

Roman Settlement at No. 31 Tunbridge Lane, Bottisham, Cambridgeshire



Archaeological Excavation Report



September 08

Client: Upware Marina

OA East Report No: 886

OASIS No: cambridg1-33345

NGR: TL 5442 6092

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Roman Settlement at No. 31 Tunbridge Lane, Bottisham, Cambridgeshire

An Archaeological Excavation

Scott Kenney

With contributions by Jeremy Evans, Ian Baxter, Nina Crummy, Tom Eley, Carole Fletcher, Rachel Fosberry, Val Fryer, Stephen Kemp, Stephen Macaulay, Ian Riddler and John Shepherd

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CHER Event Number: ECB 707
Date of works: 23rd July-24th August 2002
Grid Ref: TL 5442 6092

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Prepared by: Scott Kenny
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Checked by: Liz Popescu
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Oxford Archaeology East,

15 Trafalgar Way,
Bar Hill,
Cambridge,
CB23 8SQ

t: 01223 850500
f: 01223 850599
e: oaeast@thehumanjourney.net
w: <http://thehumanjourney.net/oaeast>

OASIS Report Form

OASIS Number: cambridg1-33345

PROJECT DETAILS				
Project name	Roman Settlement at Tunbridge Lane Bottisham			
Short description	The site was excavated as two contiguous areas that were opened sequentially by machine. Features located included ditches, pits, postholes and a corn dryer or malting oven. Roman pottery of 1st to 3rd century date was recovered from many features, most notably from the major northern boundary ditch, which ran from east to west. This feature had pottery (including rare Roman glazed ware), tile, building material, bone and glass scattered throughout the fills. No buildings were identified during the excavation, however the pottery assemblage indicates nearby domestic activity. The site may have had a functional connection with other Roman settlement, part of a possible villa estate, found just to the southeast across Tunbridge Lane in 2000. There is evidence for the destruction by fire and subsequent demolition of a nearby Roman building, probably in the mid 3rd century.			
Project dates (2000)	Start	23/07/02	End	24/08/02
Previous work	CHER ECB1115 (BOT TL 02)		Future work	No
Associated project reference codes	BOT TL 02; CHER ECB707			
Type of project	Recording Project – Full Excavation – Direction from local planning authority – PPG16			
Site status	None			
Previous land use (list all that apply)	Vacant land previously undeveloped			
Planned development	General residential			
Monument types / period (list all that apply)	Farmstead [Roman]			
Significant finds: Artefact type / period (list all that apply)	Rotary Quern [Roman], Pottery [Roman]			
PROJECT LOCATION				
County	Cambridgeshire	Parish	Bottisham	
HER for region	Cambridge			
Site address (including postcode)	31 Tunbridge Lane Bottisham Cambridge CB23 7UY			
Study area (sq.m or ha)	0.138ha			
National grid reference	TL 5442/6092			
Height OD	Min OD	11	Max OD	11.5m
PROJECT ORIGINATORS				
Organisation	OA East			
Project brief originator				
Project design originator	Stephen Macaulay			
Director/supervisor	Scott Kenney			
Project manager	Stephen Macaulay			
Sponsor or funding body				
ARCHIVES	Location and accession number	Content (e.g. pottery, animal bone, database, context sheets etc)		
Physical	OA East	Metalwork, slag, worked flint, querns, pottery, fired clay, tile, animal bone, HSR, sample residues		
Paper	OA East	Site indices and context records Permatrace plans Brief and specification Background information including HER data, client plans and maps Correspondence		
Digital	OA East/CCC servers	All reports in Word 97-2003 format Report drafts and final version Specialist reports: metalwork, slag, worked flint, querns, pottery, fired clay, tile, animal bone, HSR, environmental Site database (Access 2000) Site surveys (AutoCAD 2000) Report figures (Adobe Illustrator 10) Report PDF (Acrobat 6)		

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Summary

In April 2002, CAM ARC of Cambridgeshire County Council (now Oxford Archaeology (OA) East) conducted an archaeological excavation on 0.138ha of land at No. 31 Tunbridge Lane, Bottisham, Cambridgeshire (TL 5442 6092). This was in advance of a proposed housing development.

The site was excavated as two contiguous areas that were opened sequentially by machine. Features located included ditches, pits, postholes and a corn dryer or malting oven. Roman pottery of 1st to 3rd century date was recovered from many features, most notably from the major northern boundary ditch, which ran from east to west. This feature had pottery (including rare Roman glazed ware), tile, building material, bone and glass scattered throughout the fills. Although no buildings were identified during the excavation, the pottery assemblage indicates nearby domestic activity.

The site may have had a functional connection with other Roman settlement, part of a possible villa estate, found just to the south-east across Tunbridge Lane in 2000. There is evidence for the destruction by fire and subsequent demolition of a nearby Roman building, probably in the mid 3rd century.

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1 Introduction

Between the 23rd July and 24th of August 2002, CAM ARC (now OA East) conducted an archaeological excavation on land at No. 31 Tunbridge Lane, Bottisham (TL 5442/6092). The excavation was commissioned by Upware Marina Ltd, in response to a brief set by Andy Thomas of Cambridgeshire County Council (Thomas 2002) and supplemented by a specification prepared by OA East.

The site lies on the northeast side of the village. It is roughly rectangular in plan and 0.138ha in area.

The general potential of the site was defined by a phase of evaluation trenching carried out by OA East in April 2002. Results from the evaluation suggested that a Roman occupation site had survived in the form of earth-cut features such as ditches, enclosure systems, and pits. It was suggested in the evaluation report that the site extended across the whole of the current development area and beyond (Kenney 2002).

In 2000, an excavation was carried out land 100m to the northeast of the present site that further refined the model of archaeological potential. Roman settlement was revealed, including cellared buildings and a yard surface, which have been dated to the 2nd-4th centuries AD (McDonald 2000).

The work was designed to assist in defining the character and extent of any archaeological remains within the proposed redevelopment area, in accordance with the guidelines set out in *Planning and Policy Guidance 16 - Archaeology and Planning* (Department of the Environment 1990). The results will enable decisions to be made by CCC, on behalf of the Local Planning Authority, with regard to the treatment of any archaeological remains found.

The site archive is currently held by OA East and will be deposited with the appropriate county stores in due course.

The findings from the Bottisham site will be published as part of the corpus of recent Romano-British sites in Cambridgeshire, which has been approved for the East Anglian journal series (Wallis forthcoming). This will cross-refer to the pottery from the site which is to be published separately in a companion volume on Roman pottery, focusing on the Horningsea industry (Evans and Macaulay forthcoming). Finds have yet to be illustrated: this will be done as part of the publication project.

2 Geology and Topography

According to the British Geological Survey, the site lies on the Lower Beds of the Cretaceous Lower Chalk (BGS 1974). It is situated at around 11.5m OD at its highest point close to the road, falling to around 11.2m OD to the northwest.

3 Archaeological and Historical Background

3.1 Palaeolithic

Stray finds of hand axes have been made in the south-west of the parish (CHER 06257a, 06274) and at another unspecified location (CHER 07912).

3.2 Mesolithic

Two Mesolithic tranchet axes and a number of flint flakes were found just west of the church (CHER 06595).

3.3 Neolithic

Numerous Neolithic axes have been found around the parish. Several were uncovered near Lode, in the north-west (CHER 06520, 06573, 06575). Many more have been recovered from closer to the village itself, to the north (CHER 06610, 00208), the east (CHER 06556) and the south (CHER 06580). Flint flakes were found just to the east of the village (CHER 06531), while possibly Neolithic ditches are located to the north (CHER 06605).

3.4 Bronze Age

Within Bottisham parish there are numerous barrows and other ring ditches, most of which are located in the south-west of the parish (CHER 06288, 06289, 06302, 06487, 06744, 06745, 06751, 06752, 06754, 06755, 06757, 09330, 09332). Three more barrows are located closer to the village to the north-east (CHER 06609), to the north-west (CHER 06553) and to the south-east (CHER 06626). Bronze Age flints were also found at the same location as the Neolithic ones mentioned above (CHER 06531). A barbed and tanged arrowhead was found just to the south of the development area (CHER 06591). Further probable Bronze Age flints were found close to the church (CHER 06598).

3.5 Iron Age

No finds of this period have been made from Bottisham parish.

3.6 Roman

In 2000, Hertfordshire Archaeological Trust (now Archaeological Solutions [AS]) carried out an excavation on the site of the New Surgery, less than 100m away to the east across Tunbridge Lane from the current development area. The excavation revealed evidence for a 'high-status farmstead', including extensive metalled yards, ditches, gullies and basemented structures. Pottery from the site was dated to the 2nd to 4th centuries AD. Roman pottery was also found to the north of the development area (CHER 04133) and to the west (CHER 06586).

During 2006, large scale excavation was undertaken by AS in advance of a new housing development to the northeast, east and southeast of the New Surgery. This work revealed a substantial Roman site with its most active phase dating to the 3rd and 4th centuries, and potentially some continuation into the Saxon period. A hitherto undiscovered earlier phase of features may be related to the active lifespan of the OA East Tunbridge Lane site, itself dating from the 1st to 3rd centuries.

3.7 Anglo-Saxon

Several minor Anglo-Saxon artefacts have been found around the parish but none from within the village itself (CHER 06638, 06628, 06629, 06599). There is also a single pagan Saxon barrow amongst the Bronze Age examples in the south-west of the parish (CHER 06762a).

3.8 Medieval

The earthworks within Bottisham Park to the north of the site are the remains of a deserted medieval hamlet, possibly the lost settlement of Angerhale (CHER 00112, a-g). To the south-west of these earthworks, numerous medieval coins have been found by metal detectorists (CHER 03410, 06534-06548, 08131-08140, 08297, 08340, 08746, 08780). Holy Trinity Church at the southern end of the village largely dates from the 13th and 14th centuries but may have been founded earlier (CHER 06730).

3.9 Historical Background

The name Bottisham is first recorded in 1060 as *Bodekesham* and as *Bodichessham* in the Domesday Book entry of 1086. A straightforward interpretation of the name is 'Boduc's farm'. The village layout seems to have originated as at least three hamlets, and more may have sprung up before they all finally merged into something like the current shape (Wareham and Wright 2002).

The population of the parish at Domesday was 49; it had risen to 701 by 1891 (Wareham and Wright 2002) and to 2,020 in 2005, according to the County Council's own statistics (CCC 2005).

4 Methodology

The objective of this excavation was to preserve by record all archaeological deposits within the development area.

The format for excavation was set out by Cambridgeshire County Council, in accordance with established PPG 16 mitigation practice. The programme of work included the excavation of a single open area 0.12ha in extent, to be excavated as two contiguous halves numbered Areas 1 and 2.

Area 1 formed the eastern half of the total excavation area. Evaluation in 2002 consisting of two trenches had clearly demonstrated the presence of large east to west ditches and several smaller features. Both evaluation trenches lay within Area 1, although Trench 2 also extended into Area 2.

