Archaeological Field Unit

Iron Age and Roman-British Settlement at Land off Wimblington Road, March: Post-Excavation Assessment

PART 1

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Iron Age and Settlement Remains at Land off Wimblington Road, March: Post-Excavation Assessment

(TL 4152 9494)

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April 2004

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SUMMARY

Excavation of an area of land (0.2ha) off Wimblington Road, March, Cambridgeshire was conducted in February 2003 by Cambridgeshire County Council Archaeological Field Unit (AFU). Important evidence for occupation from the 1st century BC (Late Iron Age) to the early 3rd century AD (Roman) was revealed.

The excavation uncovered only a small part of a much larger settlement. The Late Iron Age and transitional periods were marked by some continuity of enclosures with internal domestic structures. In the Early Roman phase there was a shift in emphasis to field systems with possible fence lines, on north to south and east to west alignments. The Middle Roman period again indicated a shift in emphasis with evidence of an enclosure and a posthole structure, east to west boundary ditches, an east to west trackway and rubbish pits.

The settlement was located on low lying land (c.3.5m OD), in open marginal damp grassland, which was intermittently utilised for cereal production. Pollen and soil samples demonstrate that standing water was common within the ditches of all phases and that these ditches often contained various tall-herb and riparian communities. Briquetage recovered as secondary deposits in small quantities in all phases may indicate that the settlement was involved at least in part in salt production which presumably took place in the slightly lower lying land to the west (on the fen edge). Animal stock rearing is indicated in all periods, though there was only secondary evidence for cereal processing waste in the transitional and Middle Roman phases, and a little malting waste in a Middle Roman phase. Artefactual evidence (pottery, animal bones, metalwork, quern stones, as well as secondary deposits of industrial lining from metal working (e.g. hearths) and pottery wasters) implies a domestic fairly self sufficient community of average status with some limited access to high status products.

Two large early post-medieval quarry pits, presumably for sand, were found at the north-west corner of the site. There was relatively little evidence for modern activity with only a few Victorian pits present before the site became backplots to 20th-century houses fronting onto Wimblington Road.

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1 INTRODUCTION

Excavation by the Archaeological Field Unit (AFU) of Cambridgeshire County Council at Wimblington Road, March was completed in March 2003 (NGR TL4152 9494). The work was commissioned by Greg Blore of Cambridgeshire Developments Ltd in advance of the construction of a proposed new residential housing development. The excavation was carried out as a condition of planning consent (F/YR02/0768/O) of East Cambridgeshire District Council. This report incorporates the findings of a trial trench evaluation in January 2003 (Cooper 2003).

The excavation was carried out in accordance with a design brief drawn up by the Archaeology Office of Cambridgeshire County Council (Gdaniec 2003) and a specification drawn up Stephen Macaulay of the Archaeological Field Unit (Macaulay 2003). The aims of the excavation, laid out in the brief and specification, were to preserve the archaeological evidence contained within the excavation area by record and to attempt a reconstruction of the history and use of the site. The brief required that cropmarks directly to the west of the development were to be re evaluated (Palmer 2003).

2 GEOLOGY AND TOPOGRAPHY

The Wimblington Road site lies in March gravel deposits (BGS 1980) on the southern end of the March island. The proposed development area was irregular in shape (approximately 0.2ha; Fig.1). The excavation was on a flat land at an average height of *c.*3.50m OD and the natural geology consisted of March gravels, although there were areas of yellow or light grey sands and silts.

3 PROJECT BACKGROUND

3.1 Historical and Archaeological Background (Fig.1)

March island is surrounded by fenland and, as such, has continued to form an important focus for human occupation. Immediately to the south-west of the development area was a series of rectilinear cropmarks (a possible villa estate) which was identified from aerial photographs (Cambs SMR 09009). As part of this excavation the cropmarks were re evaluated (Palmer 2003). Palmer's report recorded that there was a ditched system, probably of Iron Age or

Roman date, comprising a broad drove linked to a series of rectilinear enclosures from which other features extend towards, and possibly into, the development area. Immediately west of the rectilinear enclosures, and possibly incorporated within them is a possible building. Palmer noted that the present photographic evidence for this being a villa was not entirely convincing.

Archaeological sites are known in the vicinity of the development area. Some 350m to the north of the site, an archaeological evaluation located an Iron Age to Roman period site (O'Brien 2002). A mid 1st century AD pot containing 872 Iceni coins: the pot had probably been set into a ditch within a contemporary settlement was found *c.*500m to the north-east at Field Baulk Farm. Another coin hoard site was found 500m to the west. Here, in 1802, a large pottery vessel containing bronze and gold Roman coins were found possibly in relation to large cropmark enclosures (SMR CB 10798).

Within 5km of the development area there are several Iron Age and Roman settlements which have been partly excavated, fieldwalked or are known from cropmarks including Stonea Camp an Iron Age hill fort and adjacent to it Stonea Grange, a Roman administrative centre (Jackson and Potter 1996). The Wimblington site was within a trade network, the main canal network flowing about 2km to the east of the site connecting with rivers and to The Wash. A main road, the Fen Causeway, ran 3km to the north and led from Peterborough to Denver, running through the extensive Romano-British cropmark site of Flagrass Hill, located on the north of March Island.

The site is near the medieval centre of March; 250m to the north is the 13th century St Wendreda's church. Traces of medieval ridge and furrow lay *c.*100m to the west of the site (Fig.1; Palmer 2003). The medieval Wimblington to March road probably lies between this ridge and furrow and the development area and may equate with the trackway recorded in the cropmarks noted above.

3.2 Previous Evaluation

An archaeological evaluation in January 2003, consisted of four trenches (160m in total) spaced across the development area, uncovered a transitional pre-Roman Iron Age (1st century AD to 2nd century AD) to Romano-British settlement (Cooper 2003; Fig.2). There was a high density of features in all trenches, predominately consisting of ditches, although pits and postholes were also identified. These features were sealed by a thick garden soil.

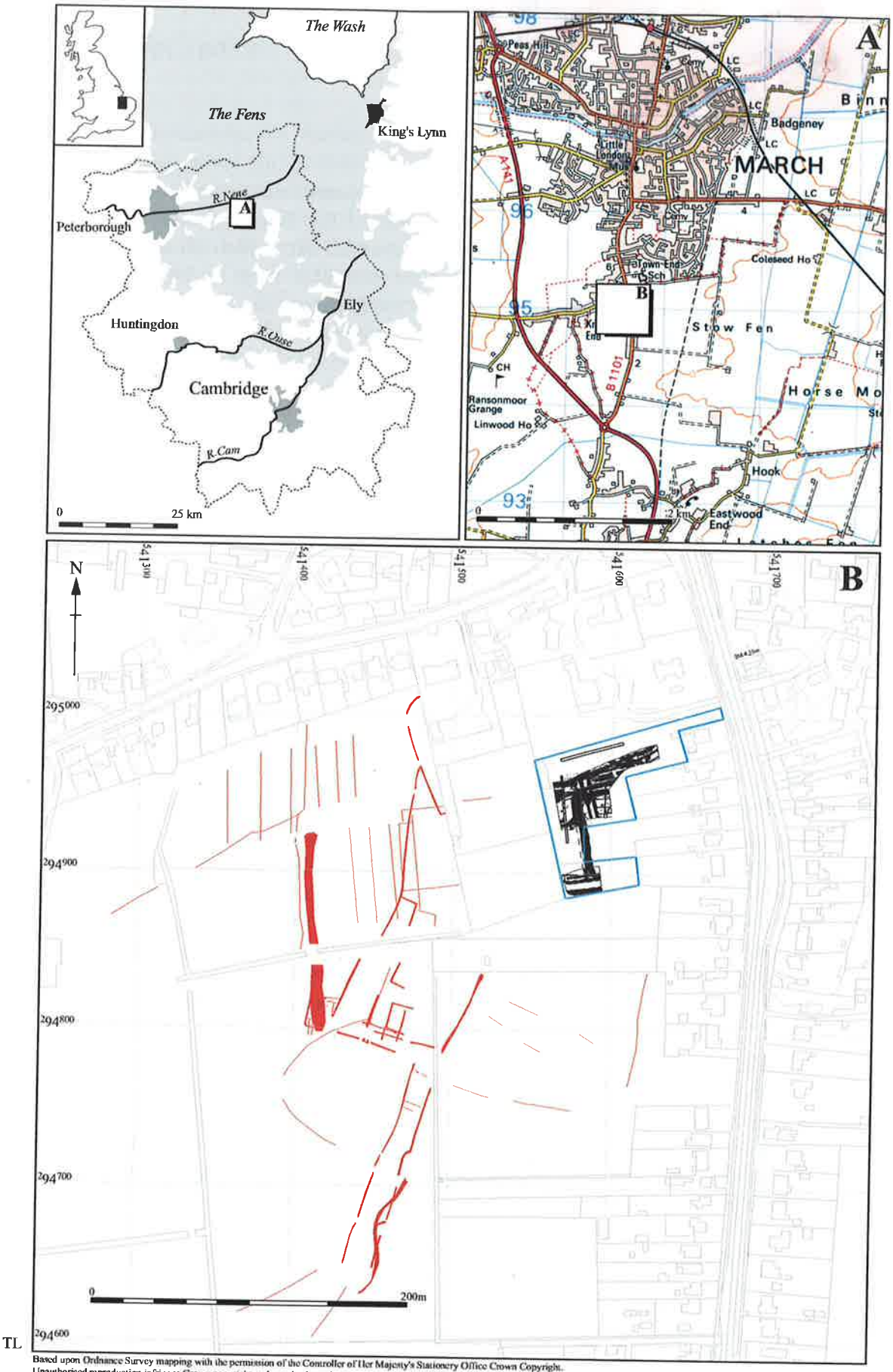

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Figure 1 *Location of excavation with development area (blue) and cropmarks (red)*

4 METHODOLOGY

4.1 Introduction

The area of excavation within the 0.55ha development site, was determined in the archaeological brief and took place within the five proposed building footpads (Gdaniec 2003). There were two areas of excavation, firstly the site of four house platforms excavated as an irregular area of 1438m², and secondly, a separate house platform on the south part of the development area which comprised a separate area of excavation of 362m² (Fig. 2).

4.2 Machining

Topsoil and subsoil were removed separately by a 360° tracked excavator with a flat-bladed ditching bucket, under constant archaeological supervision. The exposed subsoil was then subjected to a systematic metal detecting survey and artefact scan. Subsoil was subsequently removed to expose archaeological features.

4.3 Recording

The excavation areas were cleaned by hand in preparation for planning and excavation. All features and deposits were recorded using the AFU single context system. Each distinct cut, fill, and layer was allocated individual numbers. Plans were hand drawn at a scale of 1:50 then digitised as excavation progressed. Sections were drawn at a scale of 1:10 or 1:20 as appropriate. Monochrome and colour photographs were taken. All features were investigated. In addition to bulk samples from a variety of features, pollen samples were taken at the request of the Archaeology Section of Cambridgeshire County Council. The site and spoil heaps were repeatedly subject to metal detector sweeps.

4.4 Assessment

During assessment master numbers were assigned to major features in order to facilitate phasing and interpretation. Phasing is based on a combination of stratigraphy and finds. After the assessment pottery reports were completed the site phasing was distributed to the remaining specialists.

In the following text, cut numbers are presented in **bold** and deposit numbers are in plain text.

5 SUMMARY OF RESULTS

Evidence for human activity comprised features of Iron Age, Roman, medieval and post-medieval date (Phases 1-5; Fig.3). The site was occupied continuously from c.1st century BC to c.3rd century AD. The prehistoric activity consisted of large sub-rectangular enclosures with internal structures in the Late Iron Age and transitional periods. The Early Roman period is marked by field systems with probable fence lines, generally on north to south and east to west alignments. During the Middle Roman long east to west boundary ditches continued, alongside an east to west trackway and pits. The last phase also consisted of a possible enclosure and a posthole structure, before the site was abandoned in the *c.*early 3rd century AD.

5.1 **Phase 1: Iron Age** (1st century BC; Figs 2 and 3)

A dense concentration of Late Iron Age features was found across the site and consisted primarily of enclosures. Stratigraphically there were at least two phases within this period. Initial activity consisted of an east to west ditch (**260**), and a probable sub-circular well or watering hollow (**M757**) *c.*4.40m by *c.*4.30m in size. A fragment of a possible enclosure ditch (**M751**) could only be followed for *c.*10m before being cut by a plethora of features. Within this enclosure there were the fragmentary remains of an undated possible external ring gully and posthole structure (**M750**) *c.*5m to the north of enclosure **M751**.

Enclosure ditch **M752** cut into ditch **260** and butt-ended to the east. Another enclosure ditch also butt-ended 3.5m further to the east and may represent the other entrance way to **M752** or to enclosure **M753**. The latter enclosure was sub-square or sub-rectangular and was 58m long and more than 22m wide with its ditches recut twice (**M753, M754** and **M755**). The ditches each survived up to 3m wide and a metre deep. A moderate amount of domestic rubbish was recovered from the ditches. Within the enclosure were the remains of a probable drip gully of a roundhouse (**M756** and **M758**). The drip gully had a diameter of between 12 and 13m.

5.2 **Phase 2: Late Iron Age to Roman** (1st century BC to 1st century AD; Figs 2 and 3)

Features dated to the transitional period were present across the site. Pottery indicated that there was a continuation of Late Iron Age hand made vessels at the same time as transitional pottery was being produced (Percival and Lyons, Section 7.4).

This phase demonstrated a strong continuity from the earlier phase with the existing enclosure (**M753, M754** and **M755**) enlarged and redefined (**M760**). This enclosure was sub-rectangular or sub-square in plan, measuring 59m long and more than 31m wide. Its constituent ditches were between 1.5m and 2.16m wide and 0.85m and 1.02m deep. On the south side this enclosure

appeared to have butted up against another ditch line (**M789** and **M788**). A large amount of domestic waste (consisted of over 240 pottery sherds (including a sherd of imported Pompeii red ware and a Holfiem type flagon), animal bone and two lava quern fragments) was deposited in the backfill of these ditches and was particularly concentrated in the northern boundary marker. A copper alloy brooch of unclassified type was also recovered from ditch **M760** (SF27; see Mackreth, Section 7.2). Soil samples from the enclosure ditch contained small quantities of cereal processing debris, particularly wheat chaff (see Fryer, Section 8.5). Pollen samples indicate that the ditch was at first perennially wet with abundant emergent swamp with margins covered by tall herbs. It later became dryer/damp before being filled in (see Boreham, Section 8.3).

Internal to this enclosure was a posthole structure (**M759**) which appeared to have been rectangular in shape with a length of *c.*7m and a possible width of *c.*4.5m. Moderate quantities of pottery were recovered from the structure as well as a late La Tène style brooch dating to the mid 1st century BC (SF30; see Mackreth, Section 7.2).

On the eastern side of the excavation there were three sets of parallel ditches running north-west to south-east spaced *c.*3m apart (**506** to the west, **508** at the centre and **M775**, **M776** and **M784** to the east). To the east of the latter were two pits (**531** and **M774**): the latter was a large possible rubbish pit, a soil sample from which yielded small deposits of cereal processing debris.

5.3 **Phase 3: Early Roman** (mid 1st century AD to 2nd century AD)

This period is marked by a change in the type of features with a series of possible fields aligned with ditches running east to west and north to south.

A large north to south ditch **M766** demarked the western limit to a possible field system. Some 24m to the east lay the eastern boundary (**46=481**). This enclosure appeared to have been sub-divided by three small east to west ditches (**M763**, **M764** and **M765**), each of which butt-ended up against ditch **M766**. Ditch **M763** contained a moderate amount of pottery including a gaulish inspired tankard. Ditch **M765** contained moderate amounts of fired clay including structural pieces implying domestic waste may have been backfilled in the ditches during disuse. These ditches could represent narrow fields up to 4m wide. Two further east-west ditches to the north (**M780** and **M761**) may represent additional fields. Fills of ditch **M761** contained a quern (SF23; see Critchley, Section 7.7) and the pin of a copper alloy Colchester derivative brooch probably dating to the second half of the 1st century AD (SF12; see Mackreth, Section 7.2).

