
An Iron Age and Roman Settlement at Summersfield, Papworth Everard

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This paper details the excavation of a small rural settlement situated on a clay ridge at Summersfield, Papworth Everard. The ridgeline was first settled during the Iron Age, with the construction of five roundhouses and three enclosures. During the Late Iron Age/early Roman period the settlement developed further with a series of enclosures representing different forms of activity, including habitation, horticulture, crop processing, and the management of livestock. Possibly representing two distinct farmsteads, the settlement remains lay either side of a partially metalled routeway. Although this may have branched off the presumed route of Ermine Street, it is possible that this is the Roman road itself. There was a hiatus in activity from the end of the Roman period until the 10th century AD, when settlement to the north of the excavation area, centred on the church of St. Peter, encroached into Summersfield. Five separate enclosures and the remains of two structures located on the edge of the settlement were revealed. The focus of this paper will be on the Iron Age and Roman phases, revealing the character of the later prehistoric and Romano-British settlement on the clay lands; this further supports evidence from other recent excavations that have indicated that settlement was not confined to the river terraces.

Although the claylands of Cambridgeshire were long assumed to have been sparsely populated through later prehistory and the first millennium AD (Fox 1923; Clay 2002), recent fieldwork and survey have demonstrated that settlement intensity in these regions began to increase in the early Iron Age (Mills & Palmer 2007; Evans & Standring this vol.). The nature of identified Middle to Late Iron Age ditched farmsteads and field systems has been argued to reflect settlement activity revolving around animal husbandry, garden plots and woodland management, although stock-keeping and horticulture are thought to have been small-scale (Mills & Palmer 2007). Clayland settlement continued and expanded in the earlier Roman period, although landscape reorganisation in the second and third centuries AD is thought to have led to a decrease in numbers of settlements on the clay, with settlement once again broadly confined to the river valleys and gravel terraces (Taylor 2007).

On the clay uplands to the west of Cambridge, a

series of recent excavations have shed more light on later prehistoric and Romano-British settlement on the Cambridgeshire claylands. Excavations along the A428 revealed four Iron Age or Roman farmsteads; all were small, dispersed and of low status. Animal husbandry during the Iron Age was evident, although there was no direct evidence for arable cultivation. By the Roman period the economy appeared to be more mixed, with livestock enclosures and drove-ways present along one side of Roman Ermine Street and arable fields on the other (Abrams & Ingham 2008). Ten of the twelve sites excavated at Cambourne revealed evidence for Romano-British activity, four of which also revealed later Iron Age features (Wright *et al.* 2009). All of the settlements revealed through these excavations were farmsteads, dispersed and predominantly located close to a watercourse in a sheltered position. The economy of these farmsteads appeared to have been mixed agriculture dominated by pastoral farming. As will be seen, the settlement remains excavated at Summersfield displayed similar characteristics.

To the east of Summersfield work by the Cambridge Archaeological Unit (CAU) at Longstanton has revealed further settlements on a gravel ridge flanking the claylands (Evans *et al.* 2008: 186). The settlements identified were generally small and consisted of 'organic' sub-rectangular or sub-circular enclosures, and it is thought that the layout was determined by the degree to which the landscape had been deforested and cleared. The inference here was that the more 'organic' systems were representative of a wooded environment, while the more rectangular enclosures were suggestive of open land. These settlement sites situated on the claylands were probably supplying larger settlements located on the gravel 'hinterlands' (Evans & Newman 2010). Studies of the Romano-British settlements around northern Cambridge have suggested that they were arranged at approximately 400m to 600m intervals. These intervals are thought to indicate the range of any associated agricultural or pastoral land for each settlement, which themselves appeared to extend onto the clays, and further indicates the utilisation of cleared woodland (Evans *et al.* 2008).

The Excavation

During 2008 and 2010 the CAU undertook an excavation in advance of housing development at Summersfield, to the southwest of Papworth Everard. The small Romano-British farmsteads were identified during an archaeological trench evaluation in late 2006 (Essex County Council Field Archaeology Unit), which revealed a Romano-British enclosure (Pocock 2007). Commissioned by CgMs for Barratt Eastern Counties, the excavation was centred on NGR 528500 262500 and covered a development area of approximately 21 hectares (Figure 1). The site lies between 41.5m OD and 51m OD along the crest of a ridge, on geology comprising Oxford Clay overlain by Boulder Clay drift (British Geological Survey Sheet 187). The excavation was divided into three distinct areas totalling 4.7ha, Areas A, B and C (see Figure 1). The majority of the work was undertaken in 2008; however, an area under a series of overhead cables was excavated in 2010 in conjunction with an extension to Area A.

Human activity spanning the Mesolithic through to the post-Medieval period was identified during the course of the excavation, activity that began with the seasonal use of the ridge during the Mesolithic period. A small Middle Iron Age settlement subsequently developed into a Romano-British farmstead, with a further example 500m to the south. Following the decline of these farmsteads, elements of an early Medieval settlement were recorded to the north around the church of St. Peter (see Figures 1 and 2). Although the excavation at Summersfield provided a tantalising insight into a large swathe of human history, it was during the Middle Iron Age and Roman periods that the ridge was most intensively occupied. Consequently this paper will focus on these periods.

Phase 1: Later Prehistoric Summersfield

Small scale activity at Summersfield dates back to the Mesolithic. Flint recovered from natural features such as tree-throws, and residually within later features, probably represents the periodical or seasonal use of the landscape. A cluster of features, F.315, F.418, F.464, F.465, and F.477 (Figure 3) and residual material from later structures (such as Structure 1 see below) also indicates that the ridge was potentially occupied during the Late Bronze Age/Early Iron Age. However, the limited evidence suggests it was not being extensively utilised and it is during the Middle Iron Age that the first permanent settlement appears. This pattern of occupation appears to have been typical.

The Middle Iron Age settlement remains comprised five structures (1–4 and 6) and a series of four enclosures (I, II, III and XXIX), which would appear to represent two distinct phases of occupation (Figure 3); one comprising roundhouses forming part of an ‘open settlement’ with no contemporary enclosures and another characterised by enclosed compounds. Within the ‘core’ of the settlement there seems to have been a one to one replacement of each structure with an enclosure, with Structures 2, 3 and 6 being

replaced by Enclosures II, III and XXIX.

Phase 1a: The Open Settlement

In terms of the layout of the open settlement, three of the structures (2, 3 and 6) were clustered together just off the ridge’s northeastern edge and appear to represent the core of the settlement, while the remaining two structures (Structures 1 and 4) were situated to the north and south respectively. Structure 1 lay within the area of Late Bronze Age activity (and produced residual pottery of this date); its location could indicate that it was one of the earliest structures.

Each of the five roundhouses was of a comparable construction with a circular ring-gully encompassing an area of 80m² to 109m² (see Table 1). There was no evidence for any arrangement of posts either inside or outside the gullies, and there were few associated internal features. Burnt stone pits were recorded within two of the structures (1 and 3), and the remnants of a single posthole were identified near the entrance to Structure 6. Although each structure was constructed in a similar manner, three different orientations were identified from their entrances with Structures 2, 3 and 6 broadly the same; this might suggest that these particular structures were constructed at similar times.

Table 1. Comparative dimensions of the ring gullies forming the five roundhouses.

Structure	Max Width (m)	Max Depth (m)	Diameter (m)	Area (m ²)	Orientation
1	0.55	0.25	10.40	80	NW
2	0.75	0.25	12.25	109	E
3	0.40	0.20	10.50	106	ESE
4	0.49	0.17	9.50	85	SE
6	0.75	0.35	10.69	108	WNW & ESE

The structures were all very similar in their morphology and preservation, with the only real difference being in the elements that survived. Structure 6, however, was slightly different in that it had two opposing entrances facing northwest and southeast. Although its size was similar to the other roundhouses the defining ring gully was very well preserved, representing a deep cut gully which produced a greater quantity of material than any of the others, with 90 sherds (313g) of pottery, 35 fragments (110g) of animal bone, and 63 pieces (119g) of burnt clay. In addition pit F.507 contained 262 sherds (501g) of pottery, a marked contrast to the other structures, and possibly a result of the better level of preservation, although the reasons for this were not clear.

Eleven small burnt stone pits were also located across the ridge (see Figure 3). Three of the pits appeared to be directly associated with structures (F.80, F.350, and F.481); another six were located in two clusters of three; F.306, F.309 and F.313 to the north of Structure 1, and F.443, F.444 and F.445 to the north of Structure 6. Although only one of the pits contained datable material, two were located within Middle Iron

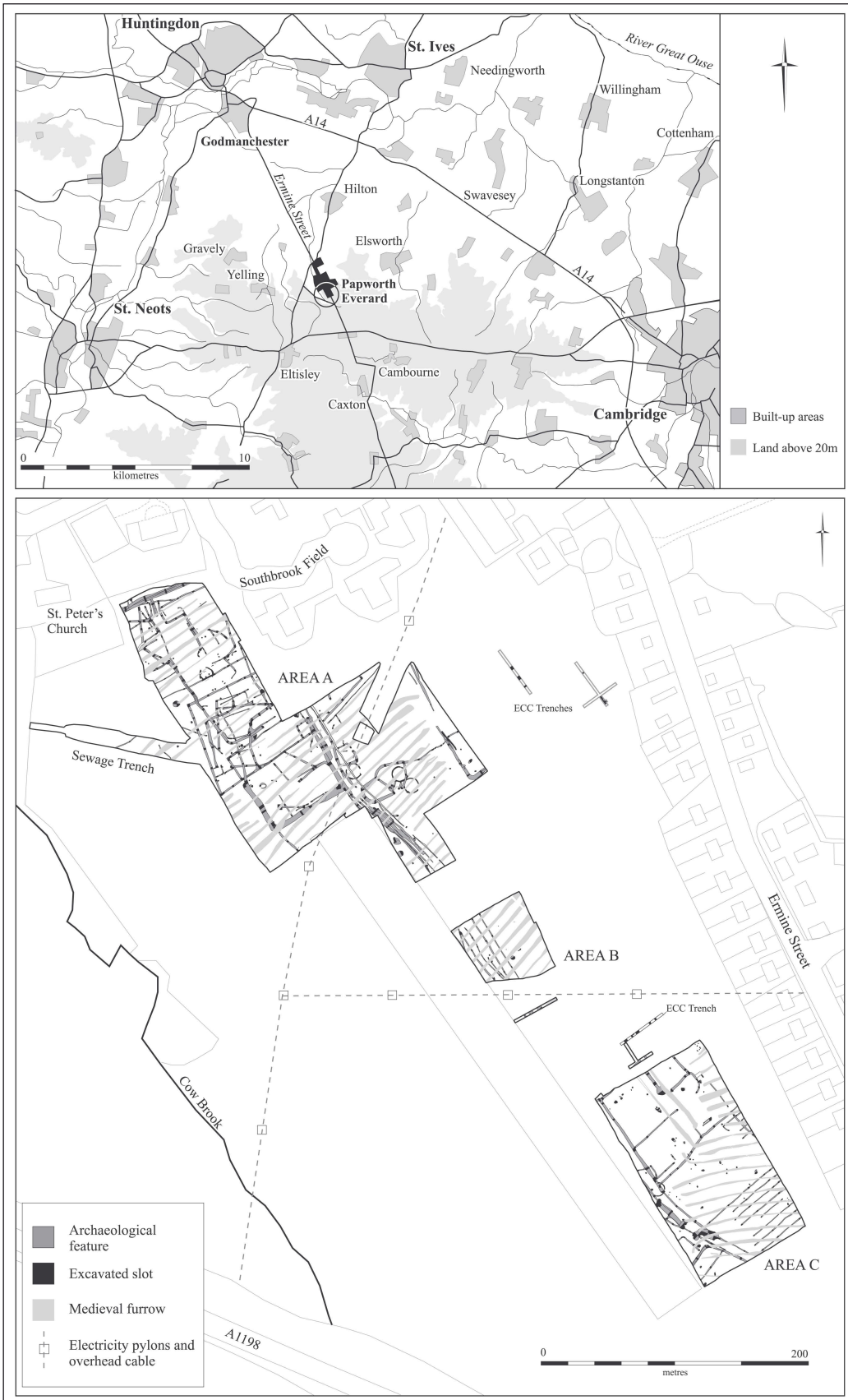


Figure 1. Site location. (TOP) Summersfield in the wider landscape; (BOTTOM) the excavated areas and all excavated features.



Figure 2. Top: Excavation of Area A with the Roman track in the foreground and St. Peter's church in the distance. Bottom: Excavation of the 'nested' Roman enclosures.

Age structures (F.350 in Structure 1 and F.481 in Structure 3), whilst one of the cluster of three to the north of Structure 6 (F.443) was cut by Enclosure XXIX's ditch (F.442), strongly suggesting the features belong to the 'open settlement' phase. There was little indication of the function of these pits, but the fact that they contained only burnt and fire-cracked stone may suggest they were cooking pits, associated with the Iron Age settlement.

Phase 1b: Enclosed Settlement

The unenclosed roundhouse settlement was replaced by a series of compounds (Enclosures II, III and XXIX) sited within the core of the preceding open settlement. The compounds survived as a series of three enclosures (see Figure 3), located in the northeastern corner of a fourth, much larger, enclosure (Enclosure I), which may represent the remains of a more extensive field system (see Table 2).

Table 2. *Iron Age enclosures (numbers in italics represent partially exposed sections).*

Enclosure	N-S (m)	E-W (m)	Area (m ²)
I	<i>40</i>	<i>80</i>	3200
II	20	22	289
III	12	16	223
XXIX	13	12	195

Enclosures II, III and XXIX were all of similar sizes but with differing characters. Enclosure II was almost triangular in form with a curved northwest corner and an entrance at the southern tip. A single re-cut was recorded along the centre of the original enclosure ditch, which on occasions extended outside the original ditch line, suggesting that any bank was inside the enclosure. Enclosure III was 'C'-shaped with its entrance/open side to the east. The ditches of Enclosure II and III ranged from 1.97m to 2.6m wide and 0.99m to 1.48m deep, much more substantial than any of the other enclosures. The western side of Enclosure III also formed part of a later Early Roman trackway, suggesting that either the track existed during the Iron Age and continued into the Roman period or that it incorporated and respected a pre-existing boundary that was still extant. Enclosure XXIX was a small sub-square enclosure formed by a single ditch (F.442) with a northeast-facing entrance; once again the western edge of the enclosure had been subsumed by the later trackway.