The second excavation area (Area 2) lay immediately to the west of the initial area and was contiguous with it. The evaluation trenches had been placed on the basis of an early draft of the proposed development, and this proposal had changed by the time of the excavation. From the results of excavating Area 1 it was clear that all of the ditches should continue into Area 2, and this proved to be the case.

Machine excavation was carried out under constant archaeological supervision with a single 360° tracked excavator used for the removal of overburden and to stockpile the spoil. The topsoil and any subsoil from Area 1 were stored on Area 2 and the spoil from Area 2 was stockpiled on Area 1 once excavation was completed on the first half of the site. Total overburden (topsoil and subsoil) depth varied between 0.20m and 0.60m over the excavated areas.

After machine stripping, the site was hand-cleaned. Archaeological features were outlined using spray paint in order to assist visibility in poor weather and then planned by hand at a scale of 1:50. A metal detector survey was conducted across the site in order to pinpoint metal finds within features, and certain objects were excavated at this stage.

A grid located with respect to the Ordnance Survey was set up during stripping of the first area. Grid pegs were located in each area at 5m intervals. These were used to plan excavated features by hand at a scale of 1:50, 1:20 or 1:10. Sections and profiles across excavated features were drawn at a scale of 1:10 or 1:20. The site grid north was approximately 50° west of Ordnance Survey grid north.

All excavated deposits and cuts were described on OA East *pro-forma* single context recording sheets. Monochrome and colour photographs were taken to supplement the drawn and written record. Digital photography was also employed to further expand the recording methods and media used.

Environmental samples were taken from a variety of different types of features representing all phases of activity on the site.

Site conditions were generally good throughout the excavation, although the hot and dry weather meant that exposed surfaces rapidly became baked and often required watering before being excavated.

5 Results

5.1 Area 1 (East)

The features seen in Area 1 were essentially those first uncovered in the evaluation trenches, i.e. two large ditches and three smaller ones. There were also a number of small pits, often quite shallow, and a small number of postholes. Smaller ditches or structural slots were evident towards the north end of the area. The single large pit was located in the northeast corner of the site.

While the northernmost large ditch continued to produce significant quantities of many materials, most notably pottery, other features were not as artefact rich, except for the large pit in the northeast corner of the site.

Many features in this first half of the site had no stratigraphic relationships with other features. Much of this lack of stratigraphy was balanced out by subsequent discoveries in Area 2.

5.2 Area 2 (West)

In addition to the ditches, pits and postholes seen in Area 1, the second half of the excavation also revealed new feature types in the form of burnt flues and a corn drier. Unlike Area 1, more stratigraphic relationships were evident from which to phase activity on the site.

5.3 The Archaeological Sequence

5.3.1 Period 1, Phase 1: Neolithic and Bronze Age (4500-700BC)

(Fig.2)

A possible buried soil (400; Group 1, not illustrated) was observed, largely across the northern half of the site. It consisted of a thin layer up to 0.10m thick of brownish yellow sandy clay above natural gravels and chalk. An assemblage of 42 worked flints was found scattered across this surface, dating to the Early Neolithic and the Bronze Age (Appendix 5). The finds include a barbed and tanged arrowhead attributable to the Bronze Age. This layer may represent a very early plough soil, although no scars or ard marks were found and no features were identified as belonging to this phase.

5.3.2 Period 2, Phases 2-6: Roman (AD55-410)

(Fig.3)

Most of the surviving features were Roman in date, with virtually no activity either preceding or following this period. A range of features was present, including ditches, pits, postholes, burnt flues and a possible corn dryer or malting oven. These features have been sub-divided into five identifiable phases of activity spanning the early 2nd century until the end of the Roman period, although concentrated in the 2nd to 3rd centuries.

a) Phase 2 (AD100-120)

The initial phase of Roman activity was characterised by the presence of numerous pits and postholes, indicating that the site may have been an unenclosed area used for small-scale proto-industrial processes and the disposal of rubbish during this time. The domestic pottery indicates that settlement must have lain close by.

Three pits (**149/151/153**, **155**, **211**; Group 2.1) shared little in common other than the fact that they may have been contemporary and that they showed no traces of *in situ* burning, unlike other features at the site. Two lay in the northern half of the site (**211**, **155**) and the third towards its southern edge. They varied in plan shape, size, depth and profile and their function could not be ascertained. The two mentioned above both had fairly regular shapes in plan and were 0.7-1.4m across and up to 0.65m deep, with steep-sided, concave based profiles. In contrast, pit **149/151/153**, which had been thought to be three separate intercutting features before excavation, proved to be a single complex feature 1.87m long, 0.57m deep and 0.7m wide. This may have been used for storage, which left no trace in the archaeological record. Infills consisted of greyish brown, olive brown or orange brown sandy clays, often with noticeable chalk flecks towards the base of the cut. Roman pottery dating to the early 2nd century was recovered from most of the fills.

In the northwest of the site was circular pit (**219**, Group 2.2) 1m in diameter and 0.4m deep, with vertical sides and a flat base. The sides and the central portion of the base were burnt, and the purplish red discolouration around the edge was visible on the surface before excavation. There was no indication that structural elements had existed within the feature in the form of stakeholes or sockets and the function remains uncertain. Infills consisted of a yellowish brown sandy clay over a thin black greasy ashy deposit. The environmental sample of the lower fill contained a few charred cereal grains.

A group of ten pits (**115**, **134**, **138**, **140**, **142**, **184**, **261**, **270**, **291**, **295**; Group 3.1; S. 19, Fig. 9) lay scattered across the site and were all 0.1-0.6m deep, mostly with very gently sloping sides blending imperceptibly into a concave base; the deeper examples tended to have steeper sides and flatter bases. They ranged in size from 1.1-3.3m and were mostly oval except for **261**, which was sub-rectangular. None showed any discernible function and they were infilled with brown, greyish brown, yellowish brown or reddish brown sandy silts, from which Roman pottery was recovered.

Two other shallow pits (**136** and **227**; Group 3.2) had partially burnt bases, although their fills were not particularly unusual and did not reflect their use as hearths. Both pits were oval, 0.85-1.55m long, 0.8-1.4m wide and up to 0.15m deep. The first was located towards the north of the site and the second in the middle. Infills consisted of light reddish brown sandy silt (in **136**) and dark greyish brown sandy silty clay (in **227**). Roman pottery was recovered from both pits. The environmental sample from pit **136** contained charred cereal grains and charcoal flecks, while the mollusca indicate that the local environment was largely open country.

A group of 15 postholes were scattered across the site, with the majority in the northern half (**10, 113, 130, 144, 160, 169, 171, 173, 175, 177, 179, 268, 209, 279, 281, 283, 285, 293**; Group 4; S. 33 and 32, Fig. 9). They varied in size from 0.22-0.65m and were between 0.06 and 0.3m deep. Infills consisted of dark greyish brown or orange brown sandy silts. Only one (**129**) contained any datable finds, consisting of a single piece of undiagnostic Horningsea pottery, the date of which cannot be refined beyond the Roman period. These features may not in fact relate to each other, and no patterns suggesting the presence of structures or other meaningful arrangements were apparent.

Five segments of narrow ditch lay at the northern end of the excavation area (**162/391, 181, 231, 287, 289**) and one (**132**; both Group 5.1) was found in the middle of the site. Each of the northern examples ran fairly parallel to each other on a NE-SW alignment and terminated at least once within the site. They were between 2.3m and 7m long, up to 0.4m wide and 0.22m deep. Profiles were generally steep-sided and concave or flat-based and the ditches had rounded terminals. Although these features may have been structural in nature, it is more probable that they represented a series of fencelines rather than part of a building. Infills consisted of brown or light greyish brown silty clays, from which Roman pottery was recovered.

Within one segment of narrow ditch (**231**) four postholes were observed (**192, 194/243, 237, 241**; Group 5.2) that could not be separated stratigraphically from the ditch. Infills were identical to each other and to the ditch segment and no finds were recovered from the postholes.

b) Phase 3 (AD120-140)

The northernmost and earliest of two major ditches found was dated on the basis of large quantities of pottery, ceramic building material and vessel glass. In total, over 20kg of pottery was recovered from this ditch. A section was excavated through this ditch during the evaluation (**6**), and five further sections were begun during the excavation, of which three were fully excavated (**118/198/247**; Group 6; S. 39, Fig. 9; S. 50 and 68, Fig. 10). The other two sections only removed material from a recut (see below; Group 10). The profile of the ditch was essentially a wide, flat-based V and it was fairly straight in plan. Infills consisted of a wide variety of different deposits. This ditch contained a notable concentration of finds including a large knife or cleaver (SF124; Appendix 3), a bone pin (SF125; Appendix 12), glass fragments (SF123 and 127; Appendix 8), a single sherd of green-glazed Roman pottery (SF134; Appendix 9) and a piece of decorated slate (SF135;

Appendix 7). The partial skeletons of two perinatal human infants were recovered from two infills of ditch **198**, along with other faunal remains such as a near complete corncrake skeleton (Appendices 13 & 14). This ditch must have been completely filled in before a series of flues (Phase 4.1) was cut across it, implying a short period when no major east to west boundary ditch existed.

Lying to the north was a relatively narrow and steep-sided ditch with a rounded base (**124/122/393/235**; Group 7), which ran NE-SW before turning towards the north at its northern end. It would appear to have formed part of an enclosure to the northwest of the site, although its small size is notable. The ditch was 0.46-0.77m wide and up to 0.31m deep, and 18.3m long within the site. Infills consisted of greyish brown or yellowish brown sandy silts, from which Roman pottery was recovered.

Two pits in the north-eastern corner of the site may have formed elements of a single feature, open and filled contemporaneously (**120/147**; Group 8, S. 10, Fig. 9). These features contained ashy deposits interspersed with yellowish brown or brownish yellow sandy silts. Overall dimensions were 5.5m long, 2.2m wide and 0.8m deep, with an irregular subrectangular plan and a steep sided uneven profile. The southern pit (**120**) in particular contained many finds, including vessel glass (SF102, 103, 114 and 116; Appendix 8), coins (SF106, 107; Appendix 3), part of a decorated bone knife handle (SF115; Appendix 12) and fragments of a ceramic crucible that retained traces of copper alloy (SF101 and 129; Appendix 4). Other finds notably include a near complete Verulamium ware bowl (Appendix 9). In total, over 10kg of pottery was recovered from these pits. In contrast the environmental sample produced only small quantities of charred grain and charcoal.

c) **Phase 4 (AD120-140)**

(Fig. 4)

Earlier activity was followed by a number of burnt flues (of unknown function), a sequence of ditch recuts and the insertion of new ditches. These features generally relate to distinctly different phases of activity. Phases 3 and 4 have the same narrow date range because the pottery recovered from the features was essentially the same, indicating that rapid changes in use were taking place on the site at this time.

