comprised burnt clay fragments, considered to have been produced through accidental exposure to heat. Generally these are amorphous pieces undiagnostic of any function although a small amount of daub was recorded, as well as vitrified clay lining and one fragment with a moulded surface that may also have been structural. Small pieces of fired loomweights were also found. All the burnt and fired clay was recovered from the mid to late Iron Age phases.

### **Fabrics**

The material was examined and sorted macroscopically into five broad fabric types which were then characterised microscopically (x10) and recorded by context and weight. The most common accounting for 89% of the material contained common to very common poorly sorted, sub-angular quartz (<1.0mm), moderate to common voids resulting from burnt-out organic material and sparse black grains (0.5-1.00mm). Other fabric types contained quartz with clay pellets, coarser rock inclusions, and coarse flint.

### **The burnt clay fragments**

Most of the material (2223g) comprised unidentifiable pieces, useful primarily as an indicator of settlement activity, and such fragments could originate from a range of domestic processes such as linings for ovens or hearths. Some may be daub although few pieces displayed any wattle impressions. The assemblage was in good condition and dated by association with pottery to the mid to late Iron Age. There were no clear concentrations, with the material occurring across the site in ditch and pit fills.

### **Vitrified clay lining**

Vitrified clay lining is diagnostic of clay that has been exposed to high temperature, and although not necessarily diagnostic of metal-working, it is often found in association with other metal-working residues. 267 g of this material occurs in a number of contexts, frequently in association with slag and other possible metalworking residues such as cinder and fuel ash slag. This material occurs in areas 3, 6 and 7, and in area 3 in context 3356. This was the primary fill of a pit which produced cinder, fired daub, undiagnostic slag, a smithing hearth bottom and pottery. There was also a concentration in area 6, particularly contexts 6011, 6012, 6034, 6035; these were fills which produced a considerable amount of metal working debris.

### **Loomweights**

Only one loomweight fragment (442 g) with more than 25% surviving and evidence of at least one perforation was identified. A number of other pieces with one or more smoothed surfaces or corners (186 fragments, 816g) were also identified as fragments of triangular loomweights, and most occurred in fabric 1. Elsewhere on similar sites, for example at the Iron Age site at Willington in Derbyshire (Elsdon in Wheeler 1979, 206), small loomweights were thought to weigh about 1360g. At Elms Farm therefore with total weight of 1258 g for loomweights, few weights are represented suggesting limited textile production, probably to fulfil domestic needs. Similar small fragments of triangular loomweights were recorded at other similar sites, for example Grove Farm, Enderby (Clay 1992, 54) and at Normanton le Heath (Thorpe *et al* 1994, 370). Loomweight fragments came mainly from within the later fills of the ditch terminals.

## The worked stone

Fiona Roe

### Introduction

13 pieces of worked stone were found, comprising 10 quern fragments, including one from a rotary quern, and 3 anvils. There were also some unworked fragments and a quantity of burnt stone. A summary is provided in Table 11. The stone was examined using a hand lens.

### Materials

Six different varieties of stone were worked, and a further 3 materials may have been utilised but occurred only as fragments without working traces. The saddle querns were made from varied materials. The site lies on boulder clay (British Geological Survey, sheet No 156), which provided cobbles of different types of rock (Posnansky 1960). These could easily be turned into small saddle querns, and imported stone used for saddle querns and small items may not be easy to distinguish. Small boulders of quartzitic sandstone were used for two saddle querns (3054, 3652), and quartzite was used for a small rubber (3282). These are very likely to have come from local Pleistocene deposits. The same two materials were also used for three anvils or rough mortars (3102, 3631 & 6011).

Volcanic agglomerate, used for one saddle quern (3054), outcrops in Charnwood Forest only some 11 km (7 miles) from the site (Evans *et al* 1968, 4), and may also have occurred in the boulder clay, as did pieces of Millstone Grit (Fox-Strangeways 1903, 53), of which there were worked fragments from two Iron Age contexts (3040 & 3236). If material for saddle querns was brought to the site, it is likely to have been the sandy facies of the Northampton Sand, which occurs mainly to the west and north east of Northampton (Taylor 1949, map plate II). This appears to have been used for two saddle querns (3292, 6106). One rotary quern was found, a complete upper stone of Jurassic limestone (3458, illus. 54.1), with a likely source in the Lincolnshire limestone some 32 km (20 miles) or more to the east.

5 unworked pieces of stone from Mountsorrel granite (12.3 kg) and a flake of Coal Measures sandstone were also found. Igneous rock, granodiorite, from Mountsorrel outcrops about 10 km (6.2 miles) north west of Elms Farm (Hains & Horton 1969, 27), but pieces suitable for saddle querns could possibly have been picked up locally in the boulder clay. The chip of Coal Measures sandstone (3853) is brown, micaceous sandstone of a type used for whetstones, and may have been deliberately collected from a source area to the north of Nottingham perhaps in conjunction with Millstone Grit. 24 fragments of unworked ironstone were also found (0.3 kg), which probably come from the Northampton Sand Ironstone Field (Hollingworth & Taylor 1951). The burnt stone (9.3 kg,) consisted mainly of broken fragments of quartzite pebbles collected from the local boulder clay.

### Artefacts

Saddle querns predominate in this assemblage, with 9 fragments from querns or rubbers, none of which is complete. None of the saddle querns seems to have been of any great size, limited by the proportion of the boulders that were available locally. The largest (3054) was maybe 39cm in length, but most appear to have been quite a bit smaller. At least two rubbers, both made from Millstone Grit (3040, 3236), were of the hog-backed type, while a smaller rubber of quartzite (3282) might also have been used for grain processing.

In phase 3 there may have been a change to the use of rotary querns, as seen in the upper stone of a beehive quern made, somewhat inexpertly, from Lincolnshire limestone (3458, illus. 53.1). This came from a phase 3 context in the enclosure ditch. Limestone would not have been an ideal grinding material, although it might have been chosen for ease of working into the required shape. Elsewhere once the use of rotary querns was established in Leicestershire, the preferred material was Millstone Grit. Mountsorrel granite may have been used later for rotary querns and 2 large fragments (3317) were found in phase 3 penannular ditch (5003), dated to between 386 and 46 cal BC. One of the anvils (3102) and burnt fragments of Millstone Grit (3538) came from the same ditch.

Hard blocks of quartzite or quartzitic sandstone could have been used as working surfaces (3102, 3631 & 6011, illus. 54.2) for hammering out artefacts during smithing. They could also have been used for breaking up either iron ore or granite for tempering. Whetstones are not always recorded from Iron Age sites, although many must have been used. At Elms Farm the only indication of their use is a flake of Coal Measures sandstone (3853), a classic whetstone material.

### Discussion

Only small numbers of saddle querns have been recorded from Iron Age sites in Leicestershire. The materials used are generally very variable, suggests the fortuitous use of stone that was locally available, principally cobbles from the boulder clay that occurs over much of the county. At Breedon-on-the-Hill, Leics, at least 7 different types of stone appear to have been used for saddle querns (Wacher 1964a, 132; 1978, 7), all of which could have been picked up locally. At Wanlip, Leics, two saddle querns and two rotary quern fragments made from 3 different types of local stone were found in the same pit (Beamish 1998, 62). Saddle querns made from small boulders of quartzitic sandstone include one from Gimbo Farm (University of Leicester Archaeological Services, in prep).

Large numbers of beehive rotary querns are known from Leicestershire, with over 40 from Breedon-on-the-Hill (Liddle 1982, 25 & fig. 17). Once such querns came into use, a more deliberate choice of stone was usually necessary, and most were made from Millstone Grit. However, despite the unsuitability of limestone for grinding, a few other such rotary querns are known, accounting for 4% of the beehive querns known from Leicestershire. Others were found at Harston, Leics (Kenyon 1950, 44 & Pl x), with two from Grove Farm, Enderby (Clay 1992, 54 & fig. 30).

Small unworked ironstone fragments from the Northampton Sand found at Elms Farm could have been discarded low quality ironstone, which outcrops intermittently over a wide area (Hollingworth & Taylor 1951). Roman smelting sites where Iron Age occupation has also been found include sites at Wakerley and Weekley in Northamptonshire (Condon 1997, 14-15), which also lie within the suggested core area for Scored Ware (Elsdon 1992b, 84 & fig. 2).

Table 11: Summary of Stone Finds (Phases in Brackets)

Materials	Objects				Total	Possibly Utilised	Unworked		Total
	Saddle Querns	Rubbers	Anvils/Mortars	Rotary Querns			Unworked	Burnt	
Quartzitic Sandstone	3652 (1b) 3040 (2) 3054 (2)		3102 (3)  6011 (2)		5			7	7
Millstone Grit		3236 (1b) 3040 (2)			2	3538 (3) 3282 (-) 3282 (-)			3
Northampton Sand	3292 (1b) 6106 (2)				2				
Quartzite		3282 (-)	3631 (3)		2			70	70
Coal Measures Sandstone						3853 (1b)			1
Charnwood Agglomerate	3054 (2)				1				
Lincolnshire Limestone				3458 (3)	1				
Mount Sorrel Granite						1706 (1a) 3317 (3) 3317 (3) 3538 (3) 2313 (2)			5
Northampton Ironstone							24		24
Various								11	11
<b>Totals</b>	<b>6</b>	<b>3</b>	<b>3</b>	<b>1</b>	<b>13</b>	<b>9</b>	<b>24</b>	<b>88</b>	<b>121</b>

## The iron slag

Lynne Keys

### Methodology

A total of 4.8kg of debris described as iron slag was recovered. This was visually scanned and categorised on the basis of morphology and colour. All categories within each context were quantified, and the dimensions of smithing hearth bottoms were recorded.

### Material type

The types of debris present and the total weight of each are presented below. Processing of iron involves the manufacture of iron from ore in a furnace and the process of smithing. Smithing can be primary, that is hot working with a hammer near the furnace, or secondary, which is hot working of the iron to turn it into an object. These activities, smelting and smithing, each generate diagnostic slags. Some slags are not diagnostic and may derive from either process. Other types of debris result from high temperature activity, including domestic fires, and these do not, on their own, indicate ironworking was taking place.