Only Enclosure XXIX had any internal features providing potential evidence for an internal structure – the remnants of a shallow gully (F.503) – and it is possible that, as with Structure 6, which it 'replaced', it represented the 'heart' of the settlement. Enclosures II and III may have been 'domestic', although they may also have been either for livestock corralling, or for grain storage (a sample from Enclosure II contained silicified awns representative of the first stages of cereal processing).

Enclosure I was significantly bigger than any of the others and was the only enclosure not fully exposed. This appeared to be part of a much larger boundary and drainage system, which extended down the slope and would have funnelled water off the ridge, and away from the settlement. Enclosures II and III cut Enclosure I and it is possible that it formed part

of a field system with the enclosure compounds (II and III) located within its western corner. With no direct relationship to Structures 2 and 3, which were also cut by Enclosure II, it is possible that Enclosure I represents the corner of a field that was present throughout both Phases 1a and 1b.

Phase 2: The Romano-British Farmsteads

The area saw the adoption of a more 'structured' layout towards the end of the first century BC. Settlement activity was at its height during the Early Roman period (mid first to second century AD) and declined in the later Roman period (second to fourth century AD). The earlier Iron Age roundhouses and enclosures gave rise to a well-defined farmstead and associated routeway, and a probable second farmstead to the south (see Figure 4).

The track is assumed to have forked off Ermine Street at the southeast end of the site, following the contour of the ridge to the northwest over a distance of at least 541m. It comprised two sets of parallel ditches set c. 5m to 8m apart with traces of a metallised surface. The surface only survived within Area A, where it was very patchy, with excavated sections revealing a series of successive layers of gravel overlain by much larger pebbles. The track followed the contours of the ridge within each area and the parallel ditches comprised multiple segments with causeways and re-cuts. Within Areas A and C where the track was adjacent to a series of farmstead enclosures, the ditches were larger than elsewhere. Although the route of Ermine Street is assumed to have always been in its current location to the east, it is possible that this trackway represents the original line of the Roman road.

A total of 20 ditched enclosures extending from the track were recorded (Table 3). The enclosures can be divided by function into four differing types; settlement related, horticultural, crop processing zones, and paddocks for the management of livestock, collectively these represented two farmsteads, the cores of which were c. 500m apart.

The Northern Settlement (Area A)

Nine settlement enclosures were identified within Area A (Enclosures IV to XII), representing at least four successive phases of activity. Enclosures IV, V, and VI were 'nested' together towards the northern edge of the trackway, and represented the earliest three phases of the northern farmstead (Phases 2a (V), 2b (VI), and 2c (IV)): a succession of enclosures spanning the Late Iron Age into the early Roman period, with each enclosure marking a slight shift in the orientation from the NW-SE alignment of the Iron Age settlement to the E-W alignment of the early Roman farmstead. The remaining enclosures were assigned to a fourth, early Roman phase (Phase 2d) when the farmstead was at its height with all of the different elements noted above. By the later Roman period the scale of the settlement had diminished with few of the settlement enclosures still in use. The cutting of a large quarry pit, F.48, through the trackway in Area C suggests that this too was no longer in use.

The core of the farmstead appears to have been Enclosures

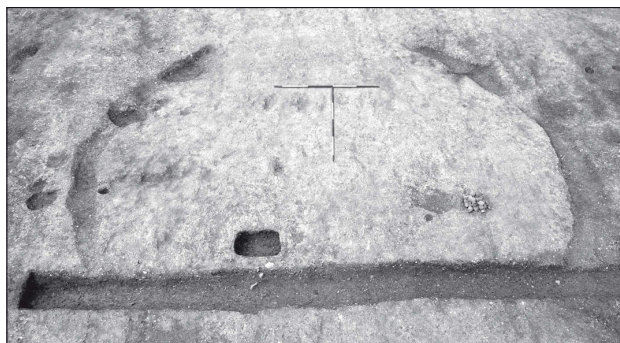


Figure 3. Later Prehistoric Summersfield.

Top: the spread of activity across the ridge is apparent from Area A to C with the settlement core showing the development from open core to enclosed settlement; Above: Structure 1 showing the burnt stone pit F.350 and the stones recovered from it, in the foreground is the Roman ditch that cuts through it; Right: Structures 2 and 3 with the later enclosure ditch F.242 cut between them.

	Enclosure	N-S (m)	E-W (m)	Area (m ²)	Area	Function
Northern Settlement	IV	68	80	5440	A	Settlement
	V	52	32	1664	A	Settlement
	VI	48	40	1920	A	Settlement
	VII	20	64	1280	A	Settlement
	VIII	8	8	64	A	Settlement
	IX	12	40	480	A	Settlement
	X	8	10	80	A	Settlement
	XI	24	60	1440	A	Settlement
	XII	44	60	2640	A	Settlement
Southern Settlement	XIII	41	37	1517	C	Processing
	XIV	31	46	1426	C	Processing
	XV	20	22	440	C	Processing
	XVI	13	30	390	C	Processing
	XVII	60	35	2100	C	Processing
	XVIII	49	80	3920	C	Horticulture
	XIX	46	68	3128	C	Horticulture
	XX	17	29	493	C	Stock
	XXI	11	26	286	C	Stock
	XXII	17	9	153	C	Stock
	XXIII	29	9	261	C	Stock

Table 3. Romano-British enclosures, component features and area enclosed (numbers in italics represent partially exposed sections).

VII to XII, while Enclosures VII, VIII and XII appeared to form the main 'settlement compound'. Enclosure VII was a narrow rectangular enclosure, which potentially enclosed the primary building while a smaller structure could have been located in Enclosure VIII. At some point this compound was expanded and Enclosure XII was constructed, the small fragmented ditches and gullies within possibly indicating the presence of further structures in this enclosure.

A series of gullies (F.224, F.392, F.399, F.403, F.404 and F.405) within Enclosure XII probably represented a series of successive alterations to its layout. Evidence for a possible timber structure in this area was recorded, with a series of shallow beam slots identified during the evaluation; however, no direct evidence for any structures or buildings was encountered in the main excavation (Pocock 2007). Despite the absence of definite structural features, a comparatively large quantity of material was recovered from Enclosure XII, which is indicative of settlement and suggestive of the presence of a structure. A total of 341 sherds (2288g) of pottery and 1625 fragments (11,731g) of animal bone were recovered from the enclosure ditches, along with 11 pieces (62g) of burnt clay, a fragment (48g) of tile, and a fragment (3500g) of quernstone. Artefact densities also suggest that a structure may have been located within Enclosure VIII. The material recovered from its boundary ditch (F.212) included a glass bead (a single early Roman melon bead of turquoise frit; Fig. 8.9, identified by V. Herring), 131 sherds (1185g) of pottery, 108 fragments (358g) of animal bone and four pieces (39g) of burnt clay, with a greater concentration of animal bone recovered from this enclosure than elsewhere (8% of the total animal bone recovered) representing probable 'household' waste (Rajkovača, below).

The Southern Settlement (Area C)

Horticultural activity was identified in Enclosures XVIII and XIX as a series of parallel northeast-southwest gullies within the southern half of Area C. Seven gullies had survived (F.14–F.18, F.20 and F.21) within Enclosure XIX that were aligned obliquely to the track, c. 4–5m apart. The remnants of only four gullies (F.106–F.108 and F.119) survived within Enclosure XVIII located towards the northeast edge of the excavated area, although in the absence of any divisions or other features it seems probable that the short lengths of gullies once extended across the entire enclosure. The linear features within both enclosures were part of a horticultural system; the remnants of raised or 'lazy-beds'. 'Lazy-beds' can be used on poorly drained soils such as clay, as the additional depth of soil helps to improve the drainage, and allows the soil to become warmer enabling a greater range of crops to be grown.

While evidence of crop processing was recovered from across the site in the form of fragments of quernstone (see Enclosure XII, for example), deposits containing large amounts of chaff suggest a defined crop processing zone was located in the northern half of Area C. The crop processing zone comprised five different enclosures, XIII to XVII, each varied in shape and size (Table 3) and was separated by a series of boundaries enabling access between the individual enclosures (Figure 4). Within Enclosures XIII and XIV the remnants of two middens (F.127 and F.147/148) had been heavily truncated and survived only as shallow hollows (Figure 4). Despite the level of truncation, a large quantity of material was recovered from the charcoal rich deposits within the hollows (Table 4). The majority comprised pottery, which accounted for 90% by weight, whilst animal bone accounted for 4%. The low percentage of animal bone suggests that the enclosures had

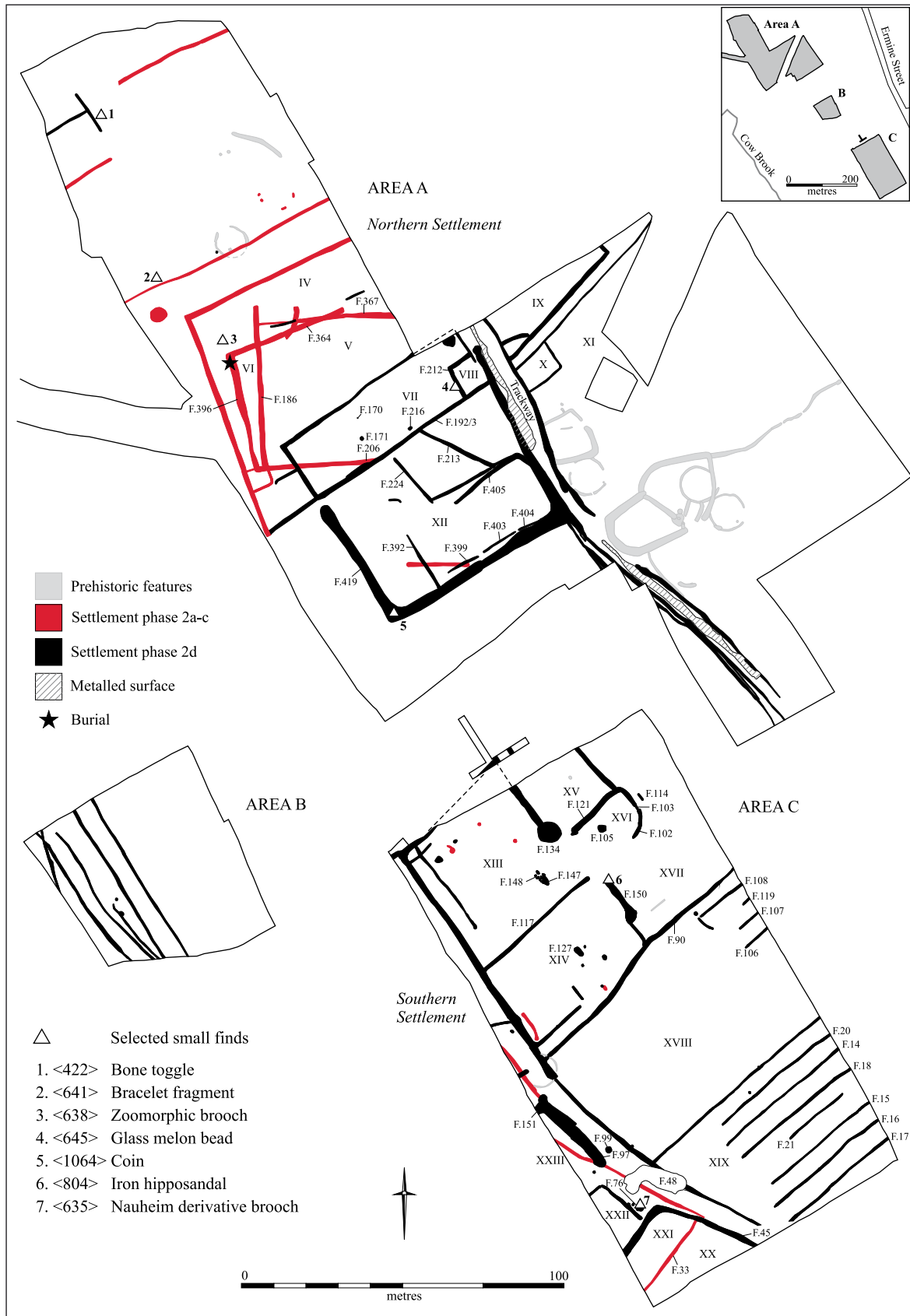


Figure 4. The Romano-British farmstead. The areas have been shown disjointed to better illustrate the features within, it is still possible to distinguish the settlement and non-settlement enclosures and the connecting track that forms the spine of the site.

no domestic function and there were no obvious structures within either of the enclosures to account for the midden material, although it was possible they may have been lost through truncation. Both midden remnants were situated towards the eastern edge of the enclosures, away from the track and towards Enclosure XVI and may represent dumping episodes or processes associated with the activities occurring within the centrally located Enclosure XVI.

Table 4. Finds quantities from the middens.

	Pottery	Bone	Burnt Clay	Metal	Glass
F.127	74 (376g)	8 (54g)	-	2 (8g)	-
F.147	42 (258g)	5 (4g)	3 (6g)	-	-
F.148	176 (858g)	3 (5g)	20 (52g)	7 (30g)	1 (1g)

Environmental assemblages suggest that the crop processing activity was centred on Enclosure XVI. Pit F.105 was purposefully backfilled with waste material from cereal processing, (predominantly spelt, see deVareilles below), including large amounts of chaff. The enclosure ditches also contained charcoal/chaff rich deposits with higher concentrations in the entrance terminals. To the northeast of the enclosure, and cut parallel to the entrance, was a short ditch F.114. The deposit within this feature was charcoal/chaff rich, as was also recorded for pit F.105. At some point the entrance to the enclosure was sealed when a short linear feature F.103 was cut across the entrance. In addition to cereal processing, the burnt deposits appear to indicate that the crop processing waste may have been burnt as a fuel for some other industrial activity, possibly malting. Quantities of brick and tile recovered from pit F.105, although in small quantities, could be the remains of a small brick built structure, possibly where the cereal was being processed.