A realignment to field boundaries to the west may have comprised a new field system consisting of a north to south boundary ditch and its recut (**M768** and **M769**). Adjacent to the west of the ditch there was a roughly linear row of four postholes running north to south (**M770**) which could represent a fence line. There may have been another parallel fence line to the east of **M768**. To

the north-west of the fence line was a boundary ditch and two recuts running east to west (**M772**, **M773**, **781**) and butting up to the north to south boundary ditch **M768** at right angles. Four metres further to the north, two further east to west ditches (**247** and **249**) which also butt-ended, appeared to respect ditch **M768** and carry on as intermittent ditch **M779**. Part of the bank of ditch **247** survived on the south side.

5.4 Phase 4: Middle Roman (mid 2nd century to early 3rd century AD)

An east to west boundary ditches with three recuts ran along the northern boundary to the site (**M777**, **M778**, **M782** and **M785**). Directly adjacent to the south of these ditches was a roughly parallel cobbled trackway (**507**). A curvilinear ditch (**M792**) appeared to have run up to the boundary ditch. Five pits, possibly used for rubbish disposal, lay generally directly to the south of the boundary ditch and trackway. Pit **169** contained was a large amount of pottery with the latest dating from the mid 2nd century, moderate amounts of fired clay including daub, briquetage and possible industrial lining and a low density of crop processing waste.

A possible enclosure (**M786**) lay on the extreme south-western part of the main excavation area and a further east to west ditch in the southern excavation area (**M790**). Malting waste was recovered from the enclosure.

A posthole structure (**M787**) cutting boundary ditches **M777**, **M778**, **M782** and **M785** at the north-eastern part of the site has been tentatively assigned to this phase. It may have been rectangular in shape and was at least 6m long and at least 4m wide. A 17th-century silver pin recovered from the fill of one of the postholes (SF24; see Crummy, Section 7.1) may indicate that the structure was early post-medieval in date, or may have been intrusive.

5.5 Phase 5: Medieval to Modern

Two large late medieval to post-medieval quarry pits (**125** and **127**), presumably dug for sand extraction, were found on the north-west corner of the site. Brick recovered from the pits has been dated them to the 15th to 16th centuries and *c.*1700 respectively. There was relatively little evidence for modern activity on side with only a few Victorian pits, a sewer pipe and a few modern animal burials found. Ditches **675** to **683** on extreme southern excavation area ran parallel and adjacent to the existing site boundary and seem to represent an earlier phase of this boundary.

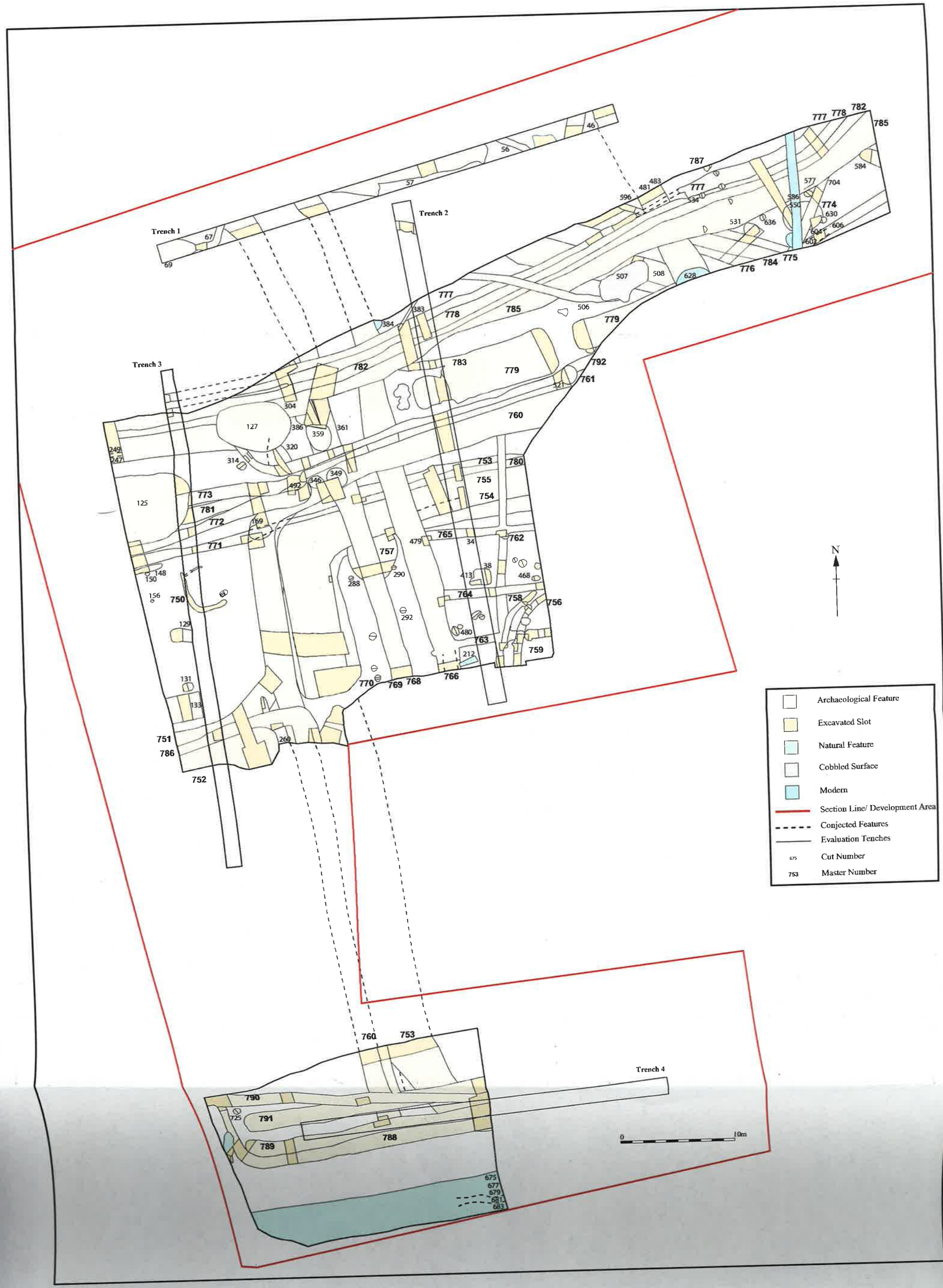

***Figure 2** Site Plan*

Figure 3 *Phase plan*

6 ASSESSMENT

6.1 Quantification of the Archive

6.1.1 Evaluation

4 sheets of context lists
103 context records

6.1.2 Excavation

19 sheets of context lists
593 context records

1 sheet of plan register
1 plan at 1:10
18 plans at 1:50

2 sheets of section register
74 sections at 1:10 or 1:20

4 sheets of sample register
39 environmental samples
34 bulk samples (10 litres +) of which 4 are 10 litre and the rest 20 or 30 litres
5 pollen samples

1 sheet of site objects register
24 individually numbered Small Found objects

3 sheets of photographic index
13 photographic register sheets
3 B&W print films
4 colour print films
4 colour slide films
2 digital camera sheets

6.2 Stratigraphy and Phasing

6.2.1 Provenance and Dating

The activity revealed through excavation can be attributed to five periods:

- Phase 1: Late Iron Age (1st century BC)
- Phase 2: Late Iron Age to Roman (1st century BC to mid 1st century AD)
- Phase 3: Early Roman (1st century AD to mid second AD)
- Phase 4: Roman (mid second AD to early third AD)
- Phase 5 Medieval and Post-Medieval

6.2.2 *Range and Variety*

Archaeological remains were found across the whole excavation area. In some places these were comparatively dense with relatively complicated stratigraphy, although in others the remains comprised scattered features, with few stratigraphic relationships.

The excavation revealed a limited number of feature types which varied from period to period. There were enclosure ditches in the Late Iron Age and transitional periods, within which there was evidence of former structures including ring ditches and a posthole structure. The Early Roman features may have been field and enclosure ditches. In the Middle Roman period features consisted of field boundaries, enclosures and a few pits. A posthole structure has tentatively been assigned this phase.

The majority of features of the Iron Age and Roman periods were ditches and pits often backfilled with one fill. Intercutting or recut features were almost exclusively ditches, primarily functioning as boundaries. Features were cut directly into the natural underlying geology, thereby placing a heavy reliance on the stratigraphic record and artefact assemblages for dating and phasing the sequence.

6.2.3 *Condition*

The surviving archaeological remains were in generally good condition. There was no evidence of floor levels surviving on the site and the posthole structures only survived partially. Features were largely negative: in only one area part of the bank of a Roman boundary ditch (**247**) survived.

There was no evidence of plough damage (*i.e.* plough scaring marks). Some medieval and post-medieval quarrying was evident. The site formed back gardens in the later 20th century, which appeared to have resulted in a deep garden soil sealing the archaeological features.

Local soil conditions (sand) affected the archaeological artefacts. Animal bone survival was variable depending on where the bone had been deposited. This is especially true for the Roman bone which did not survive at all in some places next to the natural subsoil. Metalwork have suffered damage in the acidic conditions.

6.2.4 *The Site Record*

The site record has been checked for internal consistency and preliminary interpretation, and has been fully cross-referenced. Drawn records in pencil have been fully checked and cross-referenced with the context record. The drawn record has also been combined with electronic survey data to produce a definitive site plan using Pro Cad and Adobe Illustrator software. The photographic record has been labelled and fully cross-referenced with the context record.

All site records are held currently at the AFU headquarters at Fulbourn, the artefacts are currently held by the relevant specialists and stored under the site code (MAR WR 03). Records and artefacts from the January 2003 evaluation have been incorporated into this PXA report.

7 THE FINDS

The specialists' reports are reproduced below, appendices to which are presented in Part 2. Provisional site phasing based on stratigraphy was given to all specialists prior to assessment of the various finds categories. This phasing has been subsequently slightly altered on the basis of the pottery and metal object reports below. There is therefore a slight discrepancy in the phasing between the assessment reports and Figs 2-4: this will be addressed during analysis.

7.1 Metal Objects

by Nina Crummy

7.1.1 Summary

The assemblage is very small but nevertheless reflects the multi-period nature of the site. The objects range in date from the 1st century AD through to the 17th century or later, and in the medieval and later periods cover a wide range of functions, from high-quality dress fittings to a sinker from a fishing net. A complete catalogue is provided in Part 2, Appendix 1.

All the coins and jetons are unstratified. They range in date from an *as* of Nero, dated AD 64-8, to a Charles I farthing token of mid 17th century date. The two jetons are a common type. Though made to be used for reckoning accounts, they were sometimes fraudulently passed off as coins (Mitchiner 1988, 17, 20-1).

The objects from the Roman phases of occupation consist of an unidentified iron object, a few iron nails and a copper alloy riveted strip. The medieval and later pieces consist of a buckle-plate and a strap-end, neither of which can be dated closely but are more likely to be later medieval than early, alongside a lead sinker from a fishing net.

The most striking item in the assemblage is an early post-medieval silver pin (SF24). Unlike copper-alloy pins, most of which are smaller and can be viewed as purely functional items used to fasten garments, this silver pin was clearly intended to be seen and was therefore probably used in a prominent position, for example, to pin a veil or other type of head-dress (Egan & Pritchard 1991, fig 198). The use of silver can be paralleled by a small group of 17th-century long silver head-dress pins from eastern Britain and Holland (Margeson 1993, 8-9) and by a pin with a globular head from Sturton-by-

Stow, Lincolnshire (*Treasure Annual Report* 2001, no 122). The latter is similar in size and form to the March pin, but details of how the head was made are not given; it may have been cast in one with the pin shank.

7.1.2 Recommendations

Four artefacts are recommended for illustration:

SF 24. (499). Fill of posthole (500). Phase 4. Silver pin with a globular head made from D-sectioned wire soldered around the top of the shaft with the ends neatly butted together. The shaft is straight and narrow, and the lower third has been bent over sharply to form a hook. Straight length about 65 mm. The head type belongs to Chelmsford Type K, dated to *c* 1560-90, Colchester Type 4, where it also occurs in 17th-century contexts (Caple 1985, 48; Crummy 1988, 8; Margeson 1993, 13), though all these examples are of copper alloy.

SF 10. (132). Fill of quarry (133). Phase 5. A copper-alloy strap-end, trilobate at one end, with a rivet at the tip of the central lobe, and widening out to a straight edge at the other, where a central perforation points to the position of a second rivet. Length 26 mm, maximum width 21 mm. The form is related to the 14th century shield-shaped plates from London and Norwich which had a bar-mount set across the straight end, often fixed by a single central rivet (Egan & Pritchard 1991, 156-8; Margeson 1993, 40, fig 23, 271).

SF 15. Unstratified. The upper plate of a small folded copper-alloy buckle-plate, the outer edges defined by a marginal groove. Slightly tapering, with three rivets for attachment, two near the narrow end (one is missing), one placed off-centre towards the wide end. The plate is sharply bent close to this rivet. The wide end is notched to allow the tongue to pivot, and it is the narrowness of this notch which identifies the plate as from a buckle rather than a book-clasp. Straight length 27 mm, width 10 to 12 mm.

SF 21. Unstratified. Lead net sinker, made by rolling a piece of sheet metal into a tube. Length 20 mm. In the medieval period these small weights were attached to the bottom edges of hand nets to facilitate a clean throw (Ottaway & Rogers 2002, 2747-9).

7.2 Brooches

by D.F. Mackreth

7.2.1 Introduction

Seven brooches (two Late Iron Age and five Early Roman) were recovered from the excavations. The brooches date from the middle of the 1st century BC to perhaps the early 2nd century AD.

7.2.2 Late La Tène

1) Brooch (467; SF 30) was from a Phase 2 posthole. It had a four-coil-internal-chord spring which is attached to the back of the bow, rather than from the top. The bow is in poor condition and has lost its catch-plate. The top is rounded, with the suggestion of a groove around it. The sides curve outwards to points and then return in a curve to the top of the lower bow which is more or less like a narrow bar.

   Closely allied to Feugère's Type 5c (Feugère 1985, 205), examples are excessively rare in Britain, only one other example having been recorded by the writer: Mildenhall, Wiltshire (Devizes Museum, 957).

Feugère dates the basic 5c loosely to the middle of the 1st century B.C. (*ibid.*, 226) because the paucity of dating evidence does not allow for greater precision. This range should also include the period when the type was passing out of use.

2) Unstratified brooch (SF 26). A Colchester, only the stumps of the hook and spring are present. The bow is thin in comparison with the majority of the type, is very broad at the top and tapers to a pointed foot. Down the centre of the bow is a buried ridge which has been distorted using a punch to form a wavy line. The stump of the catch-plate has a line of walked graver ornament next to the bow.

This type is a member of the a sub-group named the Sedgford, the name deriving from an example from there in Kings Lynn museum (Acc. No. 98.962) and the distribution shows that it is basically at home in Norfolk and the Fens. The published dating is very weak, one from Snettisham being late 1st to early 2nd century (Flitcroft 2001, 55, not illustrated). There is little doubt that this sub-group dates to near the end of the main Colchester sequence: the brooch should not have been made much earlier than *c.*AD 30/35 and it may have lasted in use to *c.*AD 55.

7.2.3 Colchester Derivatives

3) The pin of this unstratified brooch (SF 12) was hinged, the axis bar being fitted into a slot along the back of the wings which was the closed. The wings and the bow, save for its top, are decorated with bead and reel. The top of the bow is plain apart from two diagonal beaded bands which form an inverted V. The catch-plate is largely lost.