<i>Diagnostic slags</i>	<i>Wt g</i>	<i>Undiagnostic slag</i>	<i>Wt g</i>
smithing hearth bottoms	2550		1223
smithing slag	204		
<i>Other debris</i>			
cinder	156	ferruginous stone	2
crucible/mould	30	fired clay	38
iron-rich cinder	18	fuel ash slag	156
iron objects	9	hearth lining	10
ferruginous concretion	16	ore	24
vitrified hearth lining	19		

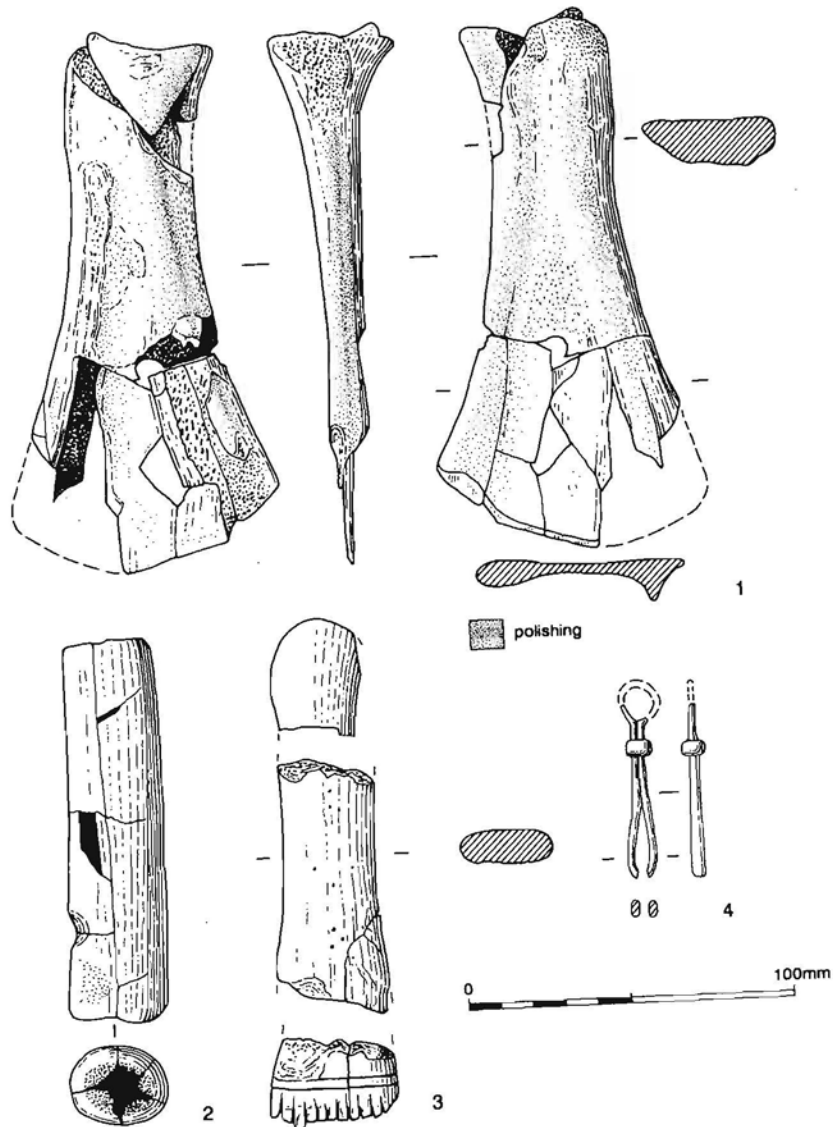
*Smithing hearth bottoms* were the largest slag type by weight. These developed in the hottest part of the hearth, in front of and below the tuyère, from the predominantly iron silicate (fayalitic) slag produced by the high temperature reactions between the iron, iron-scale and silica from either a clay furnace lining or sand used as a flux by the smith. This is indicative of secondary iron smithing. Measurements of the nine smithing hearth bottoms are given below, and suggest these were small to average in size compared with examples from other Iron Age assemblages.

	range	mean
weight (g)	44 – 1074	283
length (mm)	45 – 130	82
width (mm)	30 – 120	64
depth (mm)	20 – 65	32

*Undiagnostic slag* formed the second largest group in the assemblage. It may be produced by smelting or smithing but there is no other diagnostic evidence for smelting in the assemblage. Fragments were categorised as undiagnostic due to their small size and therefore most may have been produced by smithing activity. Some ironstone fragments (contexts 6012 <128>; 6023; and 6040) were found amongst the slag.

*Hammerscale* – a small amount was recovered, particularly from area 6 (F5045 and 5044). This is produced by smithing, and usually remains in the soil around the anvil and hearth when larger slags are removed. If slags have not been moved far for disposal it is frequently found in the soil adhering to them, but in this case the slag had been cleaned and the hammerscale was recovered from soil samples.

*Hearth lining* is not, on its own, diagnostic of smithing activity but association of vitrified lining with other diagnostic material provides support for the process. As some copper-alloy working waste was recovered, hearth lining could have been produced by this activity.



53. Worked bone: 1, cattle scapula (3454): 2, antler handle (3670): weaving comb (6086):  
copper-alloy tweezers (5064)

*Cinder* is a very porous, highly vitrified material formed at the interface between the alkali fuel ashes and siliceous material of a hearth lining. On many excavations it represents the lighter portion of vitrified hearth lining. *Fuel ash slag* is a residue produced by the reaction between alkaline fuel ash and siliceous material such as a clay lining or surface. It can be produced by any high temperature activity where these two constituents are present including domestic or industrial hearths, accidental fires, and even, in some periods, cremations.

### **Discussion**

The small quantity of ironworking debris represents a brief period of iron smithing. No slag was found within a structure although area 6 was identified as one definite area where this took place.

#### ***Area 6***

Feature 5045 contained fills 6009, 6013, and 6019 (contexts 6010, 6011, 6012 and 6020) which included three smithing hearth bottoms and other macro slags. Moderate quantities of hammerscale, mainly flake with the occasional sphere, and some fragments of iron were also recovered. One of the anvils came from this feature (context 6011 sf 24). None of this appears to relates to a building, but the inference must be, on account of the quantity of hammerscale present in the fills, that smithing activity was taking place nearby. In the same area, feature 5044 close by, contained similar slag evidence including four smithing hearth bottoms, although the hammerscale was less (fills 2316 and 6038, contexts 2313, 6034, 6035, and 6036).

#### ***Area 3***

In this area no focus was found but one pit 3355 (F5083), which was described during excavation as being rich in slag, contained three fills (3356, 3357 & 3358) yielding one smithing hearth bottom, another unusual smithing hearth bottom which may be a bloom from the manufacture of iron from ore, and some broken hammerscale. For the rest of this area a scatter of material, including the second anvil (context 3631), occurs across the centre and north-west, but most of this may have been redeposited.

Small fragments of ironstone were present on the site although there is no real evidence for the smelting of iron. Only iron smithing appears to have taken place in the area excavated, but small quantities of ironstone may have been brought to the site

### **The copper-alloy deposits**

*Peter Northover*

There were 18 fragments indicative of copper-alloy working found in area 3. One large fragment of over-fired ceramic came from context 3056 (F5003). It was light grey, vitreous and vesicular on one, probably the outer, surface. It is possible that this was from a crucible. However, the fabric was too altered for certainty and there were no visible signs of metal residues.

The remainder of the fragments were from pit 3355 (F5083). One fragment of mould, possibly for a small terret was found in this feature. The fragment has the typical sandy fabric of an Iron Age mould but had clearly been over-fired, either before use or due to the fragments ending up in the fire after the casting had been broken out. A further three small fragments may also have been mould material based on their fabric.

A rim fragment of a crucible was also found in pit 3355. It was of a dark fabric, over-fired, vitreous and vesicular with traces of cuprite as well as one possible corroded copper-alloy prill. As with the moulds it is possible that this crucible had been burned after use. This pit also included four irregular fragments which may have come from over-fired crucibles, two small fragments of hearth lining fired on one side, four small unidentifiable fragments and a small unidentifiable fragment bearing copper-alloy corrosion products.

### ***Discussion***

The evidence from the material indicates a very small scale, possibly one-off casting operation with most of the crucible and mould material involved still missing. Similar examples of small scale, settlement-based Iron Age casting activity have been found at Gravelly Guy, Oxon (Northover forthcoming). In addition, parallels for the partial destruction of the material by heat can be found at Gussage All Saints (Foster 1980) where a significant proportion of both moulds and crucibles had been over-fired. It is presumed that the metal being cast was bronze, but the material overall was too corroded for any clear determination.



## The worked bone and antler objects

*Leigh Allen*

There were four worked bone objects and one antler object found in association with middle to late Iron Age pottery. These are a weaving comb, a handle, a point, a cattle scapula and a fragment of sheep tibia. With the exception of the weaving comb they were recovered during the environmental sample processing and are very fragmentary.

A weaving comb (illus. 54.3) was recovered from 6086 (secondary fill of ditch 6087). It is highly polished and has the remains of eleven teeth regularly cut parallel with the long axis of the comb, and is rectangular in section at the base. The inter-dentate notches are v-shaped. The butt is circular and the shaft of the comb is widest at the dentate end, plano-convex in section with curving shaft sides following the natural form of the bone. All the teeth appear to have fractured just below the notches, at the weakest part of the comb. It is simply decorated with two horizontal incised grooves above the notches, and three groups of incised dots down the centre.

A similar comb was recovered from Danebury (Sellwood 1984, 371-378, figs 7.29, 3. 38). Such combs could have been used with a warp weighted loom. A number of similar combs may have been wedged parallel with the weft and driven against it with a sword beater. This use could have resulted in the kind of wear seen here.

A cattle scapula (illus. 54.1) recovered from 3454 (primary fill of ditch 3455) is very fragmentary. The blade has been cut two thirds of the way along the length and the expanded edge is curved and chamfered. The spine running longitudinally down the blade has been reduced in height. The articular end and neck act as the handle. The whole object is very highly polished and on the chamfered edge there are very fine striations. At the Meare Lake Village similar objects have been categorised as shovels, possibly for shovelling grain (Gray 1966, 304-305). They could also be used for digging as seen with the discovery of similar scapulae in association with red deer picks at the bottom of the Avebury ditch attest (Saunders 1962, 113).