A further four enclosures (XX to XXIII) were identified towards the southwest corner of Area C, abutting the track, which appeared to represent part of the core of the southern farmstead, although may also have been partly reserved for stock, with the settlement area lying further to the south.

Each enclosure had an entranceway enabling access to the track. The close proximity to Ermine Street would have made it easier to move livestock over greater distances and to make use of potential trade routes. A single horse skeleton was recovered from the juncture of F.97 and F.151, which was the only articulated animal skeleton recovered from the site. Horse bone was evident in significant quantities in the faunal assemblage, accounting for c. 19% of the total number of bones recovered. Along with the presence of a hipposandal from F.150 (Appleby below), the material suggests that horses may have played an important role in the economy of the southern settlement at least.

Together, the two settlement areas indicate a mixed economy with specialist crop production and processing. The enclosures within Area A represent the focus for the northern farmstead, with the farm buildings located on the higher ground. The settlement was serviced by a track that appears to have forked off Ermine Street, aligned along the top of the ridge. The settlement within Area C may suggest a more mixed economy, with horticultural and cereal processing practices evident, whilst the animal bone recovered shows that livestock, and in particular cattle, were managed and poultry was kept (Rajkovača, below). All of this suggests that the settlements were probably small and self-sufficient farmsteads with family compounds that may have continued for several generations.

A single burial was recorded during the excavation within Area A, cut into the northwest corner of Enclosure VI (see Dodwell 2009); an adult male [1634] was buried within a shallow sub-rectangular grave F.396 with head to the NW (see Figure 5). The skeleton was positioned in a flexed position on its right side facing west. The soil conditions resulted in poorly preserved bone, while the head had been crushed post-deposition. The teeth were worn, with some calculus and antemortem loss, but no other patholo-

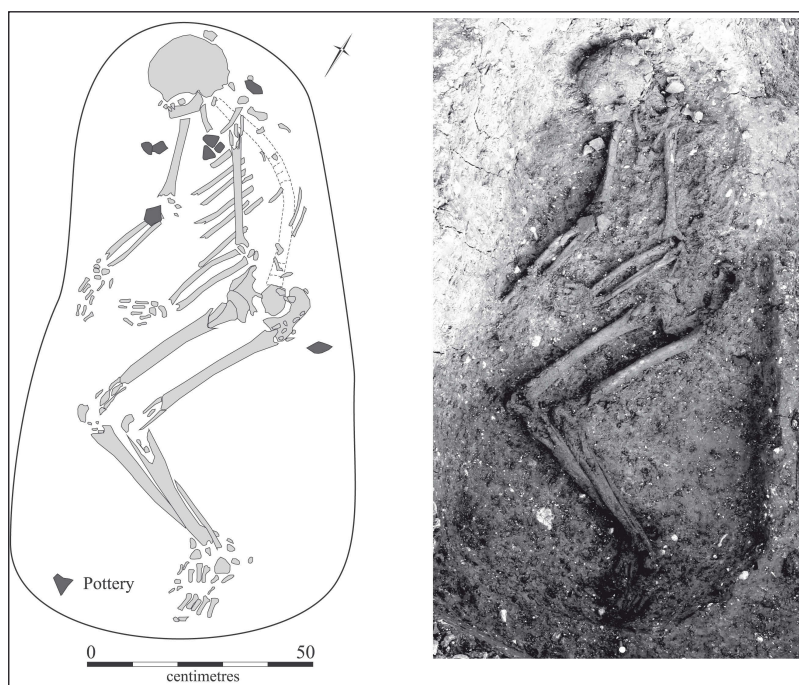


Figure 5. The only burial encountered during the excavation was that of an adult male who had been buried with a 'sprinkling' of pottery.

gies were recorded. Several body sherds of broken Romano-British pottery were recovered with the skeleton and the relationship between the pottery and bone suggests they were deposited together with the pottery spread around and over the body.

The settlement continued in use into the late Roman period and elements of the trackway were still being recut, especially within Area C, which suggest that it was still being used as a routeway. The stock enclosures also appear to have continued in use. Towards the end of the settlement's lifespan, a large amorphous pit F.48, 18.75m long by 6.25m wide and 1.35m deep (Figure 4), was excavated across the trackway. Cut into the boulder clay, the pit may have been excavated to extract clay. A similar feature was recorded at Childerley Gate, Cambridgeshire where it was interpreted as a marl quarry (SG45 in Abrams & Ingham 2008). What the material extracted from the pit was used for is unclear, however, it does indicate that the track may have been waning in significance, and that indeed the importance of the farmstead was diminishing. It was not until the early Medieval period that activity occurred again at Summersfield.

Phase 3: The Early Medieval Village

Activity spanning the tenth to eleventh centuries AD was confined to Area A and did not extend to the south. A total of five enclosures and two structures were identified, which appeared to represent the fringe of settlement focused around the Church of St. Peter with two phases of enclosure evident (Figure 6). There was no evidence for the continued settlement of the ridge between the Romano-British period and the tenth century. The settlement at this time was probably small and its core located beside the Cow Brook to the south of the church and west of the site where the Historic Environment Record records the earthwork remains of a shrunken Medieval village (HER 02469). However, a degree of landscape continuity is evident in that the large boundary ditch of Enclosure XII survived as an earthwork and was incorporated into the early Medieval system.

Five enclosures were assigned to the early Medieval period with one assigned to Phase 3a of the enclosure system and four to Phase 3b (Table 5).

Table 5. Early Medieval enclosures, component features and area enclosed (numbers in italics represent partially exposed sections)

Enclosure	N-S (m)	E-W (m)	Area (m ²)	Area	Phase
XXIV	14	18	252	A	3b
XXV	60	24	1440	A	3b
XXVI	102	58	5916	A	3b
XXVII	21	40	840	A	3b
XXVIII	120	48	5760	A	3a

The first phase of the enclosure system (Phase 3a) was evi-

denced by one enclosure, XXVIII, which had undergone several re-cuts. Although not a direct continuation of the Roman enclosure system, the enclosure occupied the same alignment and elements of the earlier system did survive. A sample from a small pit F.335 within Enclosure XXVIII was grain-rich, yielding predominantly free-threshing wheat (de Vareilles below). In close association with the pit was F.352, a small sub-rectangular pit that contained a single sherd (4g) of residual Romano-British pottery and six fragments (8g) of animal bone. A sample from the pit had a comparable assemblage of free-threshing wheat. The assemblage from F.352 was suggestive of 'household' waste (*ibid.*) and it would seem feasible that together these features may have formed the remnants of an early Medieval structure (Structure 7), which coincidentally occupied the same space as Iron Age Structure 1.

Phase 3b marked a subtle shift away from the Romano-British alignment and comprised Enclosures XXIV to XXVI, each of varying size (Table 5). These enclosures represented smaller land divisions, possibly indicating the expansion of the settlement core around the Church of St. Peter and its slight encroachment into Summersfield. Enclosures XXIV and XXV were situated at the northern end of Area A where activity was densest. Enclosure XXIV was rectangular in form and despite the lack of internal features, the quantity of artefactual material recovered (Table 6) suggested that it was in close proximity to the settlement. Immediately to the east Enclosure XXV was an 'L'-shaped enclosure. A single narrow linear gully (F.287) was the only internal feature and appeared to represent the beam slot (*c.* 6m long) of a rectangular structure (Structure 5) situated within a corner of the enclosure; the rest of the structure had been lost. Structure 5 was one of only two structures dated to this period and represented the margins of the settlement. The deposits associated with these two enclosures were all 'dark' and indicative of settlement, potentially middening activities.

Table 6. Artefact numbers from early Medieval occupation enclosures and F.287.

	Pottery		Bone		Other
	Number	Weight (g)	Number	Weight (g)	
Enclosure XXIV	80	516	51	310	2x burnt clay, 1x tile, 2x iron nails
Enclosure XXV	104	1230	157	1686	1x spindle whorl fragment, 1x oyster shell, 2x mussel shell
F.287	64	1394	22	40	2x burnt clay, 1x mussel shell

To the south the land appeared to have been divided for a different use as represented by Enclosures XXVI and XXVII, which were larger and more open than the settlement related enclosures. The enclosures were probably agricultural in function and were arranged along the ridge utilising aspects of the earlier Romano-British system. The southern corner

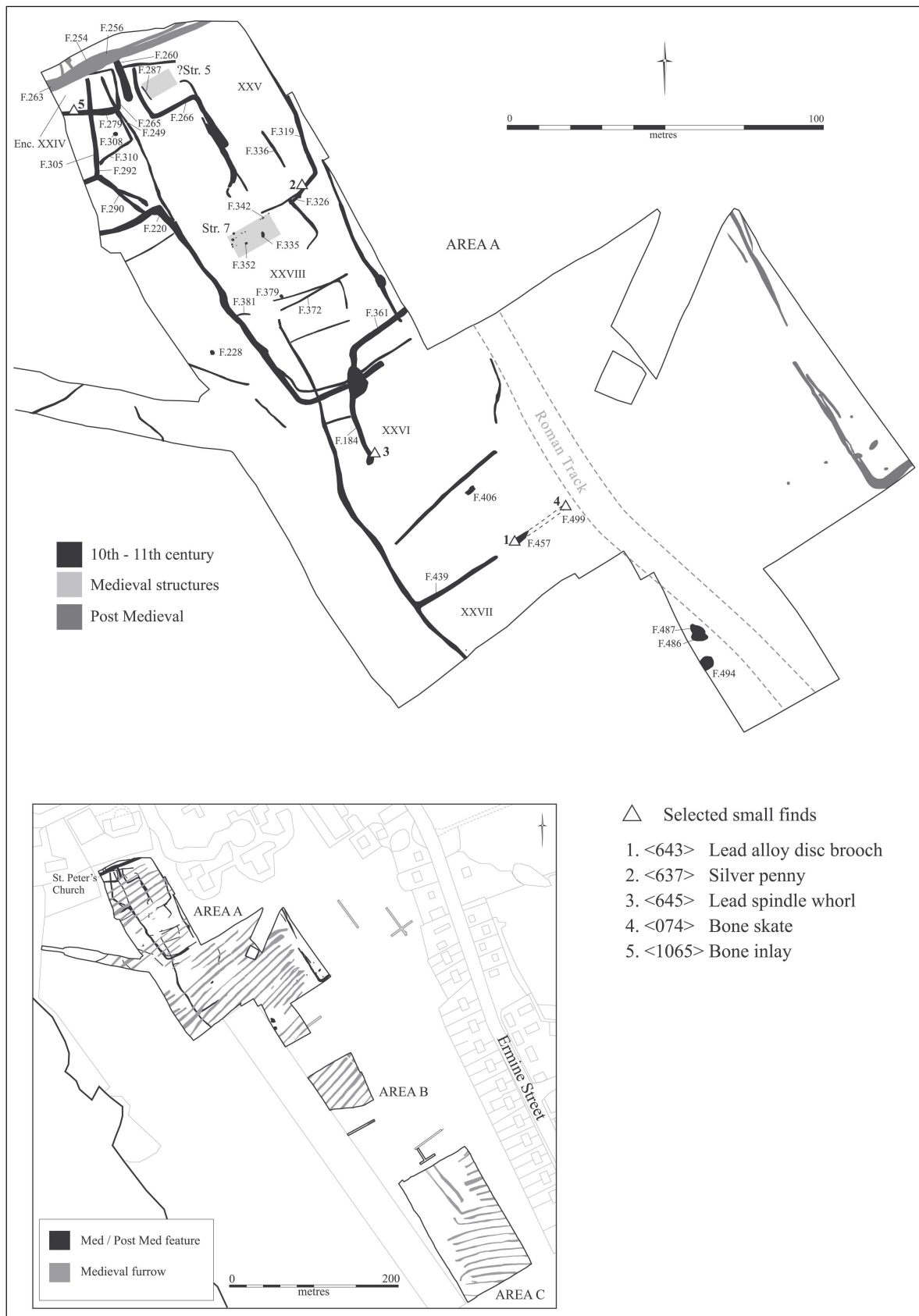


Figure 6. The Early Medieval village. The course of the Roman track is shown, although its presence at this time cannot be confirmed, local tales of a track existing in the Medieval and later periods would suggest that it did in some form. The inset shows the later ridge and furrow system that imposes itself upon Summersfield.

of Enclosure XXVI incorporated the large Romano-British Enclosure XII ditch, which must have remained as some form of earthwork. The lack of any early Medieval activity to the south within Areas B and C could suggest that these areas were used for pasture, whereas Enclosures XXVI and XXVII were potentially cultivated.

During a metal-detector survey of the site a bent and clipped silver penny dating to the reign of Æthelred II (AD 978–1016) was recovered from F.319. The coin was minted *c.* AD 978/979 and may be a *First Small Cross* type of the Norwich moneyer Osferth (Blackburn & Allen in Patten 2009). Of comparable date to the silver penny, and also recovered during metal detection, was a section of lead-alloy decorated circular disc brooch or pendant from F.457. The brooch is comparable to examples from Coppergate in York (Mainman & Rogers 2000), Barwick in Norfolk (*ibid.*), and Winchester (Biddle 1990), which are all dated to the ninth to tenth century AD (see Appleby & Hall below).

Phase 4: Medieval Farming

(with David Hall)

The focus of the tenth- to eleventh-century settlement shifted during the remainder of the Medieval period, when it contracted around the Church of St. Peter and the Cow Brook to the west. Furrows of medieval strip fields covered the whole site and the dating of these systems has been of interest for more than a century (Gray 1915, 403–418; Hall 1981). In the 1970s it became clear that in parts of the East Midlands medieval fields lay over Middle Saxon sites, and were therefore later (Hall 1995, 129–31). The site at Summersfield shows that, as the main post-Roman features date from the tenth to eleventh century, the strips were probably being laid out in the late eleventh or twelfth century. This is a late date for field genesis at the core of a settlement, since national historical evidence shows that strip fields lying in intermixed holding occur by the tenth century. Perhaps Papworth is best explained as the result of settlement re-planning that left this part of the village unoccupied in terms of dwellings and tofts, the 'space' being added to the existing open fields. Saxon settlement re-planning occurred at Cottenham and has been found elsewhere. At West Fen Road, Ely, the eastern part of the Saxon and Medieval site, abandoned in the twelfth century lay under ridge and furrow, so there is a parallel for settlement relocation and land being taken into the open fields (Mortimer *et al.* 2005, 45 & fig. 3.11). The site at Summersfield provides another example of this process occurring in about the twelfth century.