The style of the brooch shows that it belongs to the eastern side of England, mainly between Hertfordshire and the Humber. The heavy use of bead and reel, and of other moulded elements also found in this sub-type, belongs to the Rearhook which ceased to be made c.60/61 AD and had largely passed out of use by 65 AD as a result of the suppression of the Boudiccan revolt. The western Fen margin used many elements found on the Rearhook and commonly used a hinged-pin. The question is whether this was made while the Rearhook was still current, or after the ravaging of Icenian lands. The basic dating available does not help: Ringstead, late first-early 2nd century (Jackson 1980, 29, fig.10, 2); Maxey, late first – late 2nd century (Pryor et al. 1985, 164, fig 111,4); Old Winteringham, before 200AD (Stead 1976, 198 fig. 100,16). As so many with hinged-pins come from Norfolk, this dating is clearly too late. A range from 50/55 AD to 70/80 AD is suggested.

4) The foot of a plain Colchester Derivative (SF 20; unstratified). The catch-plate has a large almost triangular opening. The presence of a

large single opening in the catch-plate indicates a date in the second half of the 1st century AD.

7.2.4 *Headstud*

5) The pin of unstratified brooch (SF 17) is hinged. On the head is a cast-on loop. Each wing has three steps. The bow tapers to a foot-knob made up of three cross-mouldings under three more at the foot of the bow. The stud, with an annular groove, is at the top of a raised element with an arris which runs to the cross-mouldings at the foot. The catch-plate is solid.

Clearly a Headstud Brooch, this example is, however, not of a common type. It has the cast-on loop and the stepped wings belonging to the type, but it lacks any of the ornament to be expected under the stud. Nevertheless, it is unlikely to have a *floruit* very different from the more usual forms and these run from *c.*AD 70/75 into the early 2nd century.

7.2.5 *Unclassified*

6) Brooch (497; SF 27) was from Ditch **M760** and dated to Phase 2. The pin was hinged, the axis bar housed in short wings which are square at the end, each having a couple of buried ridges. On the head is a cast-on loop. The bow has a rounded top issuing from the flat face of the wings and tapers to the foot-knob made up of two cross-mouldings. On the front of the upper bow is a raised elongated lenticular figure in which is a buried ridge treated as that on Brooch 2.

While it might be tempting to relate this brooch to a particular group found in the deeper south-west (*e.g.* Leech 1982, 105, fig 76,11), it has relatives much closer to home. They are not common, none is dated and only one published (Hattatt 1985, 105, fig.43, 429). They belong to the east, and with this example, they seem to be more common on the western Fen margin than elsewhere. Dating is absent, but the general style is possibly roughly contemporary with the Headstud (see Brooch 5).

7.2.6 *Hod Hill*

7) Brooch (SF 16) was unstratified. The axis bar of the hinge-pin was housed in the rolled-over head. The upper bow has four vertical mouldings, between a cross-moulding top and bottom, and tapers out slightly on each side and at the lower end was a wing on each side each of which had two more mouldings and presumably ended in a knob. The lower bow tapers to the remnants of the usual foot-knob.

No Hod Hill brooch has convincingly been published from a pre-conquest context. The distribution of the type shows that it is hardly to be found in the lands taken into the province in the early AD 70s. That

describes the date-range of the bulk of examples, however, one strand continued to the end of the 1st century and spawned new types all of which were made on the continent. The present example does not belong to this later element.

7.2.7 Recommendations

It is recommended that brooches 1, 2, 3, 5 and 6 are illustrated: apart from this, no further work is needed on the brooches.

7.3 Lithics

by Stephen Kemp

Ten lithic artefacts were retrieved during excavation and a complete catalogue is provided in Part 2, Appendix 2. These were all manufactured on flint all of which would have been available from local river gravel sources. This seems to be reflected in the size of the flakes and blades.

Both flakes and blades were recovered none of which are diagnostic to a particular period, nor have they been worked into tools. All appear to be of hard hammer manufacture. A blade (context 465; fill of posthole **466**, part of structure **M759**, Phase 2) is small and irregular whilst that from context 463 (fill of posthole **464**, also part of structure **M759**) is from primary flaking. Both seem to have taken this blade form rather fortuitously than by intentional blade manufacture.

Flakes and blades occur throughout the archaeological phases defined for this assessment. In all cases they were found within the fills of cut features and their placement in pits, post-holes and ditches and in small quantities suggests their occurrence is residual.

The small quantity of lithic materials, the fact that there are no specific type fossils or characteristics to suggest a period of manufacture along with little other evidence for prehistoric activity in the immediate area suggest that further analysis of this assemblage is not necessary.

7.4 Iron Age and Roman Pottery

by Sarah Percival and Alice Lyons

7.4.1 Summary

Evaluation and full excavations at Wimblington Road, March produced an assemblage of 957 sherds weighing 23.480kg. The majority of the pottery dates to between the later Iron Age and Early Roman periods, with a number of contexts containing transitional forms and fabrics. The assemblage suggests continuous occupation of the site throughout the 1st centuries BC to AD with activity ceasing by the beginning of the 3rd century AD. Pottery forms present indicate a domestic assemblage from a settlement of moderate status with limited access to high status products. The presence of pottery wasters may suggest a production site close by.

7.4.2 Introduction

The fabric descriptions and catalogue of pottery are presented in Part 2, Appendix 3.

The assemblage is generally in good condition, with few abraded sherds and was recorded using the following spot dating categories:

- Iron Age: handmade, clamp fired vessels mostly in quartz-sand tempered fabrics. Sherds are often small or undiagnostic and are therefore not closely datable;
- Later Iron Age: Handmade clamp fired vessels in a limited range of jar and bowl forms with rounded profiles in sandy and shell and grog tempered fabrics;
- Transitional: Vessels manufactured on a slow wheel or vessels of Roman form in Iron Age fabric;
- Early Roman: Vessels that can be dated by form and fabric to the mid-to-late 1st century AD to the mid-to-late 2nd century AD;
- Roman: General term for wheelmade kiln fired pottery of the late 1st to 4th centuries AD which is not closely datable.

Phase	Quantity (sherd count)	Weight (kg)
Bronze Age	2	0.016
Early Roman	200	2.861
Iron Age	88	2.007
Later Iron Age	231	8.846
Later Iron Age to 3rd century AD	5	0.518
Transitional	208	4.680
Roman	223	4.552
Total	**957**	**23.480**

Table 1: *Quantity and weight of Iron Age and Roman pottery by period*

7.4.3 Methodology

The assemblage was analysed using the pottery recording system described in the *Norfolk Archaeological Unit Pottery Recording Manual* (Shepherd 1999) and in accordance with the Guidelines for analysis and publication laid down by the Prehistoric Ceramic Research Group (PCRG 1992). The total assemblage was studied and a full catalogue was prepared. The sherds were examined using a binocular microscope (x10 magnification) and were divided into fabric groups defined on the basis of inclusion types present. Fabric codes were prefixed by a letter code representing the main inclusion present (F representing flint, G grog and Q quartz). Vessel form was recorded; R representing rim sherds, B base sherds, D decorated sherds and U undecorated body sherds. The sherds were counted and weighed to the nearest whole gramme. Decoration and abrasion were also noted. Cambridgeshire County Council Archaeological Field Unit curates the pottery and archive.

7.4.4 The Bronze Age Pottery

Two sherds of probable Bronze Age pottery were recovered from two contexts (197 & 620; **M755,** Phase 1 and **M788**, Phase 3 respectively). The sherds were identified by the presence of distinctive grog tempered fabric. Both are undiagnostic body sherds and are not closely datable.

7.4.5 Recommendations

No further work is required. The sherds do not require illustration.

7.4.6 The Iron Age and Roman Pottery

Nine hundred and fifty-five sherds, weighing 23.464kg, were identified as Iron Age and Roman date. The pottery was recovered from 142 excavated contexts as well as several unstratified deposits.

The Iron Age and Later Iron Age assemblage is characterised by jar forms with high rounded shoulders with short everted rims and rounded rim endings. A small number of sherds from carinated vessels are also present. The assemblage is largely quartz-sand tempered though some fabrics contain shell

and small quantities of grog tempered sherds are also present. The source of the shell is unknown but it is probably of fossil origin derived from the clay source. The assemblage provides a useful addition to recent work on later Iron Age pottery from sites around Ely.

The transitional element of the assemblage is of particular interest as very few contemporary sites have been published from the East Anglian region (Lyons 2000). The transitional pottery is distinguished from earlier Iron Age vessels by the use of the slow wheel in the manufacturing process. The slow wheel was used either to produce a complete vessel or to produce the body of the vessel which was then finished off with the application of a handmade rim. A number of large, thick walled storage jars with rolled rims in shell-tempered fabrics were found within the assemblage, these vessels were produced from the later Iron Age through to the 3rd century AD and are diagnostic of a domestic assemblage. Of particular interest is a sherd of Pompeii red ware (context 517; ditch **760**, Phase 2) an import dating from the mid 1st century AD; the sherd was found exclusively with sherds of later Iron Age fabric. Pompeian red ware has also been found associated with later Iron Age sherds at Quidney Farm, Saham Toney, Norfolk (Lyons 2000, 221).

Roman pottery recovered from the site is almost exclusively of 1st to 2nd century date with occupation ceasing by the 3rd century AD. The assemblage is characterised by course wares notably sandy grey wares which are unsourced, probably locally produced. A small number of grey ware wasters are present perhaps suggesting that the source for this production lay close to the site. Nene Valley grey ware is also present in small quantities along with a single example of Nene Valley colour-coated ware. The small quantities of samian and Nene Valley colour coated wares within the assemblage may be indicative of the early date of the site which also lacks other late styles such as shell tempered, Oxfordshire colour-coated and Hadham wares. A Holfiem type flagon dated to between the mid/late 1st century to early/mid 2nd century (context 16; ditch **M760**, Phase 2) is probably a Colchester product and may have a military association.

The Roman assemblage suggests a settlement of moderate status with limited access to luxury items. Vessels of particular interest include a Gaulish inspired tankard in sandy grey ware (context 461; ditch **M763**, Phase 3). The tankard is not closely datable but is found with possible later pottery perhaps suggesting that more high-status products became available to the settlement by the end of occupation there in the 3rd century AD.

7.4.7 Recommendations

A full publication report will be required. The report will supplement the existing catalogue with detailed form and fabric descriptions and will integrate site phasing and context data once these have been finalised. Integration of site data will allow the identification of key groups and possible presence of redeposited pottery. Regional comparisons are suggested with the Iron Age assemblages from London Road Downham Market, Norfolk (Percival forthcoming), Wardy Hill, Coveney (Evans 2003) and Haddenham,

Cambridgeshire (Hill and Braddock forthcoming) and Roman assemblages from Coldham Clamp (Potter 1965) Stonea Camp (Jackson and Potter 1996) and Quidney Farm, Saham Toney (Lyons 2000). A search of the SMR record is recommended to ensure all relevant site comparisons are found.

The publication report should include illustration of a maximum of twenty sherds for which a full descriptive catalogue will be provided.

7.5 Medieval pottery

by Carole Fletcher

7.5.1 Introduction

A total of 54 sherds of medieval and post medieval pottery, weighing 1.122 kg was recovered from the excavations. A complete catalogue of the pottery is provided as Part 2, Appendix 4.

7.5.2 Methodology

The basic guidance in the Management of Archaeological Projects (MAP2) has been adhered to (English Heritage 1991). In addition the Medieval Pottery Research Group (MPRG) documents *Guidance for the processing and publication of medieval pottery from excavations* (Blake and Davey 1983), *A guide to the classification of medieval ceramic forms* (MPRG 1998) and *Minimum Standards for the Processing, Recording, Analysis and Publication of Post-Roman Ceramics* (MPRG 2001) act as a standard.

Spot dating was carried out using the AFU's in-house system based on that used at the Museum of London. Fabric classification has been carried out for all previously described types. New types have been given descriptive identifiers. All sherds have been counted classified, and weighed. Sherds warranting possible illustration have been flagged, as have possible cross-fits.

All the pottery has been spot dated on a context-by-context basis; this information was entered directly onto a full quantification database (Access 2000), which allows for the appending of quantification data.

The pottery and archive are curated by the AFU.

7.5.3 Quantity and date range of material

The fieldwork generated a large assemblage of pottery, the majority of which is Iron Age, Late Iron Age and Roman in date. Within this assemblage are a small number of medieval and post–medieval sherds, and it is these that this assessment will consider. In total 54 sherds of medieval and post-medieval pottery, weighing 1.122kg were identified and removed from the main assemblage, including unstratified material.

The main periods represented in this portion of the assemblage are medieval and post–medieval. The date of most material falls within the 1200 to 1500 bracket. There is very little Saxo-Norman material within the assemblage. Only six sherds have been tentatively identified as dating to this period (1000–1200). Further to this material there are seven post 1700 sherds and a single sherd from a 1950's or 1960's cup in a pleasant yellow glaze.

The medieval material appears to be mainly residual within post–medieval quarry pits.

The post–medieval material was recovered both from quarry pits and as intrusive material from the upper layers of earlier features. From context 145, a single large sherd of Bourne D was recovered from among the earlier material, the edge of this sherd is covered with yellow marker paint, indicating that this sherd was on the surface of the feature and likely to be intrusive.

It is possible, however, that a few features other than the quarry pits, may have a non–Iron Age or Roman date. These features produced no other pottery apart from medieval or post–medieval sherds, although have been given an early phase by the excavator or have yet to be phased. In the case of the former the dating of these features should be reconsidered (see below).

The normal range of vessel types is present within the assemblage; these include jars and jugs in medieval Lincolnshire fabrics. The later post–medieval material is mainly bowls with some small fragments from several drinking vessels, mainly cups including small fragments of 18th-century fine wares. The character of the assemblage suggests the medieval and post-medieval material derives originally from a domestic context.

7.5.4 *Provenance, contamination, bias and condition*

The assemblage was small and full statistical analysis is not viable. The majority of the medieval and post medieval material was manufactured relatively locally in Lincolnshire. Some of the material is abraded, suggesting some reworking of the material after initial deposition. Contamination of the whole assemblage (including the Roman material) is light.

The basic statistics relating to source area for the assemblage are given in Table 2:

General provenance	% of assemblage by count	% of assemblage by weight (kg)
Cambridgeshire/Fenland	9.3	10.8
Essex	16.7	16.7
Lincolnshire	29.6	48.2
Norfolk	12.9	6.9
Staffordshire	16.7	6.1
Unknown	12.9	11
Import	1.9	0.3

Table 2: *General provenance areas for post-Roman assemblage*

The table indicates the source for the bulk of the assemblage to be Lincolnshire. The dominance of fabrics from Lincolnshire is partially due to the relative proximity of the production centres in the county. The other main suppliers of pottery are Essex and Staffordshire. These two counties supply the post–medieval wares within the assemblage.

Contamination of the assemblage as a whole is light, with only four intrusive sherds identified in contexts otherwise dominated by Iron Age or Roman pottery. Three of the sherds are post–medieval, two are in a feature that the excavator allocates to Phase 4 (Roman) and one sherd in a feature allocated to Phase 3 (Iron Age). The fourth sherd is medieval in date weighing 0.005kg and occurs in a context not phased by the excavator but which produced twenty Iron Age and Roman sherds weighing nearly 0.3kg.

There are, however, three contexts that the excavator places in Phase 3 that contain no other datable pottery apart from post–medieval sherds, and a single context in Phase 4 containing only medieval pottery. On these grounds it is suggested that they have been assigned to the wrong phase.

In addition to this material there are three contexts containing only post–medieval pottery and a fourth containing two sherds of medieval pottery and a single sherd of Iron Age or Roman date, to which the excavator has assigned no phase.

Residuality was evidently not a serious problem: there are relatively few sherds of ostensibly 1150 to 1450 date found alongside others whose date range extends between 1450 and 1800.

7.5.5 *Sampling bias*

The trenches were excavated by machine and further excavation was carried out by hand and selection made through standard sampling procedures on a feature-by-feature basis. There are not expected to be any inherent biases. Where bulk samples have been processed for environmental remains, there has also been some recovery of pottery. These are only small amounts, however, and serious bias is not expected to result.

7.5.6 *Condition*

This assemblage is very small. On average the sherd size is moderate (0.021kg per sherd). No preservation bias has been recognised and no long-term storage problems are likely.

