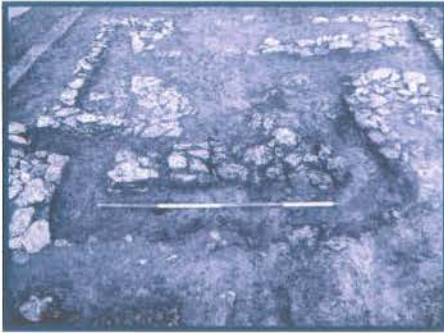


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Draft Publication report for PCAS



September 2006

Client: CgMs Consulting

Issue N^o: Draft

Draft Publication Report

A Fen-edge Landscape at Parnwell, Peterborough: Prehistoric, Roman and Post-Roman Occupation

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Summary

In the winter of 2004–5, Oxford Archaeology carried out an excavation and watching brief on a 12.2ha site at Parnwell, Peterborough. This provided a rare opportunity to investigate an extensive area of the clay hinterland adjacent to the gravel terraces surrounding Flag Fen. The sequence of landscape development revealed at Parnwell thus complements the evidence from the renowned Fengate investigations, 2km to the south.

The earliest occupation took the form of a discrete cluster of early Neolithic pits, containing worked flint and decorated bowl pottery. This was comparable in character to early Neolithic ‘pit settlements’ elsewhere in the region, although one of the pits was unusually large and rich in artefacts. Although modestly sized, the faunal assemblage is notable as one of the first from an early Neolithic settlement context in East Anglia. Subsequent activity in the early Bronze Age was represented by a looser scatter of pits, containing Collared and Biconical urn pottery.

A small group of later Iron Age features was found at the southern edge of the site. Occupation may have continued without a break into the Roman period, when a more substantial enclosed settlement was established. Although this was only partially excavated, its southwards continuation can be traced as a cropmark. The earlier phase of the settlement enclosure was curvilinear in form, and contained relatively few finds. This was later replaced by a more regular, rectilinear enclosure, containing larger quantities of material dating to the 2nd–3rd centuries AD. Features

associated with the settlement included a corn-drier, which had been used for roasting malt. The settlement lay within an extensive field system, which also contained a small cremation cemetery.

Pollen evidence suggests that there was some regeneration of scrub or woodland following the abandonment of the Romano-British settlement. The next phase of activity consisted of 57 pits with burnt fills scattered across the site, radiocarbon dated to the 7th–9th centuries AD. These were probably associated with charcoal production, with no evidence of contemporary settlement in the immediate area. Cropmarks of ridge and furrow cultivation show that the site was cleared and put under arable use at some point in the medieval or earlier post-medieval periods.

Introduction

This paper reports upon an excavation and watching brief carried out by Oxford Archaeology (OA) on a 12.2ha site at Parnwell, Peterborough, Cambridgeshire (centred ^{TF} TL 219 012). The work was carried out between December 2004 and April 2005 for CgMs Consulting on behalf of Raven Group Developments Ltd, in advance of warehouse construction. Extensive multi-period remains were uncovered, which make a significant contribution to our understanding of landscape development around the Flag Fen basin.

Geology and topography

The site is located at the north-eastern edge of the city of Peterborough, on land immediately to the east of Parnwell Way (Fig. 1). It is situated on a low rise, lying slightly above Flag Fen to the south. From the centre of the site, which lies at 6.6m OD, the ground slopes down gently in all directions to a minimum of 4.0m OD (Fig. 2). The superficial geology consists mainly of Oxford Clay, although this was overlain by second terrace gravel at the south-eastern edge of the site. Prior to excavation the site was under arable cultivation.

The environmental history of the local area has seen intensive study (*eg* Waller 1994), showing that the edge of Flag Fen advanced closer to the site over time. Thus it lay at least 2.5km to the south-west during the Neolithic, but had reached to

within 500m of the site by the later Iron Age (Hall 1987, figs 42–44). It is thought that a narrow fen inlet only *c* 150m from the northern edge of the site then developed during the Romano-British period, persisting until the drainage works of recent centuries (Hall 1987, figs 45–46).

Archaeological background

The site lies 2.5km to the north of the Fengate area, where a series of excavations on the gravel terrace at the western edge of Flag Fen have produced extensive evidence for the development of the prehistoric and Romano-British landscape. Sites investigated have included Neolithic and Bronze Age ritual monuments, Bronze Age field systems and Iron Age and Romano-British settlements (Pryor 1974; 1978; 1980; 1984; 1993; 2001). More recently, a number of developer-funded excavations have taken place further to the north along the gravel terrace, within 1km of the site. At Oxney Road, 500m to the south-east, Bronze Age ditches and pits have been uncovered (Britchfield 2002). At Edgerley Drain Road, 800m to the south, Neolithic and Bronze Age pits and a middle Bronze Age field system have been found (Beadsmoore 2005). Successive field systems from the Bronze Age and late Iron Age/Romano-British period have meanwhile been found at the Broadlands, 800m to the south-south-west (Vaughn and Last 1999; Hounsell 2002; Wotherspoon 2003). Work has also recently begun on investigating the prehistoric and Romano-British landscapes around the north-eastern and eastern edge of Flag Fen. This has included the excavation of early Bronze Age pits and Bronze Age and Romano-British field systems at Tanholt Quarry on the Eye peninsula, 2.5km to the north-east (McFadyen 2000; Patten 2003; 2004). Bronze Age, Iron Age and Romano-British occupation has also been uncovered at King's Dyke West/Bradley Fen on Whittlesey island, 4km to the south-east (Knight 1999; Gibson and Knight 2002).

There has been less work in the areas immediately to the west and north-west of the site, although a small Romano-British settlement has been excavated at Paston, 3km to the north-west (Coates *et al.* 2001). The Roman canal or drainage work known as the Car Dyke passes 700m to the west of the site (RCHM 1969, 40–3), although the exact chronology and purpose of this monument remains uncertain.

The site itself has previously been subject to a desk-based assessment (CgMs 2004). This showed that cropmarks of ridge and furrow cultivation blanket the site

(SMR 03022), masking any evidence of pre-medieval activity. However, cropmarks suggestive of later prehistoric or Romano-British settlement could be identified directly adjacent to the southern edge of the site. Further evidence for Romano-British activity in the vicinity of the site was provided by four coins reportedly found by a metal detectorist ‘in the fields between Oxney Farm and Parnwell’ (SMR 51244). The coins included a pierced sestertius of Marcus Aurelius (AD 161–180), two probable late 3rd-century bronze radiates, and a pierced coin of Constantine I (AD 306–336).

A trenched evaluation was carried out on the site in 2004 by the Cambridge Archaeological Unit (CAU). Although an early Neolithic leaf-shaped arrowhead occurred as a residual find, the earliest features revealed were a group of pits and gullies along the south-eastern edge of the site, containing worked flint and undiagnostic sherds of prehistoric pottery. Meanwhile, a concentration of Romano-British settlement features including ditches, pits and postholes was uncovered in the southern part of the site. Finds from this area were largely restricted to pottery dating to the 2nd–3rd centuries AD. Features were much sparser in the central and northern parts of the site, although some linear ditches were encountered, interpreted as part of a field system fanning out from the Romano-British settlement (Williams and Webley 2004).

A second CAU evaluation in the field immediately to the south of the site showed that the Romano-British settlement continued in this direction, corresponding with the cropmark evidence (Williams 2004). Ceramic dating evidence again centred on the 2nd–3rd centuries AD. However, two pits containing middle to late Iron Age pottery were also found in the same area as the Romano-British remains.

Excavation methodology

Based on the results of the evaluation fieldwork, three discrete areas totalling 5.14 ha were targeted for excavation (Areas 1–3: Fig. 2). The topsoil overburden, which had a depth of 0.45–0.60m, was machine-stripped under archaeological supervision, discrete features were half-sectioned (and some completely excavated), while a minimum of 10% of all linear ditches and gullies were excavated. The features within Area 3 were subjected to metal detector survey, although this only produced finds from post-medieval contexts. A watching brief was simultaneously maintained over most of the remainder of the development area.

Site sequence

Archaeological features were exposed across most of the site, although these had clearly suffered from significant truncation by medieval and post-medieval agriculture. Six phases of activity could be distinguished, from early Neolithic to post-medieval.

Phase 1: Early Neolithic

The early Neolithic occupation consisted of a discrete group of eleven pits at the south-eastern edge of Area 2, extending over an area of 35 by 12m (Fig. 3). It is likely that these features form part of a larger area of occupation continuing beyond the limit of excavation. Finds associated with the pits included worked flint and 'decorated bowl' pottery (Table 1).

By far the largest of these features was pit 2289, which produced a large finds assemblage (Table 1). Radiocarbon determinations on charred hazelnut shell from middle layer 2311 and lower layer 2418 produced almost identical date ranges of 3635–3494 cal BC/3458–3375 cal BC (NZA 24077: 4736 ± 35 BP) and 3632–3494 cal BC/3457–3375 cal BC (NZA 24076: 4728 ± 30 BP) respectively.

As this pit is unusually large and finds-rich for an early Neolithic settlement feature, the nature of its fill sequence is of some interest. The first three fills appear likely to have been deposited largely through natural processes. The pit was then back-filled with a series of dumped deposits, which contained significant amounts of pottery, animal bone and worked flint, in addition to produced moderate amounts of charcoal, charred cereals and hazelnut shell. Micromorphological analysis has identified hearth debris and possible butchery waste, and suggests that these fills were deposited fairly rapidly, with no significant hiatuses between them.

Lying to the south-west of 2289 was a V-shaped arrangement of seven pits (pit cluster 2315), while the remaining three pits (2365, 2374 and 2399) lay to the north and west.

Phase 2: Early Bronze Age

Early Bronze Age activity took the form of a group of six irregular pits and hollows, dispersed across the high ground in the north-western part of the site (Fig. 4). These produced modest quantities of worked flint and pottery in the Collared Urn and

Biconical Urn traditions (Table 2). The largest of these features was shallow hollow or possible tree-throw hole 1086. A radiocarbon determination on charcoal from an upper layer indicated a date in the first three centuries of the 2nd millennium BC (NZA 24073: 3558 ± 30 BP).

Phase 3: Middle to late Iron Age

Three features clustered together at the south-western edge of Area 3 were associated with handmade Scored Ware pottery, and can thus be dated to the middle to late Iron Age (Fig. 5). These consisted of a shallow, concave pit (3218), and two short gullies (3221 and 3223), which may have formed part of a single feature, conceivably the southern side of a truncated eaves-gully to a roundhouse. Small quantities of pottery and animal bone were the only finds recovered.

Located to the south of these features, ditch 3985 ran for 26m on a NW-SE alignment. It contained a single sherd of grog-tempered late Iron Age pottery, and could thus be either contemporary with, or slightly later than, the features to its north. Four-post structure 3294 (3.0 x 3.5m) was located immediately to the north-east of the main group of Iron Age features. It could thus also have belonged to the same phase, although in the absence of dating evidence it could equally well have been associated with the Romano-British occupation.

Further evidence for activity in this period is provided by a few sherds of residual middle and late Iron Age pottery recovered from Romano-British features in Area 3. It is in fact conceivable that the earliest phase of the Romano-British settlement enclosure had a pre-conquest origin; this issue will be discussed below.

Phase 4: Romano-British period

Romano-British features extended across most of the excavated area (Fig. 6), with a concentration of activity in Area 3 where a settlement was partially uncovered in the form of two phases of enclosure (A and B). The focus of this settlement seems to have lain to the south-east beyond the limits of excavation, and cropmark plots (Fig. 15) suggest it was bounded by a large rectangular enclosure. A field system on the same alignment extended across the areas to the north and north-east of the settlement. A small cremation cemetery was located within this field system. There may also have been a second, subsidiary area of occupation to the north of the settlement in Area 1, represented by a trackway (III) and a group of pits.

Settlement enclosure A

Stratigraphic evidence indicates that the settlement enclosure underwent two distinct phases with differing layouts (Figs 7–8). The earlier Enclosure A had a curvilinear form curvilinear and often fairly irregular ditches of widely varying dimensions (Fig. 7). Two further curvilinear ditches (3719 and 3854) extended southwards from the main circuit of Enclosure A, and probably served to divide the internal area into sub-compounds. The only artefacts recovered consisted of small amounts of pottery and fired clay, most of which came from the middle and upper fills. The absence of closely datable finds from the lower fills of the enclosure ditches make it uncertain when this system was laid out, and a pre-conquest origin thus remains a possibility. However, the small amounts of pottery from the middle and upper fills can be dated to the 2nd century AD.

Significant amounts of animal bone were recovered from Enclosure A ditches, particularly at the western end of the enclosure circuit. In addition, adult human cranium fragments were recovered from the upper fill (3700) of ditch 3854. These may derive from an inhumation burial placed within the ditch and later disturbed, as further disarticulated human remains occurred in pit 3897 which cut this section of the ditch. No other features can be demonstrated to have been associated with Enclosure A. However, post-built structure 3783 (see below) was located within the enclosure, and could potentially have been contemporary.

Settlement Enclosure B

Enclosure A was subsequently overlain by Enclosure B (Fig. 8), which formed a rectangle, measuring 120m long NE-SW by at least 45m wide NW-SE (ditches 3170 and 3713). The ditches of Enclosure B contained quantities of pottery dating from the 2nd and (to a lesser extent) 3rd centuries AD. The enclosure boundary was penetrated at its south-western corner by a trackway (I), while a second trackway (II) ran for 55m on a NE-SW alignment, continuing beyond the south-eastern limit of excavation.

The interior of Enclosure B was subdivided into a series of irregularly-shaped sub-compounds. Two ditches showed fill sequences including apparent ‘placed’ or ‘structured’ deposits. The southern terminus of ditch 3852 contained a complete jar-beaker placed at its base, while the southern end of ditch 3710 contained a partial dog skeleton, significant amounts of pottery and a possible iron ladle.

Features associated with Enclosure B included a large waterhole (3716), which contained pottery, tile, burnt stone and animal bone, a corn-drier (3548), two inhumation burials (3412 and 3523), and a few pits. Post-built structure 3783 could also potentially have been contemporary with the enclosure (see below).

Corn-drier 3548

Corn-drier 3548 was a substantial structure with sunken, stone-lined flues (Fig. 9). Although the corn-drier had suffered from later truncation, its overall layout is clear. The two flues (I and II) were placed at right angles to each other, sharing a common stoking area at the southern end of the structure. The area where the two flues met was heavily scorched, demonstrating that this was the fireplace of the structure. Adjacent to the fireplace was a concave pit (3539), 0.20m deep, with an ashy fill. This could represent the truncated base of a stoking pit, although it was eccentrically placed in relation to Flue I. Samples from this feature produced a similar charred plant assemblage to that from Flue I, including sprouted wheat grains (see Druce below).

Dating evidence from the corn-drier was limited to a few pottery sherds from the fill of Flue I, broadly datable to the late 2nd–4th centuries AD. However, the structure was almost certainly contemporary with Enclosure B, on the grounds of its alignment and the fact that large amounts of charred sprouted wheat grain had been dumped into the terminus of adjacent ditch 3852. This grain layer contained a small amount of mid 2nd century pottery, providing some indirect dating evidence for the use of the corn-drier.

After the corn-drier had gone out of use, part of Flue I was truncated by a large, irregular pit (3530), perhaps a robber pit.

Inhumation burials

The two inhumation graves (3412 and 3523) were located close together at the western edge of the settlement (Fig. 8). Although the burials cannot be closely dated, their placing alongside and alignment with ditch 3713 suggests that they were interred while Enclosure B was in use.

Both of the individuals were adults of undetermined sex, placed in a supine position within slightly irregular, sub-rectangular grave cuts. A few sherds of generic Roman pottery were recovered from both burials, although these were probably

incidental inclusions rather than the remains of grave goods. Patches of charred material were also noted at varying levels within the back-fill of grave 3412. A sample taken from this grave produced an unusual charred plant assemblage, including rose charcoal and possible ears of wheat (see Druce below).

Structure 3783

Post-built structure 3783 lay within the area of the Romano-British settlement, but as no dating evidence was recovered, an association is inferred rather than proven (Figs 7–8). The full extent of the structure is also unclear, as it lay at the south-eastern limit of excavation and had suffered from truncation by post-medieval features. The north-western side of the structure was formed by a row of seven postholes, 11.5m long. Several contained limestone packing and three showed post-pipes. A further posthole lay 4.0m to the south of this row, though this was somewhat smaller in dimensions (0.44m in diameter and 0.16m deep). It is possible that this formed part of a second row of posts, the rest of which has been obliterated by later activity. If this is correct, the structure could be interpreted as a small aisled building. No finds were recovered from any of the postholes.

Trackway III and associated pits

Trackway III lay to the north of the main settlement area, crossing the highest part of the site on a NW-SE alignment, and could be traced for a distance of 85m (Fig. 6). A dispersed group of four pits (1037, 1044, 1050 and 1051) was uncovered in the watching brief area to the south-west of the trackway, which produced significant quantities of pottery, dating mainly to the 2nd century AD. A copper alloy hairpin was also recovered from pit 1051.

Field system

The ditches extending across the northern and north-eastern parts of the site can be divided into two groups (Fig. 6). In the southern part of Area 2, there were a series of roughly parallel, sinuous ditches on an east-west alignment, which on the grounds of morphology and orientation, may be associated with the curvilinear Enclosure A to the south-west (see above). To the north of these features lay an extensive rectilinear system of boundary ditches on an identical alignment to Enclosure B. This strongly suggests contemporaneity, although there were no stratigraphic relationships present

to prove that the rectilinear field system was later than the curvilinear ditches to the south, and the small quantities of pottery recovered cannot be dated precisely enough to resolve this issue.

Plough truncation and problems of distinguishing the ditch fills from the natural subsoil conspired to make the overall plan of the rectilinear field system somewhat fragmentary. Nevertheless, it is clear that rather than enclosing large fields, the ditches demarcated relatively narrow 'strips' of standardised width. Within Area 1 and the southern part of Area 2 these strips were *c* 8m wide and followed a NW-SE alignment. In the northern part of Area 2, meanwhile, there was a discrete rectangular block of strips on a NE-SW alignment, each *c* 70m long and 11m wide.

Cremation cemetery

The cremation cemetery was located within the area of the rectilinear field system in Area 2, 135m to the north-east of the main settlement area (Fig. 10). A cluster of three burials was found (2037, 2041 and 2046), with an adjacent square enclosure (2147) possibly marking the site of a further grave.

Burial 2037 was contained within a shell-tempered jar, buried in a pit just large enough to accept the vessel. The remains have been identified as a female aged between 40 and 50 years. Pyre goods found amongst the ashes consisted of domestic fowl bone, 79 hobnails and some tiny fragments of glass, perhaps vessel glass. An iron nail was recovered from the fill surrounding the vessel.

Burial 2041 had been interred within a rectangular grave cut, measuring 0.50m NE-SW by 0.30m NW-SE. The remains—belonging to a mature or ageing individual of undetermined sex—were spread across the centre of the grave, overlain by an inverted grey ware bowl and a copper alloy coin. Further grave goods lay at the southern end of the grave, comprising a black-surfaced ware vessel, a copper alloy trumpet brooch, and an iron nail. Patches of dark staining at the base of the grave may suggest that the burial had been enclosed within an organic container such as a wooden casket. The burial can be attributed to around the mid 2nd century AD (coin: AD 145–175; brooch: early-mid 2nd century AD).

Burial 2046 was heavily truncated, with only the base of the urn surviving. Insufficient bone survived to determine the age or sex of the individual.

Enclosure 2147 lay immediately to the north of the cremation burials, and may well represent a square enclosure for a cremation burial which had been completely truncated away.

Phase 5: Middle Saxon period

Activity during this phase was represented by 57 small pits with dark fills, rich in oak charcoal (Fig. 11). These were widely scattered across the whole site, though with a slightly greater concentration in Area 1. Datable finds were absent, but it is notable that several of the pits cut Romano-British ditches, and may in fact have been placed so as to utilise these surviving earthworks. Radiocarbon determinations on charcoal from pits 1027 and 2008 produced date ranges of cal AD 689–890 (NZA 24074: 1220 ± 30 BP) and cal AD 661–778 (NZA 24075: 1288 ± 30BP) respectively.

Evidence for scorching of the pit base or sides could be seen in several cases. Charcoal from the pit fills was typically quite fragmented, although in some cases (*eg* pit 502) large pieces up to 40mm long were recovered. Artefacts were largely limited to pieces of fired clay, most of which are likely to have formed *in situ*, although possible ‘oven plate’ fragments were recovered from pit 407. While the function of these pits is uncertain, it is possible that they played a role in charcoal production (see Discussion below).

Phase 6: Post-medieval period

Two phases of post-medieval land-use were evident, both of which can be related to the cartographic evidence. The first consisted of a double-ditched trackway running along the south-eastern edge of the site, and a field boundary ditch at right angles to this. These features are depicted on the 1821 enclosure map. Subsequently, the layout of field boundary ditches was altered and two ponds were constructed, cutting the northern ditch of the earlier trackway. These later features first appear in the cartographic record on the OS 1st edition map of 1889–91, and remained extant until recent years. Details of the finds from the post-medieval features can be found in the site archive.

Radiocarbon dating

Five samples were submitted to the Rafter Laboratory (New Zealand) for Accelerator Mass Spectrometry dating (Table 3). The determinations were calibrated using the atmospheric data of Reimer *et al.* (2004).

Finds

Flint

K Cramp with H Lamdin Whymark

A total of 197 struck flints and 216 pieces (141g) of burnt unworked flint were recovered (Table 4). Most of the assemblage dates to the early Neolithic period, and derives from the Phase 1 pit group at the south-eastern edge of the site. A small amount of flintwork was associated with the early Bronze Age pit group. The remainder of the assemblage was thinly scattered across the site, mainly occurring as isolated residual finds in later contexts. Most of the burnt unworked flint (200 pieces weighing 116g) came from Anglo-Saxon pit 406.