The Finds

Due to restrictions of space only the main artefact assemblages are reported here, along with a brief summary of other material recovered. The methodologies of the specialist contributions and the full specialist reports, including the detailed tables of results, are available in the site archive (SPA08).

The Prehistoric and Roman Pottery

Katie Anderson with Matt Brudenell

A total of 3065 sherds of pottery (22,852g) were recovered from the excavations, representing an estimated vessel equivalent (EVE) of 34.9. The pottery ranged in date from the Late Bronze Age/Early Iron Age through to the later Roman period, the bulk of the assemblage being of mid first- to second-century AD in origin (Table 7). For the purposes of this report the prehistoric pottery is described very briefly, with greater emphasis given to the Roman component.

Table 7. All pottery by date. MSW= mean sherd weight.

Date	No.	Wt. (g)	MSW (g)	% of Total
LBA or EIA (<i>c.</i> 1100–350 BC)	121	424	3.5	3.9
MIA (<i>c.</i> 350–50 BC/AD 50)	574	2251	3.9	18.7
LIA (<i>c.</i> 50 BC–AD 50)	155	993	6.4	5.1
Latest IA/ER (first century AD)	481	2598	5.4	15.7
ER (mid first–second AD)	1098	9955	9.1	35.8
Second–fourth century AD	636	6631	10.4	20.8
TOTAL	3065	22852	7.5	100.0

Late Prehistoric pottery

A small quantity of Late Bronze Age or Early Iron Age pottery was recovered from five features, none of which can be closely dated, and some of which have been illustrated (see Figure 7). The material was characterised by small sherds in a combination of flint-, shell- and/or grog-tempered fabrics (Table 8). F.418 yielded 59 sherds (103g), most of which appeared to derive from a single plain rimmed coarseware bowl or jar, with flint, shell and grog inclusions. The only other assemblage of note was recovered from F.464. This contained 44 sherds (247g) of a similar flint-, shell- and grog-tempered fabric, most belonging to a large, doubled-handled coarseware jar.

The Middle Iron Age component was significantly larger, and accounted for 18.7% by number of the total assemblage. The pottery was dominated by small, fragmented body sherds (mean sherd weight of just 3.9g), few of which were diagnostic. Sandy wares with calcareous inclusions were most prolific, representing 56% of the Middle Iron Age assemblage. Other major fabrics included plain sandy wares (19%) and shell-tempered ware (18%). A number were decorated with scoring (16 sherds, 176g) or burnishing (68 sherds, 196g). Due to the poor condition of the pottery, only a small number of vessel forms could be identified, including a plain rimmed bowl and a series of slack-shouldered jars.

Pottery assigned to the Late Iron Age included both hand-made and wheel-turned/thrown vessels. A number of fabric types were identified, but sandy ware dominated (48%), followed by shelly wares (19%) and grog-tempered wares

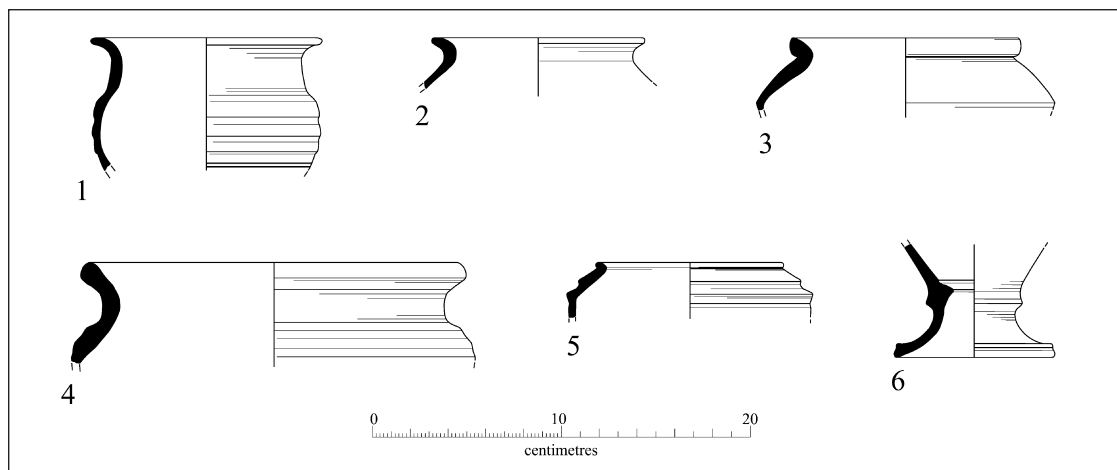


Figure 7. Examples of Iron Age pottery forms.

(17%). As with the Middle Iron Age assemblage, few vessel forms were identified. These comprised a single carinated bowl, a dish and series of plain, combed and cordoned jars with everted rims. Two vessels were burnished, two displayed combed decoration, and three sherds had surviving carbonised residues.

Table 8. All Iron Age sherds by fabric.

Fabric	LBA or EIA No./Wt. (g)	MIA No./Wt. (g)	LIA No./Wt. (g)
Calcareous and sand	-	323/996	19/57
Flint and shell	44/247	10/58	-
Flint	18/74	-	1/1
Flint, shell and grog	59/103	-	-
Grog	-	12/51	27/136
Sand	-	108/419	74/629
Shell	-	106/663	30/148
Vegetable and sand	-	15/64	-
Other	-	-	4/22
TOTAL	121/424	574/2251	155/993

Most of the pottery derived from the enclosures on the site. In total, 96 sherds (302g) were recovered from contexts associated with Enclosure II; the balance of material suggests an origin in the first century BC, with activity continuing into the early first century AD. A further 68 sherds (356g) were recovered from Enclosure III, including the partial profile of a scored jar. This compound can only be broadly dated to the Middle Iron Age, c. 350–50 BC, as could Enclosure XXIX. However, this yielded a slightly larger assemblage of 107 sherds (527g), including two slack-shouldered jars as well as fragments of a further four vessels.

Few of the other individual Middle to Late Iron Age feature assemblages warrant discussion, since each yielded less than 100g of pottery. The only exceptions were Structures 3 and 6. Structure 6 contained a relatively large assemblage, totalling 199 sherds (749g). The material comprised mainly small

fragmented sherds, with most of those from F.505 deriving from a single flat-topped, angular rimmed jar. The ring-gully of Structure 3 yielded 68 sherds of pottery (112g) in shell- and sand-tempered fabrics, a small number of which were scored.

Roman pottery

Pottery dating to the Late Iron Age/early Roman period (mid–late first century AD) accounted for 15.7% by number of the total assemblage. Material in this category was characterised by predominantly wheel-made vessels (although this sometimes included handmade sherds), which have either Iron Age fabrics with Romanising forms, or Romanising fabrics in Late Iron Age forms. This material broadly dates c. AD 30–70, although in Cambridgeshire it is common for ‘Romanising’ material to appear as late as the 60s AD, rather than immediately after the Roman conquest. Sandy fabrics were the most commonly occurring, representing 75% of the pottery (by number), while shell-tempered wares totalled 18%. The mean sherd weight of this group was still relatively low (5.4g), although there were more diagnostic sherds, including three bowls, two beakers, one dish and 12 different jars. A small number of sherds were decorated with burnishing and/or combing, whilst useware evidence was limited to one sherd with thick interior limescale.

Early Roman pottery (mid first–second century AD) accounted for the largest quantity of material representing 35.8% by number of the assemblage, with the second highest mean weight of 9.1g. There was a large increase in the number of vessel fabrics and forms, including non-local wares and imported wares. The variety of vessel fabrics not only reflects the increase in production seen at the beginning of the Roman period, but access to wider trade networks via Ermine Street. Coarse sandy greywares were the most commonly occurring fabric type with a total of 420 sherds (2793g), representing 40% of the early Roman pottery. Other fabrics likely to have been made locally included sandy whitewares (85 sherds, 766g), black-slipped wares (65 sherds, 508g), buff sandy sherds (52 sherds, 319g) and shell-tempered vessels (29 sherds, 667g). Non-local wares in this period included Verulamium whitewares, which totalled 61 sherds (1321g). There were also early Roman imported wares, comprising 30 South Gaulish Samian sherds (244g)

and four Gaulish amphora sherds (2793g). One of the Samian vessels had been repaired with a rivet and resin. In total, 60 vessels were identified, and although the assemblage was essentially jar-dominated, a variety of other forms were present: three amphora sherds (it is unclear whether these were from a single vessel), five beakers, 15 bowls, two cups, three dishes, seven flagons, three lids, three mortaria and two platters. A higher incidence of usewear was noted in this assemblage, although this is likely to be due to the larger quantity of pottery. Two sherds had interior limescale, while there were several sherds with carbonised residues. A small number of sherds were also noted as having post-breakage burning, though there was no evidence that this was *in situ*.

A total of 636 sherds, (6631g) were recorded as later Roman (second–fourth century AD), including pottery that could only be given a broad ‘Romano-British’ date. As with the Early Roman material, a variety of vessel fabrics and forms were represented. Sandy greywares dominated, which is typical of the period. Also present within the assemblage was material from some of the large Romano-British industries,

including Nene Valley colour-coats (179 sherds, 844g) and Horningsea greywares (17 sherds, 382g). Notable too is the increase in the number of shell-tempered sherds (68 sherds, 1841g), which is a common pattern seen in the later Roman period across Cambridgeshire. Furthermore, a relatively large number of imported wares were recovered, comprising primarily Central Gaulish Samian (82 sherds, weighing 856g) and including two vessels with complete stamps. Both were Dragendorff 33 cups, one with a stamp ‘MARTIANI.M’ (Figure 8.5), which has a broad date of AD 120–210 (www.terra-sigillata.org), the other with the stamp ‘ALBVCIANI’ (Figure 8.4), dating AD 140–190 (*ibid.*). Two of the Samian vessels showed evidence of repair: one Dragendorff 31 dish with a repair hole and one Dragendorff 18/31 dish with three rivets (see Figures 8.1 and 8.2). The assemblage also contained a trimmed base and several sherds with exterior sooting.

Overall, a range of vessel forms were identified, including eight beakers, five bowls, six cups, 27 jars and three mortaria. The pottery in this group is broadly dated second–fourth century AD. The bulk of the material, however, belongs to

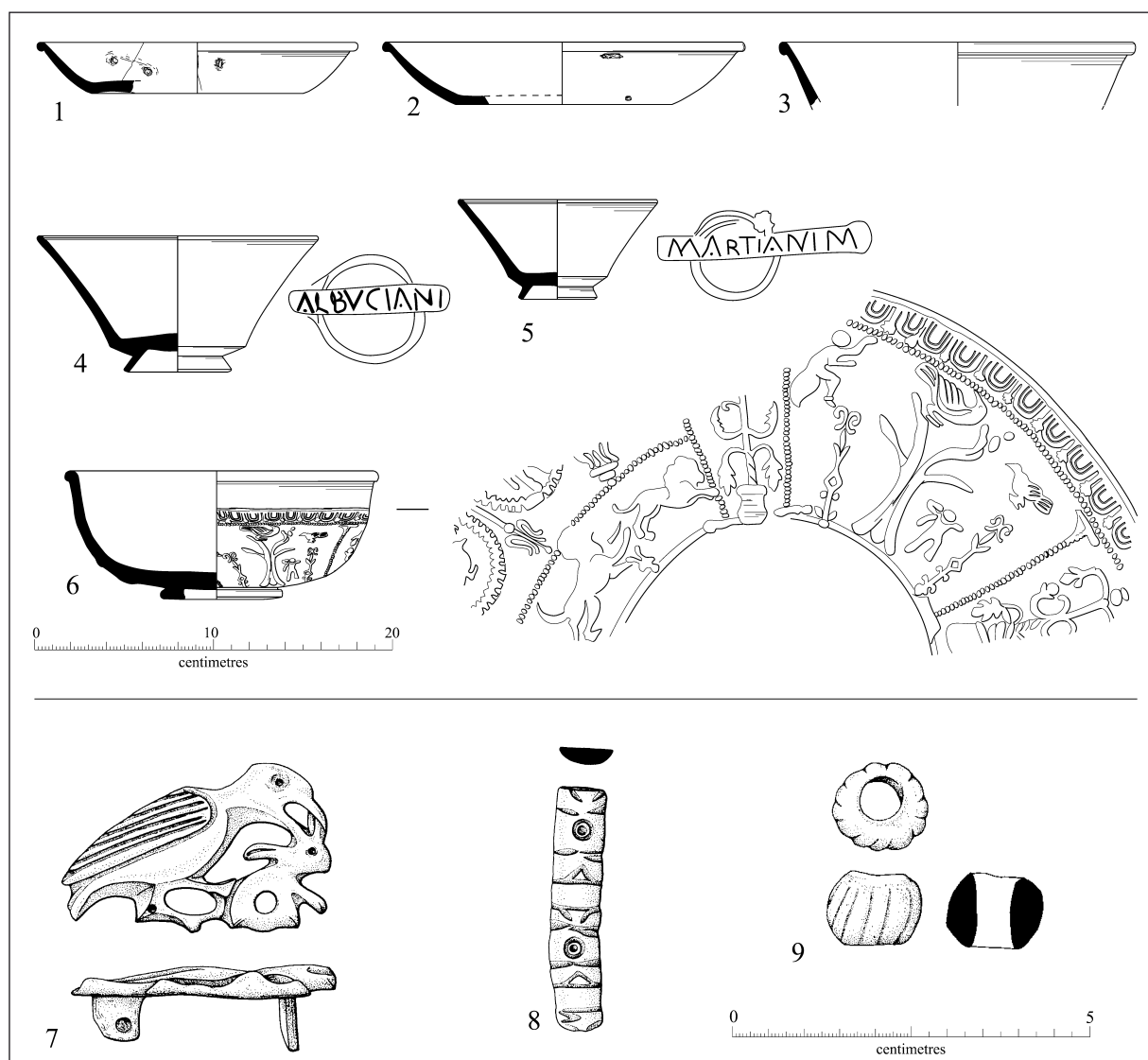


Figure 8. Roman finds. Top, the Samian ware pottery recovered; bottom, Eagle and Hare zoomorphic brooch (7), a fragment of ring-dot traverse and chevron decoration (8), and a melon bead (9).

the second–third century AD, with just a few sherds that could be dated third–fourth century AD, including two Nene Valley vessels. That being said, the condition of the assemblage may skew the results somewhat, as even though this group had the highest mean weight at 10.5g, this is still relatively low figure, and approximately 50% of the pottery was non-diagnostic.