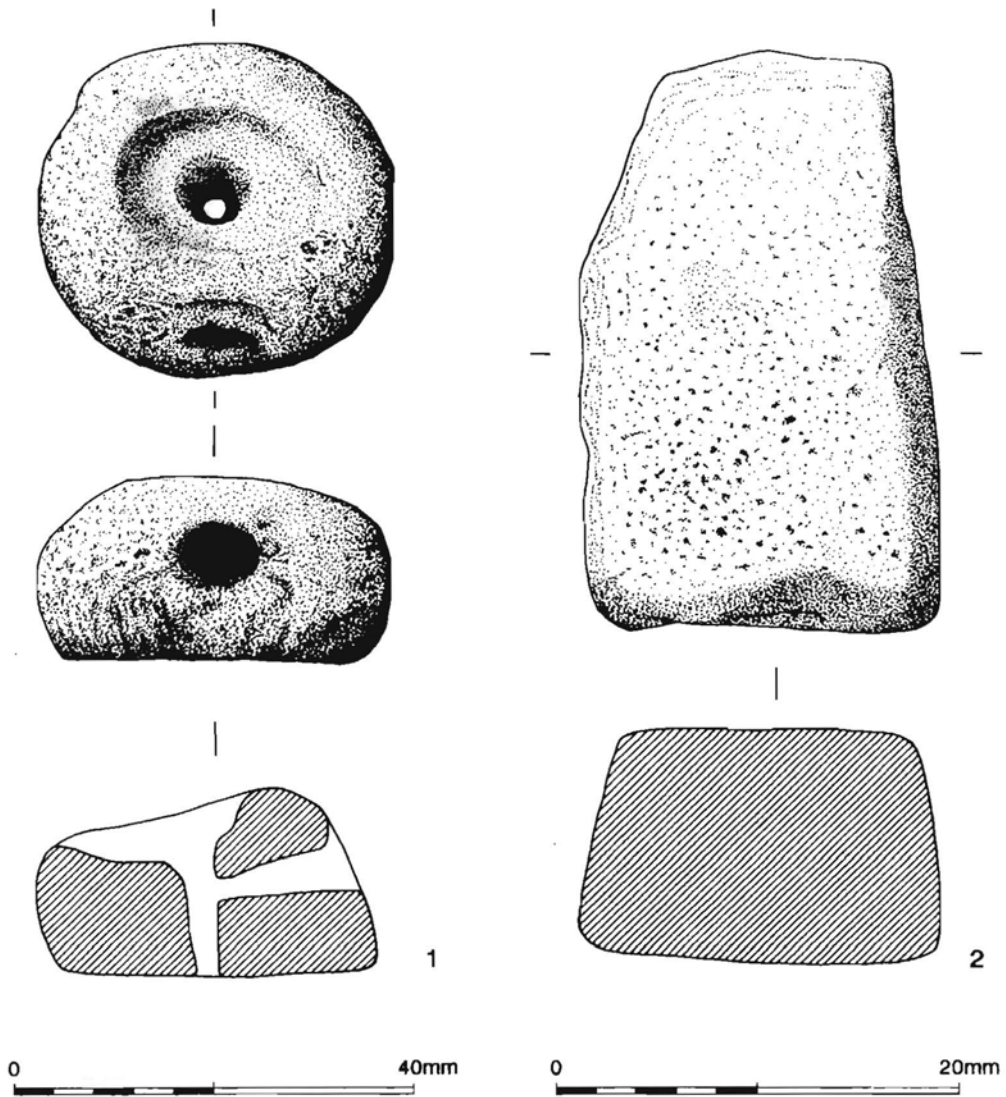
A fragment of a sheep tibia about 43 mm long with a small circular perforation, 3 mm in diameter, at the distal end, was recovered from context 3728 (the latest fill of the terminal of the pennanular gully 5020). There are signs of wear in the form of polish around the shaft and on the butt. The fragment is probably from a gouge similar to those recovered from Danebury (Sellwood 1984, 382-387, fig. 7.33-7.35). A polished bone tip from a point was recovered in 7041.

An antler handle (illus. 54.2) came from context 3670 (fill of feature 3671). It is circular in section and pierced longitudinally, and curves gently along its length expanding slightly towards the butt end. There is a transverse notch at the base of the handle at the butt end. The whole object shows signs of polish through wear. A similar object was recovered from Meare Lake Village (Coles 1987, 102-105, fig. 3.34, No. H145).

### *Illustrated worked bone*

illus 54

1	3454	Worked cattle scapula from ditch 3455 (F5017)
2	3670	Antler handle from post hole 3671
3	6806	Weaving comb from ditch 6087 (F5038)



54. Worked Stone: Quernstone from ditch F5018 (3458): anvil from ditch F5045 (6011)

## Metal objects

*Ian Scott*

21 pieces of metalwork were found, comprising 4 copper-alloy objects and 17 iron objects.

### *Stratified metalwork*

#### *Copper-alloy*

- 1 Tweezers formed from thin rod. They have a sliding collar just below the suspension loop, which is broken (3437- sf 91) – illus. 53.4.
- 2 Possible awl, with a shank of square section tapering to a point at each end. Possibly for leatherworking (3133- sf 5).
- 3 Rivet & square washer; rivet slightly burred over at the ends (3605-sf 110).
- 4 Rod of thin circle section (3004-sf 2).

#### *Iron*

- 5 Looped bar or eye, possible for attachment of handle (6023- sf128).
- 6 Bar fragment with broad flattened terminal and probable nail (3670-sf 109).
- 7 Plate fragment. (3670-sf 109).
- 8 Possible plate fragment with possible rivet (3376).
- 9 Strip, small fragment (1205).
- 10 Bar or strip, small fragment, possible offcut. (3099).
- 11 Bar fragment, possible offcut. (6005).
- 12 Bar fragment, possible offcut. (6011).
- 13 Nail, stem fragment (3670) .
- 14 Nail, stem fragment (6020).
- 15 Strip, very thin and irregular (3726).
- 16 Strip, slightly curved in section, small fragment (6011).
- 17 Small unidentified fragments. (6023-sf 127).

### *Discussion*

The copper-alloy objects are from deposits containing middle to late Iron Age pottery. They include a pair of tweezers (1) and a possible awl (2). The presence of the tweezers (illus. 53.4) is of some interest, since tweezers, and toilet sets generally, are rare from Iron Age sites, although not unknown. They are common on post-Conquest sites. At Baldock, toilet implements were present in Romano-British contexts (Stead and Rigby 1986, 130-4). A comparable pair of tweezers with a sliding collar was found at Colchester in a later Roman context (Crummy 1983, 58-9, illus. 63, 1876). The tweezers seem therefore more likely to be of Romano-British than Iron Age date. The other objects cannot be closely dated.

The ironwork consists mainly of undistinguished pieces including fragments of sheet and bar. The only identifiable objects were two nails (13 & 14), and their presence might suggest a later Iron Age date. There was also a strip or bar with a flattened terminal (6) and a fragment comprising an eye or loop from a bar (5). There are three small pieces of bar which may be offcuts, dated by pottery to the middle to late Iron Age. The presence of iron objects suggests that a later Iron Age date might be appropriate.

#### *Illustrated Metalwork*

illus. 53.4      Copper tweezers, (3437 -F5064)

## Roman Republican denarii

*Paul Booth*

Two Roman Republican silver denarii were recovered from the site, situated together in context 3607. The coins were:

1. SF112. Obverse – helmeted head of Roman; Reverse – Dioscuri galloping right, with legend C·SCR beneath, and ROMA in the exergue. Struck in Rome by C. Scribonius, 154 BC. Reference RRC 201/1.

2. SF111. Obverse – galley, with legend ANT·AVG above and III·VIR·P·C below (both; Reverse – aquila between two standards, with legend LEG III below. Struck for Mark Antony, 32-31 BC. Reference RRC 544/15.

Despite the difference in date between the two coins they were clearly deposited simultaneously, and were in very similar condition, both being moderately, but not excessively, worn. It is likely that they had been kept together and that SF112, at least, had not been in normal ‘circulation’ for an extended period. The occurrence of the two coins together suggests that they should be regarded as a deliberate deposit or hoard, perhaps deposited in an organic container. It is certainly unlikely that they would indicate a casual loss, despite the apparent absence of any distinctive characteristics of the context from which they derive, which might explain their deposition at this particular location.

Mark Antony’s legionary denarii are unique amongst Republican issues in remaining in wide circulation into the Principate and indeed into the early third century AD (Crawford 1985, 232) and occur quite frequently in Britain during this period (Duncan-Jones 1994, 196-7). It is possible, therefore, that these finds were deposited in a post-Conquest, or even second century AD context. The presence of the earlier denarius makes this unlikely, however. While the general withdrawal from circulation of pre-Augustan denarii may not have taken place in Britain before the reign of Hadrian (*ibid*), the state of wear of the earlier denarius, as already suggested, is not consistent with its having been in ‘normal’ circulation up to this sort of date. Furthermore, denarius hoards of later first century AD and later date would be expected to contain roughly contemporary pieces, though this was often not the case with Claudio-Neronian hoards dated up to c. AD 64, in which contemporary silver was often absent.

The composition of early denarius hoards in Britain has been discussed recently by Orna-Ornstein (1997). These fall into two groups, one predominantly associated with East Anglia and likely to date, for the most part, to the Boudiccan revolt, the other, with a wider distribution, being generally earlier, but not necessarily closely dated (*ibid*, 28). Of these, a parallel to the present finds occurs at Warminster (Wilts) where a hoard of 12 denarii contained 10 Republican issues (of which the earliest – coincidentally – was another example of RRC 201 struck by C. Scribonius) and ended with two legionary denarii (Meadows and Robinson 1997). The hoard was found near an Iron Age hillfort, the possible association with such a site strengthening the parallel with the Leicester finds. The condition of the coins in the Warminster hoard (*ibid* Plate 1) is also closely comparable to that of the present pieces. A pre-Conquest context, and an association with Iron Age settlement, thus seems likely in both instances (though not certain at Warminster), but in neither case is it possible to suggest a close date of deposition. In any event the absence of other evidence for post-Conquest activity on the present site strongly supports the suggestion that these coins were deposited before AD 43.

#### *Illustrated Coins*

illus. 15: two Roman Republican denarii.

## **The human remains**

*Angela Boyle*

### ***Introduction***

A small assemblage of human bone was recovered comprising a single unenclosed cremation deposit (3378) and five separate deposits of human skull fragments in various ditch fills, two primary and three final fills (3004, 3451, 3458, 3493, 3823). Four of the five ditch fills contained middle-late Iron Age pottery (3004, 3451, 3458, 3493).

### ***The cremation***

The cremation deposit was recovered from the fill of a roughly circular pit (3377) which was located within an enclosure (5066) of probable middle to late Iron Age date. There were no associated artefacts. The majority of the bone was packed tightly at the base of the pit and may originally have been placed in an organic container. A small quantity of charcoal was also present.

The cremation weighed 796 g (plus 488 g of unsorted material from the >2 mm fraction). The remains are those of an adult of uncertain sex, the majority of which derives from the <10 mm fraction. Identifiable bone comprised skull (petrous, vault, anterior mandible, premolar), axial (lumbar and cervical vertebrae, acromion and rib shaft), upper limb (humerus, ulna, metacarpals, phalange) and lower limb (femur, tibia, fibula, patella, phalange).

While the cremation itself cannot be dated, much of the activity on the site is of middle to late Iron Age date. A pair of copper-alloy tweezers was recovered from the fill of the enclosure ditch (5064 – phase 3) and they may originally have been associated with the cremation. The tweezers, however, are of either Iron Age or Roman date and there is some limited Roman activity on the site. It is perhaps noteworthy that the enclosure is quite irregular in comparison to most of the others and that the entrance has a different orientation. In addition some limited Bronze Age activity has been identified. The form of the cremation makes it impossible to determine its date: it could be Bronze Age, Iron Age or Roman.

### *The skull fragments*

Quantities of disarticulated human bone are a common occurrence on Iron Age settlement sites. Whimster (1981, 178) refers to the widespread interest in the human head and the ever-growing collection of finds of fragmentary human bones, in particular skulls from settlement sites. All of the fragments were abraded which might suggest that they were lying around on the surface prior to inclusion in the ditch fills. The presence of some fragments in final fills surely indicates that they were included at a late phase in the use of particular enclosures. However, all are associated with other Iron Age material as shown in table 12 below, and the possibility of deliberate infilling as suggested by Hill (1995, 76) should not be excluded

Table 12: Material associated with human skull fragments

<i>Context</i>	<i>Identification</i>	<i>Associated material</i>
3004	8 fragments of parietal	Middle-late Iron Age pottery, burnt animal bone
3451	1 fragment of parietal	Middle-late Iron Age pottery, burnt animal bone
3458	1 fragment of parietal	Middle-late Iron Age pottery, complete quern stone
3493	1 fragment of occipital	Middle-late Iron Age pottery, animal bone
3823	1 fragment of parietal and 1 of frontal	Animal bone

### **Animal bone report**

*Bethan Charles*

*(Identification of bird, fish and most small mammals by Adrienne Powell)*

#### **Introduction and quantification**

The animal bones were one of the richest classes of materials from the site making it an important assemblage in view of the scarcity of material providing information on animal husbandry in the Iron Age in Leicestershire. The only other closely related sites with animal bones are found at Tixover, Rutland (Baxter 1991) and Grove Farm, Enderby (Gouldwell 1992). Cattle were the most numerous elements found on these sites, although, as at Elms Farm, it is likely that they were over represented compared to the sheep due to the poor preservation of the bones from smaller animals.