This assemblage has no complete vessels. It is significantly fragmented and, in a well-understood and published region, would be deemed of limited value beyond the basic requirements of the stratigraphic sequence and the need to provide comparative period statistics.

7.5.7 *Statement of Research Potential*

The ceramic assemblage in general will assist in definition and dating of all settlement phases on the site. The small size of the medieval assemblage, however, limits analysis.

The assemblage has little potential to aid local, regional and national priorities.

7.5.8 *Proposals for Further Record and Analysis*

The stratified pottery from all phases of excavation described here has been quantified to a basic level. The assemblage offers little potential for further study.

7.6 Brick and Tile

by Rob Atkins

7.6.1 *Introduction*

A very small collection of brick and tile was recovered from the excavations with nine pieces of brick weighing 2.4kg found in Phase 4 and Phase 5 contexts. A complete catalogue is provided in Part 2, Appendix 5.

A complete early brick (15th to 16th century) was found in quarry pit **125** and was sub-square in shape 123mm by 117mm and 37mm thick. Brick from quarry pit **171** and ditch **483** were *c.*1700 in date. A small quantity of 19 roof tile pieces weighing 0.9kg, probably Roman in date, were found in Phase 3, 4 and 5 features. None of the roof tile was diagnostic.

7.6.2 *Conclusions and recommendations*

Due to the small size and undiagnostic nature of the tile recovered, no further work is recommended.

7.7 Stone Objects

by Steve Critchley

7.7.1 *Introduction*

Eight quernstone fragments were recovered from eight separate contexts. The quernstones have been divided into two rock types, vesicular basaltic lavas (four samples) and siliclastic sediments of varying grade (four samples). The latter has been subdivided into Millstone Grit and Hertfordshire puddingstone conglomerate.

7.7.2 *Geological*

All the lava samples were of a similar light to grey fine textured vesicular balsalt. The nearest source area with a known extensive production record from the Bronze Age to the 19th century is the Mayen Quarries of the Eifel region of Germany. Further afield less likely sources could include the Volvic area of Southern France or Ampurias in Southeast Spain. Two Carboniferous Millstone Grit querns were both semi-arkosic arenite in nature and probably mined from the Southern Pennine area. Two examples of Hertfordshire puddingstone conglomerate were found.

7.7.3 *Contexts*

The quernstones were found across the site with no real concentration of deposits and were mostly found deposited in ditches in a fragmentary state.

Lava querns were traded in the 1st and 2nd centuries AD before the trade ceased (Peacock 1980, 50). Millstone grit stones were traded from the Pennines throughout the Roman period into East Anglia though it has been argued that there was a possible chronological difference between the Roman use of Millstone grit and of Lava; the utilisation of Millstone Grit may be on the whole be somewhat later than the use of lava (Buckley 1995, 86). As Table 3 below shows, on this March site there does not seem to be a chronological difference between the two types of quern stones.

Context/ master no.	SF No	Type	Feature	Phase
295 (**M781**)	-	Lava	Ditch	3
347	-	Lava	Pit	4
528 (**M784**)	25	Lava	Ditch	3
658 (**M760**)	-	Lava	Ditch	2
78 (**M771**)	-	Millstone	Ditch	3
122 (**M780**)	-	Millstone	Ditch	3
447 (**M761**)	23	Hertfordshire	Ditch	3
496 (**M760**)	-	Hertfordshire	Ditch	2

Table 3: *Quernstones by type, feature and period*

7.7.4 *Recommendations*

No further work is merited on the quernstones.

7.8 Fired clay and other objects

by Rob Atkins

A small collection of 239 fired clay pieces weighing 6.25kg was recovered from the excavations and a complete catalogue is provided in Part 2, Appendix 6. The fired clay largely consists of small undiagnostic pieces found in Phases 1 to 4. There is a bias in the amount of undiagnostic fired clay from the early Roman Phase 3 (Table 4).

Phase	No. of fragments	Weight (kg)	No. of features
1	5	0.074	5
2	24	0.229	3
3	74	1.455	21
4	50	0.309	8
uncertain	4	0.027	1
Total	**157**	**2.274**	**38**

Table 4: *Undiagnostic clay pieces by number and weight*

There were no domestic or industrial features found in the excavation and the pieces were found as secondary deposits in later features. The fired clay was sub-divided into four categories; briquetage, daub with wattle impressions and probable lining from both domestic and industrial features.

7.8.1 Briquetage

Briquetage was recovered as secondary deposits and consisted of at least 36 pieces weighing 2.3kg from at least 12 different features of all phases on site (Phases 1 to 5). Within the collection there were a few briquetage objects recovered including two vessel fragments from Phase 1 **M754** (Morris 2001 fig 17, 3) and Phase 4 pit **169** as well as some lining from a structure(s).

The quantity of briquetage implies that saltmaking was taking place close to the excavation area. It is tempting to see the Late Iron Age and transitional occupation on the site as relating to this adjacent salt making areas as has been found on other March sites such as Longhill Road (Atkins 2003).

7.8.2 Daub with wattle impressions

There were 29 daub pieces weighing 1.1kg with wattle impressions from four separate Phase 3 and Phase 4 features. The vast majority (25 pieces weighing 0.952kg) were found in Phase 4 pit **169**.

7.8.3 Probable Fired Clay Lining Domestic Features

There were only a few fragments of fired clay lining which probably originated from domestic structures such as ovens. These were found in Phase 3 ditches (**766** and **776**).

7.8.4 Probable Fired Clay Lining of Industrial Features

There were 7 pieces of clay weighing 164g with vitrified green glassy surface which were found as secondary deposits in five features assigned to Phases 1, 3 and 4 (see Part 2, Appendix 6). These pieces were fired at temperatures, probably too hot for domestic oven lining and were industrial in nature (Carole Fletcher pers. comm.). The glassy surface was *c.*1mm in thickness implying there had been only one or two firings.

7.8.5 *Object*

A possible fired clay loom or thatch weight with a central hole *c.*14mm in diameter came from Phase 3 ditch **763**.

7.8.6 *Recommendations*

No further work is required on the fired clay.

8 THE ZOOARCHAEOLOGICAL AND BOTANICAL EVIDENCE

8.1 Human bone

by Ian L. Baxter and Jeni Keen

8.1.1 *Summary*

Two probable human bones were found in the evaluation stage. One was a mandibular fragment containing an unworn molar (probably 2nd) from Phase 3 ditch **766**. A possible femoral head from Phase 2 ditch **760**. Burning had occurred on part of the bone.

During subsequent excavation a femur shaft was found in the same Phase 2 ditch (**760**) though in a section *c.*40m to the south. It is uncertain if these bones are from the same skeleton. Both of the epiphyseal ends are absent and sex and age are, therefore, difficult to ascertain. The bone appears to be adult and the *linea aspera* is prominent, suggesting a male.

Given their date of deposition, it is probable that Iron Age burials were disturbed by later activity on the site.

8.1.2 *Recommendations*

No further work is merited on the human remains.

8.2 Mammal, bird and amphibian bones

by Ian L. Baxter

8.2.1 *Introduction*

Due to the small assemblage recovered it was decided to carry out a full report on the animal bone at this stage. A total of 125 'countable' (see below) animal bones were collected by hand from the site (Table 5). An additional 18 'countable' fragments were recovered from the sifted environmental sample residues (Table 6). This is a very small assemblage and, therefore, few secure

conclusions regarding temporal changes in economy or animal husbandry can be made with any degree of certainty.

Following the site phasing the animal bone has been divided into four chronological periods:

1) Iron Age
2) Iron Age/Romano-British Transition
3) Early Romano-British
4) Romano-British

8.2.2 Methods

All of the animal bones from March were hand-collected. Consequently, an under-representation of smaller species and body parts due to a recovery bias is to be expected from this site.

The mammal bones were recorded following a modified version of the method described in Davis (1992) and Albarella and Davis (1994). In brief, all teeth (lower and upper) and a restricted suite of parts of the skeleton was recorded and used in counts. These are: horncores (if measurable), skull (zygomaticus), atlas, axis, scapula (glenoid articulation), distal humerus, distal radius, proximal ulna, carpal 2+3, distal metacarpal, pelvis (ischial part of acetabulum), distal femur, distal tibia, calcaneum (sustenaculum), astragalus (lateral side), centrotarsal, distal metatarsal, proximal parts of the 1st, 2nd and 3rd phalanges. At least 50% of a given part had to be present for it to be counted. The presence of large (cattle/horse size), medium (sheep/pig size) and small (cat/dog size) vertebrae and ribs was recorded for each context, although these were not counted.

For birds the following were always recorded when present: scapula (articular end), proximal coracoid, distal humerus, proximal ulna, proximal carpometacarpus, distal femur, distal tibiotarsus.

'Non-countable' elements of particular interest were recorded but not included in the counts.

The separation of sheep and goat was attempted on the following elements (if present): dP_3, dP_4, distal humerus, distal metapodials, and distal tibia using the criteria described in Boessneck (1969), Kratochvil (1969) and Payne (1985). The shape of the enamel folds (Davis 1980; Eisenmann 1981) was used for identifying equid teeth to species. Equid postcrania were assigned to species using criteria summarised in Baxter (1998b). The crown heights of equid grinding teeth (premolars and molars) were recorded to establish a relative age at death, following Levine (1982).

Wear stages were recorded for all P_4s and dP_4s as well as for the lower molars of cattle, sheep/goat and pig, both isolated and in mandibles. Tooth wear stages follow Grant (1982). These are retained in the Access database.

Bone measurements are also retained in the Access database. These in general follow von den Driesch (1976). Pig measurements follow Payne and Bull (1988). Humerus HTC and BT and tibia Bd measurements were taken for all species as suggested by Payne and Bull (1988) for pigs.

8.2.3 *Cattle*

Cattle are the most frequent domestic species by number of identified fragments (NISP) for all phases of the site (Table 5). All the cattle examined are shorthorned beasts and were they can be sexed (based on the criteria of Armitage and Clutton-Brock 1976) are male. Particularly noteworthy are two male (bull) horncores from Phase 1 (Iron Age). These are much flattened, and not typical of other Iron Age sites in Cambridgeshire (which generally include both 'Celtic' smallhorns as well as shorthorns), but resemble others which have been recorded from Romano-British sites (*e.g.* Gidney 1999, Plate 17). Cattle horncores of this type were not seen at the Early and Middle Iron Age sites at Fordham (Baxter 1998a) and Fen Ditton (Baxter 1999) or the Romano-British site at Haddon Lodge (Baxter in press and 2000). If present at Wimblington Road in the pre-Roman Iron Age they would probably represent continental imports.

All the cattle horncores derive from adult beasts. Similarly, most of the teeth and epiphyses derive from fully adult cattle. A cattle metatarsal from Phase 3 (early Romano-British) (64) has the distal epiphysis broadened to Stage 3 (Bartosiewicz *et al.* 1997), suggesting that it may have been a draught animal. The withers height of this animal, based on Matolcsi (1970), was 120cm. A lower M3 from Phase 4 (315) has the third pillar (hypoconulid) absent. This is a common congenital abnormality (Andrews & Noddle 1975). Of five recordable and measurable cattle lower 3rd molars recovered from the site in all phases this is the only one with a missing hypoconulid (1/5).

8.2.4 *Sheep*

Sheep/goat is second to cattle by number of identified fragments in all phases of the site (Table 5). However, ovicaprid fragments comprise the most frequent taxon of all species (with cattle absent) in the environmental samples (Table 6) suggesting that they may be significantly under-represented in the hand-collected material. All of the bones and teeth that can be identified to species belong to sheep (Tables 5 and 6) and there is no evidence for the presence of goat. The sheep show a wide range of ages on the basis of dentition and it is probable, as with other sites at this time, that sheep husbandry was unspecialised. Only two bones were sufficiently complete to calculate withers heights, based on the multiplication factors of Teichert (1975): Phase 1 (438) 56cm and (155) 64cm.

8.2.5 *Pig*

Pig remains are less frequent than those of the other main domestic food species. They are present in all periods, however. The (uncounted) frontals of two juveniles and a juvenile fibula were found in Phase 4 (482).

8.2.6 *Horse*

Horse and pony teeth and bones occur in all phases of the site, accounting for 5% of domestic mammals. No complete bones suitable for calculating withers heights were recovered, but several teeth indicative of age at death were found. These comprise: a lower P2 from Phase 1 (436) from an individual aged 12 years, a lower first incisor of an animal aged around 10 years (Barone 1980) from Phase 4 (551), a lower M3 from Phase 4 (480) belonging to a horse aged 7 years (both based on Levine 1982).

8.2.7 *Dog*

Domestic dog remains are relatively common at Wimblington Road, accounting for 7% of domestic mammals. They include three partial crania of large animals. That recovered from Phase 1 (204) is in the upper range of Iron Age dog crania recorded by Harcourt (1974). This individual has multiple transverse cut marks on the frontal crest posterior to the orbit on both sides. Cut marks in this region are absent from the dog crania recovered from the final La Téne period site at Villeneuve-Saint-Germain (Yvinec 1987) which formed part of an assemblage of skinned dogs, but are present on the medieval domestic cat crania from Bene't Court, Cambridge (Luff and Moreno García 1995) which were apparently eaten. Crania within the upper size range for Romano-British dogs were found in Phase 3 (716) and Phase 4 (311). The latter is noteworthy as being particularly large. Several dog metapodials were recovered from which approximate shoulder heights may be calculated using the factors published by Clark (1995). A large animal of around 61cm at the shoulder is represented by a 3rd metacarpal from Phase 3 (279). Smaller dogs of 44cm and 47cm are represented by metapodials found in Phase 1 (197) and Phase 3 (279) respectively. The upper canine tooth of a small dog was found in Phase 4 (315) and an (uncounted) medium sized radius shaft in Phase 3 (469). The latter had been gnawed (presumably by dogs) at both ends.

8.2.8 *Wild and Domestic Birds*

Two domestic fowl (chicken) bones were found at the site, both in Phase 3 deposits. A coracoid was recovered in (179) and a femur in (213). The latter has cat or small dog tooth punctures on the distal end that fit the space between the upper 3rd incisors of a modern domestic cat. A goose scapula fragment was found in Phase 3 (271). Although incomplete, it is on the small side for a domestic bird and species attribution is not possible. A wild passerine (of approximately thrush size) is represented by a foot 1st phalanx found in a sample from Phase 2 (658).

8.2.9 *Wild Mammals and Amphibians*

A few wild mammal and anuran amphibian bones and teeth were recovered from the environmental samples. Fragments attributable to water vole (*Arvicola terrestris*) were found in Phase 3 (297) and Phase 4 (402). Bones from smaller indeterminate mice or voles were recovered from contexts in Phases 2-4. A shrew humerus was found in Phase 4 (402). This probably

belonged to a common shrew (*Sorex araneus*). Anuran amphibian remains were recovered from samples taken from Phase 3 contests. The only element identifiable to genus is a frog (*Rana* sp.) ilium found in (297).

8.2.10 *Other Finds*

A coprolite was found in a sample from Phase 3 (609). This contains no obvious bone fragments and could be either dog or human. This can only be conclusively determined by further (invasive) analysis.

8.2.11 *Discussion and conclusion*

The remains of cattle constitute the most numerous taxon at Wimblington Road in all periods of occupation. This is frequently the case in Cambridgeshire during the late Iron Age and Romano-British periods. However, sheep bones and teeth are more common in the environmental samples taken suggesting that ovicaprids are to some extent under-represented in the hand-collected assemblage. Horse and dog remains are more frequent than those of pigs. Several large dog crania were recovered, one of which was butchered. The bones of domestic birds were found in the early Romano-British deposits but are infrequent.