The raw material takes the form of small pebbles, probably originating from a single source. Where present, cortical surfaces are usually abraded and discoloured, suggesting the exploitation of tertiary deposits, such as the fen edge gravels. The flint was probably of a reasonable knapping quality, although the small size of the nodules appears to have directly influenced the size of the products, with very few flints exceeding 60mm in length.

The flint assemblage from prehistoric features is generally in an exceptionally fresh condition, while material from later features tends to display some slight edge damage and surface rolling. Most pieces are uncorticated, although an incipient cortication is occasionally present. The lightly corticated flake from early Bronze Age hollow 1086 displays two uncorticated notches, suggesting later prehistoric re-use of lithic material found in the general area. Recycling flint in this way is usually associated with later Bronze Age industries (Young and Humphrey 1999, 233), and it is possible that the original blank was deposited during earlier Neolithic activity at the site. Earlier instances of recycling are not uncommon, however, and it is as likely that the notched flake belongs to a Neolithic industry.

Catalogue of illustrated flint (Fig. 12)

1 **Multi-platform flake core.** On small cobble of ?boulder clay flint. Neatly worked but with a few step-terminated scars. Several blade-like removals. 32g. Early Neolithic. Pit 2289, context 2311. Phase 1

2 **Piercer.** On blade, dorsal blade scars, slight inverse retouch to distal point. Utilised. Early Neolithic. Pit 2289, context 2290. Phase 1

3 **End-and-side scraper.** Abraded gravel cortex. Soft hammer. Platform edge abrasion. Fine semi-abrupt retouch. Slight retouch along right-hand side. Utilised and burnt. Early Neolithic. Pit 2283, context 2284. Phase 1

4 **Serrated flake.** Fine blade, good serrations along both edges and visible gloss on the reverse of the teeth. Early Neolithic. Pit 2289, context 2312. Phase 1

5 **Re-flaked ?leaf-shaped arrowhead.** Appears to be part of a well-flaked leaf-shaped arrowhead, with an abortive attempt to re-flake. Some of the edges have been turned. Early Neolithic. Pit 2289, context 2312. Phase 1

6 **Plano-convex knife.** Manufactured on a fine, coffee-coloured flint. Made on blade, but an example that has been struck at an unusual angle. Flaking of a reasonable quality, but clearly not the product of an exceptionally skilled flintworker. Utilised. Probably early Bronze Age. Pit 1062, context 1063. Phase 2

7 **Re-flaked ?plano-convex knife.** Probable plano-convex knife, incomplete, with invasive retouch on dorsal surface only. Snapped (during use?), and re-worked with a few small removals from snap platform. Probably early Bronze Age. Hollow 1086, context 1084. Phase 2

Neolithic and Bronze Age pottery

E Edwards

A total of 591 sherds (2423g) of Neolithic and Bronze Age pottery was recovered. The assemblage was dominated by early Neolithic 'decorated bowl' pottery, most of which derived from large pit 2289. A smaller number of early Bronze Age sherds were recovered, including fragments of both Collared and Biconical Urns. The remainder of the assemblage (49 sherds, 162g) comprised undiagnostic fragments which were more difficult to date.

Early Neolithic pottery

A total of 501 sherds (1852g) of early Neolithic pottery was recovered, representing a minimum of 39 vessels. Most of this (461 sherds, 1722g) was recovered from the Phase 1 pit group, the remainder being found as residual material in Romano-British contexts in Area 3.

The pottery was generally in poor condition, with a mean sherd weight of 4g. A total of seven rims were measurable, six of these representing 12% of the vessel or less. The material from pit 2289 was of mixed condition, with some large sherds

recovered from most fills. Most of the material was in shelly fabrics, although a few sherds containing sand, flint and sand, or no visible temper also occurred. All of the fabrics are potentially local, and the sand is likely to be naturally occurring.

The vessels were coil made, with the externally expanded rims having been formed through the drawing up and shaping of the upper coil. The differential firing and dark cores of the vessels were consistent with bonfire firings. Most of the vessels appear to have been smoothed.

Vessel forms mainly comprise bowls, with round-bodied, baggy (Fig. 13, no. 7) and carinated (Fig. 13, nos 8 and 10) profiles. The bowls showed a variety of rim forms: eleven were externally expanded (Fig. 13, nos 2, 6–7 and 11), three everted (Fig. 13, nos 5 and 10), two squared (Fig. 13, no. 13), two thickened (Fig. 13, no. 1), two rounded (Fig. 13, no. 9), one T-shaped (Fig. 13, no. 3) and one flattened, with a pre-firing piercing (Fig. 13, no. 12). Measurable rim diameters were few, but sizes ranged from 100mm to 360mm, with a cluster at 250mm. In addition to the bowls, one small cup with a pointed rim (diameter 70mm) was also recovered (Fig. 13, no. 4). No charred residues were noted, although the fabrics appear porous enough to have been used for cooking (Howard 1981).

Some 30% of vessels (12 vessels from 39) were decorated, compared to 16% at the contemporary site at Kilverstone, Norfolk (Garrow *et al.* 2005). Incised diagonal lines were noted on seven rims. Most of the incised lines on the rims were very shallow and slightly abraded, although they were much deeper in one case (Fig. 13, no. 11). In addition, there was one vessel decorated on its body with short impressed lines filling the spaces between horizontal incised bands (Fig. 13, no. 8).

The Parnwell assemblage is largely comparable in form and decoration to that from the Etton causewayed enclosure, 10km to the north-west (Kinnes 1998). However, the highly decorated bowl (Fig. 13, no. 8) seems more unusual, and no close parallels have been identified.

Catalogue of illustrated early Neolithic pottery (Fig. 13)

- 1 **Thickened rim.** Fabric DS2. Pit 2283, context 2284. Phase I
- 2 **Externally expanded rim.** Fabric DS2. Pit 2285, context 2286. Phase I
- 3 **T-shaped rim.** Fabric DS2. Pit 2289, context 2312. Phase I
- 4 **Pointed rim from a small cup.** Fabric NAT1. Pit 2289, context 2312. Phase I
- 5 **Everted rim.** Fabric DS2. Pit 2289, context 2312. Phase I

- 6 **Externally expanded rim.** Fabric DS2. Pit 2289, context 2415. Phase 1
- 7 **Externally expanded, decorated rim.** Fabric DS2. Pit 2289, contexts 2290 and 2311. Phase 1
- 8 **Body sherd with incised decoration.** Fabric DS2. Pit 2289, context 2311. Phase 1
- 9 **Rounded rim.** Fabric DS2. Pit 2289, context 2311. Phase 1
- 10 **Everted rim.** Fabric DS2. Pit 2289, contexts 2311 and 2312. Phase 1
- 11 **Externally expanded, decorated rim.** Fabric DS2. Pit 2289, context 2416. Phase 1
- 12 **Flattened rim with pre-firing hole.** Fabric FA2. Pit 2289, context 2416. Phase 1
- 13 **Squared rim.** Fabric DS2. Pit 2289, context 2419. Phase 1

Early Bronze Age pottery

A total of 41 sherds (409g) of early Bronze Age pottery was recovered, representing a minimum of five vessels. All of the pottery was from Phase 2 pits and hollows. The pottery was in better condition than the early Neolithic material, with a mean sherd weight of 11g. The fabrics contained grog, sand or no visible temper. Most of the sherds were smoothed and fired to a red-brown colour on the exterior surface.

The vessels included at least three Collared Urns, from pit 1042 and hollow 1086. The two examples from 1086 represent tripartite Collared Urns, possibly from Longworth's (1984) secondary series (*eg* Fig. 13, no. 14). The shoulder from a Biconical Urn was meanwhile recovered from pit 1008 (Fig. 13, no. 15). Charred food residues were present on this sherd.

Decoration was noted on nine sherds. One of the Collared Urn fragments from hollow 1086 was decorated with incised lines on the cavetto zone. The other had rows of impressed fingertips on the shoulder (Fig. 13, no. 14), a form of ornamentation also noted on vessels from Newark Road, Fengate, 2.5km to the south (Pryor 1980, fig. 59, no. 27). The shoulder of the Biconical Urn was decorated with a smoothed cordon.

Catalogue of illustrated early Bronze Age pottery (Fig. 13)

- 14 **Collared Urn.** Fabric G1. Hollow 1086, context 1084. Phase 2
- 15 **Biconical Urn.** Fabric G1. Pit 1008. Phase 2

Iron Age and Roman pottery

D Stansbie

A total of 1454 sherds (20.2kg) of Iron Age and Roman pottery was recovered (Table 5). The assemblage spans the middle Iron Age through to the end of the Roman period. However, the majority of the material dates to the early and middle 2nd century AD, with smaller amounts from the late 2nd to 3rd centuries, and only a few sherds from the 4th century. Pottery was recovered from 153 contexts in total. Of these <1% produced more than 100 sherds and 7% produced between 30 and 100 sherds. The average group weighs 133g and the mean sherd weight is 14g. A total of 143 identifiable vessels were preserved.

The pottery was divided into four broad ceramic phases: middle to late Iron Age (400 BC–AD 20), late Iron Age to early Roman (AD 20–75), early Roman (AD 75–200) and late Roman (AD 170–400).

Middle to late Iron Age pottery

Handmade middle to late Iron Age pottery accounts for 2.8% of the assemblage by weight. The small quantities of pottery are characterised by a variety of shell and limestone fabrics, along with sandy and shelly fabrics and some sand and grog-tempered fabrics. The dominance of fabrics containing shell matches other contemporary sites in the local area, such as Werrington (6km to the north-west; Rollo 1988) and Cat's Water, Fengate (2.5km to the south; Pryor 1984).

A total of 33 sherds (361g) are scored. Handmade later Iron Age pottery assemblages from the Peterborough area almost always include a substantial component of Scored Ware (Elsdon 1992). This style of pottery appears to have continued in use well into the 1st century AD in the lower Nene and Welland Valleys (Elsdon 1992; D. Knight 2002, 134). If this is the case at Parnwell, and the Scored Ware in fact represents late Iron Age activity, then the relative paucity of 'Belgic' style grog-tempered wares may be at least partially explained.

The range of forms is generally similar to that of other sites in the area, which are also jar-dominated.

Late Iron Age to early Roman pottery

The late Iron Age to early Roman assemblage is largely made up of grog-tempered ware or its variants, which would normally be assigned to the late Iron Age. However, because of a lack of diagnostic late Iron Age vessels at Parnwell, it is impossible to be certain that this material does not continue into the post-conquest period. All of the material is wheel-thrown. The assemblage is dominated by grog-tempered fabric E80.

Early Roman pottery

Early Roman pottery incorporates a wider range of fabrics than seen in the earlier periods (Table 5), and account for the greatest proportion of the overall assemblage at 47% by weight. Shelly wares dominate the assemblage, accounting for 47% by weight. Also common are sandy reduced wares and Lower Nene Valley grey ware. Fine and specialist wares along with regional and continental imports are scarce.

The increasing range of fabrics in this period is mirrored by a growing repertoire of forms, including new types of vessels associated with eating and drinking such as flagons, beakers and dishes (Table 6). However, the assemblage is still overwhelmingly dominated by jars, which make up 50% by EVE. These are supplemented by flagons, dishes, beakers, cups, mortaria and lids.

Late Roman pottery

The late Roman groups contribute a broader range of fabrics to the assemblage than that seen in the early Roman period (Table 5), and take the second largest share of the assemblage by weight at 33%. In contrast to the early Roman groups the late Roman groups are dominated by Lower Nene Valley grey wares, which contribute 42% by weight.

Unsurprisingly, the fine and specialist wares are dominated by Nene Valley colour-coated wares, which contribute 10% by weight. As in the early Roman period a wide range of vessel types are present in the late Roman assemblage, with the occurrence of dishes, beakers and bowls increasing at the expense of jars and flagons (Table 6).

Discussion of Roman pottery

The changing functional composition of the assemblage over time is shown by Table 6. The early Roman phase is heavily jar biased, although flagons and dishes also make a significant contribution and there are some beakers, cups, mortaria and lids. In the late Roman phase jars decline in favour of dishes and bowls, although jars are still fairly strongly represented at 37% of EVEs. Beakers also increase significantly, although cups, mortaria and lids decline. This is unexpected and may perhaps be related to the small overall numbers of vessels involved. There is also a jar/bowl and part of a cheese press in the late Roman period, types that are not found earlier in the sequence.

If Parnwell is compared with other Roman sites in the area, such as Haddon, Orton Hall Farm and Tort Hill East (see Evans 2003, 105–6 for a breakdown of vessel

class by EVEs) it is immediately apparent that there are broad similarities between the sites. Jars decline over time at all sites, although at no site do they go completely out of use in the 3rd and 4th centuries. Conversely tablewares such as dishes and bowls tend to increase over time, and are consistently at relatively high levels when compared to rural sites elsewhere in the Midlands (Evans 2003, 104). Cups and beakers seem to decline over time at all sites including Parnwell, a fact that is surprising given the ubiquity of beakers from the Nene Valley industry in the 3rd and 4th centuries. The explanation might lie with the social status of the inhabitants, although if this were the case one might expect a corresponding lack of other forms of tableware such as dishes and bowls.

At all the sites discussed by Evans the numbers of mortaria also increase over time. However, at Parnwell the opposite is true, with mortaria accounting for 3% of EVEs in the early Roman phase and 1% in the late Roman phase. This is the only real anomaly and is best explained by the small numbers of mortaria found at the site. The cheese press found at Parnwell can be matched at many other sites in the area.

Pottery supply to the site is typical of such sites in the region. In the late Iron Age to early Roman period the assemblage is dominated by grog-tempered and grog and shell-tempered wares, which like the similar material from Haddon, Orton Hall Farm and Tort Hill was probably made locally (Evans 2003, 105). In the early Roman period, pottery supply is dominated by shell-tempered wares and sandy grey wares, with Nene Valley grey wares beginning to make an impact and samian wares of southern and central Gaulish origin also present in small amounts. This pattern also matches that from Haddon and other local sites very closely. It is possible that at least some of the shelly material found at Parnwell was manufactured in the kilns at Haddon, although some may also have come from the Water Newton area (Evans 2003, 107). Other locally produced material in this phase came from Longthorpe, comprising two mortaria and some oxidised ware. The presence of a flagon in Much Hadham white-slipped oxidised ware from a late 2nd century group is the only indication apart from the samian ware of long distance supply to the site in the early Roman period.

Pottery supply in the late Roman phase was dominated by Lower Nene Valley grey ware, with shelly wares still very important and Nene Valley colour-coated wares making an impact. Once again this pattern of supply fits very well with that seen at Haddon (Evans 2003, 107). The nearest known kilns producing Nene Valley

grey and colour coated wares at this time are at Stanground, just 4.5km to the south (Dannell *et al.* 1993). A single sherd of Dorset black-burnished ware from a late Roman group indicates that pottery supply was not entirely insular in the late Roman period. However, for the most part pottery consumption appears to have been resolutely focused on local products.

The ceramics indicate that the socio-economic status of the Romano-British settlement was modest.

Fired clay

C Poole

The fired clay assemblage is relatively small, amounting to 284 fragments weighing 5315g (Table 7), and was found covering a wide area of the site. All the material was one broad fabric category, containing frequent medium-coarse quartz sand and rare coarser grits of flint, limestone and ironstone, which probably derive from the local gravels.

The quantities of fired clay from all phases are sparse, and in the prehistoric and Roman phases there is an absence of features or structures from which the material could derive. In view of the level of truncation of the Roman corn-drier, it is likely that shallower ovens or hearths have been destroyed.

Two early Bronze Age pits (474 and 1008) produced a few pieces that can be identified as parts of oven structure, probably oven plates. There is a much greater quantity and variety of material in the Roman period. The most distinctive pieces are pedestals, while some of the other pieces categorized as oven furniture could also be parts of pedestals. Such structural elements were probably a feature of ovens for domestic or agricultural use.

A high proportion of the unidentified fired clay came from the Anglo-Saxon pits, most derived from the burning of their bases and sides. The only feature of this type to produce any more diagnostic structural clay was pit 407, which contained in its fill the largest group of fired clay, which has the characteristics of an oven plate or drying floor.

The overall characteristics of the assemblage indicate the fired clay had originated in non-industrial activity using relatively low temperatures. This could

have included domestic functions such as cooking or baking, or agricultural activities such as grain drying or malting.

Roman ceramic building material

C Poole

The collection of Roman ceramic building material, which amounts to 59 fragments weighing 9.3kg, is relatively small and fragmentary (Table 8). The most notable feature of the assemblage is the dominance of brick and tegulae. The absence of imbrices suggests the tegulae were not being used for roofing, but in some other way, possibly being used in constructions with the brick. The only recognisable building within the Romano-British settlement is post-built structure 3783, but no ceramic building material was associated with this. The distribution of the ceramic building material was mainly across the western half of the settlement, and it may be postulated that the corn-drier formed the focus for this.

Associated directly with the corn-drier were several pieces of brick and one fragment of box flue, with a second piece of box flue from pit 3530 cutting into the top of the corn drier. The flue walls of the corn-drier do not appear to have had any brick built into them, but it is likely that bricks and tile were used to support the floor of the drying chamber over the flues. It is also possible that tiles or bricks were used to make the projecting shelf above the open ends of the flues that allowed hot air to flow out at the back of the drying chamber. The purpose of the shelf above the flue was to deflect hot air back over the grain.

If the brick and tile was indeed used in the construction of the corn-drier, it seems likely that this was being recycled from some other source in the local area.

Roman metalwork and glass

L Webley with coin report by P Booth

The metalwork assemblage from the Romano-British settlement was relatively modest. There were two copper alloy dress accessories, comprising a simple hairpin and an imported disc brooch with millefiori glass inlay. Utilitarian items consisted of a possible iron ladle and three iron nails of Manning (1985) Type 1b (two from ditch 3710 and one from pit 3897).

The cremation cemetery also produced a small assemblage of metalwork. Burial 2040 contained a copper alloy trumpet brooch and an iron nail of Type 1b.

Burial 2037 contained a further nail of the same type, along with 79 iron hobnails of Manning (1985) Type 10. The same burial also produced nine tiny fragments of colourless glass (2g) from its sieved residue. Although these fragments give no clue as to the form of the object from which they derive, the placing of glass vessels on cremation pyres was fairly common during the Roman period (Philpott 1991).

A single coin in a poor condition, possibly a dupondius, was recovered from cremation burial 2041. The coin can only be assigned to a broad date range of AD 145–175.

Catalogue of illustrated metalwork (Fig. 14)

1 **Hairpin.** Copper alloy pin of ‘button and cordon head’ type (Cool group 6). Late 1st–early 2nd century AD (Cool 1991). Pit 1051, context 1053. Phase 4.

2 **Trumpet brooch.** Copper alloy trumpet brooch of Hull’s ‘Alcester’ type (Hull Type 162: Bayley and Butcher 2004). Essentially plain, but ornamented with two lateral grooves at the top of the head. The pin appears to be made of iron. Early–mid 2nd century AD. Cremation burial 2041, context 2042. Phase 4.

3 **Disc brooch.** Two fragments of an imported copper alloy disc brooch with millefiori glass decoration set into the single circular cell (Hull Type 256: Bayley and Butcher 2004). The brooch has a central circular perforation (cf. Bayley and Butcher 2004, no. 372). The pin is missing, but would have been hinged. Brooches of this kind were probably manufactured in northern Gaul or the Rhineland and date to the late 2nd–early 3rd centuries AD. Pit 3897, context 3900. Phase 4.

4 **Possible ladle.** Heavily corroded iron implement resembling a ladle with a broken handle. Ditch 3710, context 3921. Phase 4.

Worked stone

R Shaffrey

Two pieces of worked stone were recovered, both from Romano-British contexts. A possible saddle quern fragment (possibly of diorite), came from ditch 3998, while a probable rubber fragment (probably sarsen or similar) came from ditch 3853.

Environmental and osteological analyses

Human bone

D Mahoney and S Clough

Three urned cremation burials (2037, 2041 and 2046) and two inhumation burials (3412 and 3523) were excavated on site, while disarticulated bone was recovered

from ditch 3854 and pit 3897. All of the human remains date to the Romano-British period.

Cremations

Cremation 2037 contained large fragments of skeletal elements, providing markers for sex and age of this individual at death, seemingly a 'mature' female aged between 40 and 50 years. Two pathological conditions were observed in cremation burial 2037. One of the rib fragments displayed new woven bone growth on the ventral surface, probably denoting pulmonary or respiratory disease. Meanwhile, the superior body of an unidentifiable vertebral fragment shows slight osteophytosis, possibly denoting mild spinal degenerative joint disease within this individual.

Cremation 2041 contained very fragmentary remains with no surviving teeth, restricting osteological analysis. It would appear to be a mature or ageing individual.

Pyre technology: efficiency of cremation

The efficiency of cremation is reflected in the colour of the bone, which may range from brown or black (slightly charred), through hues of blue and grey, to buff and the brilliant white associated with full oxidisation (McKinley 2000a, 405). The grey, blue, black and brown colouration exhibited within these cremations shows relatively poor oxidisation. A poor level of burning is not uncommon in Roman cemeteries (Fitzpatrick 1997, 250), and it seems that full oxidisation of the bone may not have been a necessary component of the cremation ritual (McKinley 2000b, 39). At small rural cemeteries such as Parnwell, it is possible that cremation was conducted by the relatives of the deceased or his/her immediate social circle (*ibid.*, 41). These individuals may have been inexperienced in such processes, and may not have provided sufficient fuel or tended the pyre appropriately, resulting in poor oxidisation and incomplete cremation of the bone.

Inhumations

The skeleton from burial 3523 was in very poor condition, with heavily eroded and abraded cortical bone. In addition the level of completeness was very poor with less than 25% of the skeleton surviving in the form of unidentifiable long bone fragments. The skeleton showed evidence for dental calculus and dental enamel hypoplasia. Dental attrition patterns (Miles 1962) from inhumation 3523 indicate an age at death of 26–40 years.