A total of 7964 fragments of hand retrieved bone were examined. Some of these fragments were re-assembled as individual bones, and these along with a partly articulated skeleton recovered (3958), comprising over 600 fragments, reduced the fragment count to 5323. The elements that could not be phased accurately have been omitted from the report since they were small in number and represent mainly unidentified fragments of bone. In addition to the hand

collected bone a further 14437 fragments of bone were retrieved from the sieved material. However, under 10% (987 fragments) of the bone could be identified to species. The methodology can be found in the appendix.

### *Condition of the bone*

It was attempted to measure the condition of the bone by grading it from 1 to 5 using the criteria described by Lyman (1996); grade 1 is classed as the best preserved bone and bone which had suffered structural and attritional damage, making it unrecognisable, was classed as grade 5.

The majority of the bone tended to be between grade 1 and 3 with many of the bone surfaces showing varying degrees of pitting with fine crevices, typical of mining by plant roots. Whilst the majority of root damage was minor it is almost certain that some indications of butchery damage or pathological changes may have been obscured by the condition of the bones. Table 13 shows the number of fragments from the hand collected bone and sieved bone with butchery marks, carnivore gnaw marks, fresh breaks and signs of burning. There was a large amount of burnt bone from the assemblage, the most concentrated deposit being in phase 3 pit F3473.

Table 13. Number of bones and percentage of total number of bones suffering butchery, post excavation damage, carnivore gnaw marks and burning from hand collected and sieved bone.

Damage	Phase 1a		Phase 1b		Phase 2		Phase 3		Phase 4		Area 6		Area 7	
	N	%	N	%	N	%	N	%	N	%	N	%	N	%
Butchery	1	0.2	27	1	64	1	60	1	1	1	23	2	15	1
Fresh breaks	43	7	625	23	1232	24	1424	17	11	1	215	20	219	16
Carnivore gnaw marks	0	0	11	0.4	34	1	51	1	0	0	17	2	8	1
Burnt	8	1	116	4	674	13	535	6	19	1	83	8	168	12

### *Species representation*

#### *Bronze Age*

Only 55 fragments of bone from the Bronze Age ditch were identified to species, mostly comprising sheep and cattle bones along with one element from a water vole. Due to the small amount of bone and lack of any other Bronze Age features it is difficult to make any assumptions as to the nature of animal husbandry and the importance of animals to the population at the time.

#### *Iron Age*

Cattle and sheep dominate the collection comprising almost 90% of both the hand retrieved and sieved material through all phases (tables 14 to 17). The hand collected material indicates that the cattle were the more numerous animals. It has been shown that during the Iron Age there was a general increase in the numbers of cattle in many areas (Noddle 1984, 122). However, since cattle are the larger animals compared to pig and sheep fewer of the larger bones would be missed by excavation compared to those of smaller animals.

Table 14. Hand collected fragments from all ditches (Total fragment method)

	<i>L Bronze Age</i>	<i>M-L Iron Age</i>	<i>M-L Iron Age</i>	<i>M-L Iron Age</i>	<i>L Iron Age to E Roman</i>	<i>M-L Iron Age</i>	<i>M-L Iron Age</i>	<i>Total</i>
	<i>Phase 1a</i>	<i>Phase 1b</i>	<i>Phase 2</i>	<i>Phase 3</i>	<i>Phase 4</i>	<i>Area 6</i>	<i>Area 7</i>	
Cattle	18	80	122	317	0	41	9	587
Sheep	18	22	54	143	0	25	3	265
Horse	0	12	9	44	1	5	1	72
Pig	0	4	7	14	1	3	1	30
Red deer	0	1	1	3	0	0	0	5
Roe deer	0	1	0	1	0	0	0	2
Goat	0	0	0	2	0	0	0	2
Dog	0	0	0	7	0	0	0	7
All other	0	0	0	2	0	0	0	2
Total	36	120	193	533	2	74	14	972
Unidentified	109	319	519	1591	13	117	59	2727

Table 15. Sieved fragments from all ditches (Total fragment method)

	<i>L Bronze Age Phase 1a</i>	<i>M-L Iron Age Phase 1b</i>	<i>M-L Iron Age Phase 2</i>	<i>M-L Iron Age Phase 3</i>	<i>L Iron Age E Roman Phase 4</i>	<i>M-L Iron Age Area 6</i>	<i>M-L Iron Age Area 7</i>	<i>Total</i>
Cattle	17	17	82	65	3	2	4	190
Sheep	1	38	144	132	9	12	11	347
Horse	0	1	0	4	0	4	1	10
Pig	0	2	34	15	0	3	1	55
Red deer	0	0	2	1	0	0	0	3
Roe deer	0	0	2	0	0	0	0	2
Goat	0	0	0	0	0	0	0	0
Dog	0	0	1	0	0	0	0	1
All Other	1	3	12	38	0	1	1	56
Total	19	61	277	255	12	22	18	664
Unidentified	496	1197	3325	3632	99	271	168	9188

Table 16. Hand collected fragments from pits, gullies, layers and post holes (Total fragment method)

	<i>L Bronze Age Phase 1a</i>	<i>M-L Iron Age Phase 1b</i>	<i>M-L Iron Age Phase 2</i>	<i>M-L Iron Age Phase 3</i>	<i>L Iron Age E Roman Phase 4</i>	<i>M-L Iron Age Area 6</i>	<i>M-L Iron Age Area 7</i>	<i>Total</i>
Cattle	0	51	52	30	0	50	51	234
Sheep	0	11	19	22	3	30	33	118
Horse	0	0	4	4	0	7	1	16
Pig	0	0	6	7	0	6	8	27
Red deer	0	0	0	2	0	0	0	2
Roe deer	0	0	0	0	0	0	0	0
Goat	0	0	0	0	0	0	0	0
Dog	0	0	0	4	0	0	3	7
All other	0	0	0	0	0	0	1	1
Total	0	62	81	69	3	93	97	405
Unidentified	0	224	265	255	8	181	286	1219

Table 17. Sieved fragments from pits, gullies, layers and post holes (Total fragment method)

	<i>L Bronze Age Phase 1a</i>	<i>M-L Iron Age Phase 1b</i>	<i>M-L Iron Age Phase 2</i>	<i>M-L Iron Age Phase 3</i>	<i>L Iron Age E Roman Phase 4</i>	<i>M-L Iron Age Area 6</i>	<i>M-L Iron Age Area 7</i>	<i>Total</i>
Cattle	0	7	15	71	0	4	20	117
Sheep	0	39	7	61	0	7	67	181
Horse	0	0	2	1	0	0	0	3
Pig	0	3	0	7	0	3	6	19
Red deer	0	0	0	0	0	1	0	1
Roe deer	0	0	0	0	0	0	0	0
Goat	0	0	0	0	0	0	0	0
Dog	0	0	0	0	0	0	0	0
All other	0	3	8	0	0	3	8	22
Total	0	52	32	140	0	18	101	343
Unidentified	0	700	421	2158	0	318	645	4242

The sieved material, which is more likely to retrieve the smaller elements, indicates that sheep were the more dominant of the species. However, the results from the minimum number of mandibles for each species shown in table 18 indicates that there was more or less an equal proportion of sheep and cattle on the site during most of the phases, with the number of sheep increasing gradually through the three main phases.

Table 18. Minimum number of individuals for main domestic species indicated by mandibles from each phase. Sieved and hand collected.

	<i>Cattle</i>	<i>Sheep</i>	<i>Horse</i>	<i>Pig</i>
Phase 1a	1	0	0	0
Phase 1b	11	6	0	1
Phase 2	9	9	1	2
Phase 3	20	25	2	5
Phase 4	0	1	0	0
Area 6	3	4	0	3
Area 7	4	7	0	1

### ***Cattle***

Table 19 shows the occurrence of the main cattle skeletal elements from the hand collected elements, in the order of best surviving elements thought to occur, from the best at the top to the worst at the bottom (after Grant 1991). This ordering is based on the supposition that the elements were equally deposited on the site and that the resulting differences are due to taphonomic processes. All elements from the mid to late Iron Age were combined due to the small numbers from the individual phases.

The larger, denser and early fusing fragments such as jaws (mandibles), pelvis, and bones from the leg and foot (humerus and metacarpal are the most characteristic elements found (table 20). This indicates that the more fragile bones have not survived so well, possibly because some were left on the surface and damaged prior to deposition, or were destroyed by dogs, as gnaw damage was visible on many of the bones.

Table 19. Number of cattle elements from all periods of Iron Age occupation

<i>Best surviving elements in order of survival</i>	<i>M-L Iron Age Number</i>	<i>%</i>
Mandible	58	100
Metacarpal P	21	36
Metatarsal P	16	28
Scapula D	11	19
Pelvis	26	45
Humerus D	29	50
Radius P	15	26
Tibia D	18	31
Calcaneum	12	21
Astragalus	1	7
Metacarpal D	10	17
Metatarsal D	2	3
Femur P	10	17
Radius D	7	12
Tibia P	10	17
Femur D	3	5
Humerus P	7	12
1 <sup>st</sup> Phalanx	13	6
2 <sup>nd</sup> Phalanx	8	3
3 <sup>rd</sup> Phalanx	2	2

The age indicated by tooth wear shows that the cattle in phase 1 and those found within area 6 and 7 were killed at a young age (table 20), although the small number of indicative mandibles could be misleading.

Table 20. Cattle tooth wear stages (after Grant 1982, Halstead 1985, as defined by Hambleton 1999)

<i>Estimated Age</i>	<i>Age Stage</i>	<i>Phase 1b</i>	<i>Phase 2</i>	<i>Phase 3</i>	<i>Area 6</i>	<i>Area 7</i>
8-18 months	C	0	0	0	1	1
18-30 months	D	2	1	4	0	0
30-36 months	E	0	2	1	0	0
Young adult	F	0	2	1	0	0
Adult	G	0	0	1	0	0
Old adult	H	0	2	0	0	0
Senile	I	0	0	1	0	0

Contrary to this, the information on the epiphyseal closure of the cattle bones indicates a range of ages at death (see table 21 which shows the age at death based on the time when the various bones fuse). The tooth eruption and wear stages for the cattle from phase 2 and 3 also show a range of ages at death. The majority were killed before reaching adulthood although a small number were kept to a much older age.