Phase 4.1: Flues

A group of six flues (**221, 225, 233, 249, 259, 387**; Group 9) consisted of straight linear cuts measuring 0.6-2.9m long, 0.5-1.2m wide and up to 0.25m deep, which had been discoloured and hardened by burning. The features had been cut into the top of the northern boundary ditch (Group 6) and truncated by a recut of the same ditch (Group 10). Infills consisted of grey, greyish brown or olive brown sandy silts, from which Roman pottery was recovered. Charred cereal processing debris and charcoal were recovered from the environmental samples.

Phase 4.2: Boundary Ditch Recut

A generally steep-sided and concave-based recut of the northern boundary ditch was recorded in several places (**22/384/394/395/396**; Group 10) and was apparently rapidly infilled with burnt debris from possible demolition nearby. This ditch was 1.0-1.3m wide, up to 1.15m deep and truncated several of the flues. Infills consisted of brown, brownish yellow, yellowish brown, greyish brown, grey or light greyish brown sandy silts, from which over 33kg of Roman pottery was recovered. As with the Phase 3 feature on the same line, this recut of the ditch contained a notable concentration of non-pottery finds including a mattock head (SF108, Appendix 3), glass fragments (SF132, Appendix 8), quern fragments (SF126 and 137, Appendix 6) and a coin (SF108, Appendix 3). Charred cereal processing debris and charcoal were recovered from the environmental samples.

Phase 4.3: Ditches and Pits

Two shallow ditches (**217, 223**; Group 11) cut across the earlier flues. These features were between 3.2m and 6.2m long, 0.3-0.4m deep and up to 0.1m deep, with simple concave profiles. Infills consisted of light greyish brown or dark greyish brown sandy silts, from which Roman pottery was recovered.

Two pits (**316, 344**; Group 12) which were intercutting and subcircular, lay to the south of the Group 6 ditch. Both of the pits had steep sides and fairly flat bases, measured 1.6-1.8m across and were up to 0.5m deep. Infills consisted of light yellowish brown or light greyish brown sandy silts, from which Roman pottery was recovered.

d) Phase 5 (AD150-250)

(Fig. 5)

Three intercutting pits lay adjacent to a possible oven/corn dryer (see below). The pits (**350, 352, 354**; Group 13) were roughly oval in plan, with irregular concave profiles, 1.1-1.6m across and up to 0.47m deep. Infills consisted of pale brownish grey, pale yellowish grey or dark brownish grey sandy silts, from which Roman pottery was recovered.

Two boundary ditches of moderate width and depth crossed the site (and possibly each other) between the two major boundary ditches to north and south. The ditches (**167/126/266** and **157/128/264**; Group 14; S. 15, Fig.8) measured 1.1 to 1.6m wide and up to 0.73m deep with a generally concave profile (**166/126/266**) or a slightly more V-shaped cut (**157/128/264**) and the similarity of the fills made it impossible to determine which of them was the earlier. Infills consisted of brown or greyish brown silty clays from which a considerable quantity of Roman pottery was recovered.

e) Phase 6 (AD270-410)

(Fig. 6)

Phase 6.1: Boundary Ditch

A new phase of activity was marked by the insertion of the southernmost and most recent of the two major Roman boundary ditches found (**12/16/207/273**;

Group 15, S. 46 and 62, Fig.8). This ditch had a generally flat-based wide V-shaped profile, although in the section excavated as **207** a narrow slot on the same orientation as the ditch was present in the base. By contrast with the northern boundary marker, this ditch appears to have been largely allowed to silt up slowly until the point at which the Group 16 oven/dryer was cut. Infills consisted of very dark grey, greyish brown, dark greyish brown or dark yellowish brown silty clays. Finds from ditch **207** include a near complete miniature dish in Horningsea greyware, which may indicate 'ritual' activity nearby (Appendix 9).

Phase 6.2: Corn Dryer/Malting Oven and Pits

A possible corn-dryer or malting oven (**340/328/323/367/372**; Group 16) lay just to the north of the new boundary ditch, its flue being cut into the upper fill of the ditch. Rakeout from the oven/dryer was visible in the upper ditch fill from the oven/dryer eastwards. Evidently the ditch had all but gone out of use by the point at which this feature was created.

The feature consisted of a circular pit 2.5m across with a flue 4.1m long and up to 1.4m wide entering to the south. Infills consisted of yellowish brown, greyish brown, grey or black sandy silts or clay silts, from which no pottery was recovered, although a substantial quantity of daub was found (see Appendix 11). The environmental samples indicate that the feature was probably in use for parching of grain rather than malting, and included material that had probably been used as fuel (Appendix 14).

Two sub-rectangular pits (**213, 215**: Group 17, S. 47, Fig. 8) were dug on the northern edge of the Group 15 ditch to the east of the dryer or oven. Pit **213** was the smaller at 1m x 1.1m and 0.4m deep, while **215** measured 1.6m wide, at least 2.5m long and 0.4m deep. Both pits had infills consisting of very dark greyish brown sandy silty clays from which no finds were recovered.

5.3.3 Period 3, Phase 7: Post-Roman (AD410+)

(Fig. 6)

After the Roman period, a single straight ditch was cut across the site on a very different orientation to all of the features from earlier phases. This ditch was broad, shallow and on a completely different alignment (north-west to south-east) to that of most features in earlier phases (**272**; Group 17). Infills consisted of brown or greyish brown sandy silts, from which 3rd-century Roman pottery was recovered, although this is thought to be residual.

Although this ditch contained only 3rd-century finds, the dramatic change of alignment could indicate that it was a post-Roman feature, but that no later material was included in the fill. Unlike earlier features it was neither parallel nor perpendicular to the line of Tunbridge Lane, perhaps indicating that this road had fallen into disuse by this time.

6 Discussion

6.1 Prehistoric

The earliest material recovered from the site was a collection of worked flints dating to the Neolithic and Bronze Age (Appendix 5). This material was found in the fills of features and at the upper interface of a possible buried soil. It seems likely that all of the recovered flint was originally scattered throughout this layer before some of it was incorporated into the fills of later features that were dug through it.

Little can be gleaned from this assemblage other than that there was at least temporary human occupation of this area from the Neolithic onwards. The barrow cemeteries found close to Bottisham clearly show that there was an organised society in the area during the Bronze Age, although settlement sites of this period remain elusive. The excavated flints provide a tantalising hint that perhaps a settlement site may have lain nearby.

6.2 Roman

6.2.1 *The Status and Character of Settlement*

Overview

Bottisham lies on higher ground slightly removed from the southern fen edge, overlooking what is now the separate village of Lode and beyond that, Bottisham Fen. There has been some debate about the date of the Cambridgeshire lodes, although some are thought of as Roman in origin. If they are presumed to be Roman, then the ports and settlements that lie at their landward ends would have been important centres for the distribution of goods in this period.

This hypothesis has been questioned and Susan Oosthuizen (2000) has concluded that a Late Saxon origin is more probable. There are numerous examples of 10th and 11th century watercourses being constructed or modified on a grand scale, instigated by the monasteries of Ely and Ramsey.

Even if the lodes were not a Roman construction, goods were being transported via the Cam at this time and trackways may have led down to the river from the villages on much the same alignments as the later watercourses.

In the fens themselves, settlement had existed for centuries before the Roman period, mostly on the gravel islands but also on the silt fen in areas where salt-making was possible. Roman occupation was most intense on the islands in the fens and was also widespread on the silt fens themselves.

There has been much discussion amongst archaeologists about the nature, status and chronology of Roman occupation in the Fens and this is

summarised in Garrick Fincham's *Landscapes of Imperialism: Roman and native interaction in the East Anglian Fenland* (2002). Another wide-ranging study is presented in Tim Malim's *Stonea and the Roman Fens* (2005). Any villa at Bottisham would have had a role in the hypothesised Imperial Estate.

Romanisation

Most of the features on site can be dated to the Roman period or later and much of the occupation is of the type that might be expected on the periphery of a farm or villa. There is no evidence at this site for the existence of pre-Roman Iron Age occupation in the immediate area. The fact that material was recovered dating to earlier prehistoric periods, such as the Neolithic, suggests that if there had been Iron Age occupation, some sign of it would have survived.

It would seem that the Tunbridge Lane area at least (if not the whole of the area now occupied by the village of Bottisham) was relatively untouched when the first Roman settlers arrived, with only the barrow cemetery to the east attesting to earlier human occupation. In this respect, it is possible that the occupants were continental in origin ('Empire Romans') and not necessarily locals adopting the new fashions in pottery, glass and dwelling that had been introduced with the new settlers. Therefore the Romano-British settlement at Bottisham was probably part of the initial Roman occupation of the area after the conquest c.AD43.

Household and personal items

Fragments of household fittings and the accoutrements of daily life suggest a fascinating story of everyday working people on a Roman farm estate, with hints of perhaps greater wealth amongst the heads of the family. Agricultural tools appear in the assemblage alongside domestic vessels, both kitchen and tableware. Imported amphorae and rare glazed ware lie in pieces amongst the debris of coarse ware pottery from the nearby Horningsea kilns.

The decorated bone knife handle is comparatively rare (see Appendix 12). The worked slate trial piece (Appendix 7) is one of only a very few examples in Europe.

The level of imported wares found on the site would normally be thought to indicate a higher status settlement, usually a villa in such a rural setting. There are some indicators to support such a notion, including the amphora and glass tableware, and some that seem to contradict the idea, as in the case of the low numbers of decorated Samian vessels.

The higher than expected incidence of amphora sherds on the site, including Gallic wine amphora and fragments of a Mediterranean carrot amphora might indicate that these higher status goods were being stored here for later transport elsewhere. This does not directly explain the presence of these fragments, unless these sherds represent a few breakages during the transport process.

Many of the finds are practical items, even when they are decorated examples of their type. An exception to this is the 4th century bracelet (Appendix 3) which may have been lost.

Ritual

The miniature pottery vessel found in the lower fill of the Phase 6.1 boundary ditch is likely to have had some ritual purpose, although its function could not be determined and it was probably lost or disposed of rather than deliberately placed in the ditch.

In contrast, the burial of an infant (Burial 1; 245, Appendix 13) seems to indicate that some care was taken to place the body in the foetal position, as if sleeping or still in the womb. It is known that burial of adults was forbidden in Roman towns, although exceptions were made for children, whose remains could be legally interred within the family home. The situation in rural locations was perhaps somewhat more relaxed, and burials of adults are sometimes found in pits or ditches, although villas did often have their own small cemeteries. Since the Bottisham example was not buried within the structure of a building, as is often the case with villa sites, it suggests that this child may have been the offspring of one of the workers. Other human remains from another child were found in a more scattered setting within the fill of the earlier major east to west ditch.

Construction

Roman construction techniques on rural sites such as the one at Tunbridge Lane would have employed such classic materials as local stone (clunch) for foundations and the many types of Roman tiles for walls, floors and roofs. A piece of worked clunch (chalk rock local to the area) with similar dimensions to Roman wall tile hints at white courses breaking up the red ones, perhaps as exterior decoration on unrendered walls.