The adult skeleton from burial 3412 survived only as staining and small, very poorly preserved skeletal fragments. Insufficient skeletal material survived for osteological analysis.

The disarticulated bone comprised three adult cranial vault fragments from the upper fill (3700) of ditch 3854, and ulna and pelvis fragments from the middle fill (3900) of pit 3897. As pit 3897 cut the section of ditch 3854 from which the cranium fragments were recovered, it is possible that all of the remains derive from the same individual. The remains were poorly preserved.

Faunal remains

K Poole with E-J Evans and R Nicholson

A total of 1981 refitted fragments (18,019g) of animal bone was recovered. Most of the material came from early Neolithic and Romano-British contexts. Hand recovery accounted for 869 fragments, and sieving of environmental samples for the remainder. Bone condition ranged from very good to poor, with the majority being either good or fair. Table 9 quantifies the assemblage by phase.

Neolithic

Only a small amount of the early Neolithic bone could be identified to species, with cattle predominating. The vast majority of the bone comes from Pit 2289, and all parts of the skeleton are represented. Based on size, the cattle bone probably comes from domestic animals, and dental ageing from mandibles highlights the presence of one animal aged 18–30 months at death, one young adult, and one old adult, whilst two loose molars came from young adults. Epiphyseal fusion suggests that most cattle were skeletally mature at death, although some immature elements were noted, including a foetal/neonatal femur and humerus. A sheep/goat mandible was from an animal between 6–12 months old, and a pig fused distal tibia came from an animal at least two years of age at death. The only butchery observed was a chop mark on the medial side of a cattle metatarsal diaphysis, towards the distal end.

Cattle tend to dominate early Neolithic assemblages, with pigs and sheep generally present in more limited numbers, although there is some variation. Analyses of mortality profiles at contemporary sites such as Windmill Hill (Jope 1965), Hambledon Hill (Mercer 1980) and the nearby causewayed enclosure at Etton (Armour-Chelu 1998) revealed high proportions of adult female cattle and very young animals. This is a pattern suggested by Legge (1981; 1989) to be representative of a

dairying economy, a point supported by recent chemical analyses of pottery (Copley *et al.* 2003), indicating that dairying was a widespread activity during the early Neolithic.

However, the main difficulty with understanding relative importance of different animals in this period is that the majority of assemblages come from sites with specialised functions, such as causewayed enclosures or barrows. The ubiquity of cattle at these sites may indicate that they held some kind of privileged status, with consumption of beef being associated with special events (Ray and Thomas 2003, 39). Thus, the faunal remains will not necessarily be indicative of everyday attitudes to animals. However, great feasts and social gatherings could not have existed completely divorced from the 'everyday' economy. It could well be that cattle were important for dietary requirements of everyday life, but that consumption of these animals at communal gatherings carried different connotations.

The material from Parnwell seems to consist of domestic waste. Despite the small size of this assemblage, it is therefore of considerable interest. Cattle seem to have been the most important animal food species to those living in this area. Although it was not possible to construct detailed mortality patterns, the presence of a number of adult cattle may suggest that milk was important to the community. Pig and sheep/goat were also exploited, although to a much more limited degree. In Britain, it has been suggested that domesticated animals had more of an initial impact on the development of early Neolithic communities than cereals, with woodland clearance largely undertaken to provide pasture (Ray and Thomas 2003, 39). Whatever the case, the open environment suggested by the pollen evidence would certainly have provided pasture for cattle and sheep, with the nearby woodland used for pigs.

Early Bronze Age-later Iron Age

All cattle elements from the early Bronze Age were teeth, except a fused distal humerus from an animal at least 15–20 months old at death. Cattle were represented in the middle-late Iron Age by a proximal metatarsal, which has skinning marks around the articulation, and sheep/goat by four maxillary molars.

Romano-British period

The Romano-British bone is overwhelmingly domestic in origin, but has a much greater range of species than earlier periods. Most of the material came from the

settlement itself, with only small numbers of bones recovered from the outlying field system.

The Romano-British animal bone is fairly typical of assemblages from rural sites of this period. It is clear that cattle and, to a much lesser extent, sheep/goat were the main food animals at the site, although cattle, being much larger, would have supplied the bulk of the meat. However, the greater proportions of cattle may at least partly be due to the location of deposition, as composition of bone assemblages can vary considerably between different context-types and area of a site (Maltby 1985; Wilson 1996). These excavations may lie at the periphery of the main core of the occupation, and it could be the case that larger animal carcasses tended to be processed and dumped on the outskirts of the settlement.

The relative frequencies of species here are in line with contemporary local rural sites such as Haddon (Baxter 2003) and Paston (Hammon and Albarella 2001). The maintenance of larger numbers of adult cattle is commonly seen, suggestive of use for traction before culling at the end of their useful lives (Noddle 1984), a pattern indicated for Parnwell. At the same time, the presence of a small number of foetal or neonatal cattle, sheep/goats and pigs hints at some on-site breeding.

The importance of horse has probably been unduly inflated by the large number of loose teeth recovered, and in any case, horsemeat was not commonly eaten during the Roman period (Grant 1989, 145). Dogs also were not eaten, as the partial skeleton suggests. This skeleton could have been ritually deposited, but may just as easily have been a convenient way to dispose of the carcass. The only certain evidence for 'ritual' activity comes from the domestic fowl remains in cremation burial 2037. The inclusion of chicken remains as pyre goods is a common practice in the Roman period (Philpott 1991), and these seem to have been intended as symbolic food for the deceased (Lauwerier 1993, 78).

Wild animals generally seem to have been little exploited in Britain through most of the Roman period (King 1991, 18), although the remains from Parnwell suggest a limited degree of hunting and wildfowling. Deer may have been used more at this time as a source of raw material rather than for meat, as remains from other sites tend to be non-meat bearing elements (*eg* Elms Farm, Essex: Johnstone and Albarella n.d, 37), a pattern probably associated with skinning (King n.d, 53). It is therefore interesting that the red deer element from Parnwell was a metatarsal, exhibiting cut marks around the proximal end.

Charred plant remains

D Druce

A total of 21 samples containing relatively abundant charred plant remains were selected for full analysis. Five of these came from early Neolithic pits, and 16 from Romano-British features, including the corn-drier, various pits and ditches, and an inhumation burial.

Neolithic pits

Although the charred plant assemblages from the Neolithic pits were limited (Table 10), the evidence is consistent with other similar sites in Britain, and indicates that a combination of both cultivated and wild food plants were being utilised. As is typical, the most ubiquitous plant remains were of hazelnut. The only other certain wild food plant present was apple, which is also commonly found in Neolithic pits. The poor preservation of the cereals meant that identification to species level was difficult, but single grains of wheat and barley were identified. Fat-hen was also present in most of the samples. This is a common ruderal on waste or cultivated ground and may have been introduced into the pits along with the cereal grain, although it is also known to have been used as a food source in the past.

Romano-British features

Ten samples came from various locations within corn-drier 3548 (Fig. 9), and further samples were taken from nearby ditch terminus 3852 and pit 3619, believed to contain dumped waste material generated during the use of the drier (Tables 11 and 12).

The evidence from the corn-drier suggests that, like many sites of this period in central and southern Britain, the chief wheat crop under cultivation was spelt. In addition, the limited number of bread wheat grains suggests that this may have also been cultivated, perhaps as a minor crop. The presence of barley, rye and oat grains suggests that these crops may also have been cultivated to a limited degree. Although only a small number of grains in the corn-drier samples had germinated, the very abundant detached coleoptiles, especially in the stoking pit, suggests that the actual number was, potentially, far greater. Van der Veen (1989) suggests that where 75% or more of a cereal assemblage has germinated it is highly likely that it represents material from malting. This process involves the roasting of the 'green malt' (or germinated grain) in order to halt the process of germination at a given stage, the resultant germinated grain forming the raw material in brewing. An assemblage

similar to that from Parnwell was discovered from a corn-drier at the Roman villa site at Bancroft, Milton Keynes, and the high number of detached coleoptiles in this example was interpreted as the waste product of malting. Similarly, corn-drier assemblages from Tiddington, Warwickshire, were interpreted as the waste material produced from malting, which was used to re-kindle the ovens (van der Veen 1989).

It is possible that the thousands of spelt glume bases in the corn-drier samples are the waste product from a different activity, which was subsequently utilised to fuel the corn-drier. However, earlier evidence from 21 other Romano-British corn-driers suggests that in over half the cases the charred plant assemblages were dominated by the remains of spelt wheat (van der Veen 1989). At Catsgore, Somerset, nine out of the ten corn-drier samples contained germinated spelt wheat, which was interpreted as the remains of malt production (Hillman 1982). In addition, the abundant wood charcoal, spelt glume bases, and weed seeds in one of the stoking pit assemblages at Catsgore was believed to represent the remains of fuel, which had become mixed with the grains when the ovens were cleaned out. A rich assemblage of spelt grains, spelt chaff and detached coleoptiles at Springhead, Kent, was interpreted as the waste by-product resulting from the removal of the husks and sprouts of malted grain. Although, as at Parnwell, there were very few germinated grains in the assemblages, Campbell (1999) concluded from the association of the sprouts and spelt wheat chaff that spelt wheat was being used for brewing. Within East Anglia, flue features containing sprouted spelt wheat at Stebbing Green, Essex, have been interpreted as belonging to a 'malt house' (Bedwin and Bedwin 1999). Although barley has historically been considered the preferred grain for brewing, the brewing of spelt wheat appears to have been widespread in Roman Gaul, where the resulting wheat-beer was 'drunk by the poorer classes' (Strabo, as cited by Hillman 1982).

The weed seeds which accompanied the corn-drier cereal remains are likely to originate from plants that had been harvested along with the malting crop. Nearly all of the weed seeds are associated with waste or cultivated ground, and the very abundant brome seeds, which has been a dominant crop weed in wheat fields in the past (www.igergru.bbsrc.ac.uk) suggest that it was particularly invasive at the site. In addition, there is evidence that brome has also been cultivated as a fodder crop in the past.

The samples taken from the terminus of Flue I contained very limited charred plant remains compared to those from the southern end of the flue and the stoking pit.

This could imply that the actual working platform or 'floor' of the kiln was well cleaned following its final use and subsequent collapse.

Similar charred plant assemblages were recovered from the nearby ditch terminus 3852 and pit 3619. However one noticeable difference was the lack of weed seeds in the pit, which suggests that some form of taphonomic process prevented their introduction into the feature.

Aside from the corn-drier and associated features, a number of other Romano-British features contained abundant charred plant remains. Pit 3897 was dominated by wheat grains, and unlike the features associated with the corn-drier, contained very little cereal chaff or weed seeds. Given the lack of processing waste it is possible that the material represents fully processed grain that was accidentally charred during cooking and subsequently thrown into the pit, or that it represents stored grain, which had been subsequently charred during the cleaning of the pit (Hillman 1981).

Pit 1051, meanwhile, contained very few cereal remains but abundant seeds of weeds associated with waste/cultivated land and damp/wet ground. It is likely that the charred remains from this pit represent the remains of plants growing in the outlying area, which were cleared, burnt and then subsequently dumped in the pit. The abundant seeds from plants of wet/damp ground suggest that some of this land, or at least the field boundary ditches, were flooded.

The charred plant remains associated with the inhumation burial (3412) were remarkably well preserved, and, like the other features from the site, were dominated by wheat/spelt wheat with lesser amounts of bread wheat. In addition, however, this sample contained ten possible 'emmer-type' wheat grains. The abundant chaff fragments, including glume bases, spikelet forks, culm nodes and palea/lemma fragments, plus the pristine nature of the cereal grains, suggests that the material represents ears of wheat, which were charred at a controlled temperature. Subsequently very little distortion had occurred, and unlike many other charred cereal assemblages, parts of the whole ear survived. Provided with this evidence, and given the context from which it came, it is tempting to suggest that these remains represent a ritual token, which was preserved through gentle charring and then placed with the body. A symbolic significance may also be suggested by the presence of possible emmer-type wheat in this assemblage, as emmer wheat was not present in any of the other Romano-British contexts. There is no other positive evidence for the cultivation of emmer at the site.

Charcoal

D Challinor

A total of 25 samples from features ranging in date from the Neolithic to the middle Saxon period was examined. The preservation of the charcoal was variable; the Saxon samples were very well preserved, but the earlier charcoal tended to be heavily incrustated with sediment or mineralised, making the recognition of diagnostic characteristics difficult.

Early Neolithic

Quercus (oak) was present in all assemblages, and *Fraxinus* (ash) was also well represented. The other species tended to be shrubs or hedgerow types, with the exception of *Clematis* (traveller's joy), which is a climber and may have entered the assemblage accidentally with fuel wood from a larger tree. The picture that emerges from the charcoal assemblages is that a range of wood from the available resources was used. Most contexts produced four different species; this indicates that fuel wood gathering was probably on an *ad hoc* basis and reflects what was easily available. Given the evidence for coppicing and pollarding from other contemporary sites in the region (eg Etton: Taylor 1988) it is likely that there was a successful woodland management regime operating here.

Early Bronze Age

Only two features from the early Bronze Age had identifiable charcoal, and *Quercus* was clearly dominant, with lesser quantities of other species. The assemblages are not dissimilar to the Neolithic pit samples, suggesting that the woodland resources were essentially unchanged.

Romano-British period

This period produced the greatest range of species; there is noticeably less *Quercus* than in the earlier periods (present in only four of the eight assemblages). The use of more typical wetland species such as *Alnus glutinosa* (alder) and *Frangula alnus* (alder buckthorn) does suggest a change in collection practices and/or local resources. Given that *Alnus* does not burn well (Edlin 1949), it seems plausible that the charcoal assemblage reflects the fact that the fen edge was closer to the site in the Romano-British period than in the Bronze Age (Hall 1987). The extensive use of fenland peat-cuttings for fuel at other sites indicates pressure on the woodland resources in this period (Murphy 2001), but there are no indications that this was the case at Parnwell.

The composition of the corn-drier samples was similar and the quantity of *Fraxinus* (ash) in the possible stoking pit (3539) suggests that this was the primary fuel wood. In addition, there were *Prunus* type thorns and charred buds in the assemblage. All of the Roman assemblages are very mixed, which suggests a lack of careful selection of fuel wood. This is not unusual in domestic contexts of this period (Challinor 2003).

Middle Saxon period

The charcoal assemblages from seven pits dating to the middle Saxon period were entirely dominated by *Quercus* (oak). Both heartwood and sapwood fragments were identified and two samples (from pits 502 and 3637) also contained burr wood pieces. Burrs are produced in oak trees in two situations; either the tree has been pollarded or the tree is very old (Mark Robinson pers. comm.). The occurrence of burrs suggests that either very mature and valuable oak wood was used, or that trimmings from large trees, cut for timber, were used for charcoal. Indeed, the absence of any domestic or industrial debris suggests that these features may have been charcoal-making pits.

Pollen

S Peggler

Monoliths from an early Neolithic pit (2289) and a Romano-British waterhole (3716) were submitted for palynological analysis.

Early Neolithic pit 2289

Pollen from the sediments of the pit is very sparse and generally badly preserved. Total pollen sums are very low, and indeterminable values high. However, the assemblages are mainly dominated by the pollen of herb taxa, particularly grasses (Poaceae) and dandelion-type (Asteraceae (Lactucoideae)), characteristic of meadows and pastures, suggesting an open environment during the time of fill. Some grains of trees and shrubs suggest that there was some woodland or scrub nearby. One grain of wheat (*Triticum*) was found, but obviously the very small pollen totals provide little evidence for arable cultivation.

Romano-British waterhole 3716

Pollen was generally sparse and of variable preservation. The pollen assemblages are dominated by herb pollen taxa (>90%) except for the two upper samples. This suggests that the local environment was very open at the time the sediments were laid down, possibly with some growth of secondary woodland/scrub by the time of the

uppermost fill (context 3518). This is evidenced by the decrease in herbs and concomitant increase in pollen values of trees and shrubs, particularly oak (*Quercus*), hazel (*Corylus*), and fern spores. This may mark the partial abandonment of the site, although some cereals were still being grown in the vicinity.

The dominant herb pollen taxon is grass (Poaceae), but there is evidence for arable cultivation with the occurrence of cereals including wheat and/or oats (*Triticum/Avena*), and barley (*Hordeum*-type). The taxon *Triticum* includes those grains with very large pore + annulus diameters — spelt or emmer (*Triticum spelta/T. dicoccum/T. compactum*) (Andersen 1978). Weeds characteristic of arable fields are also present. There is no evidence of any other crops, but these are small, limited pollen assemblages. The high grass (Poaceae) pollen values together with the occurrence of dandelion-type (Asteraceae (Lactucoideae)), daisy-type (*Aster*-type), ribwort plantain (*Plantago lanceolata*), sorrel (*Rumex acetosa*-type), and meadow buttercup-type (*Ranunculus acris*-type) are indicative of areas of meadows and pastures. Other taxa are characteristic of ruderal plant communities of waste and rough ground and waysides. The presence of the pollen of obligate aquatic taxa show that the feature had standing water.

Micromorphology, chemistry and magnetic susceptibility of Neolithic pit 2289

R I Macphail and J Crowther

Three monoliths from Neolithic pit 2289 were examined and described, and full results, data tables, analysis, thin section scans and photomicrographs are available in the archive.

The results provide some clues concerning the early Neolithic environment of acid/acidifying soils, and of fluctuating water tables affecting the lowermost fills of pit 2289 in particular (*eg* context 2418). They seem to reflect occupation (fires and butchery?), with charcoal-rich deposits that were perhaps originally ashy in character, and (now-ferruginised) bone waste (*eg* 2415/2290). Neolithic burned topsoils (*eg* Windmill Hill, Wiltshire), ‘midden’ accumulations (*eg* Hazleton, Gloucestershire) and possibly animal trampled midden spreads (*eg* Eton Rowing Lake, Middlesex; Colney, Norwich, Norfolk) have been recorded elsewhere (Macphail and Linderholm 2004). It is therefore possible to suggest that the pit fills represent a series of occupation ‘events’, related to the silting of 2289, and more rapid backfilling/dumping upwards.

It is also possible to infer the presence of stock, but this suggestion should be regarded with caution without corroborative evidence, as only this one pit was studied.

Although short-lived biological activity (in the form of burrowing) is recorded throughout, no period of stasis appears to have occurred between dumping episodes, indicating rather rapid infilling overall. If populations return to sites, periods of total biological homogenisation of earlier deposits are recorded before renewed dumping events, as found for example in pitted areas at early Neolithic Ecsegfalva, Hungary (Whittle forthcoming). This does not seem to have been the case at Parnwell.

Discussion

The excavations at Parnwell represented the first opportunity to investigate an extensive area of the clay hinterland lying adjacent to the gravel terraces surrounding Flag Fen. The results thus provide a useful counterpoint to the intensive investigations of the gravel terraces at Fengate (Pryor 2001) and around the northern and eastern edge of the Fen (*eg* Gibson and Knight 2002; Patten 2003; 2004). This concluding section will consider the contribution of the evidence from Parnwell to our understanding of the long-term development of this important archaeological landscape.

Early Neolithic occupation

Landscape context

The discovery of the early Neolithic pit complex at Parnwell fills a lacuna in the prehistoric occupation sequence of the Flag Fen basin and its immediate hinterland. Earlier Neolithic features from the Fengate investigations have been relatively sparse, and mainly limited to evidence for funerary ritual. This includes the Site 11 ‘mortuary enclosure’ (Pryor 1993), the ‘funerary house’ at Padholme Road (Pryor 1974) and the multiple burial and ‘mortuary structure’ at Cat’s Water (Pryor 1984; 2001). The only possible ‘settlement’ evidence takes the form of two small pits at Newark Road (Pryor 1980) and a third at Edgerley Drain Road (Beadsmoore 2005). Notably, all of the pottery from the Fengate sites is of plain bowl or ‘Grimston’ type, in contrast to the decorated bowl (‘Mildenhall’) wares seen at Parnwell. This may imply that the Parnwell occupation belongs to a later stage of the period than the

uppermost fill (context 3518). This is evidenced by the decrease in herbs and concomitant increase in pollen values of trees and shrubs, particularly oak (*Quercus*), hazel (*Corylus*), and fern spores. This may mark the partial abandonment of the site, although some cereals were still being grown in the vicinity.

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Fengate sites, although our understanding of Neolithic ceramic development in East Anglia is not strong enough for certainty on this point.

Although Parnwell thus stands alone as the only site of its type in the local area, similar 'pit settlements' with decorated bowl associations are well known from other parts of East Anglia, particularly in Norfolk and Suffolk. Recent work has shown that such sites are invariably found on gravel or sand, and typically occupy locations that are low lying but locally elevated over river valleys (Garrow 2005). The Parnwell settlement conforms to this pattern, being strictly confined to the gravel band at the south-eastern edge of excavated area, and not extending onto the clays. Current understanding of the local Neolithic environment suggests that the site was located just to the north of, and slightly above, alluvial deposits belonging to the Nene/Cat's Water river system. The fen edge would have lain at least 2.5km to the south-east of the site (Hall 1987; French and Pryor 1993, fig. 42).

Pollen evidence from pit 2289 suggests that the site was located within a largely open, grassland environment, with some woodland or scrub in the vicinity. The charcoal assemblage includes a range of taxa, suggesting that there was no pressure on woodland resources. This is consistent with the environmental evidence from the Fengate investigations, which indicates that a combination of woodland and grazing land developed during the Neolithic, with only a minor element of arable cultivation (French 2001, 400).