The bulk of the pottery recovered from Papworth dates from the Middle Iron Age to later Roman period, with only a minor Late Bronze Age or Early Iron Age component. Whilst this earlier material hints at sporadic (seasonal?) activity on the site, the quantities of pottery deposited from the Middle Iron Age onwards testify to more permanent modes of occupation. The overall character of the Middle Iron Age assemblage is fairly typical for southern Cambridgeshire, and includes a relatively narrow range of mainly open, ovoid and globular vessels with weakly defined shoulders. Most of these handmade forms continued to be made through the Late Iron Age, where they occur alongside wheel-made vessels and grog-tempered ‘belgic’ pottery at Summersfield. Because of the co-existence of these two ceramic traditions, it can sometimes be difficult to untangle the internal chronology of sites, particularly when dealing with assemblages of modest size. Though it seems likely that some component of the site was in use during the second or possibly third centuries BC, the balance of evidence suggests that activity intensified towards the end of the first century BC, and continued to do so until the second century AD.

Although a relatively large quantity of Roman pottery was recovered, the assemblage suggests a fairly typical rural settlement, with a dominance of locally made coarseware vessels. Having said that, Samian represented approximately 7% of the assemblage (by number), which is actually slightly higher than the national pattern for rural sites, where frequencies are typically less than 5% (Willis 2005). This could be due to wealth, but is more likely to reflect the close proximity of Ermine Street, and the site’s access to wider trade networks from early on in the Roman period. More broadly, it may also explain the relatively diverse range of vessels identified in this context.

In general, the ceramics suggest that the early Romano-British activity was concentrated in Areas A and C, while the later Romano-British activity was more focused on Area A, with some material entering pits in particular in Area C. This might reflect slightly different trajectories for the two settlements. At a more detailed level, there is little evidence from the distributional patterning of the pottery to suggest that specific areas of the site were being used for specific functions. Admittedly, in some parts of the site, a number of vessels are identified as having usewear evidence linking them to cooking activities. Notable in this respect are the midden features in the northwest corner of Area C, which contain a number of vessels with carbonised residues and/or limescale. Similarly, in Area A there was a wider dispersion of vessels with these forms of usewear. However, although those from Area C could be said to ‘cluster’,

the vessels were located away from any structures and were generally found alongside larger quantities of pottery, suggesting they formed part of more generalised dumps of rubbish-type material.

The Post-Roman Pottery

David Hall

A total of 800 sherds (5912g) were recovered and of these 42 were seventeenth-century Glazed Red Earthenware (514g) and 10 were of nineteenth-century date (82g) leaving 748 early Saxo-Norman sherds (5316g). The bulk of the sherds consist of the three standard Saxo-Norman fabrics: St. Neots, Stamford and Thetford. They are well known, and fully described with references in the Cottenham Report (Hall 2000). Most pieces (701) consisted of a fairly uniform St. Neots type fabric. The vessel forms were typical; bowls with inturned and hammer-head rims, and jars with a variety of everted rims. There was one curfew piece from a medieval furrow (Figure 9.9).

Eight contexts in six features contained 27 sherds in a fabric similar to Lyveden (F.220, F.256, F.266, F.287, F.305 and F.310), with coarse shell fragments that distinguished them from the fine texture of normal St. Neots. A few had some shells partly leached out and were fired to an oxidised pink colour. Although superficially similar to Lyveden fabrics, typically dated thirteenth century, there is a marked absence of other twelfth- or thirteenth-century ceramic material at Summersfield. From their stratigraphic distribution in both early and late features it is concluded that the ‘Lyveden’ sherds are most likely a local form of St Neots fabric, and of similar date. There were eight pieces of Stamford Ware and 12 Thetford Ware types. The low number of these fabrics is consistent with Summersfield lying at the edge of their normal distribution area.

The dating of the sherds appears to be fairly early within the Saxo-Norman period (AD 850–1150). Seven contexts yielded St. Neots jar rims from small vessels (F.260, F.263, F.265, F.292, F.326, F.376 and F.439). These vessels are comparable to those found in pre-Conquest collections elsewhere (e.g. St. Neots (Hurst 1956, 67) and Cottenham (Hall 2000, 24)). At Cottenham, Stamford Wares did not appear in the earliest Late Saxon phase, but were present by the eleventh century.

Most of the collection seems to date from the tenth and eleventh centuries, and this is supported by the dating of the coin and brooch. The coin of Athelred II, 979/80, is unstratified, but is most likely to derive from the site rather than being a random stray object. The lead disc brooch is also likely to be of tenth century date according to its parallels (see Appleby & Hall below).

Metalwork

Grahame Appleby and Andrew Hall

Copper alloy

A total of nine pieces of copper alloy were recovered, primarily during metal-detecting. These included brooches, buttons, and a coin. Although the number of Romano-British metalwork finds was low, it is a

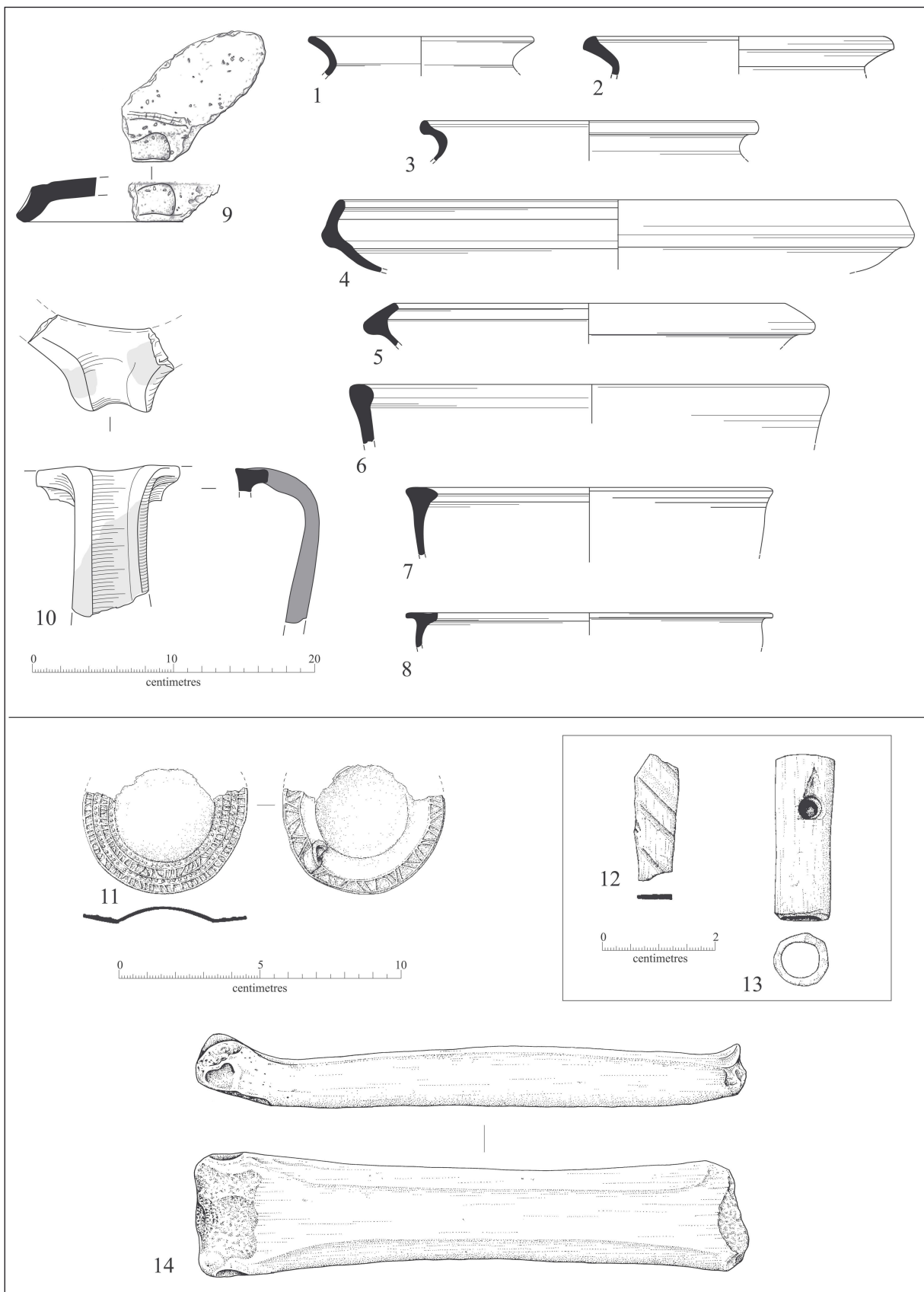


Figure 9. Post Roman finds. Top, examples of pottery forms; bottom, the lead brooch (11), fragment of a bone inlay (12), the complete bone toggle/fastener (13), and a bone skate (14).

small but interesting group. The majority of the copper alloy finds are late Medieval or post-Medieval in date and included three buttons, a possible harness fitting, a crotal or rumbler bell fragment, and a possible buckle tongue.

The coin (<1064>) was a probable *Antoninianus* of Gallienus dated AD 253–268. It was worn and partially clipped with Pax on the reverse holding an olive branch in the right hand and a sceptre in left; the obverse is less worn than the reverse. A second coin was recovered during the evaluation, also of *Antoninianus* (Pocock 2007).

Of the two brooches one was a small, one-piece copper alloy brooch of Nauheim derivative type, a variant of the La Tène III form (<635>). 39mm in height, the brooch is formed from a single length of wire tapering slightly at one end towards a flattened catch plate. The opposing end forms the four coil spring and the tapered pin missing its terminal; otherwise the brooch is in excellent condition. The bow lacks any visible decoration. Such brooches date from the first century AD (Bayley & Butcher 2004: 147) and this example belongs to the 'rod bow' sub-group, as opposed to the flattened bow group. Evidence from Baldock suggests these tended to date from throughout the first century AD (Stead & Rigby 1986: 123). A close parallel is illustrated within Hattatt's visual catalogue (Hattatt 2000: fig. 149.10).

The second brooch was a very fine cast copper alloy openwork zoomorphic plate brooch in the form of an eagle devouring a hare (<638>). The brooch measures 37mm in length by 23mm in width and is in excellent condition, with the exception of a missing pin. The detailing of the brooch is fine with a series of parallel grooves representing the eagle's wing and ring and dot eyes for both the eagle and its prey (see Figure 8.7). The quality of this example appears to surpass that of the limited number of published parallels. Hattatt illustrates two from Norfolk and Wiltshire, but both are crude castings (Hattatt 2000: fig. 220.1161, 165). An example from the PAS online catalogue from Sleaford in Lincolnshire is closer in detailing, but clearly not of the same standard or from the same mould (PAS LIN-4E23D6). A further crude example is noted from Wiltshire Museum and this clearly suggests that this type of brooch is not common. Bird brooches as a wider group are discussed in regard to the Richborough assemblage (Bayley & Butcher 2004: 174–5). It is suggested that such brooches may have associations with religious cults, as is the implication with horse and rider type (*ibid.*). Alternatively this could also just be a fine item of fashion, an identifier of good taste rather than religious affiliation. A late second-century date seems to be the consensus within the published material.

A fragment of a bracelet with ring-dot, transverse and chevron groove decoration was also recovered (<641>). D-shaped in profile and possibly with a surviving terminal, the transverse break is clean (see Figure 8.8). This bracelet form dates from the late second to fourth centuries AD (Crummy 1983).

Ironwork

A total of 244 pieces of iron metalwork were recovered from archaeological features and during metal-detecting. Preservation of the assemblage is variable, with many items delaminating and friable. 134 pieces (58%) consisted of nails, studs and tacks, and their form dates from the later Iron Age to the mid nine-

teenth century AD. Although not described here in detail, the recovery of large, structural nails indicates the presence of nearby structures, or nearby manufacture. In addition, 10 hobnails were recovered; these are commonly found on Romano-British sites. Used to provide sole protection for leather footwear, hobnails were used by both civilians and the military. Of note is the recovery of a hipposandal, from F.150, and further fragments from the same feature possibly representing a second example. Hipposandals were used to protect horses' hooves from metalled road surfaces and were in use from the mid first century AD to the later fourth century AD (Manning 1985). Two knives and several probable small bladed instruments were also recovered. On initial inspection, the ironwork assemblage from the site would seem unremarkable.

The iron hipposandal (<804>) was fragmentary and very corroded, measuring c. 160mm long and 84mm wide. The front hook and wings were missing, although several fragments (including a hook and wings?) were recovered, possibly relating to this or a second example. At the heel, the sole terminates in a down-turned hook. This example corresponds with Manning's type 2 (Manning 1985). In summary, they appear to have been used as protective shoes for lame horses or as temporary shoes for unshod animals (*ibid.*). Similar examples are from Site 18, Longstanton (Hall 2006), the King Harry site at Verulamium (Stead & Rigby 1986), and from Colchester (Crummy 1983).

Also of note was a small roughly lozenge-shaped appliqué with two spaced perforations measuring 3mm and 4mm in diameter (<730>). Possibly pre-dating the Roman period, this may be a decorative shield-shaped appliqué.