Taxon	**Phase**				**Total**
	1 Iron Age	**2 IA/RB transition**	**3 Early Romano-British**	**4 Romano-British**	
Human (*Homo sapiens*)	-	+	-	-	+
Cattle (*Bos* f. domestic)	15	16	26	14	**71**
Sheep/Goat (*Ovis/Capra* f. domestic)	6	12	12	3	**33**
Sheep (*Ovis* f. domestic)	(2)	(5)	-	(1)	**(8)**
Pig (*Sus scrofa*)	1	-	3	+	**4**
Horse (*Equus caballus*)	1	1	2	2	**6**
Dog (*Canis familiaris*)	2	-	4	2	**8**
Domestic Fowl (*Gallus* f. domestic)	-	-	2	-	**2**
Goose (*Anser/Branta* sp.)	-	-	1	-	**1**
Total	**25**	**29**	**50**	**20**	**125**

Table 5: *Number of hand-collected mammal and bird bones (NISP)*
'Sheep/ Goat' also includes the specimens identified to species. Numbers in parentheses are not included in the total of the period. '+' means that the taxon is present but no specimens could be 'counted' (see text).

Taxon	Phase				Total
	1 Iron Age	2 IA/RB transition	3 Early Romano-British	4 Romano-British	
Sheep/Goat (*Ovis/Capra* f. domestic)	1	2	2	2	7
Sheep (*Ovis* f. domestic)	(1)	(1)	-	-	**(2)**
Pig (*Sus scrofa*)	-	1	-	-	**1**
cf. Water Vole (*Arvicola terrestris*)	-	-	1	1	**2**
Mouse/Vole (Murid/Microtine)	-	1	1	1	**3**
Shrew (*Sorex* sp.)	-	-	-	1	**1**
Bird (*Aves* sp.)	-	1	-	-	**1**
Anuran Amphibian (*Rana/Bufo* sp.)	-	-	4	-	**4**
Frog (*Rana* sp.)	-	-	(1)	-	**(1)**
Total	**1**	**5**	**8**	**5**	**19**

Table 6: *Number of mammal, bird and amphibian bones (NISP) in the sieved assemblage*

'Sheep/ Goat' and 'Anuran Amphibian' also includes the specimens identified to species or genus. Numbers in parentheses are not included in the total of the period. '+' means that the taxon is present but no specimens could be 'counted' (see text).

8.3 Sedimentology and pollen analyses

by Steve Boreham

8.3.1 Introduction

The Wimblington Road excavation was *c.*250m south of St. Wendreda's Church, which is situated near the top of the north-south trending March ridge at 3-4m O.D. The ridge is underlain by the Pleistocene shell-rich March Gravels and Jurassic Ampthill Clay bedrock. The March ridge forms a gravel 'island' surrounded by fenland, and as such would have formed an important focus for human occupation.

The rationale behind the sampling regime applied at this site was to attempt to provide a continuity of palaeoenvironmental reconstruction from the Late Iron Age through to the Middle Roman period. This was possible due to the variety of cut and fill features at the site dated by pottery. Five sequences of various ages were described and sampled (see below); a total of 56 pollen samples was taken. In addition, a previously un-bottomed pit filling of indeterminate age was augered, and the basal organic material containing wood was sampled. This wood has been identified (see below) and could potentially be submitted for a radiocarbon date, if necessary.

The Late Iron Age sequence comprises grey silt and sandy silt of presumably alluvial origin, whilst the Late Iron Age/Early Roman sequence is mainly black and brown organic (peaty) material. The Early Roman sequence is largely organic silt, and two Middle Roman sequences comprise an organic

silt unit and for the most part an alluvial silty clay. It has been suggested that the site may have become progressively inundated by rising water levels accompanied by over-bank alluvial sedimentation, so that it had been virtually abandoned by Middle Roman times. Pollen analyses from the sediments sampled from each of the five trenches has been carried out. A reconstruction of palaeoenvironments for the entire Late Iron Age to Middle Roman period at the site has been attempted.

A preliminary investigation of the pollen from 16 samples has been undertaken. Three samples from each of the five sections described and sampled were processed, together with a single sample from the base of the pit filling. Given the poor preservation and low concentrations of pollen from many of these sediments, it has been determined that further analysis of the remaining 41 samples would not be productive or cost-effective. Indeed, given the poor condition of the pollen it was decided to curtail pollen counting activities, rather than waste resources on achieving the usual counts of 300 grains for all samples. For this reason the results should be treated with some caution, and especially those samples where counts of even 100 grains were not achieved.

Each cut and fill feature must be viewed as a separate entity, having a unique depositional history. In general, the model for accretion in a ditch would suggest water-lain anoxic sedimentation at first, followed by damp marsh-type environments, soil formation and eventual desiccation and oxidation. Deviation from this general pattern, as suggested by the pollen and sediment record, may suggest important changes in local ground water conditions during the time of the ditch in filling.

The $1cm^3$ pollen samples described here were prepared using the standard hydrofluoric acid technique, mounted in silicone fluid and counted for pollen using a high-power stereo microscope. The percentage pollen data has been summarised in Table 7.

8.3.2 Section Descriptions, Pollen Analyses & Interpretations

Late Iron Age
Cut **240** (**M755;** Phase 1)

Stratigraphy:

Top of section	95cm
69-95cm	Grey silty sand with chalk and flint pebbles
49-69cm	Yellow-grey mottled sand
42-49cm	Yellow-grey silty sand with pebbles
36-42cm	Grey sandy silt
31-36cm	Grey silt
22-31cm	Grey sandy silt
14-22cm	Yellow-grey silty sand with pebbles
0-14cm	Yellow-brown sand and gravel (March Gravel)

Pollen samples collected at; **15**, 20, 25, 30, 33, **35**, 40, 50, 55, 60, **70**cm

The basal sediments (14-42cm) appear to represent alluvial deposition by still or slowly flowing water. Above 42cm there is evidence for in-wash, desiccation, oxidation, and partial soil formation.

Pollen was prepared and analysed from three samples taken at 15, 35 & 70cm. Pollen preservation was not particularly good, and only the sample at 35cm in the grey silt unit produced enough pollen to give a count exceeding 100 grains. The basal sample (15cm) from the pebbly silty sand unit produced a pollen spectrum dominated by grass and herbs, but with 12.5% willow. The sample from the grey silt unit (35cm) produced a similar grass-dominated signal, but with sedges, herbs and riparian vegetation. A comparable assemblage was counted from the upper pebbly silty sand unit (70cm). It is important to note that the samples at 35 & 70cm both contained elevated proportions of resistant undifferentiated *Asteraceae* (*Lactuceae*) pollen and undifferentiated *Pteropsida* (*monolete*) spores, which together are often taken as evidence of post-depositional pedogenic oxidation and modification of the pollen signal. In the case of the sample at 35cm, it appears that these resistant types could have been washed down through the overlying material, since diversity, preservation and abundance of pollen in this sample was relatively good.

This sequence is interpreted as representing a ditch filling. The surrounding environment was apparently a pastoral meadow, with no evidence of arable activity or land disturbance. Initially, it appears that the ditch remained wet through most of the year, and supported willow along its banks. Subsequently, it appears that the ditch was invaded by emergent sedges, and that banks became overgrown by a variety of tall herbs. Finally, the ditch became drier, and soil material was washed into the ditch, filling it up.

Late Iron Age/ Early Roman
Cut **18** (**M760**; Phase 2)

Stratigraphy:

Top of section	100cm
77-100cm	Yellow-brown mottled silty sand with pebbles
70-77cm	Orange-grey mottled silty sand with shell fragments
58-70cm	Orange-grey mottled silty sand
42-58cm	Grey-black sandy silt with occasional pebbles
25-42cm B	Brown organic material
13-25cm	Black organic material
5-13cm	Grey-brown mottled organic silty sand
0-5cm	Orange sand and gravel (March Gravel)

Pollen samples collected at; **15**, 20, 25, 30, **35**, 40, 45, 50, 55, 60, **70**, 80cm

The basal sediments (5-58cm) seem to show deposition in a still, and perhaps anoxic water body. Above 58cm there is a strong indication of in-wash, desiccation, oxidation, and partial soil formation.

Pollen was prepared and analysed from three samples taken at 15, 35 & 70cm. Pollen preservation was best in the basal sample (15cm) where a count exceeding 100 grains was achieved. Preservation was poorer in the sample at 35cm and the upper sample proved to be completely barren. The basal sample

(15cm) from the black organic unit yielded an assemblage dominated by grass, but with willow, sedges, herbs and riparian vegetation. It also contained a few grains of oak and birch pollen. The sample from the overlying brown organic unit (35cm) produced a similar grass-dominated signal, but without sedges, trees or shrubs. Although pollen was sparse, there was no evidence of post-depositional oxidation and modification of the pollen signal.

This sequence is interpreted as representing a ditch filling. The adjacent habitat was seemingly open grassland. There is no evidence of arable activity or land disturbance. It seems that at first the ditch was perennially wet and supported abundant emergent sedge swamp with margins covered by a variety of tall herbs. Subsequently, there appears to have been desiccation of the ditch so that the sedges disappeared, leaving only herbs of riparian and damp ground habitats. Finally, the ditch was filled by in-washed soil material.

Early Roman
Contexts **246/247/248/249** (Phase 3)

Stratigraphy:

Top of section	145cm
104-145cm	grey-black crumbly topsoil
76-104cm	grey-brown silty sand
53-76cm	grey-brown silty sand with shells and flint clasts
37-53cm	grey silty sand with pebbles
28-37cm	black organic sandy silt occupying a channel-form
23-28cm	orange-brown medium sand with pebbles (washed-in or re-cut)
22-23cm	grey silt
21-22cm	black organic silt
9-21cm	grey silty sand with occasional pebbles
3-9cm	grey organic silty sand
0-3cm	orange-brown sand (March Gravel)

Pollen samples collected at; **4**, 10, 15, 21, 25, 30, **35**, 40, 50, 60, 70, **80**cm

The sequence from this site was relatively complex. The basal organic silty sand unit (3-9cm) seems to indicate deposition in a slowly flowing water body. This is followed by a pebbly silty sand (9-21cm), which suggests a faster flow, or perhaps in-wash. This unit is overlain by grey and black organic silt (21-23cm) indicating still and perhaps anoxic conditions. There is then evidence of re-cutting and the in-wash of pebbly sand, followed by organic sandy silt suggesting a return to still or slowly moving water. Above 53cm the silty sand may indicate slope-wash filling the ditch. It seems that this ditch feature may have remained damp to the present day, since there is little evidence for strong desiccation and oxidation, even within the uppermost topsoil.

Pollen was prepared and analysed from three samples taken at 4, 35 & 80cm. Pollen was best preserved in the basal sample (4cm) where the count exceeded 100 grains. Preservation was also good in the sample at 35cm, but poorer in the upper sample at 80cm. The basal sample (4cm) from the organic silty clay unit gave a pollen signal dominated by grass, with willow, sedges, herbs, riparian vegetation, and notably cereals. It also contained pollen of bur-reed indicating emergent aquatic vegetation. The sample from the organic sandy silt unit (35cm) occupying the re-cut channel produced a very similar grass-

dominated pollen spectrum, but with the addition of reedmace. In contrast, the upper sample (80cm), although dominated by grass, showed clear signs of post-depositional modification by pedogenic processes.

This sequence is interpreted as representing a ditch filling. The adjacent habitat was evidently meadow, with clear evidence of arable activity nearby. It appears that the ditch remained perennially wet for much of its existence, and was re-cut on at least one occasion. The ditch supported abundant emergent sedge, bur-reed and reedmace, suggesting water up to 0.5m deep, with banks supporting a variety of tall herbs. The ditch appears to have subsequently in-filled with slope-wash, but remained as a damp area in the landscape.

Middle Roman
Cut **234** (**M786** Phase 4)

Stratigraphy:

Top of section	75cm
5-75cm	black organic sandy silt with shells showing local yellow-grey laminae and strings of pebbles
0-5cm	grey-brown sand and gravel (March Gravel)

Pollen samples collected at; 5, **10**, 15, 20, 25, 30, **35**, 40, 45, 50, 55, **60**cm

This sequence (5-75cm) appears to be a homogenous organic sandy silt indicating deposition in a still or slowly flowing water body. However, the thin laminae and strings of pebbles suggest episodes of in-wash and faster flowing water.

Pollen was prepared and analysed from three samples taken at 10, 35 & 60cm. Pollen was poorly preserved throughout, and the sample from 35cm was barren. Indeed, a count of 100 pollen grains was not achieved in the time available. The basal sample (10cm) produced a pollen spectrum dominated by grass, with willow, sedges, bur-reed, herbs, riparian vegetation, and notably cereals. The upper sample (60cm) also gave a grass-dominated pollen signal, with herbs and cereals, but with clear indications that post-depositional modification by pedogenic processes had occurred.

This sequence is interpreted as representing a ditch filling. The sediment superficially appeared that it would be good for pollen preservation, but it is clear that the environment of deposition was aerobic. This implies that although seasonally wet and capable of supporting sedges, the ditch must have dried out each summer. It seems that the surrounding landscape was grassland, with arable activity close by. The barren sample in the centre of the sequence shows that desiccation must have been an important characteristic of this depositional environment from time to time.

Middle Roman
Cut **304** (**M785** Phase 4)

Stratigraphy:

Top of section	70cm
56-70cm	grey silty sand with shells and chalk and flint pebbles
40-56cm	grey-brown mottled sand with shells and pebbles
31-40cm	grey-orange mottled sandy silt with pebbles
15-31cm	grey-brown mottled silt
5-15cm	grey silt-clay with organic material
0-5cm	yellow-grey and brown medium sand with shells and pebbles (March Gravel)

Pollen samples collected at; 5, **10**, 15, 20, 25, 30, **35**, 40, 45, 50, **55**cm

The basal sediments (5-40cm) appear to indicate alluvial deposition in a still or slow moving water body. Above 40cm there is a strong indication of in-wash, desiccation, oxidation, and partial soil formation.

Pollen was prepared and analysed from three samples taken at 10, 35 & 55cm. Pollen was well preserved in the basal sample (10cm), but very poorly preserved at 35cm and absent at 55cm. A count in excess of 200 pollen grains was achieved for the basal sample (10cm) from the organic silt-clay. This sample produced a pollen spectrum dominated by grass, with sedges, bur-reed, herbs, riparian vegetation, and notably a small amount of cereals. This sample also contained pollen of privet, willow, birch, and tiny amounts of hazel and oak. The sample at 35cm contained only tiny amounts of grass pollen and was otherwise barren.

This sequence is interpreted as representing a ditch filling. It appears that initially the ditch was wet, but rapidly dried out and became in-filled by slope-wash, It is clear that the surrounding area was herb-rich meadow, with some arable activity close by. In addition there may have been some scrubby vegetation in the local area. The ditch itself supported emergent sedges and bur-reed, at least initially.

Middle Roman
Cut **345** (Phase 4; Carbon dating 1819 ± 168 BP)

Carbon dating:
90cm of grey sandy silt pit-fill (not investigated)

An augered hole in the base of the pit revealed (top down):

0-10cm	grey sandy silt
10-30cm	black organic material including wood
30-35cm	orange gravel and sand (March Gravel)

An auger sample was collected at 10-30cm (2.26-2.46m OD)

These basal sediments at 10-30cm (100-120cm below surface) appear to indicate deposition in a pool of standing water.

Pollen was prepared and analysed from the bulk sample taken at 10-30cm depth. Pollen preservation was good, and a count exceeding 200 grains was easily achieved. The black organic material yielded a pollen assemblage

dominated by grass, but with sedges, herbs, riparian vegetation and cereal pollen. The presence of strapwort plantain (*c.*5%) is notable since it is taken as an indicator of disturbed ground. The sample also contained pollen of oak, lime, ash, hazel, willow, holly and elder. There was no evidence of post-depositional oxidation and modification of the pollen signal. Analysis of organic fragments sieved from the sediment by W. Fletcher (Dept of Geography, University of Cambridge) revealed ash wood and many elder twigs. This is entirely compatible with the pollen evidence.