Table 21. Epiphyseal fusion of cattle bones, indicating age of animal from bone closure

Age	Element	Phase 1b		Phase 2		Phase 3		Area 6		Area 7	
		F	U	F	U	F	U	F	U	F	U
10 mo.	Scapula D	2	0	6	0	4	0	1	0	1	0
18 mo.	Humerus D	3	0	6	0	7	0	4	0	3	0
	Radius P	9	0	6	0	5	0	0	0	0	0
2 - 2.5yrs	Metacarpal D	3	1	0	2	4	1	2	0	0	0
	Tibia D	4	0	4	3	12	2	2	0	0	0
	Metatarsal D	0	1	1	0	1	0	0	1	0	0
3.5yrs	Calcaneum P	1	0	0	0	1	0	2	0	0	0
	Femur P	2	0	2	2	3	3	1	1	1	1
3.5 - 4 yrs	Humerus P	0	0	1	0	2	0	1	0	1	2
	Radius D	1	4	1	0	1	1	0	0	3	0
	Femur D	0	0	2	1	3	0	0	1	0	0
	Tibia P	1	0	2	0	3	1	0	2	0	0

The epiphyseal fusion of the cattle bones shown above generally indicates that few animals were killed before the age of 2 years, but there was at least one example of very young calf long bones from each of phases 1, 2 and 3. More calves may have been killed but the remains have not survived due to the porosity and fragility of the immature bones.

In phase 6, three innominate (pelvis) bones were identified as female and there was also a single bone of this type from all other phases. However, it is not certain if this is reliable evidence of all the animals kept on the site due to the small number of indicative fragments from each phase. The remains of a poorly preserved cattle skeleton were excavated from pit F3959 in the eastern part of area 3. It consisted of the right patella and part of the femur, part of the left humerus and radius and fragments of the vertebrae and rib cage. None of the bones had butchery marks.

### Sheep

Table 22 shows that the most common fragments of sheep bone were the more robust elements. It is likely that the less robust elements were damaged or destroyed during the deposition of the bone. This may indicate that there were a greater number of sheep on the site than is indicated. It may also be the case that the sheep were less intensively butchered and are therefore under-represented in the assemblage (Knight 1984, 252).

Table 22. Number of sheep elements from all Iron Age features.

	Number	%
Mandible	49	100
Metacarpal P	5	10
Metatarsal P	3	6
Humerus D	8	16
Tibia D	20	41
Radius P	6	12
Pelvis	9	18
Scapula D	8	16
Astragalus	2	4
Calcaneum	3	6
Metacarpal D	4	8
Metatarsal D	5	10
Femur P	3	6
Radius D	1	2
Tibia P	12	24
Femur D	4	8
Humerus P	0	0
1 <sup>st</sup> Phalanx	2	2
2 <sup>nd</sup> Phalanx	1	2
3 <sup>rd</sup> Phalanx	1	2

The age at which the sheep were culled appears to have varied only slightly during the different phases. Table 23 shows the age of the sheep as indicated by tooth wear and indicates that the majority of the animals were killed at or before 2 to 3 years of age, although there were many kept until much older. It is possible that many of the juvenile remains did not survive due to poor preservation of the bone.

Table 23. Age of sheep at death, as indicated by tooth sequences of sheep/goat (following Payne 1973 & Grant 1982 as defined by Hambleton 1999)

Estimated Age		Phase 1b	Phase 2	Phase 3	Area 6	Area 7
0-2 m	A	0	0	0	0	0
2-6 m	B	0	0	2	1	0
6-12 m	C	1	2	5	1	1
1-2 y	D	0	6	6	0	0
2-3 y	E	0	3	2	0	1
3-4 y	F	2	3	3	0	0
4-6 y	G	5	3	4	0	1
6-8 y	H	0	0	0	1	0
8-10 y	I	0	0	0	0	0

However, the rate of epiphyseal closure, or fusion of the sheep bones indicates a mixture of ages and is more difficult to interpret (table 24). However, very few individuals appear to have been culled before the age of one year. There were a few juvenile long bones amongst the collection and it is possible that the younger more fragile bones may not have survived as well. Two fragments from female innominate bones were found from phase 2 and 6.

Table 24. Epiphyseal fusion in sheep bones (after Silver 1969).

Age	Element	Phase 1b		Phase 2		Phase 3		Phase 4		Area 6		Area 7	
		F	U	F	U	F	U	F	U	F	U	F	U
10 mo.	Humerus D	1	0	2	0	6	0	0	0	0	2	2	0
	Radius P	0	0	1	0	1	0	1	0	0	0	0	0
	Scapula D	2	0	4	0	3	0	0	0	3	0	1	0
1.5-16 mo.	Tibia D	1	1	3	2	1	3	0	0	0	1	0	2
	Metacarpal D	1	0	1	2	0	0	0	0	1	0	0	1
	Metatarsal D	2	0	0	0	2	3	0	0	0	0	1	0
2.5-3 yrs	Calcaneum P	0	0	0	0	2	1	0	0	0	0	0	0
	Radius D	1	1	0	0	2	2	0	0	0	0	0	3
	Femur P	0	1	0	0	3	0	0	0	0	2	0	0
3-3.5 yrs	Humerus P	0	0	0	0	0	0	0	0	0	0	0	0
	Femur D	0	1	1	0	2	0	0	0	0	1	0	0
	Tibia P	0	0	2	3	1	0	0	0	0	0	1	0

### Goat

Two goat horncores from phase 2 were the only positively identified fragments from the Iron Age occupation of the site. Goats tend to require more care and attention than sheep, are less hardy, especially during colder periods as they are predominantly Mediterranean animals. It would have been necessary during the colder months to construct some form of shelter for the animals, and could be the reason why few were kept. However, unlike sheep and cattle their lactation after kidding can be maintained almost indefinitely (Reynolds 1987).

### Pig

There were very few fragments of pig bone in the collection, less than 10% in both the hand collected and sieved bone. The majority of fragments retrieved were mandibles and feet bones.

Due to the lack of long bone fragments it was not possible to look at the epiphyseal fusion of the bones. However, the tooth eruption and wear stages shown in table 25 and 26 indicate that the majority of the pigs were killed within the first two years at which point they would have begun to reach optimum weight. This is likely to explain why only the more

robust bones were recovered since the immature bones would be more susceptible to breakages and destruction. This may also indicate that the pig bones are under-represented in the assemblage.

Table 25. Pig tooth eruption stages (after Silver 1969).

Age	Phase 1b	Phase 2	Phase 3	Area 6
4 weeks – 4 months	0	1	0	1
7 – 13 months	1	1	2	1
17 – 22 months	0	3	3	0

Table 26. Pig tooth wear stage (after Higham 1967, Bull and Payne 1982 and Grant 1982, as defined by Hambleton 1999)

Suggested Age	Age stage	Phase 1b	Phase 2	Phase 3	Area 6
2-7 months	B	1	0	0	1
14-21 months	D	1	2	2	1
21-27 months	E	0	0	1	0

Only a few elements indicative of the sex of the animals were recovered from the hand collected and sieved bone. One male was identified in Phase 1 and two in Phase 2. Two males and two females were identified from Phase 3. One male was identified from area 7. It is likely that the majority of pigs kept were female and that the majority of male pigs were killed early since very few would be required for breeding purposes.

### Horse

Only 5% of the identified bones from the hand collected material was from horse, and only 2% from the sieved material. However, it is unsurprising that there are few horse bones since they would not have contributed greatly to the economy of the site and would have been expensive to feed. Many horses on a site may indicate a site of high status able to sustain the animals. The horses were probably valued for their speed and for transportation since it is unlikely that they were used for ploughing since harnesses do not appear to have been sufficiently adapted to allow the pulling of heavy loads by horses until the Saxon period (Trow-Smith 1957).

Very few mandibles were recovered from the site that could be used to give information on the age at death, but one found in phase 2 and in phase 3 indicate that the horses were kept over the ages of 3.5 to 4.5 years.

Table 27. Epiphyseal fusion of horse bones after Silver (1969)

Age	Element	Phase 1b		Phase 2		Phase 3		Phase 4		Area 6		Area 7	
		F	U	F	U	F	U	F	U	F	U	F	U
15-18mo.	Humerus D	0	0	0	0	1	0	0	0	0	0	0	0
	Radius P	1	0	0	0	0	0	0	0	0	0	0	0
	Metacarpal D	0	0	0	0	2	0	0	0	1	0	1	0
	Metatarsal D	0	0	0	0	2	0	0	0	0	0	0	0
18-24 mo.	Scapula D	1	0	1	0	2	0	0	0	0	0	0	0
	Tibia D	1	0	0	0	2	0	1	0	1	0	0	0
3-35yrs	Humerus P	0	0	0	0	0	0	0	0	0	0	0	0
	Radius D	1	0	0	0	1	0	0	0	0	0	0	0
	Femur P	0	0	0	0	0	0	0	0	0	0	0	0
	Femur D	0	0	0	0	0	0	0	0	0	0	0	0
	Tibia P	1	0	0	0	0	0	0	0	0	0	0	0

The epiphyseal fusion rate of the bones (table 27) also indicates that the horses were kept to an older age than the majority of the other domestic species. The lack of immature remains may indicate that horses were not being bred at the site. Both Harcourt (1979) and Grant (1984) have proposed that horses found at many Iron Age sites may have been taken from feral herds and

trained. Sexing of only two innominate bones was possible using comparative modern material. Two single male and female innominates were found in ditch features in phase 3.

### **Dog**

Fifteen fragments of dog bone were found in the assemblage. None of the elements were complete enough to enable measurements to be taken. However, the dogs appear to have been of medium size. There was no indication that the elements were buried as part of any special deposits. The majority of the elements came from phase 3, which may indicate that there were more dogs on the site during this period, possibly to help with the herding of the cattle and sheep. They may also have been used as hunting animals or as pets.

### **Deer**

Only a few fragments of Red and Roe deer bone were found on the site, the majority of which came from phases 2 and 3. The majority of the fragments were red deer antler, teeth and foot bones. All of the antler fragments had saw marks and appeared to be the discarded parts of worked antler. It is likely that deer did not contribute greatly to the diet of the inhabitants during this period. They may have been hunted for sport or as pests.

### **Minor mammals, bird, fish and amphibians**

Only a few wild mammals were represented in the collection as seen in table 18. The majority of the bone was collected from the sieved material except for the duck bones and one crow/rook tibiotarsus.

Most of the identified material is rodent, predominantly small rodent of which only two mandibles, from a wood or yellow-necked mouse (*Apodemus sp.*) could be more closely identified. Wood mice are the most common small rodent living in woodland today. However, they can also be found in open grassland, hedgerows and fields (Lawrence & Brown 1972).

Water vole (*Arvicola terrestris*) was the most numerous species identified with 28 fragments of bone, the majority from phase 3. Water voles tend to live in areas with expanses of slow-moving water or near small streams. Especially favoured are small streams whose banks provide a good deal of cover (Lawrence & Brown 1972). A small stream nearby would have provided ample water. In addition to the water vole, two fragments of field vole (*Microtus agrestis L*) were also found in phase 2 deposits.

Table 28. The minor mammals, bird, amphibians and fish from both sieved and hand collected material.