Settlement structure and depositional practices

The full extent of the occupation at Parnwell is unclear. The pit complex was located very close to the eastern limit of excavation, and hence is likely to have continued beyond it. Small amounts of residual early Neolithic pottery and flint (including a leaf-shaped arrowhead from the evaluation: Williams and Webley 2004) were recovered from Area 3, c. 200m to the south-west of the pit group, and may derive from further features which had been obliterated by the Romano-British settlement. This would suggest that occupation from this period was either very extensive or had more than one focus. Some early Neolithic settlements elsewhere in East Anglia comprised over 200 pits spread over comparably large distances of 50–170m, as at Hurst Fen, Suffolk (Clark 1960) and Kilverstone, Norfolk (Garrow *et al.* 2005). A feature of several of the larger East Anglian pit settlements is that they were composed of a series of smaller and fairly discrete 'pit clusters', often linear or sub-

rectangular in form (Garrow 2005). This phenomenon can be seen at Parnwell with pit cluster 2315, a discrete V-shaped arrangement of seven pits.

Most of the pits were fairly small, and had been rapidly back-filled with a single homogeneous deposit. These fills often had a high charcoal content, and contained mixed assemblages including pottery sherds, worked flint, animal bone, and charred nuts, grains and seeds, suggesting that they represent redeposited 'midden' or 'occupation' material. There was no hint of deliberate selection or placement of objects, in contrast to the pits from the Etton causewayed enclosure, 10km to the north-west, which frequently contained 'special deposits' such as complete stone axes (Pryor 1998). Similar small pits back-filled with occupation material are a ubiquitous feature of early Neolithic settlements in East Anglia (Garrow 2005) and elsewhere in southern England (Thomas 1999). As no 'practical' function can be identified for these pits, it is difficult to avoid the conclusion that they were dug in order to receive the material that was deposited within them.

Much more unusual was large pit 2289, which measured 3.25m in diameter and 1.18m deep and had a more complex depositional history. Early Neolithic pits elsewhere in East Anglia are almost always significantly shallower than this (Garrow 2005), with pits above 1m deep only previously recorded at Broome Heath, Norfolk (Wainwright 1972). The pit had been left open for a period, to partially fill through silting and erosion, before it was rapidly back-filled with 'occupation material' in a similar way to the smaller pits. Micromorphological analysis showed that this occupation material contained hearth debris and possible fine butchery waste (see Crowther and Macphail above).

Finds and activities

The finds from the pits suggest that a variety of activities were carried out at the site. The pottery assemblage comprises vessels of varying sizes, including one unusual small cup. The flint assemblage similarly includes a range of tool types, including a notable number of serrated flakes with silica gloss suggesting use in plant working. The relatively low numbers of cores and chips do however suggest that flint knapping was not a major activity at the site. Two flakes from polished axes of Cumbrian origin represent the only recognisably non-local objects. Artefact types found at some other contemporary sites in East Anglia but absent at Parnwell include hammerstones, querns and quern rubbers. However, given the relatively small number of features excavated, these absences may not be significant.

Due partly to acid soil conditions, animal bone is scarce or absent from most early Neolithic sites in East Anglia, and the faunal assemblage from Parnwell is thus of some interest. As in other regions of southern Britain, cattle were clearly of importance, with smaller numbers of sheep/goats and pigs also consumed. Wild animal remains were absent. The charred plant remains show a mix of wild and cultivated foodstuffs typical for the period. Hazelnuts, crab apples and possibly fat-hen were gathered, while at least some cereals were grown, including both wheat and barley. Assessing the relative dietary importance of wild and cultivated plant foods is difficult, however, due to potential issues of differential preservation.

Settlement dynamics

Recent discussions of early Neolithic settlement have emphasised the extent of residential mobility. The general lack of evidence for robust structures, combined with the shallow and short-lived nature of most pits, has suggested that individual sites were typically occupied for short periods at a time (Whittle 1997; Edmonds 1999; Thomas 1999). It is argued that the digging and filling of pits at these sites served to commemorate particular events or periods of occupation, to 'render activity memorable' and 'give meaning to place' (Thomas 1999, 72). In East Anglia, it has been argued that the individual pit clusters within the large 'pit settlements' each represent a single discrete episode of occupation. This is supported by the fact that close similarities in pottery types, or actual sherd joins, often occur between pits within a single cluster but not between those from different clusters (Healy 1988; Garrow 2005; Garrow *et al.* 2005).

At Parnwell, pit 2289 jars slightly with this model. It would have required a significant investment of effort to construct, and appears to have had a relatively lengthy life-cycle before its ultimate in-filling. Perhaps it marked a different kind of event, or a longer episode of occupation, than was typical for sites of this type. Although pit 2289 is unusual, it is not unique. Specifically, it is similar to many of the pits from Broome Heath, which were up to 1.60m deep with complex sequences of fills, and in some cases showed evidence for recuts (Wainwright 1972). The large features from Parnwell and Broome Heath remind us that early Neolithic settlement dynamics are unlikely to have conformed to any single, simple model. While brief, small-scale visitations may have been the norm, certain sites may also have seen other forms of occupation.

Early Bronze Age occupation

The early Bronze Age occupation consisted of six pits and hollows dispersed across an area of 125m on the highest part of the site, associated with Collared Urn and Biconical Urn ceramics. Again, the limitations of the excavated area mean that the full extent of the occupation is unclear. Intriguingly, Bronze Age remains including “Beaker hut sites, Bronze Age cinery urn and cremation ditches etc.” were reportedly found just 200m to the south-east of the site by the early 20th century antiquarian George Wyman Abbott, but no further details of this discovery are known (RCHM 1969, 8).

The discovery of the Parnwell pit group alters our understanding of the local early Bronze Age landscape, as it was previously thought that occupation was restricted to the gravels and cornbrash, with the clays not colonised until the Iron Age (Hall 1987, 60). However, despite its unusual topographic location the occupation at Parnwell appears to be fairly typical of the period. A number of similar pit groups associated with Collared Urn pottery have been found dotted around the Flag Fen basin and its immediate hinterland, including sites on the Fengate terrace at Edgerley Drain Road (Beadsmoore 2005), Newark Road (Pryor 1980) and Third Drove (Evans and Pryor 2001, 31); on the higher ground to the west of Fengate at Peterborough Prison (M. Knight 2002); on the Eye peninsula at Tanholt Quarry (Patten 2003; 2004); and on Whittlesey island at Bradley Fen/King’s Dyke West (Gibson and Knight 2002; Knight forthcoming). The pits from these sites vary widely in size, but have typically produced only modest quantities of finds; evidence for other associated structures is absent. These traits are typical of early Bronze Age occupation sites within East Anglia as a whole (Healy 1995; Garrow 2005). In most cases, the pits are fairly dispersed and unfocussed in their distribution, although discrete circular clusters of pits occur at Edgerley Drain Road and Bradley Fen/King’s Dyke West. Activity was particularly dense at the latter site, where the pits were found in association with ring ditches and cremation burials. The pattern that may thus be emerging is that activity was generally dispersed in character, but became more intense where there were monuments to act as a focus (Mark Knight pers. comm.). Perhaps occupation of Parnwell and most other sites was relatively short-lived and involved fairly small groups of people, while some favoured, monumentalised locales were returned to repeatedly, or were the venue for larger gatherings. This would fit with current models derived from other areas of southern Britain, which suggest that the early

Bronze Age was similar to the Neolithic in being characterised by a significant degree of residential mobility (Brück 1999).

The early Bronze Age features at Parnwell show wide variation in their size, form and fills. The shallow, irregular feature 1086 may represent utilisation of a natural hollow or tree-throw hole. The remaining features can all be characterised as pits, but as with the early Neolithic occupation, suggesting specific 'functions' for these features is difficult. Some of the pits may have silted up naturally, although at least one (1008) appears to have been deliberately back-filled. There are few indications of the nature of the activities taking place on the site, as artefacts were limited to modest amounts of pottery and worked flint, and preservation of animal bone and charred plant remains was poor.

One notable absence from the Bronze Age landscape at Parnwell is any trace of field systems or other forms of land division. Bronze Age field systems have been found extending across large areas of the gravel terraces around Flag Fen, at between 3–6m OD, and are argued to have been of mainly pastoral use. They were probably largely a middle Bronze Age phenomenon, as they post-date early Bronze Age settlement features or ring ditches at several sites in the area (Pryor 2001; Beadsmoore 2005). Recent excavations have suggested that the well-known field system complex at Fengate extended much further north, reaching as far as Edgerley Drain Road, 800m south of the site (Beadsmoore 2005), and probably Oxney Road, only 500m to the south-east (Britchfield 2002). While it is possible that Bronze Age field boundaries at Parnwell could have been completely removed by truncation, the survival of the Romano-British field system suggests that the absence is real. The negative evidence from Parnwell may thus define the northern edge of the Fengate field system, suggesting that the clays were avoided when this ordered landscape was laid out. As the charcoal assemblage from the early Bronze Age pits was characteristic of mature woodland (see Challinor above), it is conceivable that the site still carried significant tree cover during the early to middle 2nd millennium BC.

Middle to late Iron Age occupation

Evidence for occupation during the middle to late Iron Age was slight, limited to a small cluster of gullies and other features at the south-western edge of Area 3, containing handmade Scored Ware pottery. This may only have formed part of a larger area of settlement, however. Two further pits containing Scored Ware were

found 90m to the south-east during the CAU evaluation of the adjacent field (Williams 2004). Furthermore, a pre-conquest origin for the earliest phase of the Romano-British settlement enclosure cannot be ruled out, given the lack of datable finds from its lower fills (see below). It is therefore possible that occupation at the site continued without a break from the later Iron Age into the Roman period, with the core of the Iron Age settlement perhaps lying beyond the limits of the excavation. Little can be said about the character of the occupation at Parnwell, except that it forms part of a pattern of fairly dense later Iron Age settlement around Flag Fen (Hall 1987, fig. 44), including excavated sites such as Cat's Water (Pryor 1984) and Bradley Fen (Knight forthcoming).

Romano-British settlement, agriculture and burial

The Romano-British landscape at Parnwell

The southern end of the site was occupied by a small, enclosed Romano-British settlement, which can be traced as a cropmark into the adjacent field (Fig. 15).

The early phase of the settlement (Enclosure A) had an organic, curvilinear form. As noted above, the absence of diagnostic artefacts from the lower fills of this enclosure makes its date of construction uncertain, but it seems to have been abandoned at an early stage of the 2nd century AD. The general paucity of finds other than animal bone from the excavated part of the enclosure suggests that it was somewhat peripheral, with the core of occupation at this time perhaps lying to the south. The settlement was subsequently remodelled as the more regular, rectilinear Enclosure B, which produced a larger finds assemblage, predominantly dating to the 2nd century. The cropmark evidence suggests that the total size of this enclosure was 120m by at least 140m, although its full extent to the south-east is masked by modern buildings.

The settlement was set within an extensive rectilinear field system on the same alignment as Enclosure B. A small cremation cemetery lay within this field system, to the north-east of the settlement. To the north of the settlement, meanwhile, a curvilinear trackway and a small cluster of pits was uncovered, perhaps representing a subsidiary area of occupation. Where present, datable ceramics from these features again mainly belonged to the 2nd century AD.

The pollen evidence indicates that the site lay within a very open landscape of meadows and arable fields, mirroring the picture gained from the Fengate investigations (French 2001, 403; Boreham 2005). The edge of Flag Fen lay *c* 500m

to the south-east of the site at this time, with a narrow fen inlet only *c* 150m from the northern boundary of the site perhaps developing during the course of the Roman period (Fig. 16; Hall 1987, 34).

The character of the settlement

The settlement can be probably be characterised as a farmstead, perhaps occupied by an extended family group (Hingley 1989). The artefactual, faunal and botanical remains from the site all suggest a community engaged in mixed agriculture. Evidence for other activities was sparse, with residues of such crafts such as textile working, potting and metalworking all absent from the excavated part of the settlement. Forms of material culture traditionally regarded as indicating 'wealth' or 'status' were also very scarce. The pottery assemblage was dominated by local wares, and the vessel forms are similar to those from other modest rural sites in the region (see Stansbie above). Similarly, the assemblage of metalwork and glass was very limited both in size and pretension, despite the fact that the settlement was subjected to a metal detector survey. There are also no indications of the presence of any 'high status' buildings, as the modestly sized assemblage of brick and tile seems unlikely to derive from a domestic context (see below). It is of course possible that the excavated part of the settlement was a peripheral area, and that the apparent poverty of the finds is thus misleading. However, the CAU evaluation of the southern part of the settlement produced an equally modest pottery assemblage, with other 'status' indicators again absent (Williams 2004).

The character of the settlement seems to fit with others in the local area. Excavation and survey work have shown a pattern of dense settlement during the Roman period around Flag Fen and on the higher ground to the west (Fig. 16; Hall 1987; Pryor 2001). Excavated sites such as Cat's Water (mid to late 2nd century AD; Pryor 1984), Tower Works (late 2nd to 4th centuries AD; Brudenell 2005) and Paston (late 2nd to early 4th centuries AD; Coates *et al.* 2001) seem also to have been modest enclosed farmsteads with a mixed agricultural base. In each case, the ceramic assemblages were quotidian and dominated by local products, and there were few other 'status indicators', although a small fragment of painted plaster at Paston may hint at a building of some pretension nearby (Coates *et al.* 2001, 35). Overall, it seems that the group inhabiting the settlement at Parnwell was similar to others in the local area, either being relatively 'low status' or choosing to invest in non-classicising forms of display such as livestock control or feasting (Taylor 2001, 56).

Settlement structure

There is little evidence for the use of space within Enclosure A, due to its lack of associated features and finds. However, some comments can be made about the layout of Enclosure B and its associated artefact distributions.

The excavated part of Enclosure B was dominated by two double-ditched trackways, entering the settlement from the north-west (Trackway I) and the north-east (Trackway II). Both trackways ran far into the interior of the enclosure, terminating close together in the same central area of the settlement. While the exact purpose of these trackways is uncertain, they clearly show a concern with demarcating the 'proper' paths of movement of people or livestock into the settlement.

The only feature located in the area where the two trackways terminated was post-built structure 3783, although in the absence of any finds from this structure its contemporaneity cannot be proven. It may represent an aisled building, although it would be a modestly sized example, measuring at least 11.5m long but with a nave width of only 4m. In a regional context, this is significantly smaller than the aisled buildings from Lynch Farm (8km to the south-west: Wild 1973) and Orton Hall Farm (6km to the south-west: Mackreth 1996), which contained features such as hearths and ovens and probably combined a range of 'domestic' functions. It is, however, similar in size and in its lack of associated finds to the smaller 'barns' at Haddon, 11km to the south-west, suggested to have been storage structures or byres (Hinman 2003). Structure 3783 could perhaps have had a similar ancillary or agricultural role, possibly associated with its location at the terminus of the trackways.

The area to the north of the trackways was divided into sub-compounds by a series of ditches and gullies. Features present within these sub-compounds were fairly sparse, including a few pits, corn-drier 3548 (see below), and large 'waterhole' 3716. The latter feature could possibly have originated as a clay extraction pit, but once created it probably served a useful role as a sump (in the winter) and as a water source (especially in the summer).

The apparent 'emptiness' of many of the sub-compounds is a common feature of rural settlements in eastern England. This could suggest that paddocks or horticultural plots were often present within settlement enclosures. More likely, however, is that it reflects the use of building techniques that lacked deep earth-fast foundations, and hence are susceptible to truncation. Given these problems, artefact

distributions have an important role to play in analysing the use of settlement space within the region. At Parnwell, it is notable that the distribution of pottery shows a marked concentration in the north-eastern corner of Enclosure B. This could imply that this area was a focus of occupation, despite the absence of evidence for structures. Alternatively, it could simply have been an area of middening. Meanwhile, the distribution of tile was markedly different, focussing on the western half of the enclosure. This suggests that most of the tile derives from the superstructure of the corn-drier, supporting the observation that it is unlikely to have come from a building as imbrices are absent (see C. Poole above).

The agrarian base

Although the recovered plan of the field system is somewhat fragmentary, it seems to be characterised by relatively narrow linear strips, between 8 and 11m wide. Superficially, this differs from the patterns of rectangular fields dated to the later Iron Age and Romano-British period which have been identified elsewhere around the Flag Fen basin (Pryor 2001). However, excavation of one such field system at Tanholt Quarry, Eye (dated to the 2nd–3rd century AD) has shown that one of the rectangular plots was divided into a series of similar strips, measuring 48m long and 8m wide (Patten 2004). This form of field division must presumably have been associated with arable rather than pastoral use. While its specific purpose is unclear, it could perhaps relate to some form of horticulture. It is uncertain whether it represents a similar form of land use to the so-called ‘lazybed’ cultivation of very narrow strips (c 4m wide) seen at Romano-British sites elsewhere in Cambridgeshire at Godmanchester (Green 1978) and Cottenham (Clark 1949).

The charred plant remains from the settlement suggest that, as at other sites in the local area, spelt wheat was the main cereal crop. Bread wheat, barley, oats, rye and possibly peas were also grown. The weed flora suggest that not only heavy clay soils, but also lighter well-drained soils were under cultivation. The farmland associated with the settlement may thus have extended beyond the clays and on to the surrounding gravels.

The significance of cereals to the economy of the site is underlined by corn-drier 3548, a substantial structure built from limestone blocks. The nearest outcrops of limestone lie some 1.5km to the south-west of the site, although it is of course possible that the stone could have been reused from an earlier structure, rather than brought in specifically for this purpose. Comparable stone-lined corn-driers have

been found at a number of rural settlements in the Peterborough area (Table 13). These first appeared from the late 2nd/early 3rd century onwards, mirroring the later Roman emphasis in dating seen elsewhere in Britain (Morris 1979). They show a wide diversity of forms, suggesting piecemeal local adoption of this innovation rather than construction by specialists; Wild's (1974, 155) comment that 'each farmer had his own ideas' about how a corn-drier should be built still seems apposite. The most similar example to the Parnwell drier is that from Phase 4 at Orton Hall Farm (*c* AD 300/325–375), which also had an arrangement of two flues meeting at right angles and sharing a single stoking area (Mackreth 1996).

Romano-British corn-driers are argued to have been multi-functional structures, used both for roasting malt for the purposes of brewing, and for parching grain for storage or consumption (van der Veen 1989). At Parnwell, the charred plant remains show that the drier was used to roast malt in the form of germinated spelt wheat. Unfortunately, few botanical analyses are available from the other corn-driers in the region. However, those from Barnack (Simpson 1993) and Haddon (Fryer 2003) both contained mixtures of spelt grain and chaff along with detached embryos of indeterminate species, suggesting that they too were involved in malting. The production of wheat beer may thus have been a common activity for rural communities in the area. It should be remembered, however, that the material found within these corn-driers is likely to relate mainly to their final episode of use. Cleaning or raking out of the flues will have removed material deriving from the earlier use of the structures, when they could have been employed for other tasks.

The small size of the faunal assemblage from Parnwell prevents any detailed reconstruction of animal husbandry practices. However, it can be noted that cattle were the most numerous species, in common with several other rural settlements in the area such as Paston and Tower Works, but in contrast to sites further east in the Fens 'proper', where sheep are typically dominant (Malim 2005, 169). The high proportions of horse bone from the site (34% of the four main domestic species) are rather more unusual. Sheep/goats, pigs and dogs were found in much smaller numbers, and remains of domestic fowl were recovered from a cremation burial. Given the limited area excavated, it is possible that the dominance of cattle and horse remains does not closely reflect the economy of the site, but relates to selective deposition of the butchered remains of large animals at the periphery of the settlement (see K. Poole above). Some evidence for dairying is provided by a single ceramic

'cheese press'. Similar objects have been found elsewhere in the local area at sites such as Cat's Water (Hayes 1984, fig. 131, no. 82). The unusually high frequency of cheese presses at sites within the Fenland region as a whole may suggest that cheese-making formed a particularly important part of the subsistence economy (Hancocks *et al.* 1998, 78; Evans 2003, 104; Malim 2005).

Despite the close proximity of the fen edge, evidence for the use of wetland resources was limited. The charcoal assemblage indicates that alder carr woodland was used for gathering fuel. Although individual fish, goose, mallard and snipe bones were present, it would seem that fishing and fowling made little contribution to the economy of the settlement. The frequencies of wetland species are similarly low in faunal assemblages from other contemporary sites around Flag Fen and its western hinterland (*eg* Baxter 2003). It would appear that local rural communities followed 'typical' Romano-British mixed farming regimes, in which the fenland played only a peripheral role, except for its presumed importance as an area of summer pasture.

Burials and 'structured deposits'

Both cremation and inhumation burial was practised by the community at Parnwell, although the paucity of dating evidence makes it unclear whether there was any chronological shift from one rite to the other. The three cremation burials had been placed in a small cemetery located outside the settlement, while the three inhumations were located at boundary locations within the settlement itself. All of the ageable individuals were adults, although sexing the remains proved more difficult.

The cremation cemetery had been severely affected by truncation, but appears to represent a typical small rural burial ground, with fairly modestly furnished graves. One of the burials was interred at some time around the mid 2nd century AD, while the others cannot be closely dated. Some variation in the nature of the mortuary rite is apparent. Burial 2037 — a mature woman — contained pyre goods mixed in with the ashes, including domestic fowl bone, hobnails, and fragments of glass. In contrast, burial 2041 — an unsexed mature individual — contained goods which had been placed in the grave separately from the ashes, including a pot and a copper alloy trumpet brooch.

The placing of inhumation burials at 'liminal' locations within or alongside enclosure ditches is a well-known phenomenon within Romano-British rural settlements (Pearce 1999; Esmonde Cleary 2000). Disarticulated human bone from the upper fill of ditch 3854 (Enclosure A) may well represent an inhumation interred

within this feature, but disturbed by later activity (*eg* pit 3897). The other two inhumations were interred in rectangular graves, located alongside the outer boundary ditch of Enclosure B. In the absence of any dating evidence from the graves, a chronological association with Enclosure B remains inferred rather than proven. As a caveat, it can be noted that at some other sites in eastern England, unaccompanied inhumation burials were inserted into long-abandoned settlement enclosures during the 4th century AD (*eg* Great Barford, Bedfordshire: OA forthcoming). Although neither of the inhumation burials had any grave goods, burial 3412 contained several patches of charred material. A sample from the grave identified an unusual charred plant assemblage, including rose, elder and possible ears of wheat. This cannot be directly paralleled, although Philpott (1991, 195) lists a few cases in which charred cereal grains or possible sprigs or wreaths of leaves had been placed within Romano-British inhumation burials.