This material is interpreted as representing the basal part of a pit filling. The surrounding vegetation was apparently herb-rich meadow, perhaps with stands of shrub vegetation. There was clearly disturbance of the land, perhaps through trampling or ploughing close by, and evidence of at least some arable activity. There is also evidence that mixed-oak woodland with lime occurring at some distance from the site. This is important, since it implies a rather earlier age for this sediment, compared to all of the other samples analysed in this study. Mixed-oak woodland with lime is thought to have been cleared from southern England within the Bronze Age. The radiocarbon dating gave an unashamedly Roman date. It is possible that a small grove, or patch of scrub nearby influenced the pollen.

8.3.3 *Conclusions*

					Conditions				Pollen	
Context	Date	Lithology	Sample (cm)	Pollen assemblage	Wet	Damp	Soil	Dry	Cereals	Trees & shrubs
304	MR	Sand Sandy Silt Organic silt-clay	55 35 10	*Barren* Grass Grass-herb-shrubs	•		•	•	•	•
234	MR	Organic sandy silt Organic sandy silt Organic sandy silt	60 35 10	Grass-herb *Barren* Grass-herb-willow	•	•		•	•	•
247	ER	Silty Sand Organic sandy silt Silty Sand	80 35 4	Grass-herb Grass-herb-willow Grass-herb	•		•		•	•
18	LIA/ER	Silty Sand Organic Organic	70 35 15	*Barren* Grass-herb Grass-herb-willow	•			•		•
240	LIA	Silty Sand Silt Sand	70 35 15	Grass-herb Grass-herb Grass-herb-willow	•	•	•			•
346	MR	Organic	10-30	Grass-herb-trees	•				+	*

Table 7: *Summary of Sedimentology and Pollen Data*
NB: LIA=Late Iron Age, ER=Early Roman, MR=Middle Roman;
+=Cereals & Plantain, *=Mixed oak woodland with lime

It is clear that vegetation at the site during the interval of time between the Late Iron Age and Middle Roman periods was dominated by grassland with various tall-herb and riparian communities. Arable activity was not detected at the site until the Early Roman period, and continued until Middle Roman times. There is a little evidence for the growth of scrubby woodland close to the site by the Middle Roman period, possibly suggesting partial abandonment of some land. However, none of the data presented here supports the idea that the site may have been abandoned due to rising water levels and flood events. The re-cutting of the Early Roman ditch indicates that good drainage was an important factor at the site at that time, and there is evidence from the Middle Roman ditch that it remained wet, at least in winter, even though it progressively became in-filled. The Middle Roman ditch (304) appears to have quickly dried and filled with soil; a pattern that would not be expected if local water levels were encroaching on the site

The organic pit filling is very curious indeed, containing evidence for scrubby woodland and grassland at the site, as well as a clear signal of mixed oak woodland with lime at some distance away. In addition, there is arable activity and ground disturbance indicated. This pit filling is different from all the other sediments investigated in a variety of ways though stratigraphically and carbon dating gives a Roman date when the type of activity in the sample would be more likely in the Bronze Age.

No further work is required on the pollen and the results presented above can be integrated into the final report.

8.4 Radiocarbon dating of wood sample from pit 346

A wood sample was recovered during an auger survey for pollen of pit **346** (Phase 4) by Dr Steve Boreham. The wood was sent to the University of Waikato for radiocarbon dating (Report No. 13504). The wood was cleaned, chopped and then washed in ultrasonic bath. The sample was washed in hot 10% HCI, rinsed and treated with hot 0.5% NaOH. The resulting carbon dating gave a date of 1819 ± 168 BP. This gives a 1Ω (68.2% probability) for AD20- AD420, 2Ω (95.4% probability) for 200BC- AD600.

8.5 Charred plant macrofossils and other remains

by Val Fryer

8.5.1 Introduction

Samples for the extraction of the plant macrofossil assemblages were taken from across the excavated area, and twenty-six were submitted for assessment.

8.5.2 *Methods*

The samples were processed by a member of the Archaeological Field Unit team, collecting the flots in a 500 micron mesh sieve. The dried flots were scanned under a binocular microscope at magnifications up to x 16, and the plant macrofossils and other remains noted are listed on Tables 8-12. Nomenclature within the tables follows Stace (1997). Charred, de-watered and mineral replaced plant remains were recorded, and have been categorised as follows: cereals, herbs, wetland/aquatic plants and tree/shrub macrofossils. The presence of molluscs, animal macrofossils and other materials has also been recorded.

As most assemblages contained insufficient material for quantitative analysis, the density of plant material within each sample is recorded as follows: x = 1 – 10 specimens, xx = 10 – 100 specimens and xxx = 100+ specimens. Other abbreviations used in the tables are explained at the end of the text section.

Modern contaminants including fibrous and woody roots, seeds and arthropods were noted throughout.

8.5.3 *Results of assessment*

a) Plant macrofossils

Cereal grains/chaff, seeds of common weeds and wetland plants, and tree/shrub macrofossils were noted at varying densities in all but one sample. The charred remains were moderately well preserved, although a number of the grains were puffed and distorted, probably as a result of high temperatures during combustion. The de-watered macrofossils were also reasonably well preserved although some of the more delicate specimens were shrivelled and fragmented. Mineral replaced seeds appeared as single specimens in only two samples.

b) Cereals

Oat (*Avena* sp.), barley (*Hordeum* sp.), rye (*Secale cereale*) and wheat (*Triticum* sp.) grains were recorded, with wheat being predominant. Both elongate 'drop-form' grains typical of spelt wheat (*T. spelta*) and rounded hexaploid forms were recovered. Asymmetrical lateral grains of six-row barley (*H. vulgare*) were noted in Sample 23. Wheat chaff, including emmer (*T. dicoccum*) and spelt glume bases and bread wheat (*T. aestivum/compactum*) type rachis nodes, was present/common in fourteen samples.

c) Wild flora

Seeds of common weeds were present in all but five samples. Segetal taxa, including brome (*Bromus* sp.), fat hen (*Chenopodium album*), corn gromwell (*Lithospermum arvense*), indeterminate grasses (Poaceae), dock (*Rumex* sp.)

and vetch/vetchling (*Vicia/Lathyrus* sp.) were predominant within the charred assemblages. However, ruderal weeds (including dead nettle (*Lamium* sp.), black nightshade (*Solanum nigrum*) and stinging nettles (*Urtica dioica*)) were more common within the de-watered assemblages.

Charred and de-watered seeds/fruits of wetland/aquatic plants were noted in fourteen samples. Taxa noted included water plantain (*Alisma plantago-aquatica*), sedge (*Carex* sp.), spike-rush (*Eleocharis* sp.), duckweed (*Lemna* sp.), water crowfoot (*Ranunculus* subg. *Batrachium*) and saw-sedge (Cladium *mariscus*). Tree/shrub macrofossils were generally rare, but elderberry (*Sambucus nigra)* seeds and bramble (*Rubus* sp.) 'pips' were common within the de-watered assemblages and a charred sloe (*Prunus spinosa*) fruit stone was noted in Sample 25.

d) Other plant macrofossils

Charcoal fragments were common or abundant throughout. Other charred plant macrofossils included pieces of root/stem and indeterminate culm nodes and seeds. Mineral replaced root channels were noted within some pit and ditch fills, and de-watered *Rosa* type thorns were recorded from Sample 26.

e) Molluscs

Mollusc shells were recovered (often as single specimens) from nineteen samples. Most were fragmented and abraded, and are probably contemporary with the contexts from which they were taken, although rare specimens retained delicate surface structuring, and may be modern contaminants. All four of Evans (1972) ecological groups of terrestrial molluscs were represented, and freshwater obligate taxa were also noted. Only five assemblages (from Samples 15, 20, 21, 27 and 31) contained a sufficient density of shells to enable tentative interpretation.

f) Animal macrofossils

Animal macrofossils were rare, but fragments of bone, fish bone and small mammal or amphibian bones were recorded from some samples. Cledoceran ephippia and arthropod remains were common in the de-watered samples, and a single charred ficiform coprolite (possibly goat) was noted in Sample 19.

g) Other materials

The fragments of black porous 'cokey' material, black tarry material and the siliceous globules are all possible residues of the combustion of organic materials (including grains and straw/grass) at very high temperatures. The small coal fragments may be derived from recent agricultural practises, for example steam ploughing. Natural mineralised soil concretions were common in a number of samples.

8.5.4 *Discussion*

For the purposes of this discussion, the samples will be dealt with by phase and context type.

8.5.5 *Phase 1*

a) Enclosure ditches (Table 8)

Three samples were taken, and the assemblages are all of note for their almost total lack of charred plant remains, including charcoal. Sample 26 is principally composed of de-watered macrofossils, and these appear to indicate that the ditch held stagnant water and may have been overgrown with brambles and elderberry bushes. Colonising weeds are also common. The mollusc assemblage from Sample 27 also indicates semi-shaded conditions with standing water, the latter possibly stagnant.

b) Other features (Table 9)

Sample 15 was taken from the butt end of a ditch, and although plant remains are rare, the mollusc assemblage may suggest that the area was largely open, but that the ditch was sufficiently wet to sustain freshwater obligate taxa. The remaining two samples contain insufficient material for conclusive interpretation.

8.5.6 *Phase 2 (Table 10)*

Of the seven samples taken, Samples 22, 34 and 41 would appear to be at least partly derived from small deposits of cereal processing debris. Wheat chaff (principally spelt glume bases) is especially common in Sample 41. The presence of stinking mayweed (*Anthemis cotula*) seeds and fruits of saw-sedge, spike-rush and club-rush (*Scirpus* sp.) may indicate that clay soils and/or marginal damp grassland areas were being utilised for cereal production. Small quantities of processing debris may also be present in the remaining assemblages.

8.5.7 *Phase 3 (Table 11)*

Of the eight samples taken from the Phase 3 ditch fills, four are of particular note. Cereal grains (particularly barley), small legumes, wetland plant macrofossils, and pieces of charred stem are all common constituents of the assemblage from Sample 19. As the Romans considered barley to be an inferior grain and used it mainly for animal feed, it appears most likely that this assemblage may be derived from charred pastoral waste, possibly animal litter. The presence of a charred animal dropping within this assemblage may support this hypothesis.

The mollusc assemblages from Samples 20 and 21 (from the fills of ditch [297]) indicate that the ditch was damp and at least partially shaded, possibly by an overgrowth of shrubs. The de-watered assemblage from ditch [543]

(Sample 32) indicates that this feature contained sufficient water to sustain a varied wetland/aquatic flora including water plantain, duckweed and water crowfoot. Grassland herbs and ruderal weeds are also present within the assemblage, possibly indicating that the ditch was situated within an area of meadow or similar maintained grassland.

Macrofossils are rare within the remaining assemblages, with most probably being derived from scattered cereal processing waste or similar wind-blown detritus.

8.5.8 *Phase 4 (Table 12)*

Five samples were taken from various ditch and pit fills of 2nd century date. Wheat chaff, grains and cereal sprout fragments are especially common in Sample 11, possibly indicating that this material is derived from a small deposit of malting waste. Spelt chaff was commonly used as a fuel for malting during the Roman period, with contemporary parallels known from, for example, Beck Row, Suffolk (Fryer, forthcoming), Stebbing Green, Essex (Murphy 1989) and Culver Street, Colchester (Murphy 1992).

Sample 14 appears to contain a low density of cereal processing waste including cereals, chaff and segetal weed seeds. Although there is insufficient material to ascertain which stage of processing may be represented, it is possibly of note that a number of the weed seeds (including brome, corn gromwell, wild radish (*Raphanus raphanistrum*) siliquae and larger legumes) are of a similar size to the cereal grains. These would only have been removed by hand at a late stage of processing.

Mollusc shells form the main component of the assemblage from Sample 31. They appear to indicate that although the ditch was situated in an area of open grassland, the ditch sides were shaded, possibly by an overgrowth of brush or shrubs. There was sufficient water within the feature to sustain a number of freshwater obligate taxa.

The remaining two assemblages contain insufficient material for conclusive interpretation.

8.5.9 *Conclusions*

In summary, charred plant macrofossils are very rare within the Phase 1 deposits, possibly indicating that although the enclosure ditches were opened during this period, this area was peripheral to any main focus of activity during the 1st century BC. Agricultural activities (including cereal production and processing) and animal husbandry appear to have been integral parts of the local economy by the Late Iron Age/Roman period, although neither has left more than ephemeral traces. Small scale malting may have taken place in the near vicinity during the later Roman period. Both the Iron Age and Roman ditches appear to have been situated in grassland areas, with shrubby overgrowth probably providing limited shaded microhabitats. All ditches

appear to have been sufficiently deep to retain water on at least a semi-permanent basis.

8.5.10 Recommendations

The relatively small amount of charred material means that it is recommended that no further work is needed.

Key to Tables

x = 1 – 10 specimens xx = 10 – 100 specimens xxx 100+ specimens
b = burnt w= waterlogged/de-watered m = mineral replaced

Sample No.		**13**	**26**	**27**
Context No.		**197**	**436**	**443**
Herbs	**Common name**			
Chenopodium album L.	Fat-hen		x xw	
Hyoscyamus niger L.	Henbane		xxw	
Lamium sp.	Dead-nettle		xxw	
Small Poaceae indet.	Grasses	x	x	
Rumex sp.	Dock		xw	
Solanum nigrum L.	Black nightshade		xxw	
Sonchus asper (L.)Hill	Sow-thistle		xw	
Stellaria media (L.)Vill.	Chickweed		x xxw	
Urtica dioica L.	Stinging nettle		xxxw	
Wetland/aquatic plants				
Lemna sp.	Duckweed		xxxw	
Ranunculus subg. *Batrachium* (DC)A.Gray	Water crowfoot		xxxw	
Tree/shrub macrofossils				
Rubus sect. *Glandulosus* (Wimmer & Grab)	Bramble		xxxw	
Sambucus nigra L.	Elderberry		xxxw	
Other plant macrofossils				
Charcoal <2mm		x	x	xx
Charcoal >2mm		x	x	x
Charred root/rhizome/stem			x	
Waterlogged root/rhizome/stem			xxx	
Indet.thorn (Rosa type)			xxw	
Molluscs				
Woodland/shade loving species				
Aegopinella sp.				x
Carychium sp.			x	
Nesovitrea hammonis				xcf
Oxychilus sp.			x	xx
Open country species				
Vallonia sp.		x		x
V. costata		x		xx
V. pulchella		x		
Catholic species				
Cepaea sp.				x
Cochlicopa sp.				xx
Trichia hispida group		x		x
Marsh/freshwater slum species				
Lymnaea sp.				xx
L. peregra		x	x	x
Freshwater species				
Anisus leucotoma		x		
Armiger crista			x	xx
Pisidium sp.				x
Planorbarius corneus				x
Animal macrofossils				
Bone			xb	
Cledoceran ephippia			xxx	

Ostracods			x	x
Marine mollusc shell frags.			x	x
Small mammal/amphibian bones			x	
Waterlogged arthropods			xx	
Other materials				
Black porous 'cokey' material		x		
Black tarry material		x		
Sample volume (litres)		**20**	**30**	**30**
Volume of flot (litres)		**<0.1**	**0.1**	**<0.1**
% flot sorted		**100%**	**50%**	**100%**

Table 8: *Environmental samples by context (Phase 1 ditches)*

Sample No.		15	16	18
Context No.		**261**	**135**	**254**
Context type		**ditch**	**pit**	**pit**
Cereals	**Common name**			
Cereal indet. (grains)			x	
Triticum sp. (glume base)	Wheat	x		
T. spelta L. (glume bases)	Spelt wheat			x
Herbs				
Small Poaceae indet.	Grasses	x		
Rumex sp.	Dock			x
Vicia/Lathyrus sp.	Vetch/vetchling	x		x
Wetland plants				
Carex sp.	Sedge	x		
Other plant macrofossils				
Charcoal <2mm		xx	xx	xxx
Charcoal >2mm			x	xxx
Charred root/rhizome/stem				x
Molluscs				
Woodland/shade loving species				
Discus rotundatus				xcf
Open country species				
Vallonia sp.		x		x
Catholic species				
Cepaea sp.		x		
Cochlicopa sp.		x		x
Trichia hispida group		xx		x
Marsh/freshwater slum species				
Lymnaea sp.		x		
Freshwater obligate species				
Anisus leucostoma sp.		x		
Bithynia sp.		xx		
B. tentaculata		x		
Animal macrofossils				
Ostracods		x		
Other materials				
Black porous 'cokey' material				x
Black tarry material				xx
Burnt/fired clay				x
Mineralised concretions				xx
Sample volume (litres)		**20**	**20**	**20**
Volume of flot (litres)		**<0.1**	**<0.1**	**0.1**
% flot sorted		**100%**	**100%**	**100%**