Lead

Eight pieces of lead, or lead alloy were recovered. Of these, only two items were identifiable, a decorative disc brooch and a possible spindle whorl. The majority of the remaining six objects are pieces of scrap (clipped and reduced) and casting spills/runnels. The scrap varies in size, measuring between 15mm and 42mm and weighing between 14g and 20g.

The decorative disc brooch or pendant (<643>) was made of a lead-alloy and was incomplete (see Figure 9.11). The complete brooch would have measured 58mm in diameter, with an average thickness of 2mm. The collar is decorated with four alternating concentric bands of beading and chevrons. This surrounds a central domed boss lacking in further decoration. Of particular note is the reverse, which is also decorated with a band of chevrons around the circumference. This decoration on both front and back appears to have been part of the original casting rather than embossed or chased. A crude suspension loop formed from a cut strip of lead alloy is attached to the reverse. Several examples of similar lead alloy disc brooches are published from Coppergate in York. These examples have similar decorative motifs, such as the chevron border (10600) and beading (10601) and another displays a comparable suspension loop (10629). A further brooch from Barwick in Norfolk has five bands of beading around a similar central boss (Mainman & Rogers 2000: 2572). A further pewter example is recorded from Winchester (Biddle 1990: 634). These parallels date from the late ninth to tenth century.

The spindle whorl (<645>) was a flat, circular disc with bevelled edges and a large central perforation, with a diameter of 25mm, a perforation of 7mm and a weight of 16g. Similar spindle whorls have been recovered from Medieval sites, such as Winchester, dating from the eleventh century AD (Woodland 1990: 225, no. 196).

The Plant Remains

Anne de Vareilles

Forty-five bulk soil samples from 34 features spanning the late Bronze Age to the early Medieval period were analysed using standard CAU methodologies (Patten 2009).

Middle Iron Age

Samples from the Iron Age structures 1, 2, 3, 4 and 6 were processed. The ring-gully of Structure 1, along with two internal postholes and ditch F.418 produced very few botanical remains: one wheat grain (*Triticum* sp.), four cereal grain fragments, two wheat glume bases (chaff of *Triticum* sp.) and the occasional wild plant seed were found. The ring-gullies of Structures 2, 3 and 6, and pit F.481 produced a similar range of samples to Structure 1 and F.418. Charcoal densities were low and only three cereal grains with just a few wild plant seeds were recovered. A sample from ditch F.466 (Enclosure II) was unusual in containing a large proportion of wheat, barley or rye awns. The sample's matrix was quite ashy and composed almost entirely of silicified awns. Unlike crop processing waste assemblages commonly found on prehistoric settlement sites, glume bases were not the most frequent element. The awns were found with only five cereal grains and 16 glume bases of wheat including spelt (*Triticum spelta*), and low numbers of wild plant seeds, mostly of wild grasses. There was a complete absence of straw which suggests that it was either harvested separately to the ears, or that it was carefully reserved for other uses whilst the remaining waste (i.e. awns, other loose chaff and arable weeds) was burnt *in situ* or collected for a particular fuel. Four samples were analysed from the Structure 4 ring-gully and were comparable to those of the other Iron Age round structures in containing only a sparse scatter of loose botanical remains.

Late Iron Age/Romano-British

A total of 22 samples were taken from Late Iron Age/Romano-British contexts, 16 from Area C and six from Area A, six of which were botanically rich. From the burial F.396 a few small fragments of charcoal and one grass seed fragment were found, providing no evidence for burnt food offerings. The absence of molluscs suggests the body was quickly buried in a freshly dug grave. Three of the horticultural ditches were sampled and a few plant remains were recovered but no obvious indicators of what may have been grown. Half a seed head and two stem fragments of flax (*Linum usitatissimum*) were seen in F.17. Although flax was probably cultivated for both its fibres and oil, it is not usually grown in ditches. Linear features F.97, F.419, F.121 and pits F.99, F.48, F.134 had low density assemblages, with a little grain, chaff and seeds scattered amongst them. The six samples with high concentrations of cereal and non-cereal remains were from Enclosures XVI and XVII (F.105, F.102, F.114, and F.90), Enclosure XVIII (F.212) and a small gully (F.404) with-

in Enclosure XII. An extensive layer of fine charred remains was found in association with Enclosures XVI and XVII. The assemblages should therefore be seen as small portions of a widespread, though not necessarily homogenous, deposit.

Spelt was a common Romano-British crop and was clearly the dominant (if not the only) cereal found in these samples (preservation has precluded the exact identification of all caryopses). Possible contamination of the spelt crop with the occasional plant of rye (*Secale cereale* L.) and hulled barley appears to have been unintentional, but of no undesirable consequence. Spelt is a hulled wheat always found to have been stored in its glumes that were later removed by pounding, further winnowing and sieving as and when naked grain was required (Hillman 1981, 1984; Jones 1984; Stevens 2003). The results show how, in all six features, quantities of glume chaff clearly dominate over grains and wild plant seeds, an occurrence that was also obvious during the analysis despite the numerous grain fragments. Consequently, the carbonised remains seem to represent waste generated during the last stages of crop-processing performed after storage and before cooking/grinding. Feature 105 (a large pit in the centre of Enclosure XVI), however, also contained a large proportion of silicified awns but no straw, generated during the first stages of crop-processing — as was also noted in the aforementioned Middle Iron Age ditch F.466. The combination of fine chaff, rachis internodes and delicate coleoptiles (the sprouted or germinated grain embryos) demonstrates how excellent the preservation has been, and suggests that the ash was either found *in situ* or in a primary context, deposited into the pit shortly after carbonisation. The fine condition of the botanical remains also suggests that the large concentration of broken grain was mainly produced before carbonisation.

Following Jones' (1984) physical categorisation of arable weed seeds, c. 46% of the seeds are small, free and heavy, whilst c. 36% are big, free and heavy. These findings support the information revealed by the chaff in suggesting that waste from the very last stages of crop processing is present, including the final hand sorting. The remaining 18% or so is made up of small, free, light seeds, which, along with the awns, are usually lost during threshing and winnowing. There is an interesting absence of seeds representative of intermediate crop-processing phases. The range of wild plant seeds is relatively short and they all seem to represent arable weed seeds. The few wetland species, such as spike rushes (*Eleocharis* sp.) and a sedge (*Carex* sp.) may not originate from the harvest, though there are numerous examples of their associations with grain, suggesting they were indeed arable weeds of poorly drained fields (Jones 1988). Oraches (*Atriplex patula/prostrata*) and stinking chamomile (*Anthemis cotula*) occurred frequently and must be associated with the agricultural practices. Oraches were also common at the New Cambourne Settlement sites (Stevens 2009) and at Vicar's Farm and Langdale Hale (Ballantyne 2008). Stinking chamomile, however, was common at Vicar's Farm but almost completely absent from Langdale Hale and the New Cambourne Settlement sites. The latter weed is an indicator of damp, clay-rich soils and is associated with the introduction of mould-board ploughs capable of turning the sod (Jones 1988).

As noted in Table 9, all but Sample 9 had germinated spelt grains. There are two possible interpretations for this:

1. Malting: to make spelt beer. Spelt beer is thought to have been produced on several of the Cambourne New Settlement sites (Stevens 2009). Indeed germinated spelt

grains are quite common on Romano-British settlements, especially those close to roads. The large proportions of fragmented grain could represent accidental loss during milling when the grain is cracked before being soaked in hot water (in order to release and convert the starch produced during germination into sugars for fermentation). In contrast to several assemblages from the Cambourne New Settlement sites, however, loose coleoptiles and germinated grains do not appear to outnumber non-germinated grains in all except the sample from F.105. One might expect a higher proportion of germinated grain if the remains were indeed malting waste.

- Storage: germination can occur during storage if conditions are damp. Such occurrences can be intentional and beneficial when grain is stored underground; if the pit is securely capped the growing grains will use up any available oxygen thereby creating excellent storage conditions for the non-germinated majority (Reynolds 1974). The archaeological evidence for storage structures (pits, granaries or otherwise) is scant however, and offers no suggestions as to the preferred method.

Early Medieval

Two of the features sampled, ditch F.266 and pit F.228, produced very few botanical remains and those that were recovered probably accumulated from surface debris. The samples contained two and three unspecific wheat grains each (*Triticum* sp.) and about 50 unidentified grain fragments in total. No chaff was found and the seeds of wild plants were only recovered from F.228: a wild grass seed, up to three oat caryopses (possibly cultivated), a red bartsia (*Odontites verna*) and a medic or clover (*Medicago/Trifolium* sp.) seed. A fragment from a hazelnut shell and a black mustard seed (*Brassica nigra*) were also found, offering a glimpse into the range of herbs, spices and wild foods that would have complemented the cereal diet.

Pit F.335, associated with potential Structure 7, produced grain rich assemblages with free-threshing wheat predominating, followed by similar quantities of hulled barley (*Hordeum vulgare* sl.) and spelt (and possibly emmer wheat) grains. Fruit stones and possibly cultivated pulses provide further details into the inhabitants' diet. The crop assemblage may include oat (*Avena* sp.), though the absence of floret bases has prevented the distinction between wild and cultivated forms. Cereal chaff was almost non-existent, but wild plant seeds suggest the crops had not yet been fully cleaned. Most of the arable weed seeds are grasses but, as in the Romano-British samples, also include stinking chamomile. The rectangular pit F.352, also associated with Structure 7, had 16 whole caryopses, including four free-threshing wheat grains (*Triticum aestivum sensu lato*) usually attributed to post-Roman agriculture. The occasional

find of free-threshing wheat was also true of the extensively sampled Romano-British farmsteads at Langdale Hale and Vicar's Farm, Cambridgeshire, where spelt was the predominant cereal (Ballantyne 2008). The almost complete lack of chaff and small arable weed seed assemblages in F.352 suggest the burnt cereals were domestic waste generated during the daily use of such crops. Two fragments of hazelnut shell (*Corylus avellana*) and a probably cultivated pulse (Fabaceae fragment) support the interpretation of this assemblage as domestic food waste.

Large assemblages of free-threshing wheat are uncommon until the late Romano-British/early Anglo-Saxon period in Britain, before which spelt is the dominant crop (Greig 1991; Murphy 1985; Stevens 2009; van der Veen 1991). Unlike F.335, the Romano-British samples analysed from this site are indeed rich in spelt with almost no free-threshing wheat present (only four grains in F.352).

Practically all of the 45 samples contained some plant-macro remains, though all the very rich assemblages were Romano-British. The Iron Age structures contained very little material and they were either not used for routine processing or waste was carefully managed, not burnt and/or discarded elsewhere. The rare find of silicified awns in Middle Iron Age Enclosure II (F.466) attest to the first stages of cereal processing which is, through lack of evidence, often assumed to have occurred outside the settlement zone and away from post-storage crop-processing activities. Overall, the prehistoric assemblages had very low densities of plant remains, including charcoal. Findings indicate that spelt, barley and possibly emmer were consumed on site but provide little evidence for the practices and whereabouts of the crop-processing stages.

The Romano-British samples fall into two distinct groups: those that produced chaff-rich assemblages and those with scant, probably residual debris. There is no marked difference between Areas A and C in the latter category where low densities of charcoal, the odd grain and a little chaff were found in most samples. The chaff-rich assemblages were found in a specific zone in Area C where excavations revealed a prolific area of burnt debris; and two locations in Area A c. 40m from each other and both not far from the track (Figure 4). Whereas the zone in Area C seems to have been an area of intensive activity fuelled by crop-processing waste, the samples from Area A may represent actual areas of crop-processing events generating clean grain for consumption.

Awns and fine chaff indicate that a combination of waste from both the very early and late stages of

Table 9. Quantities of germinated and non-germinated spelt grains.

Sample number		24	38	9	7+8	17	73
Context		316	862	423	337	365	1668
Feature		102	212	90	105	114	404
<i>Triticum</i> c.f. <i>spelta</i> - germinated	germinated spelt	20	27		53	19	1
<i>T. c.f. spelta</i> - not germinated	not germinated spelt	116	5	7	12	20	9
<i>T. c.f. spelta</i> - unknown germinated	not known if germinated	73	17		39	20	3

crop-processing was used in Area C. Since the condition of delicate elements was excellent adverse preservation cannot explain the complete absence of straw (usually also a by-product of early crop-processing stages), even if it was reserved for other uses after winnowing. It seems likely, therefore, that ears were harvested separately to the straw, unlike at the Cambourne New Settlement sites where evidence for low sickle harvesting was found (Stevens 2009). The presence of stinking chamomile throughout the samples in Areas A and C indicates that clay-rich soils were cultivated, possibly from the Middle Iron Age, but certainly in the Roman period, when the introduction of iron shares and asymmetrical ploughs would have made it possible. Interestingly, arable weeds from the New Cambourne Settlement sites suggest that most of their grain was grown on dry, calcareous soils (*ibid.*), leaving one to conclude that each settlement produced their own crops. Evidence from the clay uplands west of Cambridge led the authors to suggest that damp soils in the lower valleys were cultivated whilst the drier slopes were kept for pastoralism (Abrams & Ingham 2008).

Although the southern Romano-British settlement at Summersfield was an agricultural site, most probably cultivating cereals as well as other crops in its horticultural ditches, it may not have been growing enough grain for market. Ballantyne (2008) concluded that by *c.* AD 120 both Langdale Hale and Vicar's Farm were active farmsteads producing surplus grain. The evidence for crop-processing at Summersfield is dense, but restricted to a relatively small area where the waste appears to have been burnt as a specific fuel. There is no clear evidence therefore, that grain processing was one of the site's main functions. Another possible activity was that of making spelt beer, although the evidence is rather slight and inconclusive.

Faunal Remains

Vida Rajkovača

A total of 1477 fragments (50,981g) of bone were recovered from the investigation, 1423 fragments (50,907g) from excavation and 54 fragments (74g) from the sieving of bulk soil samples. Based on the chronology of the material, seven sub-sets were created in order to study the site (Table 10) and the following report concentrates on the dominant Romano-British component of the site. The methods of quantification, species identification, ageing and biometrical analyses follow standard CAU methodology.