Small fragments of painted wall plaster recovered from the site indicate that interiors would have been decorated, and this is often seen as a key indicator of the wealth and status of Romano-British settlement.

Surrounding sites

While it appears logical that this site would have had some connection to the other Roman site across Tunbridge Lane due to their close spatial association, preliminary findings indicate that although the two may have formed parts of the same villa estate they were probably not in use at the same time. There seems to be a chronological overlap in their use, although a functional connection between them remains difficult to discern.

Throughout the history of the OA East site, it appears that the focus of settlement lay to the north or west. In the garden of No. 7 Rowley Gardens, a small test pit was excavated revealing what appeared to be part of an *opus signinum* floor (author's own observations). Unfortunately, no archaeological work had been carried out before the construction of this estate in the 1990s.

The finds assemblages from the two sites seem quite dissimilar, and detailed analysis of the pottery in particular has yielded few clues to the two sites' relationship with one another. In 2003, Cambridge University undertook archaeological investigations close to HAT's 2000 site, and in 2006 Archaeological Solutions (AS) excavated an area of around 0.6ha on the same plot of land.

The AS site revealed three main phases of activity spanning the 3rd and 4th centuries AD (AD 250-350) and very little residual material of earlier date. A very similar quantity of pottery was recovered from the AS site as from the OA East site, despite the former being approximately four times the area of the latter. The proportions were dramatically reversed with regard to the CBM from both sites, whereby almost 950kg of Roman brick and tile were recovered from the AS site, while only 29kg came from the OA East site.

6.2.2 Date

The pottery assemblage recovered from many different features was considerable, amounting to over 80kg; this is an exceptionally large assemblage considering the small area excavated. Much of the pottery is derived from the nearby Horningsea industry, although it represents a somewhat earlier example of those kilns' output than has previously been examined. Other British sources of the pottery include London, Kent, Hertfordshire and Essex. Broadly, the assemblage spans the date range AD 70-270.

In some parts of the fens there is a mid-3rd century gap in occupation, due to changing conditions and rising water tables. This seems to coincide with the end of main occupation on this site, perhaps because it was being affected economically by the retreat of Roman occupation in the nearby fens. This suggests an interdependence that may be hard to quantify.

Some of the coins recovered seem to indicate a Roman presence beyond the apparent main lifespan of the site. This indicates that nearby Roman occupation was still extant, and this has now been demonstrated during excavations on the opposite side of Tunbridge Lane.

6.2.3 Craft and Economy

The Horningsea industry, the second major coarseware industry in the fenland (the other being the Nene Valley industry), was of major importance in pottery supply for a considerable area running around the river Cam from Great Chesterford in the south to Stonea in the north. Horningsea is only 5km to the east of the Tunbridge Lane site and this assemblage demonstrates that pottery must have been produced there from at least the late 1st century AD.

Finds from the Tunbridge Lane site have been proven to come from as close as Horningsea and, in the case of the carrot amphora, at least as far away as

Palestine or Egypt. Such material could have been gathered *en route* by a family moving from Gaul or Iberia to the newly settled province of *Britannia*.

Agricultural tools, such as the mattock recovered the subject site, are not uncommon on rural sites, forming elements of the toolkit of a working farm. The crucible fragments found with metallic remains adhering to them indicate that small household implements were also being manufactured on the site.

The knife found in a Phase 4.2 ditch was repeatedly sharpened and was probably used in the process of skinning animals: a far heavier blade would have been required to cut through bone.

Sheep, pigs and chickens were all bred nearby, while cattle appear to have been bought in from outside sources. Part of the rural economy on any farm such as this would have been pigs, and this usually requires there to be woodland nearby in which they can forage. There is some evidence from the environmental samples that woodland existed to the north of the site, as shown by mollusc species favouring that habitat only being present in the fills of features in the northern part of the site.

As well as the domestic animals being kept on the site, crops were being processed and grain milled into flour, as demonstrated by the fragments of quern recovered from the ditches.

6.2.4 The Local Environment

Findings from the environmental samples indicate that while woodland certainly existed nearby, probably to the north, much of the immediate area was cleared, as would be expected for a farm. Common crop and weed species were both present in numerous samples.

Some of the macrobotanical remains recovered from the soil samples indicates that wetland plant species were being utilised, possibly for fuel in hearths and ovens. Reeds and sedge might also have been harvested for making matting for floors.

Wildfowling would have taken place either at Teversham Fen 2km to the south-west or at Bottisham Fen 3km to the north-west. Many species of duck and goose would have made their way to the Roman table, hunted with bows or slings. The Scaup or Tufted Duck could easily have come from either of the nearby habitats.

The Corncrake (*Crex crex*) was once widespread and common in Britain, however modern farming practices have all but eliminated the species from most of the country and it is now only found in any numbers in the Western Isles. Its favoured habitats include some natural and some manmade, including hay meadows and crop fields, both of which were relatively common during the Roman period.

6.2.5 Research Objectives

English Heritage's updated survey of archaeological endeavour and agenda for future work (English Heritage, 1997) sets out the need for regional frameworks for archaeology. The Regional Resource Assessment (Glazebrook 1997) identifies further work on the Horningsea pottery industry as a key area for further work. The Regional Research Agenda and Strategy document focuses on the subject of non-villa rural occupation sites as a 'Gap in Knowledge', in particular the distribution of such settlements. Local pottery production centres are also mentioned, particularly in relation to examining marketing patterns (Brown and Glazebrook 2000).

The site at Tunbridge Lane had the potential to fulfil some of these criteria and to contribute to the growing understanding of both rural settlement patterns and pottery production and distribution in the early part of the Roman period. As has been noted, the pottery will make a significant contribution to the English Heritage funded research project on the Horningsea pottery industry (Evans and Macaulay forthcoming). Although the site did not contain structural remains of buildings, the indirect evidence suggests that at least one must have existed nearby, due to the large amounts of building material recovered from ditches and pits.

Coupled to the usual research aims of understanding the diet, economy and settlement development of this period, there was a particular opportunity with this site to further clarify the nature of the introduction of new pottery types during the early Roman period, and also to explore the nature of 'native' Briton versus 'foreign' Roman, in the context of finds assemblages.

6.3 Post-Roman

Almost nothing is currently known about Saxon Bottisham, other than the fact that it was an established settlement of 49 inhabitants before Domesday. The lost hamlet of Angerhale, which lay nearby to the north, may also have existed at this time, although it is not mentioned.

7 Conclusions

Part of the frustration of any project of this nature is that it can only give a narrow window onto the archaeology, revealing tantalising glimpses of the scope of the wider picture, yet often falling short of explanation. This was never more the case than at Tunbridge Lane Bottisham, where hints of higher status were found as rubbish in ditches containing signs of destruction and indications of nearby buildings without any direct structural evidence.

Despite these drawbacks, the site has contributed to the picture of rural Roman life in Cambridgeshire in the 1st to 3rd centuries AD, indicating the extent to which local resources were exploited. What has also become clear is that 'rural' in this context does not also necessarily mean isolated or poor, as the imported goods attest. The subsequent excavations by Archaeological Solutions to the east of the subject site, which revealed the presence of 2nd-

to 4th-century activity and suggested the location of a nearby villa, can be combined with the evidence contained in this report to research further the Roman settlement at Bottisham. This study will be undertaken during the production of the forthcoming publication.

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The brief for archaeological works was written by Andy Thomas, who visited the site and monitored the excavation.

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Appendix 1: Context Data

Context	Phase	Group	Cut	Category	Feature Type	Length	Width	Depth	Colour	Fine component	Shape in Plan	Orientation	Profile
1	8	19	layer	demolition				0.1	grey	concrete			
2	8	19	layer	subsoil				0.4	very dark greyish brown	clayey silt			
3	3	7	4 fill	gully					very dark grey	sandy silt	curvilinear	SW - N	wide U
4	3	7	4 cut	gully		2	0.3	0.08					
5	4.2	10	22 fill	ditch					greyish brown	sandy silt	linear	NE - SW	wide flat-based V
6	3	6	6 cut	ditch				2.95	1.2	sandy silt	linear	NE - SW	wide flat-based V
7	5	14	8 fill	ditch					greyish brown	sandy silt	linear	NE - SW	wide flat-based V
8	5	14	8 cut	ditch				1.6	0.45	sandy silt	linear	NE - SW	wide flat-based V
9	2	4	10 fill	posthole					dark greyish brown	sandy silt	circular		U-shaped
10	2	4	10 cut	posthole		0.7	0.45	0.29		clayey sandy silt	linear	NE - SW	wide V
11	6.1	15	12 fill	ditch		7	1		very dark greyish brown	clayey sandy silt	linear	NE - SW	wide V
12	6.1	15	12 cut	ditch					very dark greyish brown	clayey sandy silt	linear	WNW - ESE	wide round-based V
13	7	17	14 fill	ditch					very dark greyish brown	sandy silt	linear	NE - SW	wide flat-based V
14	7	17	14 cut	ditch					black with dark greyish brown	sandy silt	linear	NE - SW	wide flat-based V
15	6.1	15	16 fill	ditch		17.5	0.9	0.55		sandy silt	linear	NE - SW	wide flat-based V
16	6.1	15	16 cut	ditch					brown	sandy silt	linear	NE - SW	wide flat-based V
17	4.2	10	22 fill	ditch					greyish brown	sandy silt	linear	NE - SW	wide flat-based V
18	4.2	10	22 fill	ditch					very dark grey	sandy silt	linear	NE - SW	wide flat-based V
19	3	6	6 fill	ditch					yellowish brown	sandy silt	linear	NE - SW	wide flat-based V
20	3	6	6 fill	ditch					bluish grey	clayey sandy silt	linear	NE - SW	wide flat-based V
21	4.2	10	22 fill	ditch					olive yellow	clay	linear	NE - SW	irregular V
22	4.2	10	22 cut	ditch		2.2	0.85		olive yellow	sandy silt	linear	NE - SW	irregular V
23	3	6	6 fill	ditch					olive yellow	sandy silt	linear	NE - SW	irregular V
24	3	6	6 fill	ditch					olive yellow	sandy silt	linear	NE - SW	irregular V
25	7	17	26 fill	ditch					very dark greyish brown	clayey sandy silt	linear	WNW - ESE	wide round-based V
26	7	17	26 cut	ditch				2.5	0.6	clayey sandy silt	linear	WNW - ESE	wide round-based V
27	7	17	28 fill	pit					very dark greyish brown	clayey sandy silt	linear	WNW - ESE	wide round-based V
28	7	17	28 cut	pit		0.8	0.6	0.5		clayey sandy silt	oval		simple concave profile
29	7	17	30 fill	posthole					very dark greyish brown	clayey sandy silt	oval		flat-based V
30	7	17	30 cut	posthole		0.4	0.35	0.35		clayey sandy silt	oval		flat-based V
31	7	18	32 fill	gully					brown	sandy silt	linear	WNW - ESE	square
32	7	18	32 cut	gully		3	0.6	0.25		clayey sandy silt	linear	WNW - ESE	square
33	5	17	34 fill	ditch					light olive brown	clayey sandy silt	linear	NE - SW	wide flat-based V
34	5	17	34 cut	ditch		1.55	0.53			clayey sandy silt	linear	NE - SW	wide flat-based V