A partial dog skeleton from ditch 3710 (Enclosure B) was the only articulated animal deposit identified from the settlement. Other forms of 'structured deposit' were also difficult to identify, although a near-complete jar-beaker from the terminus of ditch 3852 (Enclosure B) could represent a deliberately placed object.

Abandonment

The ceramic evidence from both the excavated area of the settlement and the evaluated area to the south suggests that activity may already have begun to decline in the late 2nd century AD, and largely ceased at some point during the 3rd century. Pollen evidence from the uppermost fill of waterhole 3716 — which contained some of the few pieces of 4th century pottery from the site — suggests growth of secondary woodland or scrub, particularly oak and hazel. This may suggest that we are not simply dealing with a short-distance shift in settlement location, but actual abandonment of the area.

The reasons for the abandonment of the settlement may have been entirely contingent, relating to the biography of this particular residential group rather than to any wider trends. However, there are also indications of settlement abandonment on the Fengate terrace at this time, with occupation at Cat's Water and the neighbouring Storey's Bar Road site going into decline in the late 2nd century AD (Pryor 1984). It has been suggested that these sites were abandoned due to increasing wetness, with occupation shifting to the higher ground to the west, to sites such as Tower Works (Pryor 2001; Brudenell 2005). Certainly, the Cat's Water and Storey's Bar Road sites

were subsequently overlain with freshwater flood deposits during the mid 3rd century, and show no evidence for activity beyond that point. This formed part of a wider flooding episode in the Fenland region at this time, in which extensive areas up to the 3m OD contour became at least seasonally wet (French 2001). Recent excavations just 500m to the south-east of Parnwell at Oxney Road have identified flood deposits probably associated with this episode (Britchfield 2002). Lying at *c* 5m OD, the settlement at Parnwell would have been safe from inundation, but any associated farmland on the lower ground to the north, east and south of the site may have become wet at this time, potentially weakening the economic base of the community.

The late 2nd century decline and 3rd century abandonment of the Parnwell site may thus have been related to a wider episode of disruption to local settlement and socio-economic networks. While there has been much discussion of the role of wetter conditions in causing these problems, it should be remembered that flooding can be a consequence as much as a cause of social disruption, if for example drainage works are not properly maintained (Malim 2005).

Post-Roman land use

The discovery of features radiocarbon dated to the 7th–9th centuries cal AD was unexpected, as very little evidence for Anglo-Saxon activity has hitherto been found around the Flag Fen basin (Hall 1987; Pryor 2001). The activity at Parnwell was, however, of a limited and specific kind. The 57 charcoal-rich pits from this period contained virtually no artefactual material, indicating that there was no permanent settlement in the immediate vicinity. Furthermore, the scattered, unfocused distribution of the pits is suggestive of sporadic visits to the site, rather than concerted occupation. In the absence of metalworking slag, briquetage or other evidence for a specific craft or industrial function, the most likely interpretation of these features is that they represent the truncated bases of pits or clamps used in charcoal production. This is supported by the exclusive use of oak in the pits, a wood historically favoured for charcoal making (Harris *et al.* 2003). The presence of burrs in some of the charcoal would be consistent with woodland management in the form of pollarding. The identification of charcoal production at this site is significant for our understanding of local landscape development, as in combination with the pollen evidence from waterhole 3716 it suggests regeneration of woodland during the late Roman/post-Roman period. It must be stated, however, that there were no tree-root

boles to confirm this, although such features could well have been lost to medieval/post-medieval truncation.

Evidence for charcoal production prior to the middle ages has hitherto been scant, but evidence comparable to that from Parnwell has recently been found at some other sites in southern England, suggesting that the industry was quite widespread during the Saxon period. The nearest example is 19km to the west at Cross Leys Quarry, Wittering, Cambridgeshire, where several clusters of charcoal-filled pits have been found, radiocarbon dated to *c.* cal AD 520–660 (see <http://www.peterboroughheritage.org.uk/museum/archaeology%20update2.htm>). At Mayton Wood, Norfolk, 27 shallow pits containing significant amounts of charcoal and evidence of *in situ* burning have been suggested to relate to charcoal burning, and have again produced radiocarbon evidence for a middle Saxon date (Gurney and Penn 2005). Further afield, at Bestwall Quarry, Dorset, nearly 1000 oak charcoal-filled pits have been found scattered across a wide area, with radiocarbon determinations indicating use between *c.* cal AD 700–850 (see <http://www.bestwall.co.uk>). At both Cross Leys Quarry and Bestwall, the pits were associated with contemporary ironworking features, indicating that the charcoal was used to fuel furnaces. As this was not the case at Parnwell, the purpose of the charcoal production is uncertain. It could have been carried out over an extended period by a local community, for purely domestic purposes, although Peterborough and Thorney Abbeys (both founded in the mid 7th century) are known to have had extensive holdings in the local area (Hall 1987, 66).

The cropmarks of ridge and furrow cultivation which extend across most of the site (SMR 03022) do however indicate that the area had been cleared of tree cover and put under the plough by the medieval or earlier post-medieval period. The site may have formed part of the open fields of Newark village (RCHM 1969, 8), or could alternatively have been farmed from the moated complex at Oxney House, 150m to the east, which originated in or before the 11th century as a grange of Peterborough Abbey (RCHM 1969, 7). No trace of the ridge and furrow system was encountered during the excavation, indicating that it did not penetrate the subsoil. However, the trackway seen in the aerial photographic evidence, and apparently respected by the furrows, was uncovered at the south-eastern edge of the site. The ditches flanking the trackway produced only post-medieval material. On the enclosure map of 1821 this

trackway is labelled 'Private Road', and is shown to continue eastwards to Oxney House.

It is notable that the trackway and ridge and furrow both follow a very similar NE-SW/NW-SE alignment to the Romano-British settlement and field system. This could simply be coincidence. However, it is also conceivable that despite the apparent evidence for reversion to woodland in the post-Roman period, there was some continuity in the axis of land division in the local landscape. Alternatively, the layout of the medieval landscape could have been influenced by the presence of upstanding Romano-British earthworks, without any actual continuity of land use in the intervening period. In several other parts of Cambridgeshire the medieval agricultural landscape appears to have followed Romano-British precursors, evidence which Oosthuizen (1997; 1998) has used to argue the case for direct continuity in patterns of land use.

Acknowledgements

Many thanks are due to Raven Group Developments Ltd for funding the excavation and publication. Paul Chadwick (CgMs Consulting) and Ben Robinson (Peterborough Council) are also thanked for their work in facilitating the project.

The fieldwork was directed by Andy Simmons and managed by Annie Bingham. The post-excavation work was managed by Alex Smith, who also edited the report. The author is thankful to the numerous OA staff who worked on the project, whether in the field or at the post-excavation phase. Denise Druce would also like to thank Jacqui Huntley and Elizabeth Huckerby for their assistance with the charred plant analysis. Emma Beadsmoore and Mark Knight at Cambridge Archaeological Unit and Duncan Garrow at the University of Oxford kindly provided unpublished information.

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Table 1: Early Neolithic pits

Feature	Diameter (m)	Depth (m)	% Excavated	Pottery (g)	Worked flint (no.)	Animal bone (g)
2289	3.25	1.18	100	1517	105	3587
2365	0.52	0.10	50	15	-	-
2374	1.18	0.40	50	8	-	-
2399	0.90	0.35	50	19	5	-
2283*	0.71	0.16	100	20	26	2
2285*	1.06	0.20	100	95	3	11
2287*	0.74	0.18	100	31	9	4
2303*	1.00	0.11	100	17	-	-
2305*	0.86	0.12	100	-	-	-
2307*	0.60	0.19	100	-	3	-
2309*	0.76	0.14	100	-	-	-

* = Pit group 2315

Table 2: Early Bronze Age features

Feature	Diameter (m)	Depth (m)	Pottery (g)	Worked flint (no.)	Animal bone (g)
415	0.88	0.28	3	-	-
474	2.00	0.70	3	-	22
1008	2.50 x 1.90	0.90	91	4	-
1041	1.50 x 1.30	0.50	17	-	-
1062	0.70	0.15	-	1	-
1086	4.40 x 3.06	0.20	298	14	10

Table 3: Radiocarbon determinations

Lab no.	Context	Radiocarbon age BP	$\delta^{13}\text{C}$ (‰)	Material	Context type	Calibrated date range (95% confidence)
NZA 24073	1084	3558 ± 30	-26.6	Charcoal (Betulaceae)	Upper fill of Phase 2 hollow 1086	2009-2000 cal BC/ 1974-1870 cal BC/ 1844-1812 cal BC/ 1801-1776 cal BC
NZA 24074	1028	1220 ± 30	-27.1	Charcoal (non- <i>Quercus</i>)	Sole fill of Phase 5 pit 1027	cal AD 689-890
NZA 24075	2010	1288 ± 30	-25.6	Charcoal (non- <i>Quercus</i>)	Upper fill of Phase 5 pit 2008	cal AD 661-778
NZA 24076	2418	4728 ± 30	-24.3	Charred hazelnut shell	Second fill of nine, Phase 1 pit 2289	3632-3494 cal BC/ 3457-3375 cal BC
NZA 24077	2311	4736 ± 35	-24.1	Charred hazelnut shell	Sixth fill of nine, Phase 1 pit 2289	3635-3494 cal BC/ 3458-3375 cal BC

Table 4: Flint, summary of assemblage

Category	Early Neolithic features			Early Bronze Age features	Other features	Total
	Pit cluster 2315	Pit 2289	Pit 2399			
Flake	10	53	5	10	6	84
Blade	4	7		1	3	15
Bladelet	2	3		1		6
Blade-like flake	6	9		1	1	17
Core face/edge rejuvenation flake		1				1
Other rejuvenation flake	1	1			1	3
Irregular waste	2	7		1		10
Chip		5			1	6
Sieved chips	9	5		2	6	22
Multi-platform flake core		1				1
Levallois / other discoidal flake core					1	1
Unclassifiable / fragmentary core					1	1
Partially-worked nodule					1	1
Retouched flake	3	2			2	7
End-and-side scraper	1					1
Other scraper		2				2
Notch	1			1		2
Serrated flake	2	7			3	12
Piercer		1				1
Spurred piece					1	1
Plano-convex knife				1		1
Other knife				1		1
Unclassifiable / fragmentary arrowhead		1				1
Total	41	105	5	19	27	197
No. of burnt unworked flints	1	2		1	212	216
Weight (g) of burnt unworked flints	1	2		6	132	141
No. of burnt struck flints	9			1	1	24
No. of broken struck flints	2			4	7	60
No. of retouched flints (excluding chips)		13			6	41

Table 5: Iron Age and Roman pottery

Fabric	Description (NRFC codes in brackets)	Sherd No.	% by sherd no.	Weight (g)	MLA-LIA	% by weight			Broadly Roman	All phases
						LIA-Early Roman	Early Roman	Late Roman		
Iron Age										
AG2	Fine/moderate sand and grog	1	<1	3	<1					<1
AG3	Moderate sand and grog	3	<1	13	3					<1
AL3	Moderate sand and limestone	1	<1	43			<1			<1
AS2	Fine/moderate sand and shell	1	<1	1	<1					<1
AS3	Moderate sand and shell	8	<1	141	29					<1
AS4	Moderate/coarse sand and shell	4	<1	21			<1			<1
AV3	Moderate sand and vegetable/organic	1	<1	68	14					<1
GL3	Moderate grog and limestone	3	<1	12			<1			<1
GS3	Moderate grog and shell	20	1.4	181	37					<1
SL2	Fine/moderate shell and limestone	2	<1	19	4					<1
SL3	Moderate shell and limestone	6	<1	64	13					<1
Roman										
B11	Dorset black-burnished ware (DOR BB 1)	1	<1	2				<1		<1
C10	Roman shelly ware	519	35.7	7211		14	47	20	45	35.7
E13	Shell and grog-tempered ware	16	1.1	73		38	<1	<1		<1
E80	Grog-tempered ware (SOB GT)	16	1.1	149		48	<1	<1	<1	<1
F51	Oxfordshire colour-coated ware (OXF RS)	3	<1	106				<1		<1
F52	Nene Valley colour-coated ware (LNV CC)	33	2.3	756			<1	10		3.7
M24	Lower Nene Valley white ware mortaria (LNV WH)	3	<1	129				2		<1
M41	Oxfordshire colour-coated mortaria (OXF RS)	1	<1	4				<1		<1
M57	Longthorpe mortaria	3	<1	545			6			<1
O20	Sandy oxidised ware	24	1.7	211			<1	<1	2	1.0
O57	Much Hadham oxidised ware (HAD OX)	1	<1	4				<1		<1
O58	Longthorpe oxidised ware	1	<1	8			<1			<1
Q61	Much Hadham oxidised white-slipped ware (HAD OX)	5	<1	12			<1			<1
R10	Fine reduced ware	10	<1	355			<1	4		1.8
R20	Sandy reduced ware	362	24.9	3489			20	10	18	17.3
R46	Lower Nene Valley reduced ware	343	23.6	4944			12	42	28	24.5
R47	Lower Nene Valley grey-slipped reduced ware	10	<1	395			2	3		1.93
R50	Black surfaced ware	11	<1	193			<1	<1	6	<1
R90	Reduced coarse-tempered ware	1	<1	80				1		<1
S20	South Gaulish samian ware	3	<1	65			<1			<1
S30	Central Gaulish samian ware	19	1.3	395			4	<1		2.0
W10	Fine white ware	1	<1	1					<1	<1
W14	Lower Nene Valley white ware	16	1.1	486			3	3		2.4
W20	Sandy white ware	2	<1	9			<1			<1
Total		1454	100.0	20188						100.0

Table 8: Roman ceramic building material, quantities (count and weight) by form and fabric

Fabric	Tegula		Box flue		Brick		Flat/unidentified		Roof (flat)		% by weight
	No.	Weight (g)	No.	Weight (g)	No.	Weight (g)	No.	Weight (g)	No.	Weight (g)	
A	7	2407	4	677	16	4113	19	509			83.0
B					3	208	2	85			3.2
C					7	1029	2	95	1	27	12.4
D							2	137			1.5
Total	7	2407	4	677	26	5350	25	826	1	27	
% by weight		25.9		7.3		57.6		8.9		0.3	100.0

Table 9: Faunal remains, Number of Identified Specimens (NISP) by phase. *=35 bones from a single articulated skeleton

Species	Early Neolithic	Early Bronze Age	Middle-late Iron Age	Romano-British	Middle Saxon	Unphased	Total
Cattle	71	4	1	66	-	13	155
Horse	-	-	-	54	-	1	55
Sheep/goat	1	-	4	36	1	2	44
Pig	4	-	-	3	-	-	7
Dog	-	-	-	38*	-	-	38*
Cat	-	-	-	1	-	-	1
Red deer	-	-	-	1	-	1	2
Hare	-	-	-	1	-	-	1
Domestic fowl	-	-	-	2	-	-	2
Goose	-	-	-	1	-	-	1
Mallard	-	-	-	1	-	-	1
Crow/rook	-	-	-	1	-	-	1
Snipe	-	-	-	1	-	-	1
Fish	-	-	-	1	-	-	1
Field/wood mouse	-	-	-	1	-	-	1
Mouse	-	-	-	1	-	-	1
Cf. Water vole	-	-	-	3	-	-	3
Field vole	-	-	-	3	-	-	3
Mouse/vole	-	-	1	14	-	-	15
Shrew	-	-	-	1	-	-	1
Frog/toad	-	-	-	4	-	-	4
Snake	-	-	-	5	-	-	5
Large	145	1	3	145	-	35	329
Medium	36	6	7	35	-	3	87
Small	-	-	1	20	-	-	21
Unidentified	538	17	44	530	2	107	1238
Total	821	28	61	932	3	136	1981

Table 10: Charred plant remains from early Neolithic pits. Figures given are actual counts

	Feature	2283	2287	2289	2289	2289
	Context	2284	2288	2311	2327	2416
	Sample no.	2034	2036	2333	2087	2060
	Sample size (litres)	30	20	40	40	40
Charred cereal grain						
<i>Triticum</i> sp.	Wheat	1				
<i>Hordeum vulgare</i>	Barley					1
Cerealia indet.	Indeterminate grains	2	3	2	1	1
Cerealia indet. frag.		105	6	9	1	5
Charred cereal chaff						
<i>Triticum spelta</i>	Spelt wheat glume base	1				
Other charred edibles						
<i>Corylus avellana</i> frag.	Hazelnut shell frag. >2mm	79	16	29	8	2
<i>Corylus avellana</i> frag.	Hazelnut shell frag. >1mm	c500	5			
<i>Malus sylvestris</i>	Crab apple		2			
Charred weed seeds						
<i>Chenopodium album</i>	Fat-hen	1		1		1
Other						
Poaceae floret base	Wild grass	1				

Table 11: Charred plant remains from Romano-British features. Figures given are actual counts.

	Feature	1051	3412	3548	3548	3548	3548	3548	3548
	Context	1054	3414	3475	3475	3521	3521	3521	3522
	Feature type	Pit	Grave	Corn-drier Flue I	Corn-drier Flue I	Corn-drier Flue I	Corn-drier Flue I	Corn-drier Flue I	Corn-drier Flue I
	Sample no.	1001	3413	3067	3068	3018	3020	3021	3024
	Sample size (litres)	40	10	10	10	10	20	10	10
Charred cereal grain									
<i>Triticum</i> sp.	Wheat		98	46	70	2	3	7	7
	Wheat, coleoptile impressions		2		3				1
	Wheat, coleoptile attached		1	5					
<i>Triticum dicoccum/spelta</i>	Domestic emmer/spelt wheat		24	3	3				
	Domestic emmer/spelt wheat, coleoptile attached			2					
<i>Triticum</i> c.f. <i>dicoccum</i>	Domestic emmer-type wheat		10						
<i>Triticum aestivum</i>	Bread wheat	5	5	9	8				
	Bread wheat, coleoptile attached		1						
<i>Hordeum vulgare</i>	Barley undiff.		1		1				
	Barley undiff., coleoptile attached				1				
<i>Secale cereal</i>	Rye			1					
<i>Avena</i> sp.	Oats			2	2				
	Oats, coleoptile attached				2				
Cerealia indet.	Indeterminate grains	7	65	119	127	17	24	27	24
	Total cereal grain	12	207	187	217	19	27	34	32
Cerealia indet. frag.		>100	>100	>1000	>1000	>100	>100	>100	>100
Detached coleoptiles			4	48	65		1	2	
Charred cereal chaff									
<i>Triticum spelta</i>	Spelt wheat glume base	2	35	1000	1000	14	3	2	5
<i>Triticum spelta</i>	Spelt wheat spikelet forks		11	12	45				
<i>Hordeum vulgare</i>	Barley rachis	1			5				
Culm nodes		1	5	3		3			
Stem frag		1	20						
	Total chaff	5	71	>1000	>1000	17	3	2	5
<i>Triticum</i> sp.	Wheat glume base frag.	6	40	>1000	>1000	10	21	5	12
Palca/lemma frag			>100						
Charred weed seeds									
<i>Ranunculus flammula</i>	Lesser spearwort	2							
<i>Chenopodium album</i>	Fat-hen			6					1
<i>Agrostemma githago</i>	Corncockle			2	3				1
<i>Stellaria media</i>	Common chickweed	1							
<i>Fallopia convolvulus</i>	Black-bindweed	1							
<i>Polygonum aviculare</i>	Knotgrass	2		1	3				
<i>Rumex obtusifolius</i>	Broad-leaved dock	5	1	18	24				
<i>Rumex acetosa</i>	Common sorrel	2		7	12				1
<i>Rumex acetosella</i>	Sheep's sorrel	4	1	4	9			1	1
Rosaceae	Rose family	1							
<i>Brassica</i> sp.	Cabbages	1		1					
Fabaceae <4mm	Pea family	3		21	54	3			2
Apiaceae	Carrot family				3				1
<i>Plantago lanceolata</i>	Ribwort plantain		1	1					
<i>Galium aparine</i>	Cleavers			2					
<i>Galium palustre</i>	Common marsh-bedstraw	3	1						
Asteraceae	Daisy family			2			1		1
<i>Anthemis cotula</i>	Stinking chamomile				3				
<i>Chrysanthemum segetum</i>	Corn marigold				3				
<i>Lapsana communis</i>	Nipplewort			1					
<i>Tripleurospermum inodorum</i>	Scentless mayweed	1							
<i>Carex trigonous</i>	Sedges- three sided	4		2					
<i>Carex lenticular</i>	Sedges- two sided	2		2					
<i>Isolepis</i>	Club-rushes	1	1	4					
<i>Juncus</i> sp.	Rushes	1							
<i>Eleocharis palustris</i>	Common spike-rush	18	2		3				
Poaceae <2mm	Grass family	5			12				
Poaceae 2-4mm	Grass family	9		40	42				
Poaceae >4mm	Grass family		1	6		1			
<i>Bromus</i> spp.	Bromes	1	6	225	138	1		1	
	Total charred weed weeds	67	14	345	309	5	1	2	8
Other									
Poaceae awn frag.	Wild grass		8	9	2				
Fabaceae seed pod frag.	Pea family			10	1		1		
<i>Raphanus</i> cf <i>Ssp.</i>	c.f. Wild radish	1							
<i>raphanistrum</i> capsule									

Table 12: Charred plant remains from Romano-British features, continued. Figures given are actual counts.