Table 9: *Environmental samples by context (other Phase 1 features)*

Sample No.		1	22	34	35	38	39	41
Context No.		16	16	609	611	467	557	658
Context type			ditch	pit	pit	pit	pit	ditch
Cereals	**Common name**							
Avena sp. (grains)	Oat			x				xcf
(awn)			x	x				
Cereal indet. (grains)		x	x	x		x	x	x
(detached embryos)								x
(basal rachis nodes)				x				
Hordeum sp. (grains)	Barley	xcf	xcf					
(rachis nodes)			x					
Triticum sp. (grains)	Wheat		x	x				x
(glume bases)						x		xx
(spikelet bases)			x	x				x
(rachis internodes)								xx
T. spelta L. (glume bases)	Spelt wheat	x	x	x	x		x	xxx
Herbs								
Anthemis cotula L.	Stinking mayweed							x
Brassicaceae indet.				x				
Bromus sp.	Brome	x		xcf	x			x
Chenopodium album L.	Fat-hen							x
Chenopodiaceae indet.			x	x				
Medicago/Medicago/Lotus sp.	Clover type		xcf	x				
Small Poaceae indet.	Grasses	x		x		x	x	
Polygonum aviculare L.	Knotgrass			x			x	
Raphanus raphanistrum L.(siliqua)	Wild radish			xcf				
Rumex sp.	Dock	x		x				x
Tripleurospermum inodorum (L.)Schultz-Bip	Scentless mayweed							x

Vicia/Lathyrus sp.	Vetch/vetchling		x				xcf	
Wetland plants								
Cladium mariscus (L.)Pohl	Saw-sedge	x		x			x	
Eleocharis sp.	Spike-rush		x					
Scirpus sp.	Club-rush			x				
Other plant macrofossils								
Charcoal <2mm		xxx	xxx	xxx	xx	xxx	xxx	xx
Charred root/rhizome/stem		x	x	xx		x		
Indet.bud		x						
Indet.culm nodes					x			
Indet.inflorescence frags.				x				
Indet.seeds				x				
Mineral replaced root channels		xx	x	x				x
Molluscs								
Woodland/shade loving species								
Aegopinella sp.					x			
Open country species								
Vallonia sp.					x			
V. costata					x			
V. pulchella					x			
Catholic species								
Cochlicopa sp.		x			x			
Trichia hispida group					x			
Freshwater obligate species								
Anisus leucostoma								
Bithynia sp.					x			
Animal macrofossils								
Bone		x xb	xb	x xb			x	x
Small mammal/amphibin bone		x	x	x xb		x		
Other materials								

Black porous 'cokey' material			x	x			x	xx
Black tarry material								x
Burnt concretions				x				
Mineralised concretions		xx			xx			
Pottery			x					
Siliceous globules			xx				xx	
Small coal frags.			x			x	x	
Sample volume (litres)			**10**	**20**	**20**	**20**	**20**	**20**
Volume of flot (litres)		**0.3**	**0.1**	**0.1**	**<0.1**	**<0.1**	**<0.1**	**<0.1**
% flot sorted		**50%**	**100%**	**100%**	**100%**	**100%**	**100%**	**100%**

Table 10: *Environmental samples by context (Phase 2)*

Sample No.		17	19	20	21	23	32	33	40
Context No.		250	272	293	298	376	543	582	461
Cereals	**Common name**								
Avena sp. (grain)	Oat		x						
Cereal indet. (grains)		x	x	x	x				x
(sprout frags.)			x						
(basal rachis node)			x						
Hordeum sp. (grains)	Barley		xx	xcf		x			xcf
(rachis node)			x						
H. vulgare L.(asymmetrical lateral grain)	Six-row barley					x			
Pisum sativum L.	Pea		xcf						
Secale cereale L. (grains)	Rye		xcf						
Triticum sp. (grains)	Wheat		xx	xcf					
(glume bases)		x		x	x				x
(spikelet bases)		x		x	x				
(rachis internodes)		x							x
T. spelta L. (glume bases)	Spelt wheat	xx		x	x				x
T. aestivum/compactum type (rachis node)	Bread wheat type		x						
Herbs									
Aethusa cynapium L.	Fool's parsley						xw		
Apiaceae indet.							xw		
Arctium lappa L.	Greater burdock						xw		
Arenaria sp.	Sandwort						xcfw		
Atriplex sp.	Orache						xxw		
Brassicaceae indet.			x xm						
Bromus sp.	Brome	x	x						
Carduus sp.	Musk thistle						xw		
Chenopodium album L.	Fat-hen		x				xw		x
Chenopodiaceae indet.			x	x				x	

Cirsium sp.	Thistle						xw		
Galeopsis sp.	Hemp-nettle						xw		
Galium aparine L.	Goose grass		x			x			
Lapsana communis L.	Nipplewort						xw		
Lithospermum arvense L.	Corn gromwell		x						
Medicago/Trifolium/Lotus sp.	Medick/clover/trefoil			xcf					
Small Poaceae indet.	Grasses								x
Ploygonum aviculare L.	Knotgrass						xw		
Ranunculus acris/repens/bulbosus	Buttercup						xxw		
Reseda sp.	Weld/Mignonette		xcf						
Rumex sp.	Dock		x				x xxxw		x
Silene sp.	Campion		x						
Sonchus asper (L.)Hill	Sow-thistle						xw		
S. oleraceus L.	Milk-thistle						xxw		
Stellaria sp.	Chickweed		x						
Torilis japonica (Houtt)DC	Hedge parsley						xw		
Urtica dioica L.	Stinging nettle						xw		
Vicia/Lathyrus sp.	Vetch/vetchling	x	xx	x				x	xcf
Wetland/aquatic plants									
Alisma plantago-aquatica L.	Water plantain						xxxw		
Cladium mariscus (L.)Pohl	Saw-sedge		x	x					
Carex sp.	Sedge		x				xw	xx	x
Eleocharis sp.	Spike-rush		xx					x	
Lemna sp.	Duckweed						xxxw		
Lychnis flos-cuculi L.	Ragged robin						xw		
Oenanthe aquatica (L.)Poiret	Water dropwort						xw		
Ranunculus subg. *Batrachium* (DC)A.Gray	Water crowfoot						xxxw		
Scirpus sp.	Club-rush						xw		
Tree/shrub macrofossils									
Sambucus nigra L.	Elderberry						xw		

Other plant macrofossils									
Charcoal <2mm		xxx	xxx	xx	xx	xx		xxx	xxx
Charcoal >2mm		xx		xx	x	x	x	xx	x
Charred root/rhizome/stem			xxx	x				x	
Waterlogged root/rhizome/stem							xxx		
Mineral replaced root channels		x			x				
Indet.culm nodes		x	x						x
Indet.seeds		x					xw		
Molluscs									
Woodland/shade loving species									
Aegopinella pura				x					
Carychium sp.		x	x	xx	xx			x	
Nesovitrea hammonis					x				
Oxychilus sp.				x	x				
Vitrea crystallina				x	x				
Open country species									
Vallonia sp.		x	x					x	
V. costata		x		xx	x	x			
V. excentrica			x			xcf		x	
V. pulchella		x		x					
Catholic species									
Cepaea sp.		x			x				
Cochlicopa sp.			x	xx	x	x			
Trichia hispida group				xx	x				
Marsh/freshwater slum species									
Vertigo sp.			x	x		x			
Lymnaea peregra					x				
Freshwater obligate species									
Anisus leucostoma				x	x				
Bithynia sp.			x	x					

Planorbis sp.			x					x	
Animal macrofossils						x		x xb	
Bone							x		
Caddis larval cases			x						
Charred ficiform coprolite			x						x
Fish bone		x	x xb	x	x	x			
Small mammal/amphibian bone							xxx		
Waterlogged arthropods									
Other materials		x		x		x		x	
Black porous 'cokey' material		x		x	x	x			
Black tarry material		x		x	xxx	xx		xx	
Mineralised soil concretions			xxx						x
Siliceous globules				x	x	x			
Small coal frags.		20	20	20	20	10	20	20	20
Sample volume (litres)		<0.1	<0.1	<0.1	<0.1	<0.1	0.1	0.1	<0.1
Volume of flot (litres)		100%	100%	100%	100%	100%	50%	100%	100%
% flot sorted									

Table 11: *Environmental samples by context (Phase 3)*

Sample No.		11	14	25	31	36
Context No.		157	168	412		551
Context type		ditch	pit	pit	ditch	ditch
Cereals	**Common name**					
Avena sp. (grains)	Oat	x	x			
(awn)			x			
Cereal indet. (grains)		xx	x		x	x
(sprout frags.)		xx	x			
(detached embryos)		x				
Hordeum sp. (grains)	Barley	x	x			
Triticum sp. (grains)	Wheat	xx	xx			x
(glume bases)		xxx	x			
(spikelet bases)		xxx	xx			
(rachis internodes)		xxx	x			
T. dicoccum Schubl. (glume base)	Emmer		xcf			
T. spelta L. (glume bases)	Spelt wheat	xxx	xxx			
T. aestivum/compactum type (rachis nodes)	Bread wheat type	x	x			
Herbs						
Atriplex sp.	Orache		x			
Bromus sp.	Brome	xx	xx			
Chenopodium album L.	Fat-hen	x	x			
C. ficifolium Sm.	Fig-leaved goosefoot		x			
Galium aparine L.	Goosegrass	x				
Lithospermum arvense L.	Corn gromwell		xx xm			
Mentha sp.	Mint			x		
Raphanus raphanistrum L. (siliqua)	Wild radish		x			
Rumex sp.	Dock	x	x			
Rumex/Carex sp.			x			
Tripleurospermum inodorum (L.)Schultz-Bip	Scentless mayweed		xx			

Vicia/Lathyrus sp.	Vetch/vetchling	x	x			
Wetland plants						
Carex sp.	Sedge		x			
Cladium mariscus (L.)Pohl	Saw-sedge	x		xcf		
Eleocharis sp.	Spike-rush		x			
Tree/shrub macrofossils						
Prunus spinosa L.	Sloe			x		
Other plant macrofossils						
Charcoal <2mm		x	xx	xxx	xx	x
Charcoal >2mm		x		xxx	x	x
Charred root/rhizome/stem		x	x	x		x
Indet.culm nodes			x			
Indet.seeds		x	x	x		
Mineral replaced root channels			xx			
Molluscs						
Woodland/shade loving species						
Aegopinella sp.					x	
Carychium sp.					xx	x
Oxychilus sp.					x	
Vitrea crystallina					x	
Open country species						
Vallonia sp.			x		x	x
V. costata					xx	
V. excentrica					x	
V. pulchella			x			
Catholic species						
Cochlicopa sp.			x		x	x
Trichia hispida group		x	x		xx	x
Marsh/freshwater slum species						
Vertigo sp.					x	

Freshwater obligate species						
Anisus leucostoma					xx	
Armiger crista					x	
Bithynia sp.					x	x
B. tentaculata					x	
Gyraulus albus					x	
Hippeutis complanata					x	
P. planorbis					x	
Planorbarius corneus					x	
Valvata cristata					x	
Animal macrofossils						
Bone			x	xxb	xb	
Fish bone			x			
Small mammal/amphibian bones		xb			x	x
Other materials						
Black porous 'cokey' material			x	x	x	x
Burnt/fired clay				x	x	
Burnt stone				x		
Mineralised concretions			xx			
Small coal frags.			x			
Vitrified material			xx			
Sample Volume (litres)		**20**	**20**	**10**	**20**	**30**
Volume of flot (litres)		**<0.1**	**0.1**	**<0.1**	**<0.1**	**<0.1**
% flot sorted		**100%**	**100%**	**100%**	**100%**	**100%**

***Table 12**: Environmental samples by context (Phase 4)*

9 RESEARCH AIMS

The post excavation analysis will produce an accessible research archive and a publication which will succinctly interpret the main elements of the site. This publication will address the aims of the archaeological specification (Macaulay 2003) and relevant interest areas recorded in the regional strategy document: *Research and Archaeology: A Framework For The Eastern Counties* (Brown and Glazebrook 2000). Further research themes were included in the specification were drawn from English Heritage's draft research agenda at section 3 headed Archaeological Research Priorities (English Heritage 1997).

The research aims in the specification only concerned the Roman period, as the evaluation did not encounter Iron Age remains. The aims for the Late Iron Age are therefore taken from the regional framework document (Bryant 2000).

9.1 Late Iron Age/transitional

9.1.1 Settlement chronology and dynamics

The regional research document for the Late Iron Age lists settlement chronology and dynamics as a research topic for this period (Bryant 2000, 16). The excavation produced some information on layout and economy to assist in addressing this research topic but this is limited due to the size of the excavation. Only part of a settlement, which was continuously occupied from the Late Iron Age (*c.*100BC) into the Romano-British period, was sampled with features continuing beyond the excavation area to the north, east, south and west. It is possible that the settlement extended over an area of more than 400m as an archaeological evaluation at 9 Church Street, 350m to the north of the site, found part of an Iron Age to Roman period settlement (O'Brien 2002).

Within the excavation area parts of at least two Late Iron Age enclosures were found both with an internal structure. One was a large ?sub-rectangular enclosure whose ditches survived up to 3m wide and a metre deep and was recut up to two times. The internal structure consisted of an internal ring gully with a 12m or 13m diameter.

It may be that cattle dominated this phase as a large watering hole was found in the earliest phase. Animal bone recovered included two imported continental male bull horncores which is unusual as Iron Age sites had 'Celtic' smallhorns while these continentals were presumably used as studs. The lack of environmental material recovered from six samples implies either a lack of crops being grown here or that crop processing was taking place elsewhere in the settlement. Evidence from pollen and soil samples is that the area was open grassland with various tall-herb and riparian communities. The local water table was clearly relatively high since the enclosure ditches were wet with standing water for at least part of the year. Briquetage was also recovered which implies that salt making was also taking place near by.

9.1.2 *Processes of economic and social change and development*

The regional framework highlighted the need to understand the processes of economic and social change and similarly nationally the transition from Briton into Roman (*c.*300BC-AD200) was highlighted as a period poorly understood. (Bryant 2000, 16; English Heritage 1997).

The excavation found there was on the whole a high level of continuity in the settlement and land use from the Late Iron Age into the transitional period. This seems to imply there was continuity of the social and economic organisation. This is demonstrated by the fact that a large enclosure of the transitional period was aligned on the large Late Iron Age enclosure. Within it there was a probable rectangular posthole structure which, in contrast to round houses, implies Romanising influence in this period.

This Romanising influence can also be seen in the pottery recovered from the site. Continuity is also indicated by the late hand made Iron Age pottery which was recovered with wheel thrown pottery in features of this phase, implying that the former continued to be made into the 1st century AD. There were also a few sherds of contemporary exotic ware including a sherd of Pompeii red imported ware. This was found in one of the sections of the transitional enclosure ditch amongst sherds of the later Iron Age fabric. Lava quern and Hertfordshire puddingstone quern was also recovered from this fill. Residuality may be partly to blame for this pottery loss but excavations nearby have shown these mixed assemblages in transitional period features (*e.g.* Atkins and Mudd 2003; Evans 2003).

At the same time it is important to point out that the Late Iron Age (Phase 1) features dated to the 1st century BC did not have the Aylesford/Swarling type pottery within their backfill. This implies that the wheel thrown pottery began to be used at the earliest in the later 1st century BC or early 1st century AD. The group of seven brooches dating from the mid 1st century BC to the early 2nd century AD also imply both continuity of occupation but also change in style with more sophisticated brooches deposited later.