Context	Phase	Group	Cut	Category	Feature Type	Length	Width	Depth	Colour	Fine component	Shape in Plan	Orientation	Profile
35	6.1	15	16 fill		ditch				black, light grey and red	charcoal, ash and fired clay			
100	8	19	layer		modern overburden			0.1	very dark grey	sandy clay silt			
101	3	8	120 fill		pit				light brownish grey	sandy silt			
102	3	8	120 fill		pit				light grey	sandy silt			
103	3	8	120 fill		pit				black	silt and ash			
104	4.2	10	394 fill		ditch				dark greyish brown	silty sand			
105	4.2	10	394 fill		ditch				pale grey with orange mottling	sandy silt			
106	4.2	10	394 fill		ditch				pale grey with orange mottling	sandy silt			
107	3	6	118 fill		ditch				reddish yellow	sandy silt			
108	3	6	118 fill		ditch				reddish yellow	sandy silt			
109	3	6	118 fill		ditch				grey	silty sand			
110	3	8	120 fill		pit				light grey	sandy silt			
111	3	6	118 fill		ditch				grey	silty sand			
112	2	4	113 fill		posthole				very dark greyish brown	sandy clay silt			wide flat-based V
113	2	4	113 cut		posthole	0.65	0.4	0.2	dark greyish brown	sandy clay silt	subrectangular		wide flat-based V
114	2	3.1	115 fill		pit	3.3	1.05	0.3	dark greyish brown	sandy clay silt	subrectangular		wide flat-based V
115	2	3.1	115 cut		pit				yellow	silt sand			
116	3	6	118 fill		ditch				strong brown	sandy silt			
117	3	8	120 fill		pit					silty sand			V shaped
118	3	6	118 cut		ditch	2.5	1.9	1.05	brownish yellow	silty sand	linear	E - W	
119	3	8	120 fill		pit	5	1.9	0.8		sandy silt	oval		wide U
120	3	8	120 cut		pit				yellowish brown	sandy silt			wide U
121	3	7	122 fill		ditch					sandy silt	curvilinear	SW - N	
122	3	7	122 cut		ditch	0.77	0.34		greyish brown	sandy silt	curvilinear	SW - N	wide U
123	3	7	124 fill		ditch					sandy silt			wide U
124	3	7	124 cut		ditch	3	0.5	0.28	pale brown	sandy silt	linear	NNE - SSW	wide U shape
125	5	14	126 fill		ditch	1.55	1.8	0.68	pale brown	sandy silt	linear	NE - SW	round-based V
126	5	14	126 cut		ditch					sandy silt			wide flat-based U
127	5	14	128 fill		ditch	1.5	1.08	0.46	light brown	sandy silt	linear		
128	5	14	128 cut		ditch					sandy silt			
129	2	4	130 fill		posthole	0.46	0.43	0.1	brown	sandy silt	circular		wide flat-based U
130	2	4	130 cut		posthole					sandy silt			
131	2	5.1	132 fill		ditch	2.5	0.46	0.17		sandy silt	linear	E-W	open U
132	2	5.1	132 cut		ditch					sandy silt			
133	2	3.1	134 fill		pit	1.25	0.63	0.09	brown	sandy silt	oval		flat based U
134	2	3.1	134 cut		pit				dark red	sandy silt			
135	2	3.2	136 fill		hearth								

Context	Phase	Group	Cut	Category	Feature Type	Length	Width	Depth	Colour	Fine component	Shape in Plan	Orientation	Profile
136	2	3.2	136 cut		hearth	1.65	1.4	0.1			oval		v wide shallow U
137	2	3.1	138 fill		pit				dark grey	sandy silt	circular		wide flat bottomed U
138	2	3.1	138 cut		pit	1.25	1.05	0.11		sandy silt	circular		flat bottomed U
139	2	3.1	140 fill		pit	0.85	0.8	0.15	reddish brown		circular		flat bottomed U
140	2	3.1	140 cut		pit				dark brown	sandy silt	oval		flat bottomed U
141	2	3.1	142 fill		pit	1.1	0.68	0.13		sandy silt	oval		flat bottomed U
142	2	3.1	142 cut		pit				reddish grey	sandy silt	circular		flat bottomed U
143	2	4	144 fill		posthole	0.35	0.33	0.19		ashy silty sand	circular		flat bottomed U
144	2	4	144 cut		posthole				dark reddish grey	sandy silt	circular		flat bottomed U
145	2	4	144 fill		post pipe				yellowish brown	sandy silt	rectangular		elongated U
146	3	8	147 fill		pit	1.2	2.51	0.35		sandy clay	subcircular		irregular semi circle
147	3	8	147 cut		pit				dark greyish brown with reddish yellow		subcircular		rounded base
148	2	2.1	149 fill		pit	0.3	0.22	0.17		sandy clay	subcircular		rounded base
149	2	2.1	149 cut		pit				dark greyish brown with reddish yellow		subcircular		rounded base
150	2	2.1	151 fill		pit	0.59	0.27	0.41		sandy clay	subcircular		rounded base
151	2	2.1	151 cut		pit				dark greyish brown with reddish yellow		subcircular		rounded base
152	2	2.1	153 fill		pit	0.99	0.53	0.56		sandy clay	subrectangular		irregular rectangle
153	2	2.1	153 cut		pit				light olive brown	sandy silt	subcircular		U shaped
154	2	2.1	155 fill		pit	0.58	0.6	0.34		sandy silt	subcircular		U shaped
155	2	2.1	155 cut		pit				greyish brown	sandy silt	linear	WNW -ESE	wide round-based V
156	5	14	157 fill		ditch	2	1.52	0.48		silty sand	linear		wide round-based V
157	5	14	157 cut		ditch				dark yellowish brown	sandy silt	subcircular		round based V
158	4.2	10	395 fill		ditch	0.5	0.47	0.21		sandy silt	subcircular		round based V
159	2	4	160 fill		posthole				dark greyish brown		linear	NE - SW	U shaped
160	2	4	160 cut		posthole				dark greyish brown		linear	NE - SW	U shaped
161	2	5.1	162 fill		ditch	1.4	0.4	0.2		sandy silt	linear		U shaped
162	2	5.1	162 cut		ditch				brown		linear		U shaped
163	5	14	164 fill		ditch	2	0.5	0.14		sandy silt	linear		shallow U
164	5	14	164 cut		ditch				dark greyish brown		linear		shallow U
165	5	14	164 cut		ditch				greyish brown	clayey sandy silt	linear		shallow U
166	5	14	167 fill		ditch	2	1.5	0.22		sandy silt	linear		open V
167	5	14	167 cut		ditch	2	1.55	0.53		sandy silt	linear		open V
168	2	4	169 fill		posthole				dark greyish brown with reddish yellow	sandy silt	subcircular		flat based U
169	2	4	169 cut		posthole	0.56	0.33	0.22		sandy silt	subcircular		flat based U
170	2	4	171 fill		posthole				dark greyish brown with reddish yellow	sandy silt	subcircular		flat based U

Context	Phase	Group	Cut	Category	Feature Type	Length	Width	Depth	Colour	Fine component	Shape in Plan	Orientation	Profile
171	2	4	171 cut		posthole	0.29	0.23		dark greyish brown with reddish yellow	sandy silt	subcircular		flat based U
172	2	4	173 fill		posthole								
173	2	4	173 cut		posthole	0.45	0.29		dark greyish brown with reddish yellow	sandy silt	subcircular		flat based U
174	2	4	175 fill		posthole								
175	2	4	175 cut		posthole	0.3	0.21		strong brown	sandy silt	subcircular		flat based U
176	2	4	177 fill		posthole								
177	2	4	177 cut		posthole	0.38	0.31	0.18	strong brown	sandy silt	rectangular		vertical sides flat base
178	2	4	179 fill		posthole								
179	2	4	179 cut		posthole	0.48	0.38	0.28	strong brown	sandy silt	subcircular		flat based U
180	2	5.1	181 fill		slot								
181	2	5.1	181 cut		slot	2.8	0.3	0.22	brown	sandy silt	linear	NE - SW	flat based U
182	2	3.1	184 fill		pit				dark greyish brown	sandy silt			
183	2	3.1	184 fill		pit								
184	2	3.1	184 cut		pit	1.98	0.24				oval		wide U
185			186 unused										
186			186 unused										
187	5	14	189 fill		ditch				brown	sandy silt			
188	5	14	189 fill		ditch				greyish brown	clayey sandy silt			
189	5	14	189 cut		ditch	0.63	0.73				linear		V shaped
190	3	6	198 fill		ditch				dark grey and black brown	silty ashy sand			
191	2	5.2	192 fill		posthole					sandy silt			
192	2	5.2	192 cut		posthole	0.48	0.4	0.09	brown	sandy silt	subcircular		elongated U shape
193	2	5.2	194 fill		posthole								
194	2	5.2	194 cut		posthole	0.31	0.34	0.06			subcircular		elongated U shape
195	4.2	10	395 fill		ditch				yellow, white and greyish brown	chalk and silty sand			
196	4.2	10	395 fill		ditch				brown	silty sand			
197	3	6	198 fill		ditch				reddish brown	silty sand			
198	3	6	198 cut		ditch	1.2	3	1.3			linear	SW - NE	flat based U
199	3	6	198 fill		ditch				reddish brown and white	silty sand			
200	3	6	198 fill		ditch				reddish brown, olive yellow and white	silty sand			
201	6.1	15	207 fill		ditch				very dark grey	sandy silt			
202	6.1	15	207 fill		ditch				dark greyish brown	sandy silt			
203	6.1	15	207 fill		ditch				dark greyish brown	sandy silt			
204	6.1	15	207 fill		ditch				dark yellowish brown	silty sand			
205	6.1	15	207 fill		ditch				dark yellowish brown	silty sand			
206	6.1	15	207 fill		ditch				greyish brown	sandy silt			