	Feature	3548	3548	3852	3852	3539	3539	3619	3897
	Context	3522	3522	3532	3537	3538	3607	3621	3900
	Feature type	Corn-drier Flue I	Corn-drier Flue I	Ditch	Ditch	Corn-drier stoke pit	Corn-drier stoke pit	Pit	Pit
	Sample no.	3026	3028	3069	3070	3076	3077	3089	3414
	Sample size (litres)	10	10	40	40	20	10	40	10
Charred cereal grain									
<i>Triticum</i> sp.	Wheat	24	1	96	6	40	6	10	103
	Wheat with coleoptile impression			3		8			
	Wheat with coleoptile attached			6		4	1		
<i>Triticum dicoccum/spelta</i>	Domestic emmer/spelt wheat			5	1	11	2		5
	Domestic emmer/spelt wheat with coleoptile attached					3			
<i>Triticum aestivum</i>	Bread wheat			18		4	7	12	
	Bread wheat with coleoptile attached			1					
<i>Hordeum vulgare</i>	Hulled barley								2
<i>Hordeum vulgare</i>	Barley undiff.				1				
<i>Avena</i> sp.	Oats								1
<i>Cerealia</i> indet.	Indeterminate grains	43	34	112	1	210	26	19	54
	Total cereal grain	67	35	241	9	280	42	41	165
<i>Cerealia</i> indet. frag.	Detached coleoptiles	>100	>100	>1000	>100	>1000	>1000	>100	>100
				31	1	247	3	2	
Charred cereal chaff									
<i>Triticum spelta</i>	Spelt wheat glume base	4	2	>1000	126	>1000	16	270	2
<i>Triticum spelta</i>	Spelt wheat spikelet forks					>100	2	4	1
	Culm nodes					1			3
	Total chaff	4	2	>1000	126	>1000	18	274	6
<i>Triticum</i> sp.	Wheat glume base frag.	20	7	>1000	>100	>1000	>100	>1000	
Charred weed seeds									
<i>Papavar rhoeas</i>	Common poppy						1		
<i>Chenopodium album</i>	Fat-hen			16			2		
<i>Chenopodium/Atriplex</i>	Goosefoots/oraches								
<i>Agrostemma githago</i>	Corncockle					5			
<i>Stellaria media</i>	Common chickweed						1	1	
<i>Fallopia convolvulus</i>	Black-bindweed			5		20			
<i>Rumex obtusifolius</i>	Broad-leaved dock			29	2	40			
<i>Rumex acetosa</i>	Common sorrel			16		3	2		
<i>Rumex acetosella</i>	Sheep's sorrel					3			
<i>Brassica</i> sp.	Cabbages					1			
Fabaceae >4mm	Pea family						2		1
Fabaceae <4mm	Pea family	4	1	1		35			
Apiaceae	Carrot family						1		
<i>Plantago lanceolata</i>	Ribwort plantain				2	1			
Asteraceae	Daisy family		1				9		
<i>Anthemis cotula</i>	Stinking chamomile						3		
<i>Cirsium</i> sp.	Thistles			1					
<i>Tripleurospermum inodorum</i>	Scentless mayweed					3	2		
<i>Carex trigonus</i>	Sedges- three sided			1					
<i>Isolepis</i>	Club-rushes			4		2			
<i>Juncus</i> sp.	Rushes						2		
<i>Eleocharis palustris</i>	Common spike-rush						1		
<i>Schoenoplectus</i> sp.	Club-rushes			2					
Poaceae <2mm	Grass family			4					
Poaceae 2-4mm	Grass family			4	2	35	7	7	
Poaceae >4mm	Grass family			7		10	7		
<i>Bromus</i> spp.	Bromes	1		510	8	297	10	3	
Indet.	Unknown seeds						1		
		5	2	600	14	455	65	11	1
Other									
Poaceae awn frag.	Wild grass			4		6			
Poaceae floret base	Wild grass					1			
Fabaceae seed pod frag.	Pea family					40	3		
<i>Papavar c.f. somniferum</i>	c.f. Opium poppy					1			
	capsule lid								

Table 13: 'Corn-driers' from Romano-British rural settlements in the Peterborough area. * = not stone lined.

Site	No. of flues	Date	Reference
Barnack	1	AD 250-300	Simpson 1993
Barnack	1	AD 300-400	Simpson 1993
Haddon*	1	AD 275-350	Hinman 2003
Longthorpe	1	AD 150-250	Dannell and Wild 1987
Lynch Farm	1	Romano-British	Wild 1974, fig. 5
Orton Hall Farm, Phase 3	1	AD 225-300/325	Mackreth 1996
Orton Hall Farm, Phase 4	2	AD 300/325-375	Mackreth 1996
Orton Hall Farm, Phase 5	1	AD 375+	Mackreth 1996
Parnwell	2	AD 150-250	This volume
Plant's Farm, Maxey	1	AD 250-350	Gurney <i>et al.</i> 1993

Figure Captions

- Fig. 1 Site location
- Fig. 2 Plan of all features
- Fig. 3 Early Neolithic pit group
- Fig. 4 Early Bronze Age pit group
- Fig. 5 Middle-late Iron Age features
- Fig. 6 Romano-British features
- Fig. 7 Enclosure A and associated features
- Fig. 8 Enclosure B and associated features
- Fig. 9 Corn-drier 3548, showing location of environmental samples
- Fig. 10 Romano-British cremation cemetery
- Fig. 11 Anglo-Saxon pits
- Fig. 12 Worked flint
- Fig. 13 Neolithic and early Bronze Age pottery
- Fig. 14 Roman metalwork
- Fig. 15 Romano-British settlement: cropmark evidence
- Fig. 16 Romano-British settlement around Flag Fen. Based on Hall 1987, fig. 45