Cattle appear to have been the predominant species in all phases of occupation, with the exception of the early Medieval period. By number of specimens identified to species (NISP) 42% of the Middle Iron Age assemblage was cattle, 20% of the Late Iron Age/early Romano-British, and 28% of the Romano-British in comparison to 8% of the early Medieval. Sheep/goat and horse were identified as well as other commonly found domestic species such as pig, dog and

cat. There is an indication that poultry was kept on site as evidenced by the remains of chicken and domestic goose. An articulated horse skeleton found in Enclosure XXIII (F.97) was counted as one specimen.

Table 10. Quantity and provenance of faunal remains (hand-recovered only).

Period	Contexts	NISP	%NISP
Pre Iron Age	2	5	0.4
Middle Iron Age	14	52	3.7
Late Iron Age/ early Romano-British	69	394	27.7
Romano-British	137	655	46
Early Medieval	51	266	18.7
Post-Medieval	6	11	0.8
Undated	21	40	2.7
Total	300	1423	100

The Middle Iron Age sub-set recovered from ten different contexts produced 52 fragments, 28 of which were identifiable to species. Domesticates are a dominant group (93% of those identified), with some evidence for exploiting wild faunal resources (red deer representing 7%). Twenty-two bone fragments (78% NISP) were assigned to cattle with the majority of them being loose teeth and teeth fragments.

The Late Iron Age/early Romano-British sub-set (Table 11) is comprised of poorly preserved and highly fragmented animal bone recovered from 69 different contexts. The total number of fragments analysed was 395, 175 of which were identifiable to species. Based on a complete metacarpus, sheep was positively identified (Boessneck 1969: 355), and an articulated horse skeleton was found in association with Enclosure XXIII (F.97). There is evidence for the keeping of poultry on the site, which was confirmed by the remains of goose (*Anser anser*) and chicken (*Gallus gallus*). A domestic fowl specimen was positively identified as male, based on the presence of a spur on a tarso-metatarsus (Cohen & Serjeanston 1996: 79).

Seven examples of butchery were noted in this sub-set, mostly showing carcass dismemberment or disarticulation. Several examples were recorded as bone breaking and pot-sizing, especially cattle ribs. One large mammal cervical vertebra displayed signs of extensive butchery, probably in an attempt to disarticulate the head of a large cow or bull from the rest of the body. Marks were deep and imply the use of large and heavy blades to perform this.

Despite the great fragmentation, it was possible to age two ovicaprid (sheep/goat) mandibles to three and six years respectively and a femur to just over three years. Cow radii gave the age at death of between 18–36 months. As evidenced by the number of juvenile specimens, pigs were killed before maturity. The articulated horse skeleton was aged to around 15 years based on teeth attrition (Levine 1982). Biometrical data for the horse was drawn from the measurements of the third metacarpal bone and withers height calculations follow the conversion factors of Kiesewalter (see Von den Driesch and Boessneck 1974). The animal stood 13 hands high which classifies it as a pony by modern standards.

Romano-British contexts produced the largest quantity of bone, totalling 654 fragments, 316 (48%) of which were iden-

tifiable to species; the prevalence of cattle, horse and large domesticates is in keeping with the period. Canid gnawing marks were noted on 16 fragments, suggesting the presence of dogs on site, although dogs were not retrieved osteologically from Romano-British contexts. Butchery marks were rare and recorded on *c.* 2% of all bones. Chop marks are more common than cut marks and this probably indicates butchery techniques needed for managing big carcasses, such as cattle and horse. The general characteristics of the type of butchering actions performed include: chop and cut marks on the diastema and ascending ramus of mandibles which can be attributed to disarticulation from the skull; chop marks at joints, which can be attributed to primary dismemberment, as well as scoops and fine marks which could be related to meat removal or pot-sizing. It is surprising, however, that none of the cattle scapulae showed marks indicative of the curing process. Very little butchery evidence might reflect the fact that the carcasses were dismembered with a sharp knife, a practice that leaves very few marks if carried out by a skilled butcher. Withers height estimates followed the conversion factors of Matolski for cow (see Von den Driesch & Boessneck 1974) and came at the top end of the size range, measuring some 126 cm. This sub-set, although very big, did not produce considerable ageing data. Only seven ageable specimens were recovered for all species. The data available shows that cattle were culled around 3 years. One ovicaprid mandible was aged to 6–12 months and two pig specimens were both aged to 14–21 months.

Faunal remains recovered from 51 different contexts dated to the early Medieval period totalled 266 bone fragments, 179 (67.3%) of which were assigned to element, and a further 100 (37.6%) to species level. The preservation ranged from moderate to poor (209 specimens/78.6%), with a sig-

nificant portion of porous, eroded and fragmented bones. Canid gnawing marks were recorded on *c.* 10% of the bones and a dog mandible and pelvis osteologically confirm the presence of dogs on site. Butchery evidence was noted on post-cranial elements, the cut and chop marks reflecting disarticulation, pot-sizing and meat removal. The available ageing data has been useful for indicating that the majority of ovicaprids were slaughtered around their third year. Four pig specimens were all aged to under 2 years, all from the same context possibly implying they all came from the same individual. Only one cow metacarpal was recorded as juvenile and one horse mandible aged (Levine 1982) to 12–20 years of age.

Bones from the sieved samples offered only one type of data, which were the smallest unidentifiable elements/ fragments of large mammals. The majority of features sampled were of Romano-British date. The only two species identified were sheep/goat and horse. The remainder of the assemblage was made up of the sheep-sized mammal fragments. Interestingly, a number of bird and fish bones recovered during the course of hand-excavation were completely absent from the sieved material.

The relative proportions of major species by period are presented in Table 12, and the pattern obtained from minimum number of individuals (MNI) values fits very well with these results. Pig proportions show an increase through time, with a very small number of pig specimens recovered from Romano-British features. There is a slight increase in the proportion of sheep relative to cattle in the early Medieval phase of occupation. The prevalence of cattle recorded during

Table 11. Number of specimens identified to species (or NISP) by phase from Summersfield Papworth Everard site. The abbreviation *n.f.i.* denotes that the specimen could not be further identified. *includes one articulated skeleton.

Taxon	Phase							Total
	LBA/ EIA	MIA	LIA/ER	Romano-British	Early Medieval	Post-Medieval	Undated	
Cattle	.	22	81	186	22	4	4	319
Ovicaprid	.	2	52	59	42	.	1	156
Sheep	.	1	1	1	.	.	.	3
Horse	1	1	27*	58	21	3	1	112
Pig	.	.	11	7	13	.	4	35
Dog	.	.	1	1	2	.	.	4
Cat	.	.	.	1	.	.	.	1
Domestic fowl	.	.	1	.	.	.	1	2
Domestic goose	.	.	1	.	.	.	.	1
Red deer	.	2	.	1	.	.	.	3
Fox	.	.	.	2	.	.	.	2
Sub-total to species	1	28	175	316	100	7	11	638
Cattle-sized	4	14	90	130	62	2	11	313
Sheep-sized	.	10	82	124	84	1	14	315
Rodent-sized	.	.	3	.	1	.	.	4
Mammal <i>n.f.i.</i>	.	.	39	83	17	1	4	144
Bird <i>n.f.i.</i>	.	.	3	1	2	.	.	6
Fish <i>n.f.i.</i>	.	.	3	.	.	.	.	3
Total	5	52	395	654	266	11	40	1423

the Middle Iron Age continued into the Late Iron Age and Romano-British period, and poultry keeping was also another trait of the period. Domestic fowl has been recorded from a number of Roman sites in the region: Stonea (Stallibrass 1996) and Orton Hall Farm (Harman 1996) as well as on the majority of Romano-British sites (Parker 1988: 209) across the country.

Table 12. Major species relative proportions by period (MNI).

Period	Taxon			
	Cow %	Ovicaprid %	Pig %	Horse %
Middle Iron Age	83.9	11.8	.	4.3
Late Iron Age/ Early Roman	47.2	30.7	6.4	15.7
Romano-British	59.7	19.2	2.3	18.8
Early Medieval	22.4	42.9	13.3	21.4

King's (1999) study of Roman animal bone assemblages showed that Romanised sites tend to produce higher numbers of cattle and to a lesser extent pig, whereas non-Romanised sites were likely to continue with the native Iron Age economy which favoured mutton consumption. A slight increase in cattle proportion reflecting the preference for beef is likely to demonstrate that the site was Romanised. The majority of domesticates of all the periods were culled at the optimum age for the production of prime beef and mutton. Fox and red deer remains are present, proving the continuing exploitation of local wild faunal resources.

The spatial distribution of faunal material across the site suggests that ditches and enclosures contained greater quantities of animal bones than the ring gullies or pits. Enclosure VIII contained a slightly greater concentration of animal bone compared to other areas of the site with a total of 114 fragments (cattle, horse, sheep, pig and red deer), and this corresponded to c. 18% of the Romano-British faunal record and c. 8% of the assemblage as a whole. Skeletal element distribution demonstrated that both meat and non-meat elements were recovered, suggesting that this represents household waste. The single largest isolated bone assemblage (bone 'dump') was recovered from amorphous pit F.48. This feature produced 55 bone specimens, a figure which corresponds to c. 9% of the Roman sub-set. The remains of cattle, horse, ovicapra, pig and fox were identified, as well as a number of other unidentifiable specimens. Based on their size and age, a number of horse hind limb and foot elements were thought to belong to the same individual. Given that the material was quite dispersed across the site, it was difficult to establish where different forms of the activity took place, i.e. skilled butchery/processing waste or household/ food waste.

Composition of the assemblage from Cambourne New Settlement is similar to that from Summersfield, with the relative importance of species showing slightly higher proportions of ovicaprids than observed elsewhere. The relative importance of spe-

cies at Cambourne (combined values for all phases) showed that cattle accounted for 52.7%, followed by ovicaprid 40% and pig at 7.3% (Hamilton-Dyer 2009). Archaeological evaluations at North West Cambridge (Site II) resulted in the recovery of an assemblage with high percentages of cattle and horse, mainly originating from ditches and peripheral features. Cattle accounted for 47.5% and horses for 38.5%, followed by ovicapra at 11% and pigs at 3% of the four main species (Rajkovača in Evans and Newman 2010). A similar pattern of species representation was found on a Romano-British villa/farmstead at Bottisham. This site had a much higher proportion of cattle and horse and very little sheep and other taxa (Baxter 2001). On the same site, larger waste was often disposed of in peripheral features. It could be proposed that the relatively high number of horse specimens is due to the site's roadside position. Horse was common in all phases at Haddon (Baxter 2003: 125), a steady 10% in the Romano-British period. King (1978) suggested that higher percentages of horse in the Fens during the Romano-British period may reflect ranching practices, with horses being sold off by the Roman army once they proved obsolete as mounts (Baxter 2003).

The process of Romanisation has influenced the content of many faunal assemblages; yet on another level the changes in the structure and functioning of the economy facilitated the change that is reflected in the faunal record (Hamshaw-Thomas 1993: 168). The ratio of the main livestock groups here showed the prevalence of cattle with 73.5%, followed by ovicapra with 23.6% and pigs with 2.9%. When plotted on the tripole graph presented by King (1988: 54), relative percentages of all three main groups appear to portray the economy of a Romanised settlement. King further argues that it is military sites that have a general tendency to cluster around the high percentages of cattle bones (70% or more). A secondary characteristic of military sites, however, is a higher percentage of pig bones (around 20%) and that is not the case here. The low pig count could be indicative of the local environment lacking extensive woodland for pannage (Albarella 1999). As for the other domestic species, horse is particularly well represented in almost all phases of occupation.

The great fragmentation and the dispersed character of bone deposition imply that most of the deposits at Summersfield represent the general accumulation of refuse where meat was produced as small joints by individual households.

Worked bone objects

Vida Rajkovača

Three worked bone objects were recovered from the site, two of which appear to be complete. These comprised a skate, toggle and an inlay, all from post-Roman contexts.

One of the complete objects was a skate (<074> F.499) fashioned from a horse third metacarpus with the anterior face

smoothed from wear (Figure 9.14). The distal end is upswept and the centre of condyle is trimmed on the posterior side. The smoothed surface on the anterior face would have been in contact with the ice. This surface was checked for longitudinal wear traces to enforce the idea that this object represents a skate; however, no wear patterns were recorded.

The second was a complete toggle/fastener (<422> F.249) probably fashioned from an ovicaprid metatarsus; 28.6mm long by 10.7mm wide (Figure 9.13), representing a fragment of a mid-shaft that was sawn off. A circular perforation on the anterior face is *c.* 4mm in radius. The object is polished and could be of Roman or later date (I. Riddler pers. comm.).

The third was a fragment of a bone inlay (<1065> F.279) of irregular/rectangular shape 22.5mm long by 7.9mm wide (Figure 9.12). This appears to be knife-cut and slightly polished.

Collections of similar objects were recovered from the late Anglo-Saxon and Medieval contexts from London and York. Comparable objects were also recovered from a similarly dated site of West Fen Road, Ely (Mortimer *et al.* 2005). One example of a skate, similar to the one recovered at Summersfield, was found within Enclosure 13 (object 275; F.501) at West Fen Road. Much like the Summersfield object, the distal end is not tapered. Whilst some skates used securing holes for straps, others are entirely devoid of any such fixtures (Riddler 2005: 85).

Discussion

The excavation at Summersfield has provided an insight into the genesis of the current settlement of Papworth Everard, in particular its Iron Age and Roman antecedents along with a glimpse of the early Medieval settlement which was to evolve into the current village. By the later prehistoric periods people had begun to settle at Summersfield with the construction of five distinct roundhouse structures and three enclosures. The enclosures appeared to inform and demarcate at least part of the later trackway and subsequent Romano-British settlements.