Context	Phase	Group	Cut	Category	Feature Type	Length	Width	Depth	Colour	Fine component	Shape in Plan	Orientation	Profile
207	6.1	15	207 cut	ditch		2.5	1.34		light grey	sandy silt	linear	SW - NE	wide V
208	2	4	209 fill	pit							oval		round-based U
209	2	4	209 cut	pit		0.7	0.6	0.44		sandy silt			
210	2	2.1	211 fill	pit					reddish yellow and brown				
211	2	2.1	211 cut	pit		1.4	1.25	0.65		sandy clay silt	subrectangular		wide flat-based V
212	2	17	213 fill	pit					very dark greyish brown				
213	2	17	213 cut	pit		1.2	1.15	0.4		sandy clay silt	subrectangular		wide flat-based U
214	2	17	215 fill	pit					very dark greyish brown				
215	2	17	215 cut	pit		2.5	1.6	0.4		sandy clay silt	subrectangular		square
216	4.3	11	217 fill	gully					dark grey brown	sandy silty clay	linear	NW - SE	U shaped
217	4.3	11	217 cut	ditch					yellowish brown	sandy clay	subcircular		square
218	2	2.2	219 fill	hearth		6	0.43	0.1					
219	2	2.2	219 cut	hearth									
220	4.1	9	221 fill	flue					dark grey brown	sandy silty clay	linear		shallow U
221	4.1	9	221 cut	flue		1.5	0.5	0.09		sandy silty clay	linear	NW - SE	shallow U
222	4.3	11	223 fill	ditch					light brownish grey	sandy silty clay	linear		shallow U
223	4.3	11	223 cut	ditch		3	0.25	0.05			linear	NW - SE	shallow U
224	4.1	9	225 fill	flue					light brownish grey	chalky ashy silt	linear		flat-based U
225	4.1	9	225 cut	flue		1.9	0.9	0.15		sandy silty clay	linear	NW - SE	flat-based U
226	2	3.2	227 fill	pit					dark grey brown		circular		U shaped
227	2	3.2	227 cut	pit					light brownish grey	sandy silt	linear	NE - SW	U shaped
228	2	5.1	229 fill	ditch							linear		shallow U
229	2	5.1	229 cut	ditch					pale brown	sandy silt	linear	NE - SW	shallow U
230	2	5.1	231 fill	gully		5	0.25	0.05			linear		shallow U
231	2	5.1	231 cut	gully					grey	ashy silt	linear		shallow U
232	4.1	9	233 fill	flue					greyish brown	sandy silt	linear	NW - SE	wide flat based U
233	4.1	9	233 cut	flue		1.6	0.6	0.12			linear		wide flat based U
234	3	7	235 fill	gully							linear	E - W	flat U shaped
235	3	7	235 cut	gully		2	0.78	0.31		sandy silt	linear		flat U shaped
236	2	5.2	237 fill	posthole					light brownish grey	sandy silt	circular		V shaped
237	2	5.2	237 cut	posthole							linear		U shaped
238	3	7	239 fill	gully					yellowish brown	sandy silt	linear	E - W	U shaped
239	3	7	239 cut	gully					greyish brown	sandy silt	linear	E - W	U shaped
240	2	5.2	240 fill	posthole							circular		flat based V
241	2	5.2	241 cut	posthole					greyish brown	sandy silt	linear		flat based V
242	2	5.2	243 fill	posthole					greyish brown	sandy silt	circular		flat based V
243	2	5.2	243 cut	posthole							circular		flat base V
244	2	2.2	219 fill	hearth					black	sandy silt	circular		flat base V
245	3	6	247 fill	grave						skeleton			

Context	Phase	Group	Cut	Category	Feature Type	Length	Width	Depth	Colour	Fine component	Shape in Plan	Orientation	Profile
246	3	6	247 fill		ditch				pale brown	ashy chalky clayey silt	linear	SW - NE	wide irregular flat-based V
247	3	6	247 cut		ditch	1.8	3	0.4	brown	silty sand	subrectangular		square
248	4.1	9	249 fill		flue								
249	4.1	9	249 cut		flue	0.6	0.41	0.13					
250	3	6	247 fill		ditch								
251	4.2	10	260 layer		ditch	1.3	0.8	0.2	very pale brown	silt chalk clay			
252	3	6	247 fill		ditch				reddish yellow	chalk			
253	4.2	10	260 fill		surface				brownish yellow	silty sand			
254	4.2	10	260 fill		ditch				light grey	silt and sand			
255	4.2	10	260 fill		surface				very pale brown	silty ash			
256	4.1	9	259 fill		flue				very dark grey	silty sand			
257	4.1	9	259 fill		flue				dark olive brown	sandy silt			
258	4.1	9	259 fill		flue				greyish brown	sandy silt			
259	4.1	9	259 cut		flue	1.45	0.58	0.25		silty sand	irregular	N - S	U shape
260	4.2	10	260 cut		ditch	1.3	1.1	0.3			irregular	NW - SE	irregular V
261	2	3.1	261 cut		pit	1.75	1.45	0.27			rectangular		flat based V
262	2	3.1	261 fill		pit				light brownish grey	sandy silt			
263	5	14	264 fill		ditch				pale brown	sandy silt			
264	5	14	264 cut		ditch	7	1.1	0.47			linear	NE - SW	V shaped
265	5	14	266 fill		ditch				dark greyish brown				
266	5	14	266 cut		ditch	4	1.35	0.3			linear	NE - SW	shallow U
267	2	4	268 fill		posthole				greyish brown				
268	2	4	268 cut		posthole	0.5	0.18	0.15			subcircular		simple concave profile
269	2	3.1	270 fill		pit				light yellowish brown and light grey	silty sand and chalky clay			
270	2	3.1	270 cut		pit	1.75	1.4	0.6			oval		irregular wide U
271	7	18	272 fill		ditch				light grey brown				
272	7	18	272 cut		ditch	6	1.9	0.35			linear	NE - SW	flat bottomed U
273	6.1	15	273 cut		ditch						linear	E-W	U shaped
274	6.1	15	273 fill		ditch				black				
275	6.1	15	273 fill		ditch				pale grey	sandy clay			
276	4.1	9	387 fill		flue				very dark grey	ashy silt			
277	3	6	247 fill		ditch				dark greyish brown	sandy silt			
278	2	4	279 fill		posthole				brown	sandy silt			rounded U
279	2	4	279 cut		posthole	0.31	0.48	0.3			subcircular		
280	2	4	281 fill		posthole				brown				
281	2	4	281 cut		posthole	0.31	0.3	0.2			circular		rounded wide U

Context	Phase	Group	Cut	Category	Feature Type	Length	Width	Depth	Colour	Fine component	Shape in Plan	Orientation	Profile
282	2	4	283 fill		posthole				dark yellowish brown	sandy silt			
283	2	4	283 cut		posthole	0.31	0.47	0.09			subcircular		U shaped
284	2	4	285 fill		posthole				dark yellowish brown	sandy silt			
285	2	4	285 cut		posthole	0.22	0.3	0.06			subcircular		U shaped
286	2	5.1	287 fill		gully				dark yellowish brown	sandy silt			
287	2	5.1	287 cut		gully	1.71	0.33	0.13			linear	ENE - WSW	round-based V
288	2	5.1	289 fill		ditch				dark yellowish brown	sandy silt			
289	2	5.1	289 cut		ditch	3.27	0.22	0.2			linear	ENE - WSW	U
290	2	3.1	291 fill		pit				brown	sandy silt	oval		wide flat based U
291	2	3.1	291 cut		pit	1.2	0.9	0.2					
292	2	4	293 fill		posthole				dark brown	sandy silt			wide U
293	2	4	293 cut		posthole	0.5	0.5	0.14			circular		
294	2	3.1	295 fill		pit				yellowish brown	sandy silt			flat based U
295	2	3.1	295 cut		pit	1.06	0.4	0.11			subrectangular		
296	2	3.1	296 fill		pit				dark greyish brown	sandy silt			
297	7	17	298 fill		pit				brown	clayey sandy silt			
298	7	17	298 cut		pit	1	0.5				circular		simple concave profile
299	7	17	300 fill		ditch				greyish brown	sandy silt			
300	7	17	300 cut		ditch	2	0.6	0.25			linear	NW - SE	U shaped
301	7	17	302 fill		ditch				brown	sandy silt			
302	7	17	302 cut		gully	1.5	0.4	0.2			linear	NNW - SSE	U shaped
303	6.1	15	273 fill		ditch				very dark greyish brown	sandy clay silt			
304	6.1	15	273 fill		ditch				yellow	silty sand			
305					natural								
306	4.2	10	260 fill		ditch				very dark greyish brown	sandy silt			
307	4.2	10	396 fill		ditch				light grey	silt			
308	4.2	10	396 fill		ditch				dark greyish brown	sandy silt			
309	4.2	10	396 fill		ditch				dark greyish brown	sandy silt			
310	4.2	10	396 fill		ditch				greyish brown	sandy silt			
311	4.2	10	396 fill		ditch				light grey	silty ash			
312	4.2	10	396 fill		ditch				grey	ashy silt			
313	4.2	10	396 fill		ditch				light brownish grey	ashy silt			
314	4.2	10	396 fill		ditch				black	silty ash and charcoal			
315	4.3	12	316 fill		pit				light brownish grey	sandy silt			wide shallow V
316	4.3	12	316 cut		pit	1.2	0.35				circular		
317	3	6	247 fill		ditch				pale brown	sandy silt			
318	3	6	247 fill		ditch				dark brown	sandy silt			
319	6.1	15	273 fill		ditch				light grey	sandy silt			

Context	Phase	Group	Cut	Category	Feature Type	Length	Width	Depth	Colour	Fine component	Shape in Plan	Orientation	Profile
320	6.1	15	273 fill		ditch				dark red	sandy clay			
321	6.1	15	273 fill		ditch				black with yellow	sandy silt			
322	6.2	16	323 fill		hearth/oven				very dark greyish brown	sandy silt			wide shallow V
323	6.2	16	323 cut		hearth/oven	0.8	0.23				oval		
324	6.2	16	328 fill		hearth/oven				pale brown	silty sand			
325	6.2	16	328 fill		hearth/oven				brown	sandy silt			
326	6.2	16	328 fill		hearth/oven				yellowish brown	sandy silt			
327	6.2	16	328 fill		hearth/oven				black	sandy silt			
328	6.2	16	328 cut		hearth/oven	3.3	0.38				oval		wide V
329	6.1	15	273 fill		ditch				yellow with grey	silty sand			
330	8	19	331 fill		posthole				dark greyish brown	sandy silt			
331	8	19	331 cut		posthole	0.58	0.35	0.3			rectangular		flat based U
332	6.2	16	328 fill		hearth/oven				dark grey	clayey silt			
333	4.3	12	334 fill		gully				light brownish grey	sandy silt			
334	4.3	12	334 cut		gully	0.25	0.17				linear	NE - SW	V shaped
335	7	17	337 fill		ditch				brown	sandy silt			
336	7	17	337 fill		ditch				very dark greyish brown	clayey sandy silt			
337	7	17	337 cut		ditch	1.95	0.38				linear	E - W	wide U
338	6.2	16	340 fill		hearth/oven				pale brown	sandy silt			
339	6.2	16	340 fill		hearth/oven				very dark grey and black	silty ash			
340	6.2	16	340 cut		hearth/oven	2.5	2.3	0.15			subcircular		square
341	5	14	362 fill		ditch				pale brown	sandy silt			
342	4.3	12	316 fill		pit				dark yellowish brown and brown	sandy silt			
343	4.3	12	344 fill		pit				greyish brown	sandy silt			
344	4.3	12	344 cut		pit	1.4	0.5				subcircular		flat bottomed U
345	4.3	12	344 fill		pit				light brownish grey	sandy silt			
346	5	13	350 fill		ditch				light grey	silty sand			
347	5	13	350 fill		ditch				light brownish grey	silty sand			
348	5	13	350 fill		ditch				dark bluish grey	silty sand			
349	5	13	350 fill		ditch				light yellowish brown	silty sand			
350	5	13	350 cut		ditch	2.1	0.47				linear	NE - SW	wide U
351	5	13	352 fill		pit				light brownish grey	silty sand			
352	5	13	352 cut		pit	0.99	0.86	0.3			subcircular		wide round-based V
353	5	13	354 fill		pit				very dark greyish brown	silty sand			
354	5	13	354 cut		pit	0.59	0.37	0.2			irregular oval		irregular
355			unused										
356			unused										
357			unused										
358			unused										