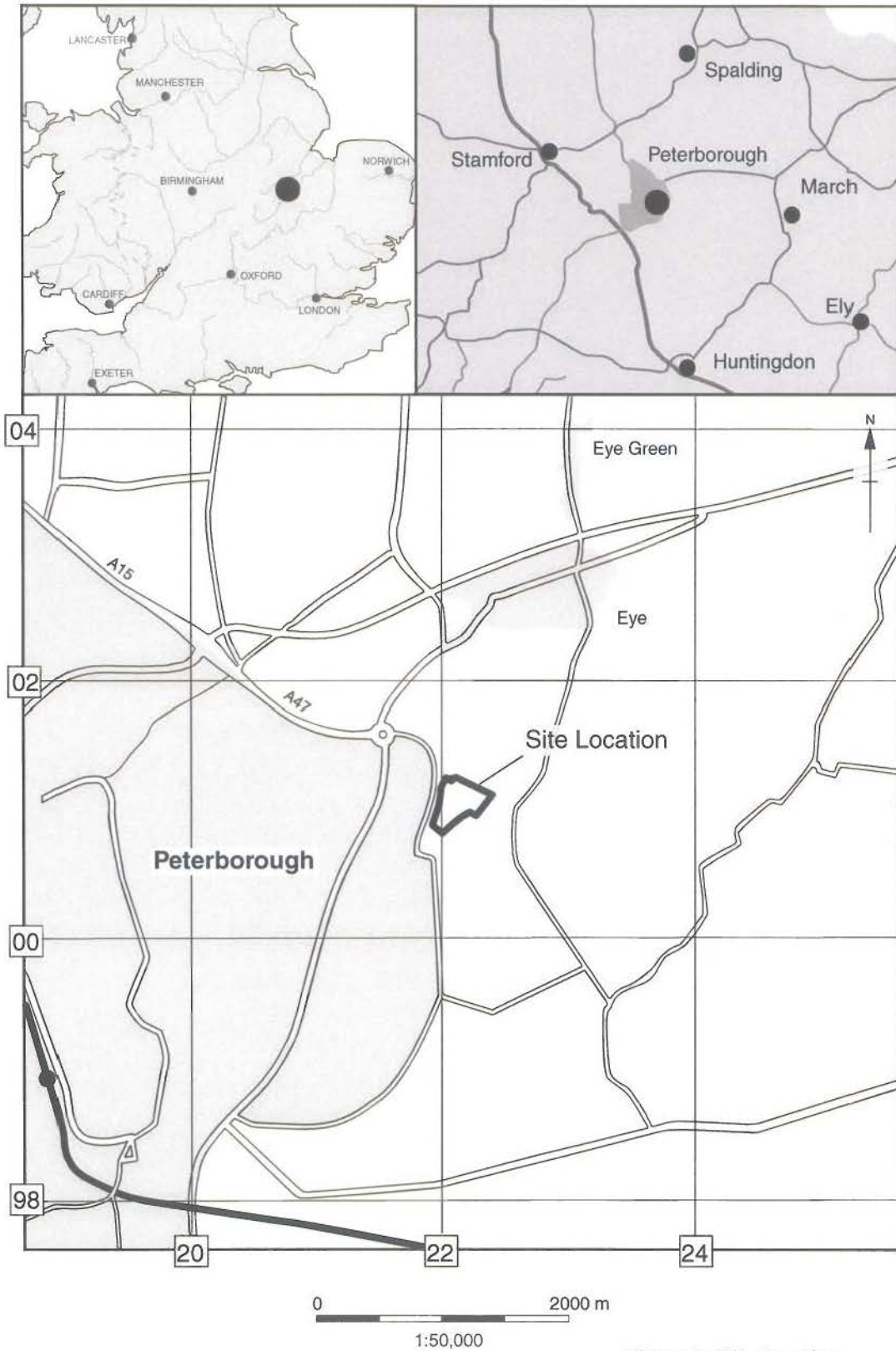


Figure 1: Site location



Figure 2: Plan of all features

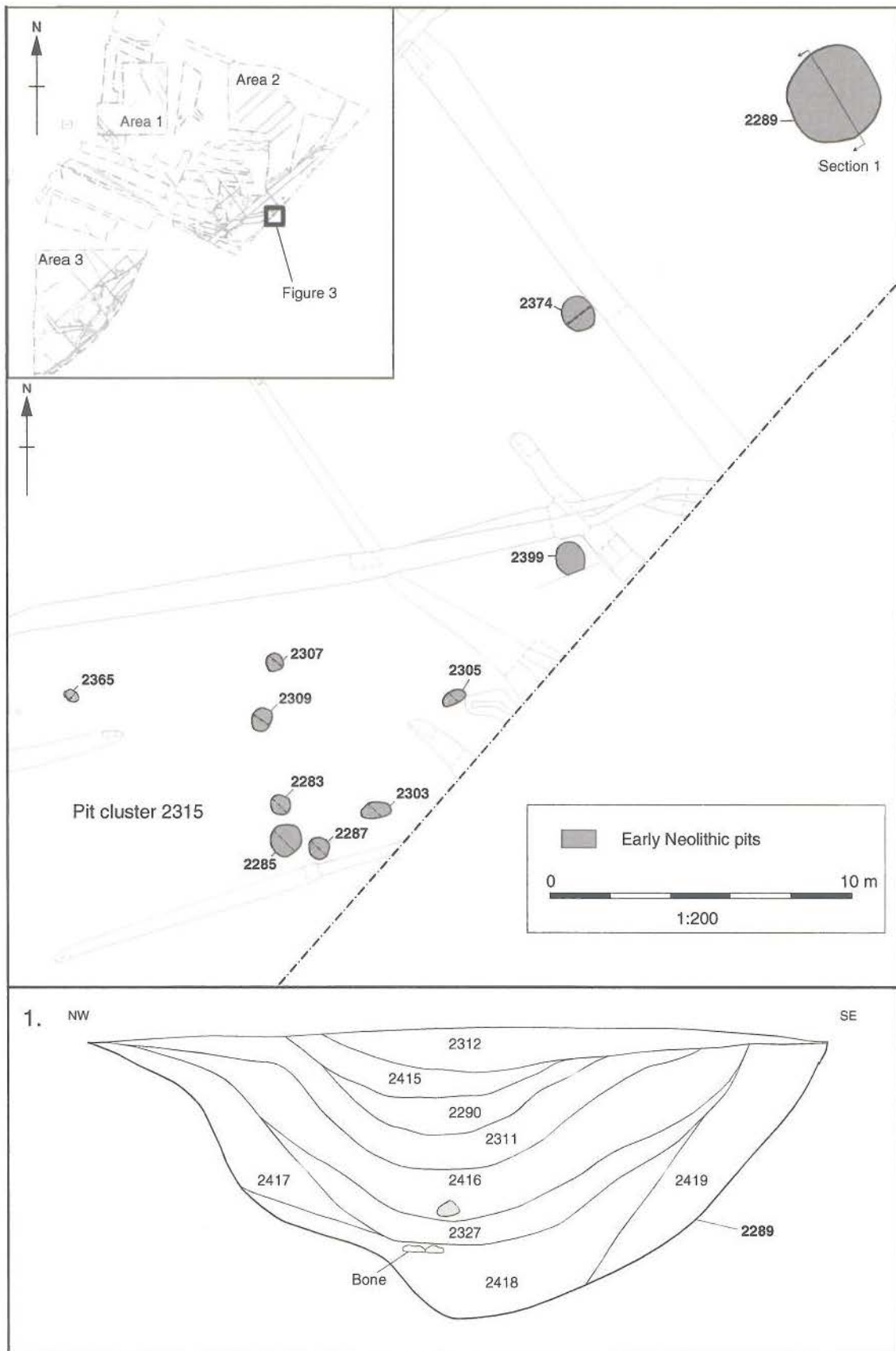


Figure 3: Early Neolithic Pit Group

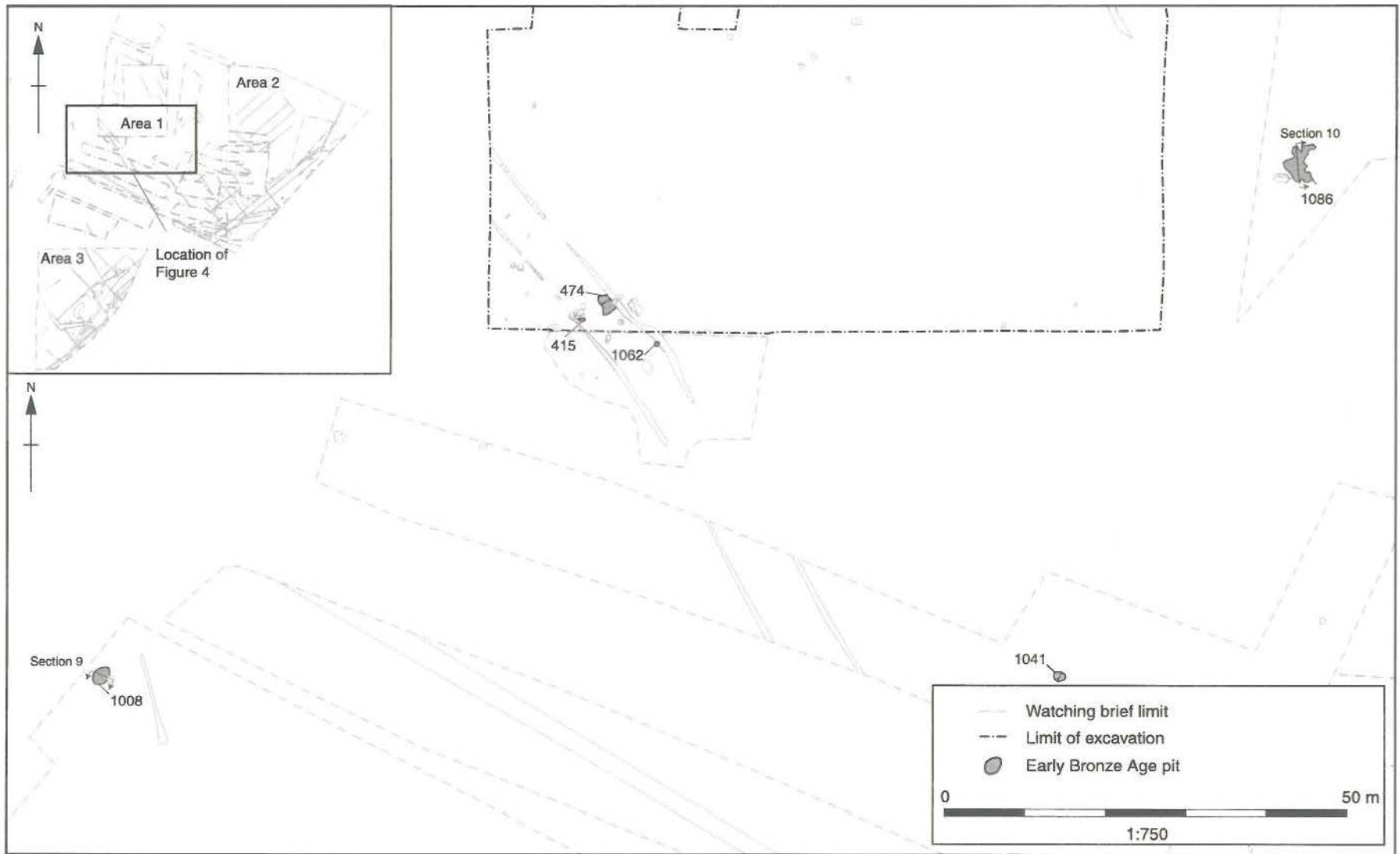


Figure 4: Early Bronze Age pit group

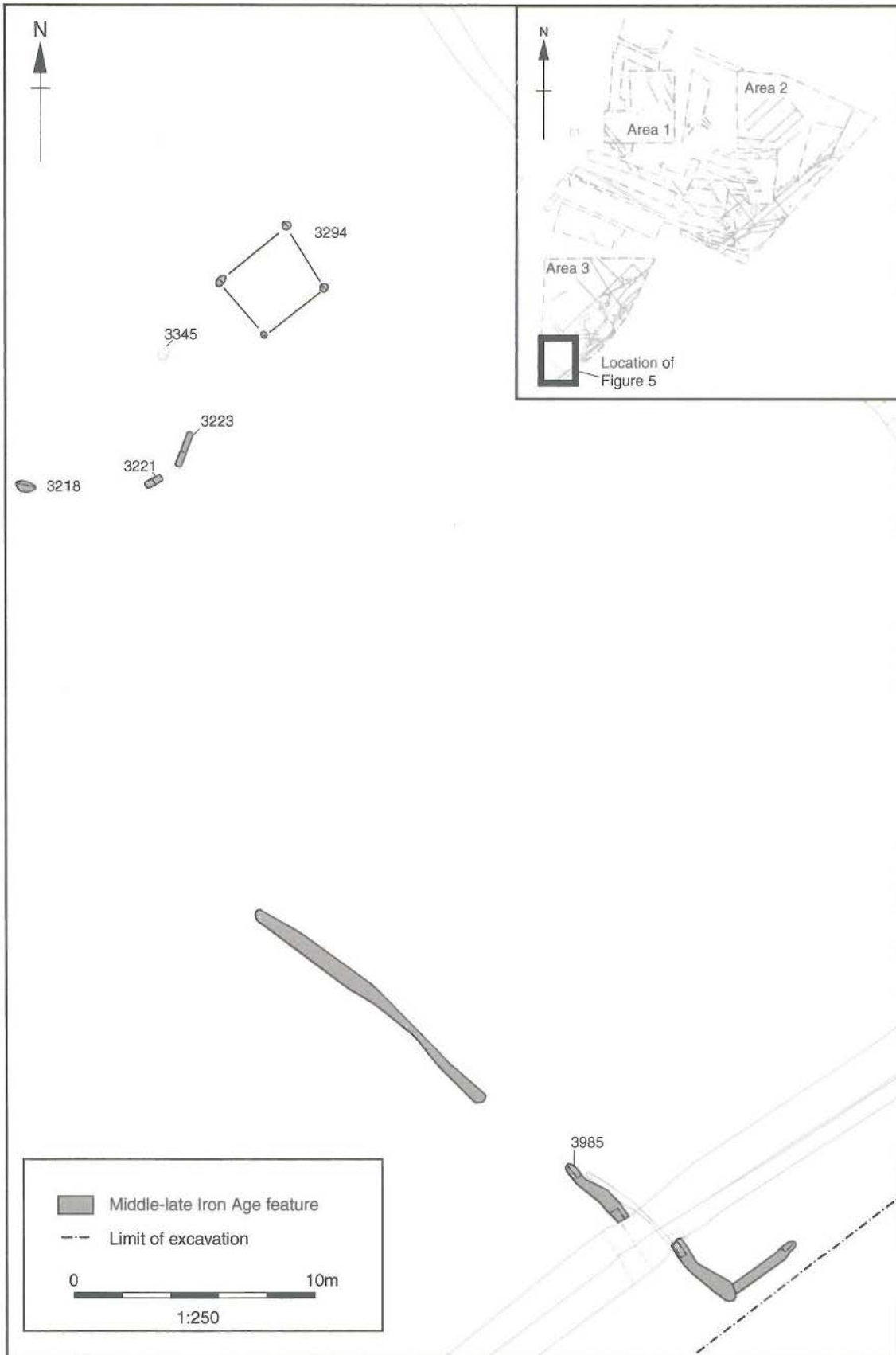


Figure 5: Middle - Late Iron Age features

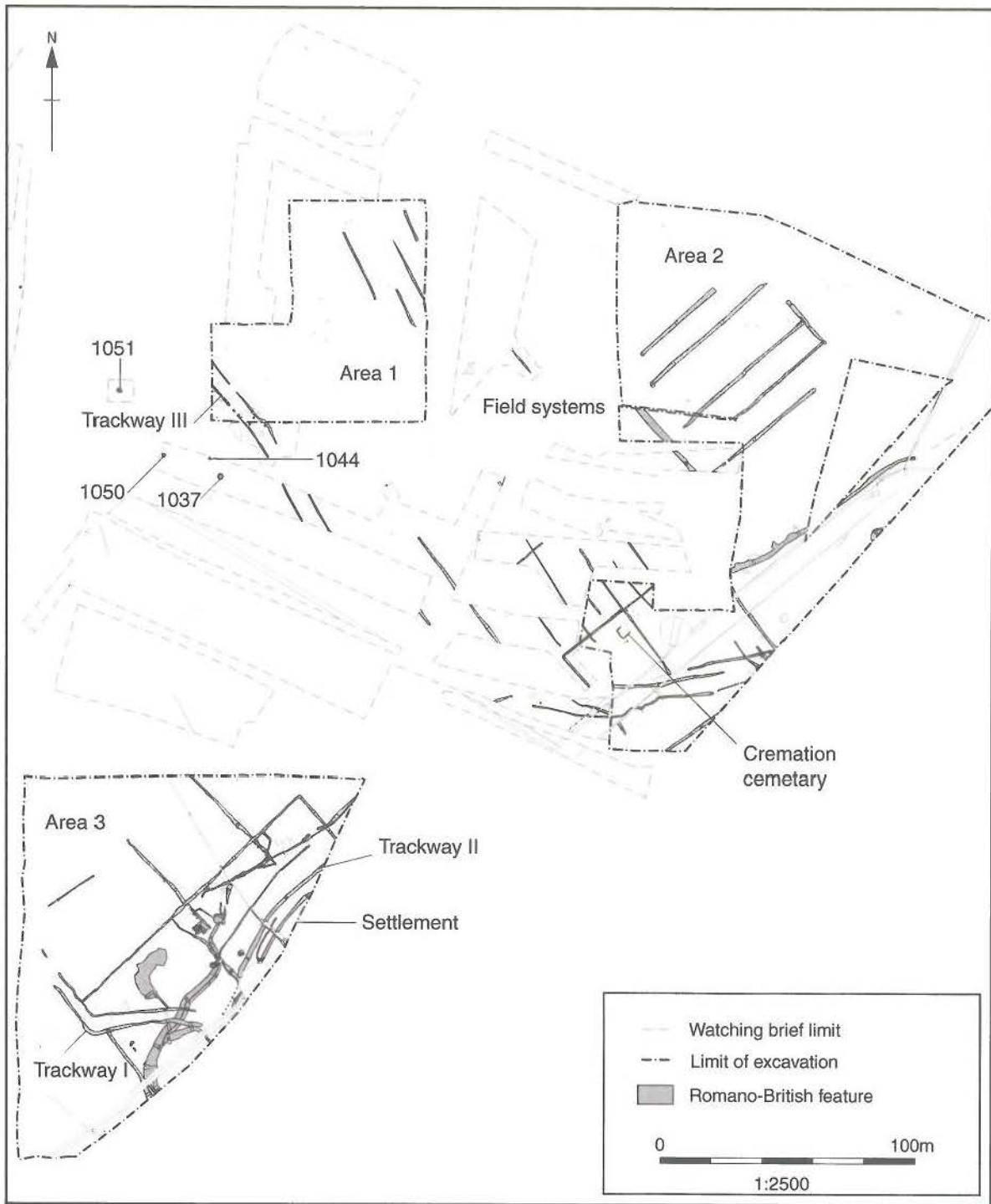


Figure 6: Romano-British features

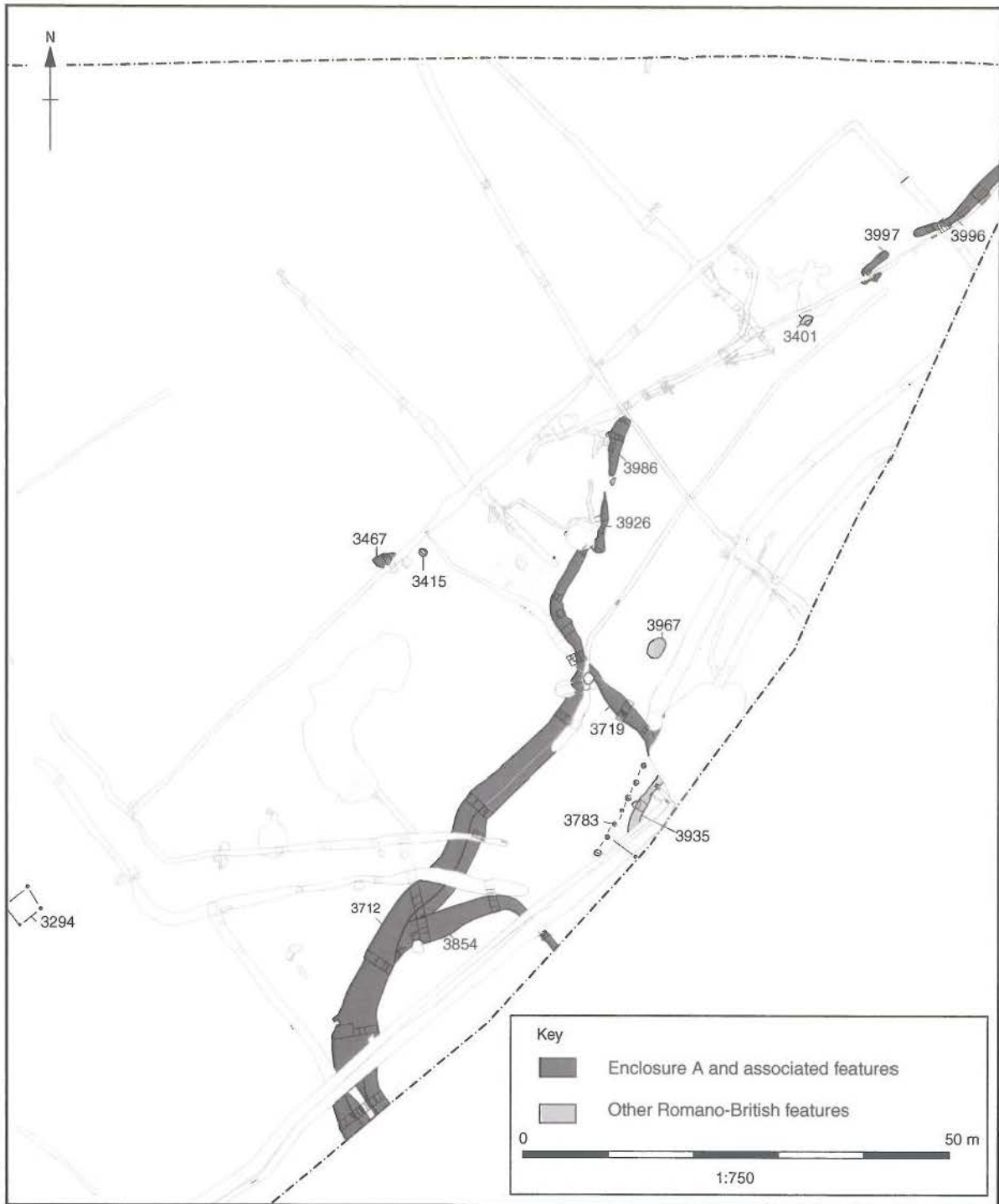


Figure 7: Enclosure A and associated features

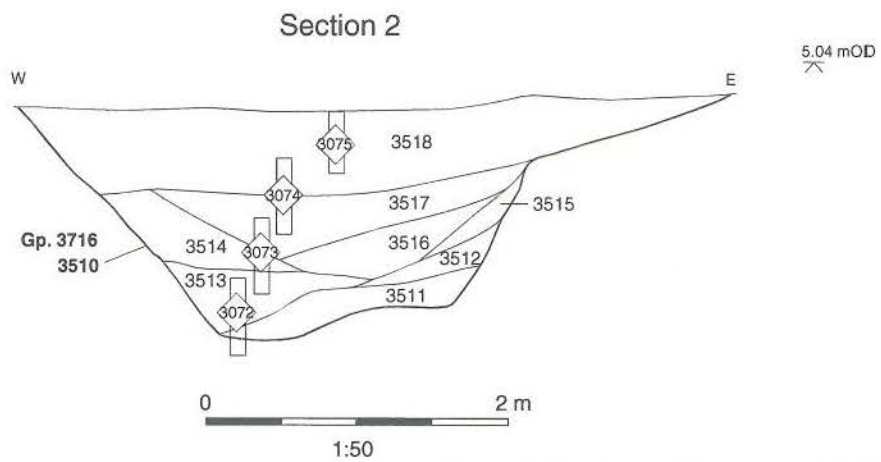
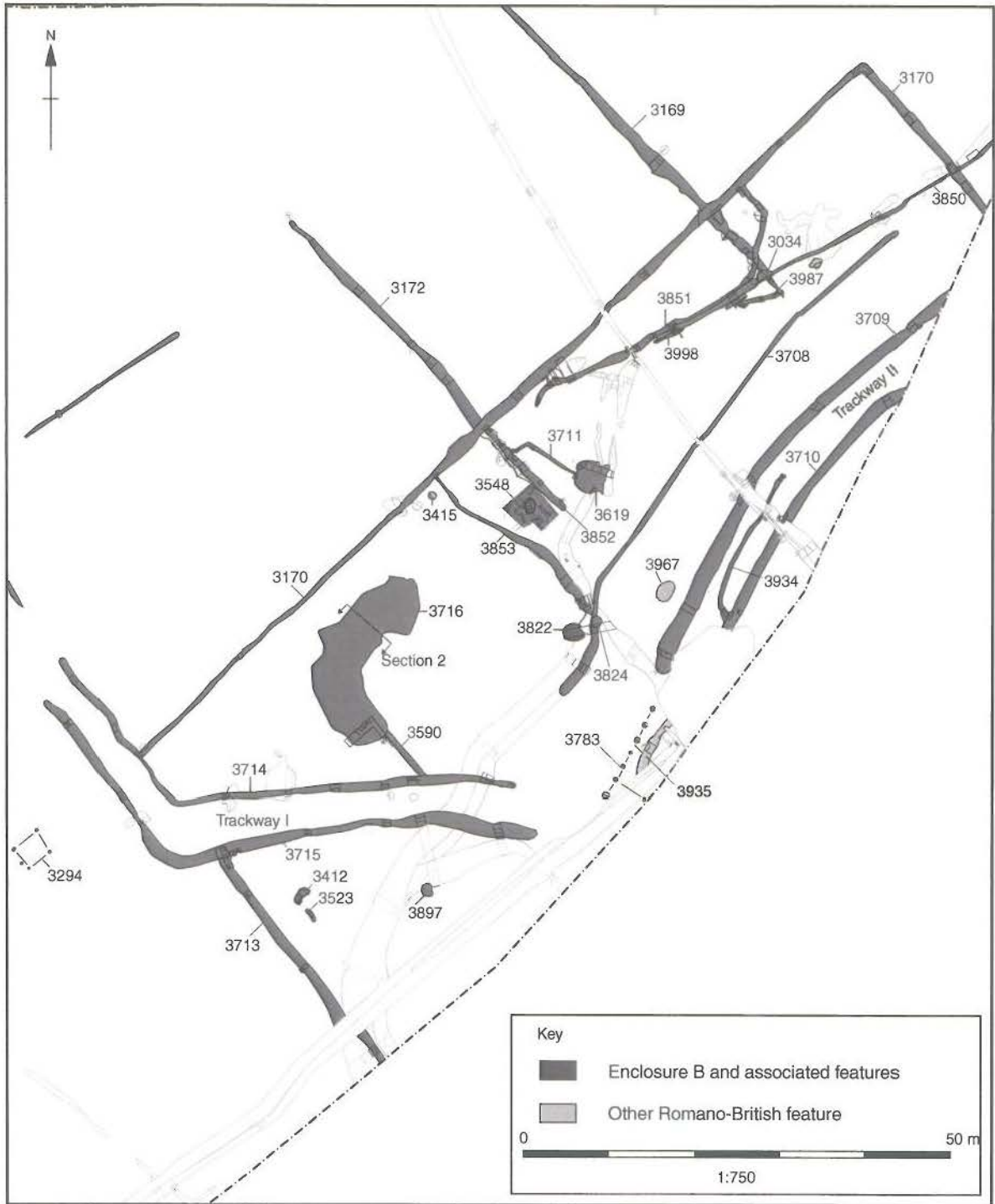


Figure 8: Enclosure B and associated features

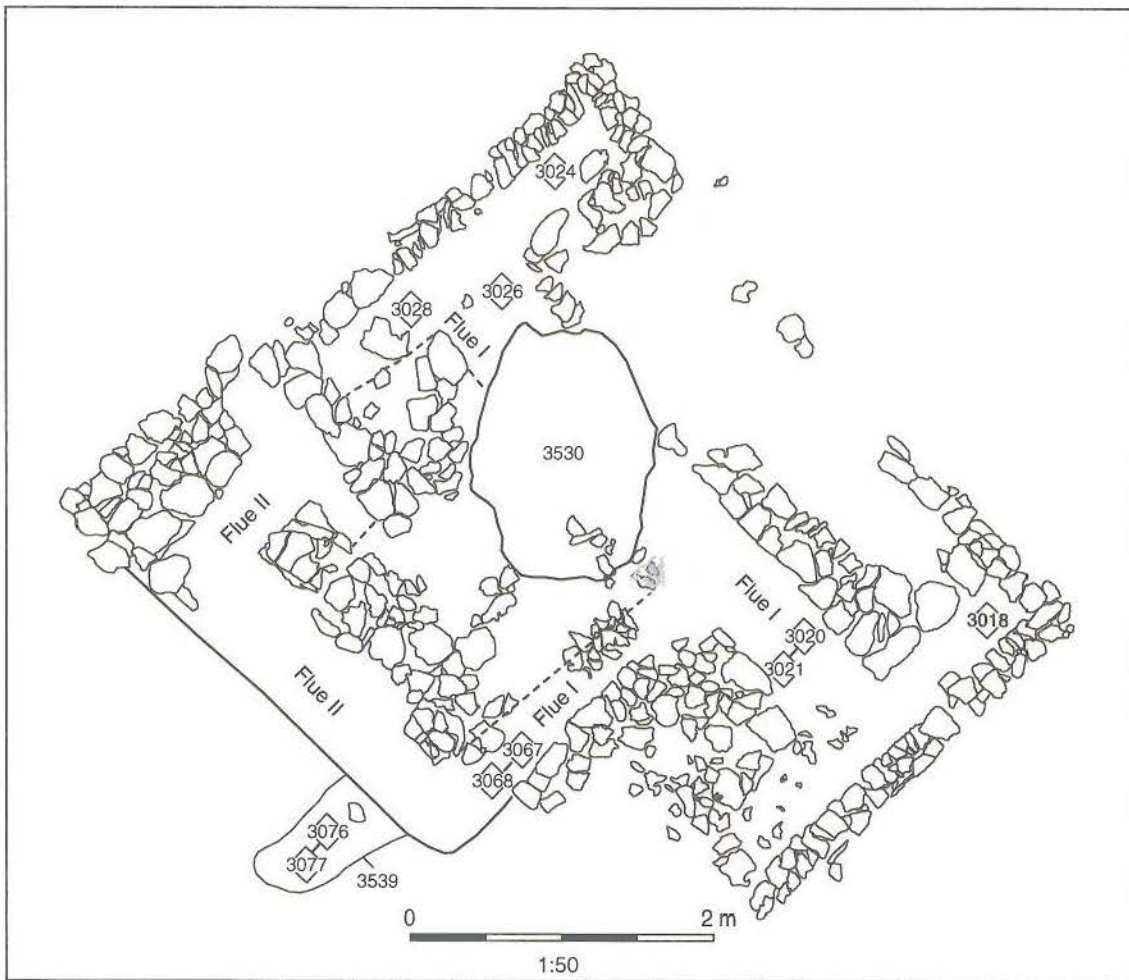


Figure 9: Corn-drier 3548, showing location of environmental samples

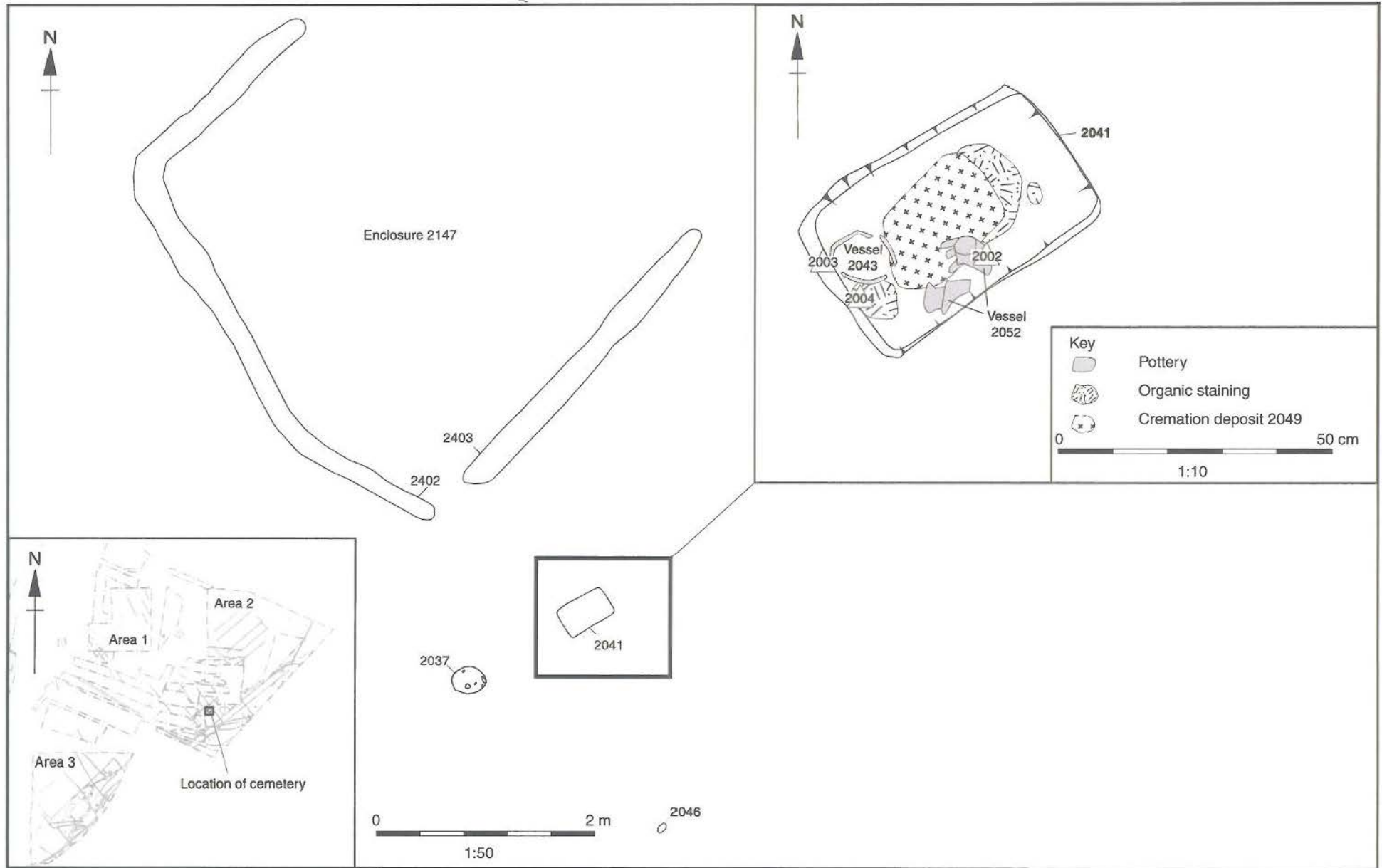


Figure 10: Romano-British cremation cemetery

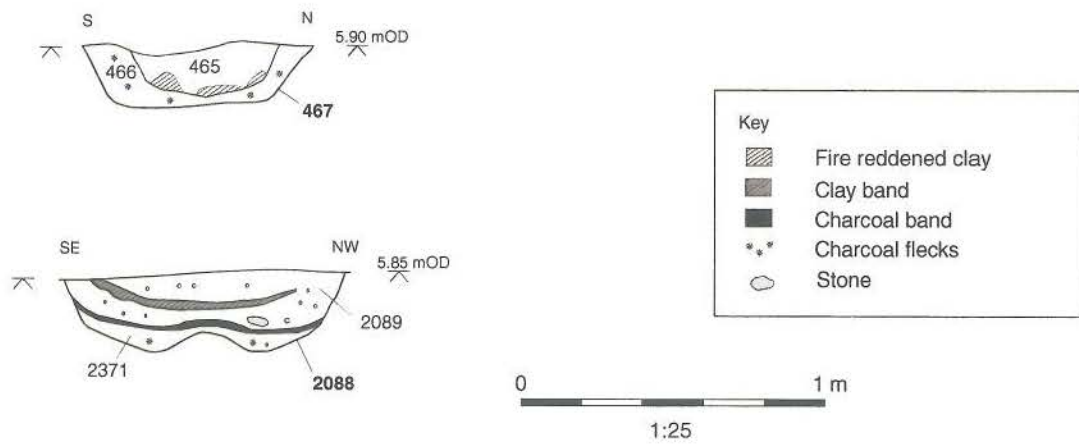
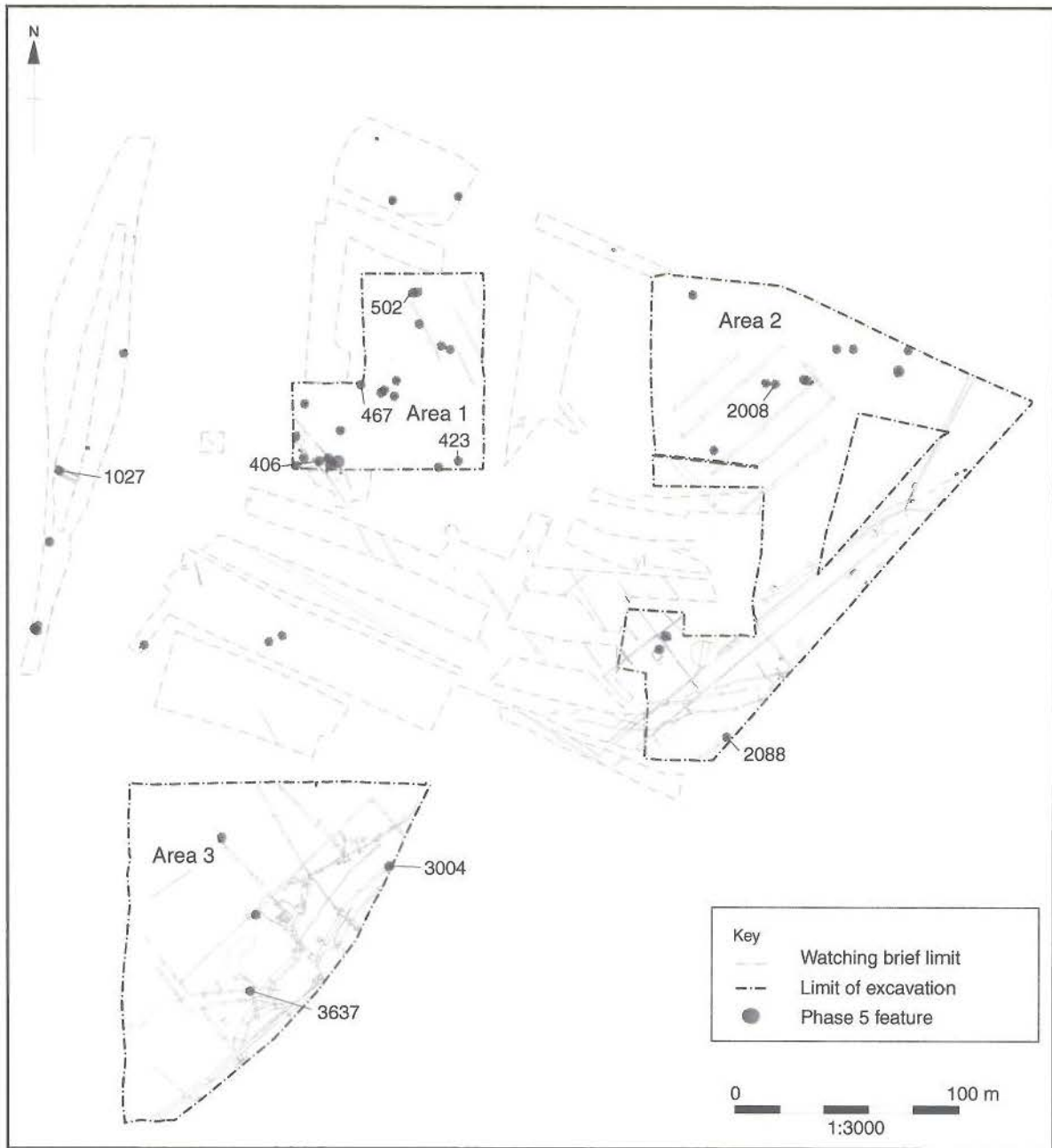