Phase	1a	1b	2	3	4	6	7	Total
Water Vole	1	1	2	21	0	1	2	28
Field Vole	0	0	0	2	0	0	0	2
Wood/Yellow necked mouse	0	0	0	2	0	0	0	1
Small Rodent	0	0	4	6	0	1	1	13
Crow/Rook	0	0	0	1	0	0	1	2
Duck	0	0	1	2	0	0	0	3
Turdus SP	0	0	0	1	0	0	0	1
Woodcock	0	0	1	0	0	0	0	1
S. Passerine	0	0	1	1	0	0	0	2
Cyprinid (Tench?)	0	0	0	1	0	0	0	1
Unidentified Fish	0	0	0	1	0	0	0	1
Frog	0	0	0	8	0	0	1	9

Several species of wild bird were present including crow/rook, duck, woodcock (*Scolopax rusticola*), thrush (*Turdus sp.*), and smaller passerine. All of these may represent food remains,

Searjeantson (1991) has found that edible birds have been found to occur on a very small scale at most Iron Age sites and did not appear to be an important part of the diet, as appears to be the case at Elms Farm.

The single identifiable fish bone was from a cyprinid, possibly tench (cf. *Tinca*) indicating exploitation of freshwater resources.

Nine fragments of frog bone were identified, the majority of which was from ditch F5003, probably indicating that it was damp and waterlogged for a period.

### **Pathology**

A cattle humerus from phase 1 (3176) displayed a large amount of exotosis or bone formation and pitting on the distal section of the shaft just above the articulation. This may be due to stress, including osteoarthritis, possibly indicating that the animal was used for draught purposes. However, this is not certain since the distal articulation was missing leaving only a small part of the shaft above. A cattle rib with a well healed fracture was also found from this phase in context 3727.

A quarter of the acetabulum and part of the pubis from a cattle innominate (pelvis) from phase 2 (3127) displayed a small amount of eburnation or polishing around the acetabulum, indicating possible osteoarthritis. This would have been caused by the softened rough cartilage wearing away due to constant trauma to the joint, leaving the bone exposed. The highly polished effect would have been caused by cumulative pressure on the exposed surface and immediately adjacent tissue of the joint (Baker & Brothwell 1980). This may have been a result of an animal that was used for heavy work.

From phase 3 (3319) the proximal or top half of a horse metatarsal displayed spavin disease (fusing of the bone). All the tarsal bones, except the astragalus, and the second metatarsal had fused with a small amount of exotosis or pitting surrounding; the articular surface was unaffected. This disease is principally found on the horse tarsus and has been linked to possible hereditary factors although it may also be aggravated by heavy work. Spavin (fusing) only tends to cause a mild degree of lameness and given time and rest the joint will ankylose or fuse together, as in this case, allowing the animal to be used in slow work (Baker & Brothwell 1980).

### **Butchery**

Only a small proportion of the bone recovered from the site had clear signs of butchery damage (table 1). The majority of the butchery marks were found on the larger bones from phase 2, 3 and area 6. One sheep atlas had transverse cuts on the anterior of an axis that may indicate removal of the head. There were a number of cuts on cattle mandibles below the mandibular condyle indicating removal of cheek meats. The majority of cuts recorded appeared to be disjuncting cuts made by knives rather than chopping marks. There were many knife marks on the dorsal side of astragalii as well as marks of calcanei (bones in the leg). The most fragment cut marks from all phases recorded, are around the distal articulation of the humerus, indicating the inhabitants were enjoying legs of beef.

### **Discussion**

The animal bone from Elms Farm clearly indicates that the animal husbandry of the site centred around the raising of cattle and sheep. The majority of the bone was found in phase 2 and 3, which may indicate that this represents a period of greater and more sustained animal husbandry. Alternatively it could suggest that patterns of disposal changed, perhaps in response to a shift in the location of the settlement focus. The increase of cattle and sheep on site during the later phases may also have been due to expansion of the site as a whole and is likely to have contributed to an expansion in arable farming which would have increased the demand for manure (Knight 1984). The assemblage at Elms Farm appears to represent mainly food waste.

The cattle would have been valuable animals during the Iron Age. It is possible that the

majority of meat eaten on the site would have been beef since cattle provide a far greater amount of meat than the sheep per individual. Harcourt (1979) estimates a meat ratio of around ten sheep to one cattle carcass. In addition to being utilised for their meat, the older cattle bones from the site may be representative of animals kept for traction purposes. It is possible that some of the elements displaying pathological changes may have been as a result of animals put to work. These working animals would have required high-energy food.

It is possible that some of the cattle were milked. However, it is likely that the majority of the dairy products were obtained from the sheep during this period since there is not evidence until the medieval period that cattle became free milking (Noddle 1986). The cattle would also have been utilised for their hides, and the dung that they produced would have been essential in providing nutrients for the crops.

There is no evidence that the cattle were kept on the settlement since they would have needed to be close to a large water source. Cattle can drink up to 16 gallons of water a day (Reynolds 1987) and would have been suited to the lower ground surrounding the settlement area, with better access to the water supply. It is possible that females were the most numerous cattle kept at the site. It may have been economically more viable to keep a greater number of females, since fewer males were required in order to maintain the herd. In addition to this, females are equally able to be used for traction purposes with no affect to their breeding (Noddle 1986, 37) which again may have reduced the need for many of the males.

It is unclear why part of the cattle carcass was buried. It is possible that the rest of the skeleton was disturbed during ploughing, or this could have been a special deposit. Animal skeletons of the Iron Age are more commonly found to be partially articulated rather than complete (Hill 1995, 59) although many complete carcasses were found at Danebury (Grant 1984). It is possible that a portion of the carcass was set aside for ritual sacrifice, whilst the rest was consumed (Hill, 1995, 103).

The sheep on the site would also have been greatly valued, partly for their by-products as well as for their meat. Sheep would have provided milk, wool, dung and finally meat for the inhabitants. Age data from mandibles indicates that the majority of the sheep were culled before the ages of 2 to 3 years with just over 41% older than this. The small number of elements from juvenile sheep may indicate that some were being culled as part of the dairy process, since sheep would have been more efficient milk producers during this period. The bone weaving comb found in area 6 as well as the loom weights from the site indicates that there was active weaving on the site. It is likely that weaving at this site was for domestic consumption only.

A small number of the bones from the site had damage as a result of carnivore chewing (table 1). It is assumed that the majority of damage was done by dogs since there is no other evidence of other carnivorous animals from the site. The destructive effect that dogs can have on bones is highlighted by Payne and Munson (1985). Many of the smaller species and smaller elements may have been totally destroyed by the animals. This factor must be considered with relation to their influence on spatial distribution and the destruction of bones. Kent (1981) illustrates the influence of dogs on the spatial distribution of faunal remains. Even without competition it has been demonstrated that dogs tend to remove bones from depositional sites to other areas.

It does not appear that pig husbandry on the site was particularly intensive and may not have contributed much to the diet. The killing of a high number of immature and young adults would be unlikely to have a detrimental effect on the herd. Many of the horse bones from all phases had clear butchery marks on the elements, indicating that the animals were seen as a food source. The age at death of the majority of animals appear to have been quite old, so the animals may only have been killed at the end of their usefulness, possibly if they became lame or ill.

Pig husbandry is generally connected with forested areas (Noddle 1984, 111), although they can adapt to most environments, and this, along with the small number of deer bones recovered, may be indicative of a forested area near by. This being the case it is likely that tree foliage may have also supplemented the diet of the animals on the site. There were not many wild species in the assemblage. However, it does indicate that there was some variety in the diet of the inhabitants, with wild species such as deer, bird and fish supplementing the main diet of beef, lamb and pork.

## Appendix

### Methodology

The calculation of the species recovered from the site used the total fragment method. All fragments of bone were counted including elements from the vertebral centrum, ribs and long bone shafts. In addition the minimum number of individuals (MNI) was calculated for the main domestic species from the mandibles, since they were the most numerous of the fragments identified from almost all of the phases. Mandibles were used both with and without teeth still in place. Care was taken not to include part mandibles thought to be related to more complete fragments, in order to avoid counting the same element from one individual twice. Mandibles from each species were separated and the number of left and the right mandibles totalled.

Sheep and goat bones were separated using the criteria of Boessneck (1969) and Prummel and Frisch (1986). However, since there were only two positive identifications of goat in the collection, all caprine bones are listed in the report as sheep. The determination of the sex of the cattle, sheep and horses used the criteria of Grigson (1982), Boessneck (1969), and using modern comparative material. The pigs were separated through differentiation of tusks due to lack of other indicative fragments.

Ageing was based on tooth eruption and epiphyseal fusion. Silver's (1969) tables alone were used to give timing of epiphyseal closure for cattle, sheep, pigs and horses. Sheep's tooth eruption and wear was measured using a combination of Payne's (1973) and Grant's (1982) tables as defined by Hambleton (1999). Cattle tooth eruption and wear was measured using Halstead's (1985) and Grant's (1982) tables as defined by Hambleton (1999). Pig tooth eruption and wear was measured using Higham (1967), Bull & Payne (1982) and Grant (1982) also defined by Hambleton (1999). Horse tooth eruption and wear was measured using Silver's (1969) tables. Both elements from the hand collected and sieved bone were used in the ageing of the animals on the site. The measurements taken are those defined by Von den Driesch (1976). Only a small number of complete cattle, sheep and horse bones were measured due to lack of complete elements. All elements were consistent in measurement with elements from Danebury (Grant 1991) and Iron Age sites in the Thames Valley (collated by Wilson 1993). Detailed information can be found in the archive.

### The charred and mineralised plant remains

*Ruth Pelling*

#### Introduction

A total of 109 samples were processed for the recovery of charred plant remains. Features sampled included house gullies and associated enclosures, storage pits and post holes. Processing was by bulk water flotation using a modified Siraf machine. The sediment was suspended on a 500µm mesh and the flot collected on a 250 µm mesh. The volume of deposit processed ranged from 8 to 60 litres, but was mostly 40 litres. Table 29 summarises the charred plant remains included in the analysis, and table 30 shows those remains which were noted in the samples but not included in the analysis.

#### Methods

Each sample submitted was assessed by scanning under a microscope at magnification of x12 to x25. Any seeds and chaff noted were provisionally identified and abundance was estimated using a four point scale (+ = 0-10 items; ++ 11-50 items; +++ = 51-100 items; 100 = items). Charcoal fragments were also provisionally identified in transverse section where pieces were of sufficient size.

On the basis of the assessment, samples which produced sufficient remains of charred material other than charcoal (generally more than 1 item per litre deposit) were subjected to full analysis. No samples merited full analysis of the wood charcoal. A total of 9 samples were sorted in full under a binocular microscope at x10 to x20 magnification. Any seeds or chaff were extracted.

Identification of remains was then based on well documented morphological characteristics and by comparison with a modern reference collection held at the Oxford University Museum of Natural History. Nomenclature and taxonomic order follows Clapham, Tutin and Moore 1989.

## Results

### *Area 3*

#### *Phase 1a Bronze Age Enclosure Ditch*

Three samples were taken from the enclosure ditch, feature 5008, and produced limited charred remains. No identifiable charred remains were present in sample 120 (context 3935), while occasional charcoal fragments including *Quercus* sp. (oak) were noted in sample 336 (context 3271). A single indeterminate cereal grain was identified in sample 35 (context 3267).