Context	Phase	Group	Cut	Category	Feature Type	Length	Width	Depth	Colour	Fine component	Shape in Plan	Orientation	Profile
359				unused									
360	4.3	12	344 fill		pit				light brownish grey	sandy silt			
361	4.3	12	344 fill		pit				light grey	sandy silt	linear	NE - SW	round-based V
362	5	14	362 cut		ditch	1.1	0.25		light grey	silty sand			
363	5	13	350 fill		ditch				greyish brown and dark greyish brown	ashy clayey silt	subcircular		square
364	6.2	16	365 fill		hearth/oven				very dark grey	sandy silt	linear	NW - SE	wide U
365	6.2	16	365 cut		hearth/oven	2.5	2.3	0.15		silty sand			
366	6.2	16	367 fill		hearth/oven				yellowish brown	sandy silt	linear		
367	6.2	16	367 cut		hearth/oven	1.25	0.15		grey	sandy silt			
368	3	6	247 fill		ditch				greyish brown	silty clayey sand			
369	3	6	247 fill		ditch				dark grey	silty sand	irregular	E - W	wide U
370	6.2	16	372 fill		hearth/oven				yellowish brown	sandy silt	linear	E - W	wide U
371	6.2	16	372 fill		hearth/oven				very dark grey	sandy silt	linear	E - W	wide U
372	6.2	16	372 cut		hearth/oven	2.6	1.4	0.6		sandy silt			
373	7	17	374 fill		gully				very dark grey	sandy silt	linear	E - W	wide U
374	7	17	374 cut		ditch	1.3	0.65	0.17		sandy silt			
375	7	17	376 fill		ditch	2.2	0.9	0.2		sandy silt	linear	E - W	wide U
376	7	17	376 cut		ditch	2.2	0.9	0.2		sandy silt	linear	E - W	wide U
377	7	17	365 fill		pit				very dark grey	sandy silt			
378				unused									
379	6.2	16	273 layer		hearth/oven				very pale brown	silty chalk			
380	4.2	10	384 fill		ditch				greyish brown	sandy silt	linear		
381	4.2	10	384 fill		ditch				olive brown	sandy silt			
382	4.2	10	384 fill		ditch				black and olive	sandy ashy silt			
383	4.2	10	384 fill		ditch				pale grey	ashy silt	linear	NE - SW	irregular
384	4.2	10	384 cut		ditch	1.3	0.6						
385	4.1	9	387 fill		flue				white	silty chalk			
386	4.1	9	387 fill		flue				pale yellow	silty chalk	linear	NW - SE	wide U
387	4.1	9	387 cut		flue	2.9	1.2	0.22					
388	4.1	9	387 fill		flue				greyish brown	sandy silt			
389	6.2	16	328 fill		hearth/oven				brown	ashy silt			
390	2	5.1	391 fill		ditch				light brownish grey	sandy silt	linear	NE - SW	shallow U
391	2	5.1	391 cut		ditch	2	0.3	0.1					
392	3	7	393 fill		ditch				greyish brown	sandy silt			
393	3	7	393 cut		ditch	1	0.4				linear	NE - SW	wide irregular flat-based V
394	4.2	10	394 cut		ditch	2	0.6				linear	NE - SW	irregular
395	4.2	10	395 cut		ditch	2.55	0.5				linear	NE - SW	irregular

Context	Phase	Group	Cut	Category	Feature Type	Length	Width	Depth	Colour	Fine component	Shape in Plan	Orientation	Profile
396	4.2	10	396 cut		ditch	2	0.8				linear	NE - SW	irregular
397	4.2	10	396 fill		ditch				light grey	sandy clay			
398	4.2	10	396 fill		ditch				yellow	sandy clay			
399	4.2	10	396 fill		ditch				very dark grey	ashy silt			
400	1	1	layer		cultivation horizon				yellow	sandy clay			
401	4.2	10	396 fill		ditch				yellow	sandy clay			
402	4.2	10	396 fill		ditch				white	sandy clay			
403	4.2	10	396 fill		ditch				light grey	ashy silt			
404	3	6	247 fill		ditch				black	silty charcoal			
405	3	6	247 fill		ditch				dark greyish brown	sandy clayey silt			
406	2	2	270 fill		pit				yellowish brown	silty sand			
407	2	2	270 fill		pit				greyish brown	sandy silt			
408	2	2	270 fill		pit				brownish yellow	silty sand			

Appendix 2: Finds Summary (weight in g)

Context number	Animal bone	Brick or tile	charcoal	Clay pipe	Daub	Fired clay	Flint	Glass	Metalwork	Fe	plaster	Mortar or	Organics	Pottery	Quern stone	Shell	Slag	Stone	Worked stone
5	378						62							714		157			
7	80	63												157		24			131
11		134												12					
13	58	302					1							64					
15		328					97							10					77
17	32							9						291		105			
18	31						26							486		272			
19	642	674			182	123	8	51						5007		1214	129	123	123
21	453	388						28						1003		453	292	1306	
23	35	103												506		129			
24	104													204		305			
25	131	128												46					95
27		336												76					
33	34	81						7						207		45			
35	159																		
101	458		34				1							1961		209			
102	470						33							1847		266			
103	657	37	1		837		9						38	4305		216			
104	163	1107	1		25		32							827		220	219		
105	273				25		18							566		218			
106	468													477		288			
107	799		1				53							1428		198			
108	393						62							1113		544			
109	860						23							1287		240			
110	1116				2486		65							3869		262	15	177	
111	402						278							1238		190			
112	25						9												
114	18	174					11							181					
116														104		30			

Context number	Animal bone	Brick or tile	charcoal	Clay pipe	Daub	Fired clay	Flint	Glass	Metalwork Fe	Mortar or plaster	Organics	Pottery	Quern stone	Shell	Slag	Stone	Worked stone
117	27	12								4		149		102			
119												23		25			
121	311																
123	20	40										62					
125	123	382								45		486		25			
127	235	264				64						491		12			
129						4						4					
131	16	6				21						53		2			
133												16					
135	7											33					
137	1	3				12				15				7			
139						13						23					
141	15											63					
148												22					
150	30	44				32						285		5			
152	2											15		1			
154	4											5		2			
156	243	217										104		14			
158	779	2871		390		28				988		13259		458		15	
161		11										2					
163												57			172		
165	75	272				3						240					
166	112			21								48					
168	0																
172	2																
174						1											
180				25								45					
182														81			
183	144											247		40			
185	4	122		594		3						445					
187		60										136					
190	3928			10								2545		231			
195	276	318		33		13				931		2628		114			

Context number	Animal bone	Brick or tile	charcoal	Clay pipe	Daub	Fired clay	Flint	Glass	Metalwork	Fe	Mortar or plaster	Organics	Pottery	Quern stone	Shell	Slag	Stone	Worked stone
196	85	66											830		144			
200	130		1															
201	166			879							2		302		1			
202	787	1637					5						330			39		
203	373	64	2	1									1317		427			
206	54	651											359					
216	38	231				7					11		195	113	11			
218	25						9						27		12			
220											73		73					
221	9		1				4						199		28			
222													7					
224	4												35					
226	15						8						20					
228							26						14					
232	10			18			4						33					
234	206	245					9						127			193		
238													34					
245	6						11											
246	196	1386	1	343				1			109		3615		422	40	902	
248	11						28						43		40			
250	364			802									675		36			
258	77												145		46			
263	47	150					2				49		277		164			
265	120			402									82				506	
269	33					8					44		316		62			
271	37			9									175					
274	20	687					293				15		185					
276													34		279			
278													8					
289							2											
294																		
297		4											31					
299		69					24						28					
													9		26			

Context number	Animal bone	Brick or tile	charcoal	Clay pipe	Daub	Fired clay	Flint	Glass	Metalwork	Fe	Mortar or plaster	Organics	Pottery	Quern stone	Shell	Slag	Stone	Worked stone
304	1233	303					181						236		36		953	
306	1	123											462					
307	24							2					502					
308	33			9			2						340					
309	175												204					
311	254			594			3				159		704					
312		11126												3910			528	
313	421	48		151							44		3733		10			
314	215	202		90			28						1837		104			
315	198	96					2						67		4			
316	30	55																
317	432										35		3107		132		393	
318	1335			94			48						5084		550	7		
319	75	18				95							36		5			
324		257											47		22			
325	230	149											153					
327							1											
330	35	126					3								64	8		
335	10														22			
336	192																	
339				2324														
342													10					
343	39												52					
346	63			5710									39					
349	35												12					
353													24					
364				10433			1						14					
366				122														
369	331												279		190			
370		175											69					
371		581					1						122					
377							1											
380	39												437					

Context number	Animal bone	Brick or tile	charcoal	Clay pipe	Daub	Fired clay	Flint	Glass	Metalwork Fe	Mortar or plaster	Organics	Pottery	Quern stone	Shell	Slag	Stone	Worked stone
381	68											533					
382		7			144							474					
383												330					
389	10											21					
390	419																
400	1						168										

Appendix 3: Metalwork

by Nina Crummy

1 Quantity

A total of 262 pieces of metalwork were examined. Most of the objects are Roman, but a few are post-medieval or modern. Iron nails formed the largest part of the assemblage, and few functional categories - other than tools and fittings - are represented by several items.

2 Condition

The copper-alloy objects and lead objects are in fair condition, but some need to be stabilised soon to ensure their long-term survival. Most of the iron nails and small fragments are covered in a solid layer of corrosion, but in contrast the other ironwork has generally little surface corrosion. The objects are packed to a good standard of storage in either crystal boxes or polythene bags, supported in both cases by pads of foam. The bags and boxes are stored in large airtight Stewart boxes with silica gel.

3 Assemblage

The assemblage breaks down by material thus:

<i>copper-alloy</i>	21
<i>?silver</i>	1
<i>lead</i>	4
<i>iron</i>	236
<i>Total</i>	262

Many of the bags of nails, some of other ironwork, and one of copper-alloy contain several items. The maximum number is given here. The objects are broken down by function and date below, with those not diagnostic of date given as Roman, and those of uncertain identification given in brackets. No attempt has been made to divide the nails by date.