Figure 11: Anglo-Saxon pits

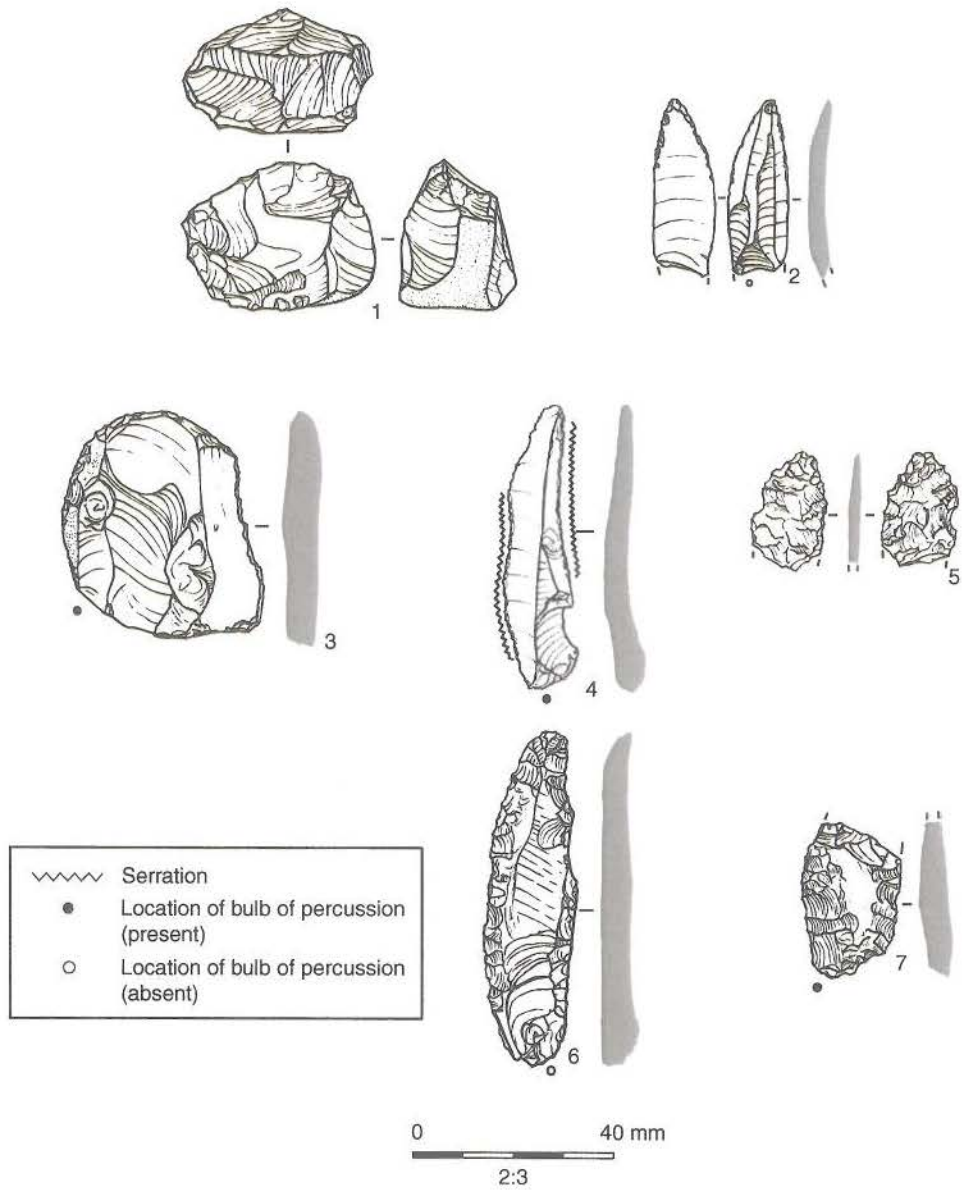


Figure 12: Worked flint

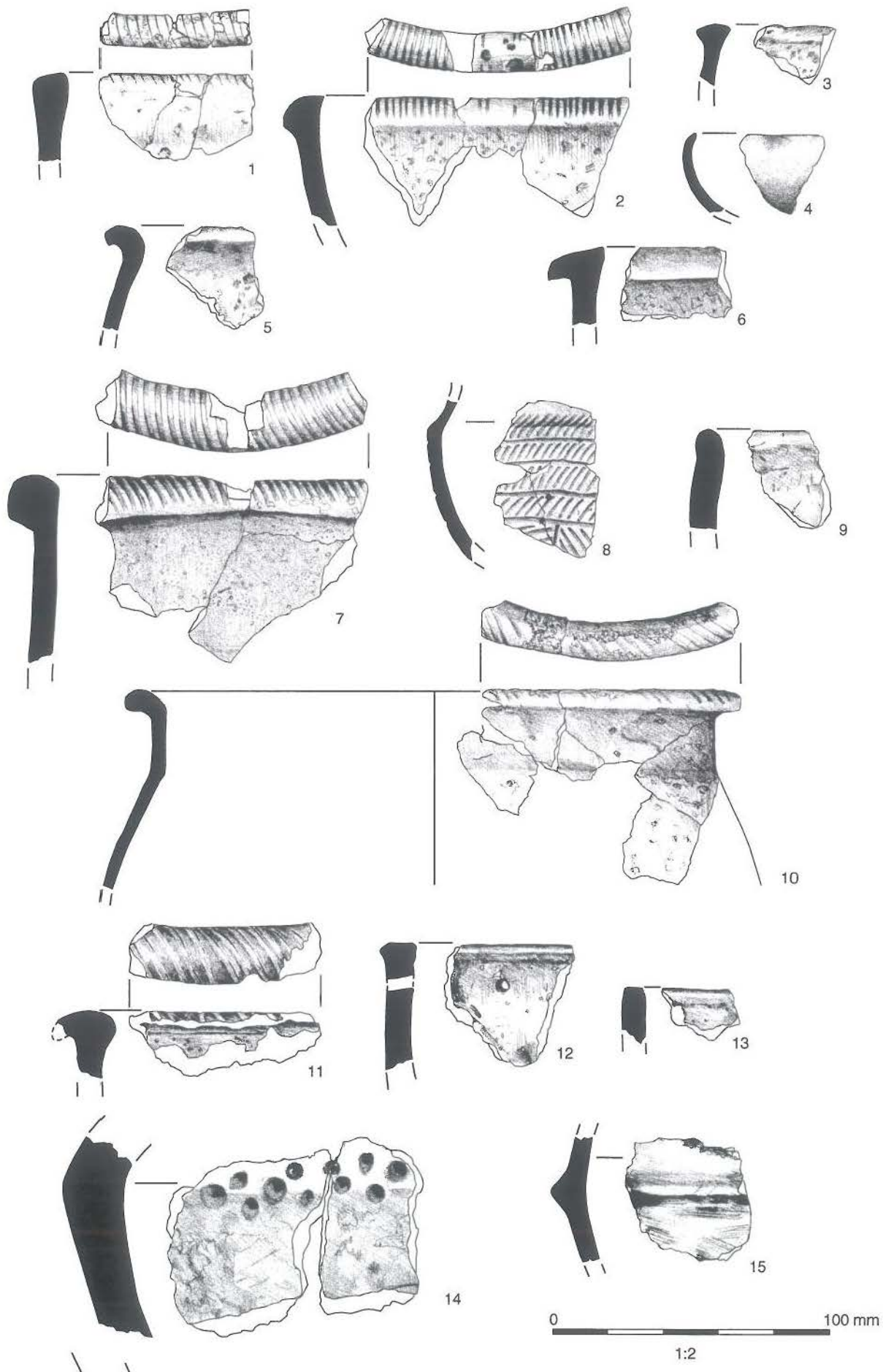


Figure 13: Neolithic and early Bronze Age pottery

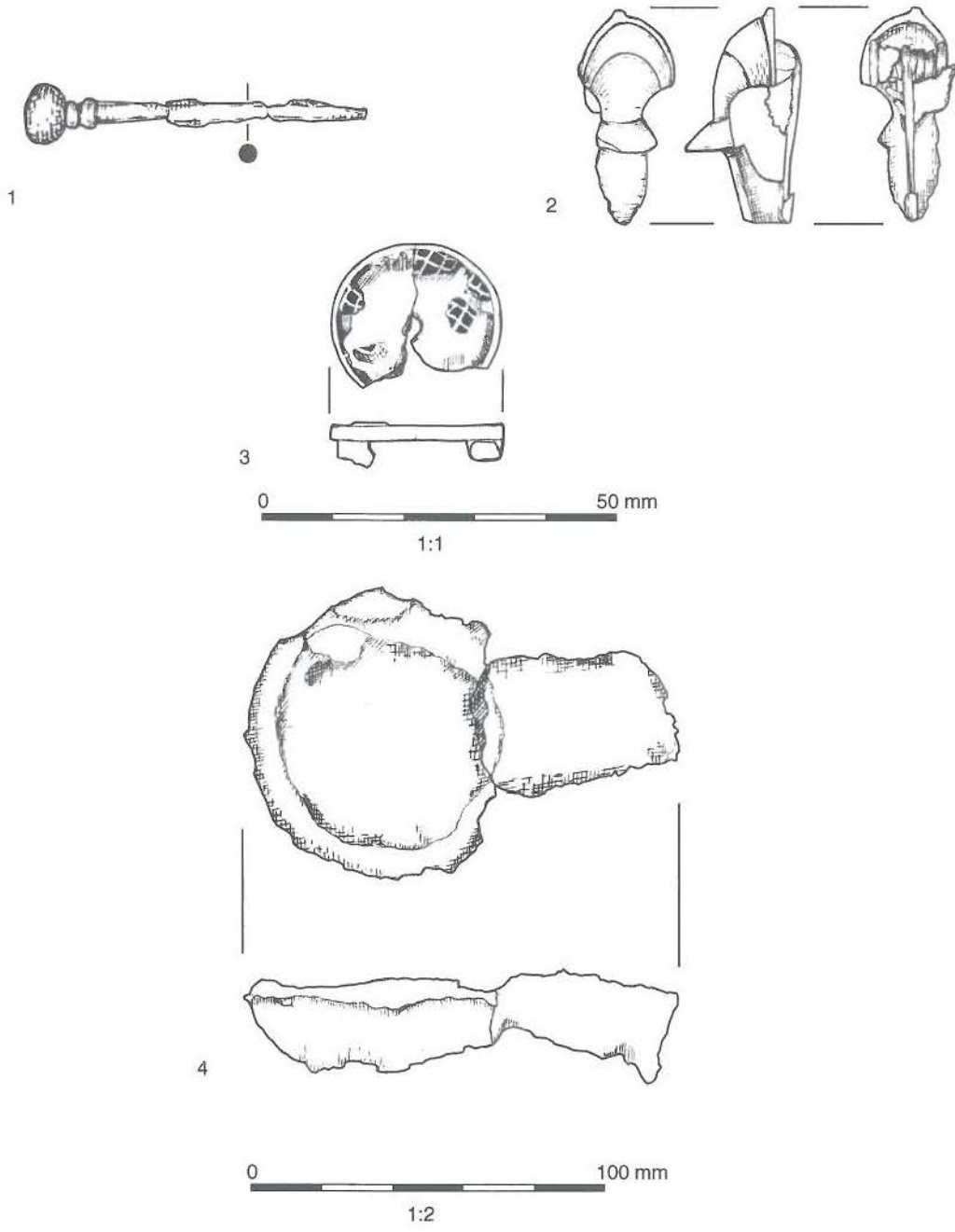


Figure 14: Roman metalwork

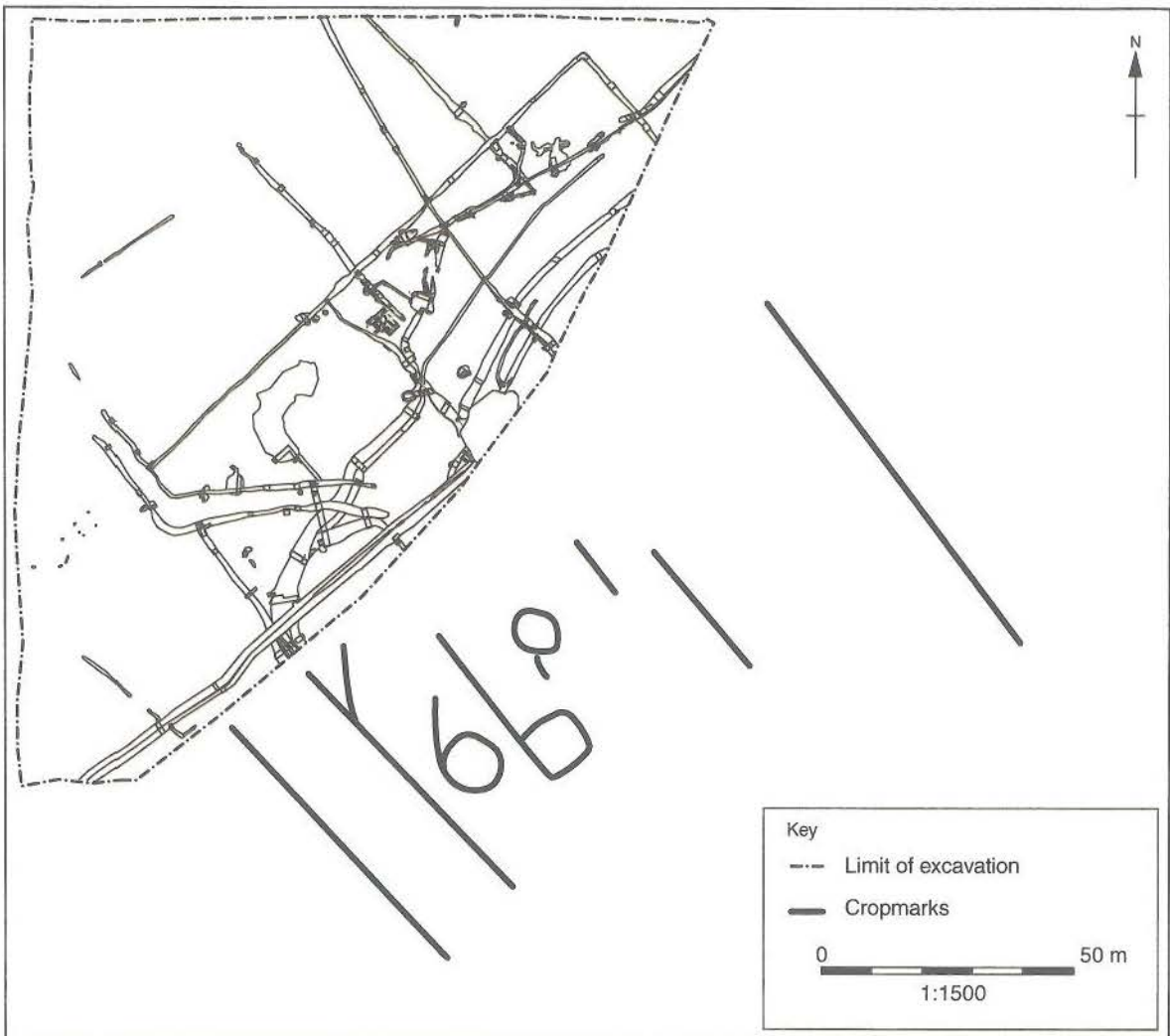


Figure 15: Romano-British settlement: cropmark evidence

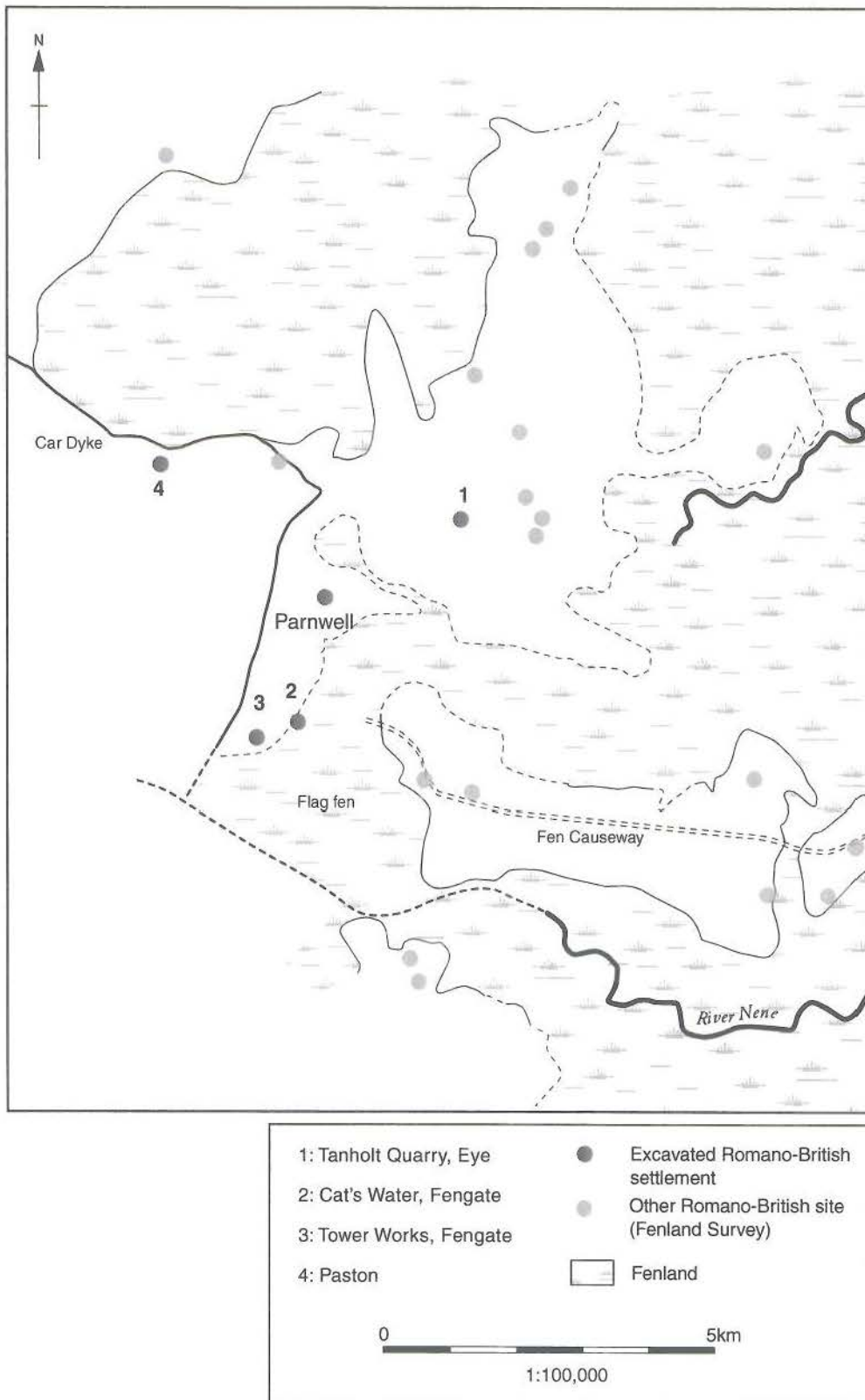


Figure 16: Romano-British settlement around Flag Fen