#### *Phase 1b – Iron Age*

A total of 21 samples were assessed from Phase 1, nine of which were found to contain charred remains. Three samples contained sufficient material for detailed analysis. Sample 109 (context 3099) was taken from the fill of ditch 3100, part of feature group 5010. The sample produced a small, mixed assemblage, with just over half consisting of weed seeds. Cereal grains included a single grain of *Triticum* cf. *dicoccum* (possible emmer), with occasional *Triticum spelta/dicoccum* and *Hordeum vulgare* grains. One *Triticum spelta/dicoccum* glume base was the only chaff present. The weed assemblage was dominated by *Chenopodium album* with occasional other common arable/ruderal species such as *Polygonum aviculare* (knotgrass), *Urtica dioica* (stinging nettle) and *Galium* sp. (goosegrass).

Samples 32 and 33 were derived from a post hole (feature 3248) forming part of a four post structure 5028. Both assemblages were dominated by cereal grain, notably *Triticum spelta* (spelt wheat). Occasional glume bases were identified in sample 32, while no chaff was present in sample 33. Weeds in both samples were few in number and were dominated by *Bromus* subsect *Eubromus*, a cereal sized grain often associated with charred cereal assemblages and thought possibly to have been deliberately collected to bulk out the crop or at least to have been tolerated as a contaminant.

The assemblage from sample 33 was exceptionally well preserved. Grain forms some 97% of the assemblage. Of the 365 grains, 240 were identified as *Triticum spelta* (spelt wheat). Most grains were intact displaying little damage or blistering to the epidermis, characteristic of Hubbard's preservation and distortion classes 1 or 2 (Hubbard & al Azm 1990). The remaining grains are thought to be mostly of *Triticum spelta* in varying stages of damage, identified as *Triticum spelta/dicoccum* (spelt/emmer wheat), *Triticum* sp. (wheat) or indeterminate grain. Only 18 grains were damaged to the extent that they were not identifiable to genus, indicating the unusual level of preservation. One grain of *Hordeum vulgare* (hulled barley) was present. It is likely that this sample represents a deposit of clean, fully processed grain.

The remaining samples from this phase produced low levels of mixed cereal grains and cereal processing waste. *Triticum spelta* and *Hordeum vulgare* grain were identified in the samples and appear to be the principle cereals cultivated in Phase 1. Chaff was present in the form of glume bases but was generally rare. The remains are presumably derived from small scale scatters of burnt waste derived from numerous minor episodes of the late stages of cereal processing. Such remains are likely to have been scattered generally across the site and do not represent any deliberate deposition of waste or product.

#### *Phase 2 – Iron Age*

Of the 26 samples assessed from phase 2, nine produced low levels of remains. Occasional cereal grains were identified, principally of hulled *Triticum spelta*, *Triticum spelta/dicoccum* and *Hordeum vulgare*. Weeds were very scarce, with *Bromus* subsect *Eubromus* and *Odontites verna/Euphrasia* sp. (red barstia/eyebright) the only species recognised. No chaff was noted in any of the samples.



### Phase 3 – Iron Age

Of the 30 samples which were assessed from Phase 3, 12 were found to contain charred remains, generally in very low concentrations. One sample, 42, taken from ditch fill 3319 (part of structure 5003) was analysed in full. The assemblage was dominated by weed seeds with cereal remains restricted to one *Hordeum vulgare* grain and two *Triticum spelta/dicoccum* glume bases. The weeds were dominated by ruderal species including *Stellaria media* agg. (chickweed), *Chenopodium album* (fat hen), *Urtica urens* (dead nettle), *Hyoscyamus niger* (henbane) and grasses. While *Stellaria media*, *Chenopodium album* and *Urtica urens* are arable weeds characteristic of spring sown crops, they are also common ruderal species of nutrient rich soils. *Hyoscyamus niger* is not an arable weed, but is characteristic of ruderal habitats. The occurrence of seeds of these species in one assemblage would therefore suggest that they all derive from ruderal habitats, and that they were growing on nutrient rich soils within and around the settlement. The seeds may have been burnt deliberately or entered the settlement fires accidentally.

Of the remaining samples the charred remains consisted of occasional cereal grains, including *Triticum* sp. (wheat) and *Hordeum vulgare*, with occasional glume bases, including *Triticum spelta* in sample 23 (context 3077). Other remains of economic use include fragments of possible cultivated legumes, stones of *Prunus spinosa* (sloe), nut shell fragments of *Corylus avellana* (hazel nut) and *Arrhenatherum elatius* tubers (false oat grass). These samples contain very little charcoal, with occasional flecks of *Quercus* sp. (oak) the only taxa only identified. It appears unlikely that the hedge row remains have derived from fire wood. The presence of hazel nut shell without the nut kernel would further suggest that the remains derived from the waste product of food, the nut having been removed and the shell discarded on the fire. It is also plausible that the sloe stone has derived from a similar origin.

The occasional weed seeds noted in the samples are generally of common arable/ruderal species although charred seeds of *Sambucus nigra* (elderberry) were present in sample 48 (context 3375). *Sambucus nigra* will not be present as an arable weed, and given the absence of charcoal in the sample is unlikely to have derived from fire wood. It is therefore possible that the elderberries were also being utilised as food.

### Phase 4

A total of 7 samples were assessed from phase 4, of which one (sample 44) contained occasional weed seeds and a single legume.

### Area 6

Nine samples were assessed from Area 6, of which four were found to contain low densities of charred remains. Cereal grains were relatively frequent in two samples and included *Triticum spelta* and *Hordeum vulgare* grain. Glume bases of *Triticum spelta* and *Triticum spelta/dicoccum* were present in three samples. Weed seeds were present but rare. Species noted include *Polygonum aviculare* (knotgrass), *Chenopodium album* (fat hen), *Vicia/Lathyrus* sp. (vetch/vetchling), *Odontites verna/Euphrasia* (red barstia/eyebright) and *Bromus* subsect *Eubromus* (brome grass), all common arable/ruderal species. The small numbers of cereal remains and weeds must again represent scatters of small scale cereal processing waste present across the site. In addition to the cereal remains, occasional nut shell fragments of *Corylus avellana* (hazel nut) were present in sample 124 (context 6005). The absence of nut and of *Corylus avellana* charcoal would suggest the nut shell has derived from food waste and not fire wood.

### Area 7

Ten samples were assessed from area 7 of which nine contained charred plant remains. Five samples were analysed in full. Two samples were taken from ditch 7014 (samples 144 and 145, contexts 7015 and 7016), two from pits including a large bell shaped pit (samples 148 and 154, contexts 7044 and 7054) and one sample from a 'layer' (sample 159, context 7049).

Samples 144, 145, 154 and 159 all produced mixed assemblages suggesting low levels of cereal

processing activity. Cereal grain slightly out numbers other items. *Triticum spelta* was most frequently identified with occasional less well preserved *Triticum spelta/dicoccum*. *Hordeum vulgare* was less frequent but present. Small numbers of glume bases and weed seeds suggest some processing waste is represented. The weeds are mostly of common arable/ruderal species including *Caryophyllaceae*, *Chenopodium album*, *Rumex* sp. and *Odontites verna/Euphrasia*. *Prunus spinosa* and *Corylus avellana* are represented by a stone and nut shell fragments in sample 144. No *Prunus* sp. or *Corylus* sp. charcoal was present.

Sample 148, taken from a bell shaped pit feature 7045, produced a rather different assemblage. The charred assemblage was dominated by *Triticum* sp. glume bases while grain forms a very minor component. *Triticum spelta* was represented although preservation was generally poor so the majority of glume bases were not identifiable to species. Occasional hexaploid rachis fragments displaying the characteristic horizontal lines, are likely to be tough spelt rachis. Occasional *Hordeum vulgare* rachis was also present including dense eared rachis. Weeds were relatively rare and include the usual arable/ruderal species seen across the site, with *Chenopodium album*, *Rumex* sp. and *Polygonum* sp. The assemblage is interpreted as representing processing waste, possibly burnt as fuel, indicating that de-husking of spelt wheat was taking place on the site, with possibly some processing of barley.

Also present in sample 148 were a large number of calcium phosphate replaced mineralised weed seeds. Most seeds were in a very poor state of preservation and could not be identified, although occasional seeds were identified to family level (*Chenopodiaceae*, *Labiatae*, *Polygonaceae/Cyperaceae*). No obviously edible species were noted. Almost 400 seeds were identified while frequent broken seed fragments and indeterminate mineral concretions were noted during sorting. Calcium phosphate mineralisation is usually associated with deposits in which high levels of calcium and phosphate are present in solution, such as would be present in a cess pit. The absence of edible species usually associated with cess pits would suggest human sewage is not present. It is possible however, that animal dung or manure is present in the deposit.

#### **Weed species**

Weed seeds were generally scarce. The majority of species which were represented are characteristic of ruderal or arable habitats on a wide range of soils, such as *Chenopodium album* (fat hen) and *Stellaria media* (chickweed). Occasional species do offer some insight into the nature of the soils cultivated and the agricultural regimes. An indication of at least seasonally wet ground is provided by *Montia fontana* subsp. *chondosperma* (blinks), *Eleocharis palustris* (common spikerush) and *Carex* sp. (sedge). The association of *Eleocharis palustris*, which favours alkaline soils, with cereal assemblages is usually taken as indicative of the cultivation of marginal ground on a flood plain or in close proximity to a river. *Odontites verna/Euphrasia* has not been distinguished due to difficulties in identification. The seeds are, however, more likely to be of *Odontites verna*, a robust plant of grassland and arable, rather than *Euphrasia* sp. which tend to be small plants of nutrient poor grassland. *Odontites verna* is a common arable weed which favours heavier calcareous soils. *Rumex acetosella* gp. (sheep's sorrel) conversely tend to be more associated with acid soils, although will grow in neutral conditions. The weed seeds seem to suggest, therefore, that the cereal crop was derived from more than one location.

#### **Cereal processing/storage activities**

The majority of samples contain low concentrations of mixed cereal product and fine sieving by-product. These assemblages are interpreted as residual material which has become scattered around the site. The scale of activity represented appears to be low, and it is the product, the grain, which dominates. The early stages by-products of crop processing, the culm nodes, straw and large seed heads, are absent from the samples, although as these elements are least likely to survive charring their absence can not be taken to indicate that these crop processing stages were not taking place within the site.

Chaff is generally very rare in the samples, with the exception of sample 149. Since chaff tends not to survive charring as well as grain (Boardman and Jones 1990), its absence may be due to

preservation and thus may not be truly representative. The chaff rich sample does provide evidence that some cereal processing was taking place, at least in Area 7 and that unprocessed spikelets were entering the site.

The grain rich sample associated with the four post structure in Phase 2 (sample 33) raises the possibility that some grain was stored in a fully clean state. In theory, it would be possible, under certain charring conditions, that in spikelet form the glumes could be burnt away completely while the grain remains intact (Boardman and Jones, 1990). However, for the grain to survive in such good condition it would seem more likely that charring occurred at low temperatures, possibly in oxidising conditions, in which case the glumes are also likely to survive. It must be considered, therefore, that the four-post structure was used for the storage of clean grain.