The Middle Iron Age settlement was concentrated in the southeast of Area A where three of the five roundhouses (Structures 2, 3, and 6) were identified. The structures were all of a similar size ranging from 9.5 to 12.25m in diameter. In their study of the structures at Hurst Lane, Ely and Cats Water, Fengate, Evans *et al.* (2007) characterised Iron Age roundhouses into three groups: small (5–8m in diameter), medium (8–12m), and large (12–15m). The pattern identified at Hurst Lane incorporated all three categories, but with a predominance of mid-range sized structures, a trend also identified at Cats Water (*ibid.*). At Summersfield the structures are best classified as medium, with only Structure 2 being slightly larger, at 12.25m (Figure 10). This classification of roundhouse dimensions can also be applied at the Cambourne New Settlement (Wright *et al.* 2009) and Scotland Farm, Hardwick (Abrams & Ingham 2008). Excavations at the Cambourne New Settlement iden-

tified variability in structure size; while the roundhouses at Knapwell Plantation and Little Common Farm were predominantly mid-range in size; those at Lower Cambourne and Poplar Plantation were predominantly large. The lack of a similarly broad range of structure size at Summersfield could indicate that this was a small, marginal settlement that did not require such a variety of structures. Although the function of the settlement or the structures was not determined, the association of each structure with at least one burnt stone pit suggests that they represented domestic occupation. The settlement at this time was unbounded with the structures situated within an unenclosed landscape, a practice that was typical of this period in the eastern region (Bryant 1997).

At Summersfield, the pattern of unenclosed roundhouse settlement was replaced by one of enclosed compounds, these defining spaces slightly larger than the roundhouse gullies. A similar evolution in Iron Age settlement has been recorded at Broom, Bedfordshire (Cooper & Edmonds 2007), where Iron Age roundhouses were replaced by enclosures, offering a more flexible use of space (*ibid.*, 182). The function of the enclosures is difficult to determine and their construction and associated assemblages can be interpreted in a number of different ways. That the enclosures replaced the earlier structures, which were most likely domestic, could suggest that a similar function of domestic usage continued. The enclosures could have surrounded post built structures, the remnants of which did not survive. The enclosures at Summersfield occupied only a small portion of the ridge, and Enclosure I particularly seemed to form one corner of a larger tract of land, potentially part of a more extensive field system. Enclosures II, III and XXIX may represent a change in function, with the deep ditches of the enclosures defining small areas as corrals or paddocks for livestock rather than domestic enclosures (perhaps representing a change in the economy of the site). At Broom it has been suggested that the enclosures were for exclusion, with large boundaries such as those for Enclosures II, III, and XXIX providing an effective barrier between internal dwellings and stock, with Enclosure I defining a large stock enclosure.

On the clay uplands of the region it is thought that the Iron Age economies were generally mixed. It has been postulated that livestock were traded and that small settlement enclosures would have been associated with numerous paddocks, either in direct association with the settlement or as isolated corrals or enclosures a short distance away (Medlycott & Brown 2008). Summersfield fits this model comparatively well. Enclosure II also revealed evidence for the first stages of crop processing, which could indicate that the enclosure defined an area of crop storage or early stage processing. Consequently it is clear that the site represents a small mixed settlement probably set on the fringes of areas of more intense Iron Age settlement.

Summersfield is in many ways comparable to the Iron Age settlement evidence from Broom, a predom-

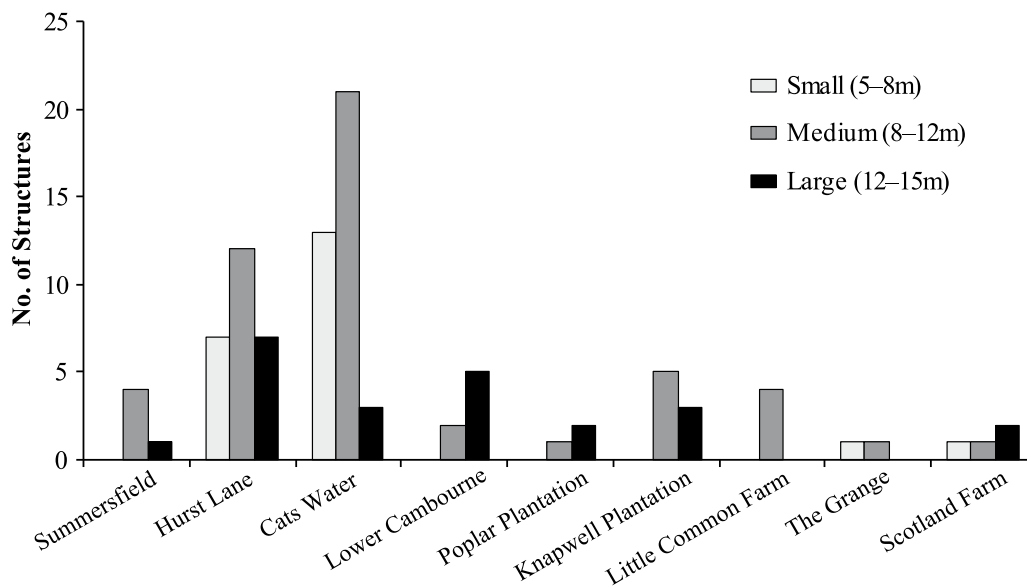


Figure 10. Comparison of Iron Age roundhouse diameter based upon Evans et al. 2007.

inantly gravel landscape, and this shows similarities between sites located on differing geologies. At both Broom and Summersfield there was an evolution in the character of the settlement from roundhouses to compounds. This suggests that the movement onto the claylands at this time did not bring large variations in the character of the settlements. It was apparently not the geology that determined the settlement type and the inhabitation of the claylands was more a reaction to rises in population and increased competition for resources, rather than the deliberate exploitation of a different environment.

Even though there was some evidence of possible activity in the period between the Middle Iron Age and the Roman period, this was unlikely to have been continuous. Although the ceramic material spans the Early Iron Age to the late Roman period there was not a large enough quantity of material to suggest settlement continuity. With 18.7% of the total number of prehistoric and Roman pottery dating to the Middle Iron Age and 15.7% to the Late Iron Age/early Roman period, only 5.1% was dated to the Late Iron Age, and the nature of this activity is uncertain.

During the Roman period the settlement activity intensified and appeared to expand with large tracts of the ridge becoming enclosed. This intensification was also evident in the pottery and faunal assemblages, which became significantly larger. By the mid to late first century AD the pottery had become more diverse with the introduction of both non-local and imported wares. This expansion in activity may have been the result of the importance of Ermine Street, which (if it was located to the east of Summersfield) would have facilitated trade and the movement of materials and livestock (Millett 1996: 145). The location of the settlements in the vicinity of Ermine Street must have been a contributing factor in its expansion and to the apparent mixed economy that arose

here. At Tort Hill, Sawtry settlement activity was evidenced either side of Ermine Street and this appeared to comprise several different economies, including crop processing and horse breeding, along with the small scale production of pottery (Ellis *et al.* 1998).

The 'nested' Enclosures IV, V and VI represented a series of gradual shifts from the alignment of the later Iron Age enclosures to the established pattern set out during the Roman period. To the south of Papworth Everard the Roman farmstead recorded at Ash Plantation and the field systems between Caxton Gibbet and Childerley Chapel were recorded on different alignments to that elsewhere within the landscape (Abrams & Ingham 2008). These sites were situated in close proximity to Ermine Street and it was suggested that this main routeway had a bearing upon the alignment of the nearby settlements. The site at Summersfield was situated between 150m and 260m from the presumed course of Ermine Street (if not actually along it) and it is possible that the construction of the road in the mid first century AD (Branigan 1987: 63) may have had an effect upon the alignment of the enclosures and the Roman settlements themselves. If the proposed route of Ermine Street to the east is correct then the farmsteads at Summersfield were not roadside but rather set away from it, on higher ground. Any main settlement may have been located roadside with direct access to Ermine Street.

Initially, the northern settlement was comprised of Enclosures IV, VII and VIII, which were aligned on the track. Along the southern edge of the compound, Enclosure VII appeared to contain the primary farmstead building, with a further small building in Enclosure VIII. At some time the compound was expanded with the large ditch of Enclosure XII forming a second compound to the south. A series of short linears along the southern edge, along with traces of possible beam slots identified during the evaluation

indicates the presence of a second building along the southern edge (Pocock 2007). Together the compounds formed a single complex with a series of internal divisions and spaces for probable structures. Evidence for structures on non-villa rural Roman sites are notoriously difficult to find and many rural buildings would have been constructed of posts on beam slots which would have rested either on/or just below the ground surface. Modern agricultural methods and archaeological excavation techniques mean that many buildings which would survive only as very shallow features in the natural substrate are lost in the attempt to clarify the nature of the archaeology as a whole (Evans *et al.* forthcoming). However, at Summersfield, the location of further buildings was also suggested by the material recovered from the settlement enclosures: the large quantity of pottery and animal bone, along with the Roman coin of *Antoninianus*, the melon bead, and the zoomorphic brooch. The material also indicated that the site remained a rural farmstead, as the pottery assemblage was dominated by locally made coarseware vessels. The Roman coins, along with the two brooches and a small quantity of Samian ware pottery, suggest a level of prosperity, albeit small. In his recent work Evans has characterised Roman settlement sites based upon site finds densities into rural settlements, major farms, 'centres', shrines, and towns (Evans & ten Herkel forthcoming). Based on this model, the site at Summersfield would not even be classified as a rural settlement, as the quantity of material recovered per hectare is too small (see Table 13). Such a small quantity of material potentially represents the farmstead of an extended family (Hingley 1989: 55). At this time the northern settlement appeared almost self-sufficient, with Enclosures IV, VII, VIII and XII representing its heart.

Table 13. Comparative Roman site finds densities with quantity of material per hectare (from Evans & ten Herkel forthcoming). The numbers for Summersfield also include material recovered during the evaluation and not directly reference in the text (see Pocock 2007).

	Summersfield	Rural Settlement
Pottery	644	2500
Bone	448	2305
Coins	0.4	18.3
Cu alloy small finds	3	18.65
Glass	1	1.45

In contrast to the northern settlement enclosures in Area A, those within Area C represent another farmstead to the south, and reflect slightly differing forms of activity (see Figure 11). Along the eastern side of the track this activity was focused predominantly on crops. The closely spaced linear features within Enclosures XVIII and XIX represent horticultural plots (or 'lazy beds'), although despite sampling, it was not possible to determine what exactly was grown. Immediately to the north, Enclosures XIII

to XVII were associated with the processing of spelt wheat and other crops, which, however, appears to have been relatively small-scale. The farmstead was primarily concerned with producing enough grain for its own consumption rather than to trade. The environmental analysis has revealed a high percentage of grain and glume bases with a very low percentage of wild plant seeds in the area, suggesting the continued agricultural use of the site.

The evidence of awns and fine chaff in Area C revealed that a combination of the very early and late stages of crop processing was occurring. The presence of germinating spelt grains may suggest that they were also malting the grain, possibly to produce spelt beer. Spelt beer is thought to have also been produced at Cambourne New Settlement (Wright *et al.* 2009), and highlights the mixed economies and apparent self-sufficiency of farmsteads in the area.

The enclosures on the western side of the track were markedly different. Each with an entranceway, Enclosures XX to XXIII appeared to be associated with the management of livestock and the edge of a settlement area. The track was aligned along the edge of the ridge at this point and as a result the enclosures were situated on the slope. The entrances onto the track would have facilitated the movement of animals, with the large ditches better enabling their control. Cattle were the most dominant species and, although typical for the Roman period, also represented a continuation from the Iron Age activity at Summersfield where cattle dominated. The increase of animal bone in the Roman period and the diversity of enclosures show that by this time the local area's economy also relied upon skilled livestock management. There was a high proportion of horse in the assemblage and it has been suggested that this was the result of the site's location near Ermine Street. Activities associated with horses have been suggested for a series of sites excavated alongside Ermine Street to the north between Alconbury and Peterborough (Ellis *et al.* 1998). At Tort Hill East it has been suggested that a metalled area and series of enclosures may be associated with stables, and that horses may have been bred here (*ibid.*). At Summersfield the remains of a fully articulated horse in the corner of Enclosure XXIII and the presence of a hipposandal associated with Enclosure XIV support the idea that some of the enclosures were being utilised as paddocks. The dramatic increase in settlement in the early Roman period, and subsequent apparently rapid decline, might be linked to the wider progress and priorities of the Roman state (Taylor 2007: 101).

By the 10th and 11th centuries settlement activity at Summersfield was centred upon St. Peter's church to the north. The presence of enclosures within Area A, but not within areas B and C, is further evidence that the medieval settlement did not extend to the south and that its core was located to the north. The low density of structures, (Structures 5 and 7) which represented outlying buildings and the high number of finds from the early Medieval period, including the silver penny, suggests that the southern extent of an



Figure 11. Roman zones of activity showing the track acting as a spine through the site joining the many facets to Ermine Street. The distinction between the settlement and its 'working' zones is apparent.

early Medieval settlement of some importance was revealed, whilst the enclosures throughout the rest of the area represented the settlement's associated infields. The shifting and reorganisation of the settlement was echoed in the slight alterations to these enclosures and subtle changes in boundary alignments; these eventually gave way to open fields, probably in the late eleventh to twelfth centuries.

These open fields were evidenced by a series of furrow remnants. These failed to respect any of the earlier features and truncated the late Saxon features as well as those of the Romano-British and prehistoric periods, and where they were exposed in Area A crossed the entire width of the ridge. A western boundary was identified in Area C with the furrow remnants curving to the south, suggesting that this particular field was bounded at this point. On the 1825 Parish map a track was recorded which left the main road (Ermine Street) and crossed the site along the ridge to the church (Dickens 1998). This appeared to roughly follow the course of the Romano-British track, suggesting that it had continued in use in some manner, with its course shifting over time, and it was this track that the furrows appeared to respect. The furrows were apparently still extant during the

Victorian period when clay field drains were laid along their lengths, only later being obliterated and levelled by more recent agricultural practices.

With the advent of developer-funded archaeology, and the expansion of modern settlement and infrastructure, more investigations have occurred on the claylands of Cambridgeshire and bordering counties. With this increase in investigation we have seen an increase in the number of later prehistoric and Roman sites within a landscape that was once thought of as being inhospitable and uninhabited. The emphasis of past investigations on gravel river terraces has biased our understanding of settlement during the Iron Age, and as the results of more work on the clay uplands is disseminated, a better understanding of the dynamics of these settlements is being generated.

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