Evidence for mixed farming appears for the first time in the transitional period. Small quantities of cereal processing debris including wheat chaff was found backfilled in the enclosure ditch from soil samples. Low levels of processing waste were also recovered from a rubbish pit on the extreme eastern side of the site. Pollen samples did not find this arable activity in this period. The presence of stinking mayweed seeds and fruits of spike-rush may indicate that the clay soils and/or marginal damp grassland areas were being utilised for cereal production. Briquetage was recovered in Late Iron Age and transitional period features implying continuity of salt making activity nearby.

9.2 Romano-British

9.2.1 Characterisation of the form and development history of the settlement

The specification highlighted the need to characterise the form and development history of the settlement. This is important as the regional framework has also highlighted that the excavation of rural settlements other than villas are very under-represented and there is limited evidence for rural settlement layout and economy (Going and Plouviez 2000, 19). The excavation, due to its small size, will only partly address the question of layout and development. Only very small parts of ditches of enclosures or boundaries were uncovered.

In the Early Roman phase (Phase 3), there was a change in the type of features from the preceding phase though the ditches were still on the same north-south and east-west alignments. The features seem to be related to field systems with no definite structures. Phase 4 also showed a lack of continuity in the type of features with enclosures reappearing, boundary ditches and for the first time a metalled trackway and a few pits. A possible posthole structure has been very tentatively assigned to the last part of Phase 4 but may be post-medieval in origin.

The cropmarks to the south-west of the excavation area are on a slightly different alignment to all the features within the excavation area (Iron Age and Romano-British) and may therefore not relate to the settlement. The AFU site was abandoned during the early 3rd century AD; it is not unfeasible that the cropmarks relate to a later villa complex. Elsewhere in other sites, *e.g.* Norwood, after abandonment in *c.*AD200 there was reoccupation in the later Roman period (Potter 1981). At Stonea Grange there was considerable reduced activity on site after *c.*AD200 (Jackson and Potter 1996).

9.2.2 Characterise the form, date of establishment and subsequent development of the field systems and their relationship to the settlement

Current knowledge of faunal (animal bone) remains from rural sites is poor and much more information is needed about the use of the countryside in Roman times (Murphy 2000, 21). 'Sites spanning the Iron Age-Roman transition should have a particularly high priority so far as faunal remains studies are concerned, to assess the extent to which the conquest affected patterns of production.' (Murphy 2000, 21). Although the excavation yielded animal bone, the assemblage was too small (125 countable bones) to permit secure conclusions with any degree of certainty. Though cattle constitute the most numerous taxon for all periods, sheep bones and teeth are more common in the environmental samples suggesting that ovicaprids are to some extent under-represented in the hand-collected assemblage. Horse and dog remains were more common than pig.

There was very little evidence of shells being eaten on site with only a single oyster and two marine mussel shells recovered from the Early Roman and Middle Roman contexts respectively. Some quern stone fragments show that

domestic milling was occurring on site. A few ceramic roof tile in Phase 3 and 4 contexts and fired clay with wattle and daub impressions show that this was a domestic settlement.

Pollen analysis did not detect arable activity until the Early Roman period (Phase 3) and this arable activity continued to the Middle Roman period. In contrast evidence from soil sampling found reasonable quantities of secondary evidence of arable activity in Phase 2 (transitional) and Phase 4 (Middle Roman) features only.

Evidence from environmental samples in the Early and Middle Roman period suggests that the site was still within a meadow or similarly maintained grassland. Pollen samples have confirmed this as they show that between the Late Iron Age and Middle Roman periods the area around the excavation was dominated by grassland with various tall-herb and riparian communities.

In the Early Roman period the ditches were often wet and the few plant macrofossils present were probably derived from low densities of refuse, possibly including wind-blown detritus. There was a little evidence from pit 346 for the growth of scrubby woodland of mixed oak woodland with lime fairly close to the site suggesting partial abandonment of some land.

Environmental evidence suggests that the waterlogging of features continued in Phase 4. In this period two features contained evidence of definite arable activity with a small amount of malting waste found deposited in the backfill of an enclosure ditch and cereal processing waste found in a possible storage pit. Environmental and pollen samples have therefore to a certain extent answered the research topic raised by Murphy 2000, 21 'how well wooded was the landscape and has the detailed distribution of woodland changed?'

The site yielded only minimal evidence of industrial activity. Seven pieces of clay with vitrified green glassy surface were found in secondary deposits in five features assigned to Phases 1, 3 and 5. These were from probable industrial features such as a metal working kilns. The discovery of small fragments of clay lining, particularly in Phase 3 ditches in north-western part of the site, implies that domestic or craft/industrial activity was taking place near by. Grey ware pottery wasters were also found on site indicating probable pottery production close to the site. Nearby salt making is discussed in 9.2.4 below.

9.2.3 *The determination of the relationship of the agricultural regime and any associated settlement with the local and regional economy (*cf. *Stonea Grange)*

A few kilometres south-east of the site is the Iron Age fort of Stonea Camp which was superseded by the Roman Town of Stonea Grange, from the late 1st century AD, 300m to the north of the hill fort. Stonea Grange is the supposed administrative centre for an Imperial Fenland Estate (theorised by Dr Tim Potter to have begun in the mid 2nd century AD under Emperor Hadrian). This has long been a model for Roman fenland settlement but the

role of the fens and the nature of Romanisation is still not fully understood (Potter 1981; Jackson and Potter 1996). Existing theories (*e.g.* the Imperial Estate centred on Stonea Grange) have yet to be fully proved. Evidence for salt making is dealt with separately below.

Both finds and the limited structural evidence imply the Wimblington Road site was of average status though there is some evidence of imports. It may be the close proximity to the market at Stonea Grange that introduced these imports. The pottery shows a domestic assemblage throughout the occupation period with limited access to high status products. Evidence from pastoral farming was equally domestic in nature though there may have been some imports of male bulls from the continent in the Late Iron Age. The brooches and the single coin of Nero indicate that some artefacts were being imported into the site during the Late Iron Age period again possibly via Stonea Camp.

It may be significant that far more brooches have been found around Stonea (including March) compared to few being found in the Ely sites. Large scale excavations at Wardy Hill (Evans 2003) and Prickwillow Road, Ely (Atkins and Mudd 2003) found no brooches and only two respectively. Other unpublished sites in the area such as that at West Fen Road have also found minimal numbers of brooches. Evans has pointed out this relative lack of metalwork in the Ely area as compared to the March area (Talk to the PCAS conference 2003) although Don Mackreth has suggested that further published reports are needed before any possible distinction can be asserted (pers. comm.).

The English Heritage's draft research agenda highlighted settlement hierarchies and interaction as poorly understood in this period as a national concern (English Heritage 1997). As noted above, the range of artefacts present at this rural site seems to imply that there may be some link to the settlement at Stonea.

9.2.4 *Investigate Roman fenland exploitation, in particular salt production*

Stonea Grange is believed to have been the administration centre of the fenland imperial salt making estate established between AD 130 and 150 close to the former Iceni stronghold of Stonea Camp (Jackson and Potter 1996). It is well documented that the fens were extensively exploited during the Roman period for salt and while much of this activity was focused along the Lincolnshire fens (*cf.* Car Dyke north of Peterborough), the Fenland Survey has revealed Roman salterns to the north and east of March, extending as far inland as Littleport (Cambs).

Briquetage weighing 2.3kg was found in small amounts in the backfill of all phased features at Wimblington Road (from Late Iron Age to Middle Roman periods). Briquetage in the backfill of 1st century BC contexts is confirmation of salt making in the Late Iron Age period in the March area. At Estover, March, a ditch with Late Iron Age pottery and briquetage including a bar, container and 'squeezed' pieces was found (James and Potter 1996, 53; fig 18.10). Salt making in the transitional Iron Age into Romano-British period

has been found at Longhill Road (Atkins 2003) and from the mid 1st century AD settlement at Norwood (Potter 1981).

The briquetage from the site seems to be background debris from nearby salt making and the excavation may have found the settlement relating to this industry. The site was on land at *c*.3.5m OD and this seems to be too high a ground level for salt production. Salt making relies on ready access to water and this seems to have only taken place on land less than *c*.3 metres above OD. In Potter's Norwood salt making site was on land at *c*.2.6m above OD and salt making at Longhill Rd, March took place at *c*.2m above OD (Potter 1981; Atkins 2003). It may be significant that settlement adjacent to the salt making at Longhill Rd was on slightly higher areas up to 3.3m OD. It seems significant that these large salt-making areas finished production by *c*.AD200. No major Late Roman salt making sites have been found in the area although a probable small scale Later Roman salt making site dating to after AD300 has been postulated at land off Cedar Close, March on land at *c*.2m OD (Hickling 2003).

9.2.5 The creation of a model of land-use and organisation over time

The evidence from this project will be set within the framework of existing knowledge of the archaeology of the area and will make a valuable contribution to ongoing local research. The site, despite the limited nature of the excavations, will contribute to the understanding of Iron Age and Roman occupation in the area.

In the Iron Age fen peat deposits developed around most of the island. There were only four known other Iron Age settlement sites on March island. Around 5km to the north of the site there was an early Iron Age site (Site 21), to the north of Granford (Hall 1987). About 4km to the north-east of the site was Site 34 at Flaggrass which was also started in the Early Iron Age and continued into the late Pre-Roman Iron Age (Hall 1987, 40; SMR 08448a) Adjacent to Flagrass was Site 31 which was established in the late pre-Roman Iron Age (Hall 1987, 40; SMR 08451a). Both these latter sites are associated with the later Romano-British settlements and field-systems at Flagrass. Excavations conducted at Estover, revealed a Late Iron Age/Early Romano-British droveway beneath the Fen Causeway (SMR 407936a), and ditched enclosures (aligned on the droveway and not on the Fen Causeway) that survived into the later Roman period (SMR 07936).

During the Roman period the dry land at March increased significantly to the northeast of the island, as marine flooding ceased. Extensive areas of cropmarks have been recognised in the north-east corner of March (around Estover (SMR 07936) and Flagrass Hill Road (SMR 08449) and these appear to have developed from earlier Iron Age settlements.

The Fen Causeway Roman Road runs through these settlements and across the north of March. Excavations in southern March have recovered quantities of pottery which suggest that Roman settlement was not confined to the northern reaches of March island (Kemp 1999). Archaeological sites are known in the

area around the development area. Some 350m to the north of the site, an archaeological evaluation found an Iron Age to Roman period site (O'Brien 2002). A mid 1st-century AD pot containing 872 Iceni coins probably set into a ditch within a contemporary settlement was found c.500m to the north-east at Field Baulk Farm. Another coin hoard site was found 500m to the west. Here, in 1802, a large pottery vessel containing bronze and gold Roman coins were found possibly in relation to large cropmark enclosures (SMR CB 10798).

Wimblington Road, the route which passes through March from north to south, may be older than previously thought. It may have linked settlements on the southern and central parts of the island and possibly even areas further to the southeast such as Stonea Grange. The Fen Causeway connected Peterborough with settlements such as March across the fens to Denver in Norfolk. Most other Roman sites on the island are small and have been interpreted as farmsteads. These tend to date to between the 2nd and 4th centuries AD. A number of sites lies on the silt roddons to the north and north-east of March and are thought to be associated with salt production see 9.2.4 above .

9.2.6 *To produce stratified assemblages of Romano-British pottery to assist in the development of a local type series and site dating*

The excavation has recovered a moderate amount of pottery (nearly 1000 sherds) from relatively secure deposits. These will be incorporated into on-going local research (Macaulay 2002) as well as assessed and incorporated into the existing project. Results from this investigation will be looked at in conjunction with the forthcoming Roman pottery research project for the Southern Cambridgeshire Fen Edge and in particular Horningsea Pottery Industry (Evans & Macaulay forthcoming), which should assist in developing accurate type series to be compared to the Nene Valley data.

Grey ware pottery wasters were found at the March site indicating probable pottery production close to the site in the Roman period. As with other sites in March the date of the demise of the site (derived from negative evidence *e.g.* only a single colour coated Nene Valley pottery, shell tempered, Oxfordshire colour-coated and Hadham wares, no late brooches *etc.*) confirms other abandonment sites in March (Atkins 2003; Potter 1981). The abandonment of the site in *c.*AD200 is comparable with other low lying sites in the March area and may be due to flooding through the silting up of the River Nene probably due to the intensification of agriculture (French 1985). Interestingly, the pollen sampling on site which included three samples from the last Roman phase before abandonment does not provide evidence for flooding. This may mean there were other reasons for abandonment of the site here (and else where in some of the March sites; see above).

10 CONCLUSION AND RECOMMENDATIONS

In terms of the specialists work, the assessment process has provided adequate data for publication on all finds other than Iron Age and Roman pottery. It is therefore recommended that no further work, other than the ceramic analysis and illustration of both metalwork and pottery, is undertaken. The forthcoming analytical and full report stage will further integrate the existing text with previous archaeological work in the neighbourhood to set the site into its local and regional context.

11 STORAGE AND CURATION

The archive is currently held at the AFU's headquarters at Fulbourn. The bulk of the material archive is to be prepared for storage at Landbeach.

12 PUBLICATION

It is proposed that the results of the excavations should be published as an article in the regional journal *Proceedings of the Cambridge Antiquarian Society* and a note in the national journal *Britannia*.

13 TASK LIST

Key to abbreviations in task lists:
FC = Finds Co-ordinator, ILL = illustrator, PEPM = Post-Excavation and Publications Manager, PM = Project Manager, PO = Project Officer, SC = Specialist Consultant

13.1 Stratigraphic Analysis and Publication Draft

Task	Days	Staff
Finalise site phasing and dispatch to pottery specialists	1	PO
Write group and phase text 3	PO	
Collate and review results of previous work from the local area	2	PO
Write background text	2	PO
Write discussion and conclusions	3	PO
Collate matter for publication (lists, captions, bibliography, *etc.*)	2	PO
Internal Edit	2	PM/PEPM
Incorporate Edits	1	PO
Final Edit	1	PM/PEPM
Submit to PCAS	1	PO
Archiving	2	FC
Total person days	**20**	

13.2 Illustration

Task	Days	Staff
Produce plans/sections/location drawings	2	Ill
Finds illustration (metal)	6	Ill
Finds illustration (pottery)	3	Ill
Total person days	**11**	

13.3 Pottery

Task	Days	Staff
Discuss issues raised through assessment	0.5	SC
Catalogue, report	4.5	SC
Total person days	**5**	

14 PROJECT PERSONNEL

Name	Role	Employer
Robert Atkins	Project Officer	AFU
Ian Baxter	Animal Bone Analysis	Freelance
Steve Boreham	Pollen	Cambridge Univ.
Steve Critchley	Worked Stone	Freelance
Nina Crummy	Metalwork	Freelance
Carole Fletcher	Finds Officer	AFU
Rachel Fosberry	Finds	AFU
Val Fryer	Environmental Analysis	Freelance
Celia Honeycombe	Conservator	Cambs CC
Jeni Keen	Human bone	AFU
Steve Kemp	Flint	AFU
Alice Lyons	Roman Pottery	Norfolk Arch. Unit
Steve Macaulay	Manager	AFU
Don Mackreth	Brooches	Freelance
Emily Oakes	Illustrator	AFU
Sarah Percival	Iron Age Pottery	Norfolk Arch. Unit
Elizabeth Shepherd Popescu	Post-Excavation & Publications Manager	AFU

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The excavation and post-excavation assessment was managed by Stephen Macaulay. Rob Atkins directed the fieldwork with a team consisting of Abby Antrobus, Tony Baker, John Balderson, Chris Montague, Simon Pickstone and Sam Whitehead. Steve Critchley made a significant contribution to the understanding of the site through metal detecting.

Carole Fletcher and Helen Fowler assisted in the assessment of the artefacts. Thanks are also extended to all of the specialists who have contributed to this report. Finally, thanks are also offered to Steve Macaulay and Elizabeth Shepherd Popescu for editing this report.

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(NB: includes bibliography from Part 2)

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