If hulled wheat grains are stored as spikelets the glumes provide some protection against damage by damp and/or pests. Indeed, the damage caused to the grain by the de-husking processing would render it unsuitable for pit storage. The storage of clean, de-husked grain is therefore unusual and is more associated with large scale Roman military sites such as at South Shields (Van der Veen 1988) than with Iron Age or Romano-British settlement sites on which storage of spikelets is more usual. Cereal remains usually become charred as a result of the burning of waste products for fuel, as accidents during food preparation/cooking or, more rarely, due to accidental fire damage, for example of a stored crop. The processing by-product, the chaff, would not enter the charred assemblage if it was not required for fuel because of widely available woodland or scrub resources, and/or if it was required for some other purpose, such as winter animal fodder. It is possible therefore that some of the spelt crop was fully processed prior to storage and that grain and chaff were stored separately, with the chaff being used elsewhere, for example as a product in its own right.

The presence of both bell-shaped pits and four-post structures may be of significance. Once a bell shaped pit is opened, then stored product must be removed. Products stored in a four-post structure could be accessed at any time and as little or as much product removed as desired. It is possibly therefore that the bell shaped pits are used for long term storage of spikelets, while the four post structures used for storage either of cleaned grain removed from its hulls, or in spikelet form which was then processed in small quantities perhaps on threshing floors below.

### *The economy of the site*

The cereal evidence indicates spelt wheat to have been the principal cereal crop utilised, with hulled four or six-row barley as a secondary cereal. Some emmer wheat may have been cultivated although the evidence is very slight. Spelt wheat is the principle cereal cultivated in the Iron Age throughout England. Within Leicestershire spelt and emmer chaff were recovered at Tixover (Monckton 1995), and Normanton le Heath (Monckton 1994), while spelt, emmer and a little free-threshing wheat were recovered from Kirby Muxloe and Wanlip (Monckton 1995). Barley was present at Normanton le Heath and Kirby Muxloe. Generally the density of remains seem to be low on these sites and chaff rare, although cereals are consistently present. Sites examined by Monckton also produced evidence of domestic animals suggesting a mixed arable and pastoral economy. The assemblages from the Elms Farm site seem to conform to this pattern. The absence of chaff on the sites, even where large samples were taken such as at Wanlip (Monckton, *ibid*) might suggest the use of chaff, for example for animal feed, to be widespread in the region.

There is some evidence in the samples of the utilisation of wild scrubland and woodland resources for economic purposes. Fragments of hazel nut shell and sloe stones were present in several samples, while occasional *Arrhenatherum* tubers were also present. Such remains are very characteristic of Neolithic settlement sites from which they are generally interpreted as collected resources used to supplement the cereal diet (Moffett *et al* 1989). The presence of nut shell in the absence of the nut, and the absence of *Prunus* and *Corylus avellana* charcoal would suggest that these remains do derived from food rather than firewood. It is suggested therefore, that the economy of the site was a mixed one in which wild resources supplemented the main arable/pastoral economy.

Table 29: The charred plant remains included in the analysis

Sample	32	33	42	109	144	145	148	154	159	
Context	3249	3050	3319	3099	7015	7016	7044	7054	7049	
Feature	3248	3248	3320	3100	7014	7014	7045	7057		
Feature group	5028	5028	5003	5010	5034	5034				
Type	PH	PH	Ditch	Ditch	Ditch	Ditch	Pit	Pit	layer	
Date	ML	ML	ML	?L	ML	ML	ML	ML		
	IA	IA	IA	IA	IA	IA	IA	IA		
Phase/Area	1	1	3	1	A7	A7	A7	A7	A7	
Volume	40	40	40	40	40	40	40	40	40	
<b>Charred Cereal Remains</b>										
<i>Triticum spelta</i>	spelt wheat grain	21	240	-	-	7	17	-	9	1
<i>Triticum cf. dicoccum</i>	cf. emmer wheat grain	-	-	-	1	-	-	-	-	-
<i>Triticum spelta/dicoccum</i>	spelt/emmer wheat grain	12	65	-	3	3	3	2	6	-
<i>Triticum sp.</i>	wheat grain	5	41	-	3	-	1	1	5	5
<i>Hordeum vulgare</i>	barley, hulled grain	-	-	-	2	-	-	-	1	-
<i>Hordeum vulgare</i>	barley grain	2	1	1	-	1	-	1	2	3
Cerealia indet.	indeterminate grain	4	18	-	7	9	7	5	8	3
<i>Triticum spelta</i>	spelt wheat glume base	-	-	-	-	7	-	18	-	-
<i>Triticum spelta/dicoccum</i>	spelt/emmer glume base	6	-	2	1	-	12	120	13	9
<i>Triticum sp.</i>	hexaploid wheat rachis	-	-	-	-	-	-	7	-	-
<i>Hordeum vulgare</i>	barley, dense eared rachis	-	-	-	-	-	-	3	-	-
<i>Hordeum vulgare</i>	barely rachis	-	-	-	-	-	-	2	-	-
Cerealia indet.	indeterminate basal rachis node	-	-	-	-	-	-	1	-	-
Cerealia indet.	indeterminate rachis	-	-	-	-	-	-	2	-	-
Cerealia indet.	detached embryo	-	1	-	-	-	-	-	1	-
<b>Charred Weeds</b>										
<i>Ranunculus</i> subgen	buttercup	-	1	-	-	-	-	-	-	-
<i>Ranunculus</i>										
Cruciferae		-	-	-	-	-	1	-	-	-
<i>Stellaria media</i> agg.	chickweed	-	-	14	-	-	-	-	-	-
Caryophyllaceae		-	-	1	-	-	1	-	-	-
<i>Montia fontana</i> ssp.										
<i>chrodosperma</i>	blinks	-	-	1	-	1	-	1	-	1
<i>Chenopodium album</i>	fat hen	1	-	9	13	-	2	15	3	-
<i>Chenopodium ficifolium</i>	fig-leaved goosefoot	-	-	1	-	-	-	-	-	-
Chenopodiaceae		-	-	3	-	-	-	-	-	-
<i>Vicia/Lathyrus</i> sp.	vetch/tare	-	-	-	-	-	2	1	-	3
Leguminosae	small seeded	-	-	1	1	-	-	1	-	-
<i>Prunus spinosa</i>	sloe stone	-	-	-	-	1	-	-	-	-
<i>Rumex acetosella</i> gp.	sheep's sorrel	-	-	-	-	-	-	-	-	1
<i>Rumex</i> sp.	docks	-	1	-	-	-	-	1	-	1
<i>Polygonum aviculare</i>	knotgrass	-	-	-	2	-	-	1	-	-
<i>Polygonum</i>										
<i>persicaria/lapathifolium</i>	persicaria	-	-	-	-	-	-	1	-	1
<i>Urtica dioica</i>	stinging nettle	-	-	-	1	-	-	-	-	-
<i>Urtica urens</i>	dead nettle	-	-	1	-	-	-	-	-	-
<i>Hyoscyamus niger</i>	henbane	-	-	1	-	-	-	-	-	-
<i>Odontites verna/</i>										
<i>Euphrasia</i> sp.	Red barstia/eyebright	-	-	-	-	-	-	-	-	1
<i>Galium</i> sp.	goosegrass/cleavers	-	-	-	1	-	-	-	-	-
<i>Corylus avellana</i>	hazel nut shell fragment	-	-	-	-	2	-	-	-	-
<i>Carex</i> sp.	sedge	-	-	-	1	-	-	-	-	-
<i>Eleocharis palustris</i>	common spikerush	-	-	-	-	-	-	-	-	2
Compositae	small seeded	-	-	-	-	-	-	-	-	1
<i>Bromus</i> subsect										
Eubromus	brome grass	4	10	-	-	1	-	-	-	-

Table 29: The charred plant remains included in the analysis (*continued*)

Sample	32	33	42	109	144	145	148	154	159	
Context	3249	3050	3319	3099	7015	7016	7044	7054	7049	
Feature	3248	3248	3320	3100	7014	7014	7045	7057		
Feature group	5028	5028	5003	5010	5034	5034				
Type	PH	PH	Ditch	Ditch	Ditch	Ditch	Pit	Pit	layer	
Date	ML	ML	ML	?L	ML	ML	ML	ML		
	IA	IA	IA	IA	IA	IA	IA	IA		
Phase/Area	1	1	3	1	A7	A7	A7	A7	A7	
Volume	40	40	40	40	40	40	40	40	40	
Gramineae	small seeded grass	1	-	3	-	1	-	7	-	1
Gramineae	large seeded grass	-	-	1	2	3	2	2	-	-
Indet.		-	-	1	2	2	1	4	-	-
Sample	32	33	42	109	144	145	148	154	159	
<b>Mineralised Seeds</b>										
Chenopodiace	-	-	-	-	-	-	44	-	-	
Labiata	-	-	-	-	-	-	2	-	-	
Polygonaceae/Cyperaceae	-	-	-	-	-	-	5	-	-	
Indet.	-	-	-	-	-	-	335	-	-	
<b>Total charred grain</b>	44	365	1	16	20	28	9	31	12	
<b>Total charred chaff</b>	6	1	2	1	7	12	153	14	9	
<b>Total charred weeds</b>	6	12	37	23	11	9	34	3	12	
<b>Total charred items</b>	56	378	40	40	38	49	196	48	33	
<b>Density (items/litre)</b>	1.4	9.45	1	1	0.95	1.225	4.9	1.2	0.825	

Table 30: A summary of the remains noted in the samples but not included in the analysis

Area	3	3	3	3	3	6	7	
Phase	0	1	2	3	4			
Number of Samples	3	6	9	11	1	4	4	
Total Volume	120	220	250	380+	40	150	160	
<i>Triticum spelta</i>	Spelt Wheat grain	-	++	-	-	-	+	+
<i>Triticum spelta</i>	Spelt wheat glume base	-	-	-	+	-	+	+
<i>Triticum spelta/dicoccum</i>	Spelt/Emmer Wheat grain	-	++	-	-	-	+	+
<i>Triticum spelta/dicoccum</i>	Spelt/Emmer wheat glume	-	+	+	+	-	+	+
<i>Triticum sp.</i>	Wheat grain	-	+	++	+	-	+	+
<i>Hordeum sp.</i>	Barley grain	-	+	+	+	-	+	+
<i>Hordeum sp.</i>	Barley rachis	-	-	-	-	-	-	+
<i>Avena sp.</i>	Oats grain	-	-	+	+	-	-	-
Cerealia indet.	Grain	+	++	+	+	-	+	+
<i>Vicia/Lathyrus/Pisum sp.</i>	Vetch/bean/Pea	-	-	-	-	+	-	-
<i>Prunus spinosa</i>	Sloe stone	-	-	-	+	-	-	-
<i>Corylus avellana</i>	Hazel nut shell fragments	-	-	-	+	-	+	-
<i>Arrhenatherum elatius</i>	False oat-grass tuber	-	-	-	+	-	-	-
Weeds		-	++	++	+	+	++	+

+ = 0-10 items; ++ = 11-50 items.

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