<i>coins</i>	<i>Roman</i>	7
	<i>modern</i>	1
<i>dress accessories</i>	<i>Roman</i>	1+ (2)
	<i>modern</i>	1
<i>toilet instrument</i>	<i>Roman</i>	1
<i>writing equipment</i>	<i>Roman</i>	(1)
<i>weight</i>	<i>?post-medieval</i>	1
<i>tools</i>	<i>Roman</i>	4 + (1)
<i>fittings</i>	<i>Roman</i>	8
	<i>modern</i>	1

<i>nails</i>	-	208
<i>uncertain</i>	<i>Roman</i>	16
	<i>modern</i>	6
<i>Total</i>		262

Post-medieval and modern material is not further discussed. The low ratio of dress accessories and toilet instruments to tools in the Roman assemblage, and of copper-alloy to iron generally, is typical of a Roman rural site, particularly one with little or no occupation in the 1st century, when brooch use (and subsequent loss) was at its highest in southeast Britain.

The coins are not generally legible but broad dates are given based on size. Though some 4th-century bronze is present, it is only in low numbers, which may suggest little if any occupation at that period. The only other small find probably of 4th-century date is a fragment of a bracelet with punched decoration that was recovered from the spoilheap. In general context terms the stratified finds derive chiefly from pits and ditches, with a marked concentration within ditch **247** (Phase 3).

The mattock (SF19) is an agricultural tool, and the socket fragment may also be agricultural, perhaps coming from the side of a spade shoe. Both are remarkably well preserved. The mattock derives from the upper fill of a ditch and was associated with late 1st- and early 2nd-century pottery. It is short compared to Roman military examples, but is comparable in length to the one in the Late Roman Lakenheath hoard, though differing from it in details of the shape around the eye. The large knife or cleaver (SF124) from the fill of ditch **247** was probably used in butchery; its edge is now concave from much sharpening. The socket fragment came from the same context. The precise identification of the other two tools must await X-raying and possibly cleaning, but it is likely that both are associated with metal-working and so may be related to the crucible and the small quantity of other metal-working debris from pit fill 103.

The positive identification of the stylus shaft depends on the result of the X-ray, and cannot now be taken as proof of literacy. The fittings include a well-preserved latchlifter and lift key, and a handle probably from a tumbler-lock slide key. The holdfast and probable joiner's dog are structural fittings; the former is smaller than many British examples and could not have been used on massive timbers. All the nails are small and, where the head form can clearly be seen, have the flat irregularly round head of most Roman period nails. However, the corrosion products on a few examples in this assemblage suggest some may be post-medieval.

Catalogue of the metalwork

Coins

All are copper-alloy unless stated otherwise.

id	SF	Context	Context description	Identification	Reverse	Mint?	Reference	Date
14072	106	101	pit fill	-	-	-	-	C1-C3
14071	107	102	pit fill	-	-	-	-	C3-C4
14073	108	104	ditch upper fill	-	-	-	-	C1-C3
14122	120	127	ditch fill	silver?	-	-	-	second half C4
14070	-	274	ditch upper fill, burnt	-	-	-	-	C4
14123	-	-	spoilheap	?Crispus	-	Trier	-	(317-26)
14091	4	-	unstratified	fragment;	-	-	-	C3?
14117	-	-	spoilheap	George V penny	-	-	-	1912

Copper-alloy

id	SF	Context	Context description	Identification	Illustration	Cleaning urgent	Functional category	Diagnostic date
13488	RF3	19	fill of ditch 6	wire coil + loop; part of 13487; ? brooch spring	(y)	y + X-ray	(1)	Roman
13487	RF3	19	fill of ditch 6	wire coil attached to iron; part of 13488	-	y + X-ray	(1)	Roman
14074	105	101	pit fill	probe with part of shaft	y	y	2	Roman
14067	104	101	pit fill	stud, convex, flat-topped	y	y	11	Roman
14068	117	110	layer?	sheet fragment	-	y	18	-
14914	-	269	fill of pit 270	plaque fragment	-	-	18	-
14066	-	274	ditch upper fill, burnt	folded sheet fragment	-	y	18	-
14125	-	-	spoilheap	button, plain, flat, rear-loop for attachment, covered in thin layer of iron corrosion	-	-	1	post-medieval to modern
14124a b c	-	-	spoilheap	oval plaque conical fitting bracelet fragment, punched decoration	- - y	- - y	18 18 1	modern ?modern C4th
14075	-	-	spoilheap md	fitting (+ iron)	-	-	18	modern

Iron

id	SF	Context	Context description	Identification	Illustration	X-ray	Functional category	Diagnostic date
14136	112	103	pit fill	latchlifter	y*	y	11	Roman
14916	RF 1	103	pit fill	stud	y	y	11	Roman
14060	19	104	ditch upper fill	mattock	y	y	10	?Roman
14022ia b	-	110	layer?	strip fragment ?punch	- (y*)	y y	18 10	- Roman
14046	113	110	layer?	lift key	y*	y	11	Roman
14126	121	228	fill of gully 229	key handle	y	y	11	Roman
14128	124	246	fill of ditch 247	knife or cleaver with knob terminal to tang	y*	y	10	Roman
14059ii		246	fill of ditch 247	socket fragment (? spade shoe)	y	y	10	Roman
14080	-	274	ditch upper fill, burnt	square pierced fitting, ?cast	(y)	y	11	?modern
14086ii	-	274	ditch upper fill, burnt	5 fragments	-	y	18	-
14018ii	-	307	fill of recut 296 of ditch 247	?stylus shaft	(y)	y	(7)	Roman
14127	130	313	fill of ditch 247	?tool	(y)	y	(10)	Roman
14085a b	131	313?	fill of ditch 247?	fragment ?joiner's dog	- y*	y y	18 11	- Roman
14936	-	317	fill of ditch 247	curved strip, ? handle	-	y	18	-
14939	-	325	fill of pit/kiln 328	curved thick sheet fragment, probably cast	-	y	18	modern
14021ii	-	380	upper fill of recut 384 of N ditch	holdfast	y*	y	11	Roman
14941	RF 16	382	fill of recut 384 of N ditch	4 fragments	-	y	18	-
14076	-	-	spoilheap	curved sheet fragment, ? cast	-	y	18	modern

Iron nails

All are of Manning's Type 1b unless stated otherwise.

id	SF	Context	Context description	Number of fragments	Illustration	X-ray
13479	-	17	-	1	-	y
13477	-	19	fill of ditch 6	4	-	y
13489	RF 3	19	fill of ditch 6	7	-	y
13481	-	19 or 21	-	4	-	y
13478	-	19 or 21	-	19	-	y
13480	-	21	lining of ditch recut 22	2	-	y
14019	-	102	pit fill	1	-	y
14056	-	103	pit fill	1	-	y
14045	-	103	pit fill	12	-	y
14024	-	104	ditch upper fill	3	-	y
14029	-	104	ditch upper fill	1	-	y
14133	-	105	layer in ditch	2	-	y
14914	-	106	layer in ditch	1	-	y
14030	-	106	layer in ditch	2	-	y
14081	-	107	redeposited	1	-	y

id	SF	Context	Context description	Number of fragments	Illustration	X-ray
			natural			
14038	-	107	redeposited natural	2	-	y
14040	-	108	redeposited natural	1	-	y
14020	-	109	layer	2	-	y
14022i	-	110	layer	8	-	y
14918	-	111	layer	1	-	y
14025	-	116	layer	1	-	y
14028	-	117	fill	1	-	y
14028	-	117	fill	1	-	y
14037	-	123	ditch 124 fill	1	-	y
14031	-	127	ditch fill	1	-	y
14919	-	137	small pit fill	1 (?nail shank)	-	y
14033	-	141	pit 142 fill	1	-	y
14039	-	150	pit 151 fill	1	-	y
14034	-	156	ditch fill	1	-	y
14054	-	158	pit fill	1	-	y
14043	-	158	pit fill	1	-	y
14042	-	158	pit fill	1	-	y
14083	-	158	pit fill	1	-	y
14035	-	158	pit fill	2	-	y
14036	-	158	pit fill	3	-	y
14921	RF 3	190	ditch fill	2	-	y
14920	-	190	ditch fill	2	-	y
14082	-	190	ditch fill	1	-	y
14084	-	190	ditch fill	1	-	y
14922	-	195	ditch fill	3	-	y
14044	-	203?	ditch 207 upper fill	8	-	y
14923	-	216	gully 217 fill	2	-	y
14057	-	221	?flue cut	2	-	y
14023	-	222	gully 223 fill	1	-	y
14926	RF 4	224	?flue 225 fill	1	-	y
14032	-	226	pit 227 fill	1	-	y
14927	RF 5	232	?flue 233 fill	1	-	y
14053	-	234	gully 235 fill	4	-	y
14928	-	246	ditch 247 fill	3	-	y
14059i	-	246	ditch 247 fill	5	-	y
14052	-	246	ditch 247 fill	2	-	y
14055	-	250	ditch 247 fill	1	-	y
14026	-	258	flue 259 fill	2	-	y
14027	-	263	ditch 264 fill	1	-	y
14079	-	274	ditch upper fill, burnt	4	-	y
14086i	-	274	ditch upper fill, burnt	3	-	y
14058	-	276	?flue fill	3	-	y
14929	-	307	fill of recut 296 of ditch 247	9	-	y
14018i	-	307	fill of recut 296 of ditch 247	2	-	y
14930	-	308	fill of recut 296 of ditch 247	6	-	y
14255	-	311	ditch 247 fill	5	-	y
14931	-	313	ditch 247 fill	1	-	y
14933	-	314	ditch 247 fill	6	-	y
14935	-	314	ditch 247 fill	6	-	y
14932	RF 9	314	ditch 247 fill	1	-	y
14937	-	317	ditch 247 fill	1	-	y
14938	-	318	ditch 247 fill	4	-	y
14940	-	369	ditch 247 fill	3	-	y
14021i	-	380	upper fill of recut 384 of N ditch	3	-	y
14077	-	-	spoilheap	7	-	y
14078	-	-	spoilheap	8	-	y

Lead

id	SF	Context	Context description	Phase	Identification	Functional category	Diagnostic date
13482	-	19 or 21	-		structural fitting?	11	-
14062	111	103	pit fill		square-section strip, partly twisted	18	-
14063	110	-	unstratified	-	weight, pierced bun-shaped	6	post-medieval ?
14064	-	-	spoilheap md	-	folded sheet plug	18	modern

Appendix 4: Crucible Fragments and Slag

by Tom Eley

1 Introduction and Methodology

An assemblage of 0.466kg of slag and 0.217kg of crucible fragments was recovered from a small number of features, mostly in the northeastern corner of the site.

A visual assessment of the morphological characteristics was undertaken to assign the slag by-product to a metallurgical process, either iron smelting or smithing. Also recorded was mass and magnet response. Testing with a magnet was used to identify slag with a high iron or magnetite content. Magnetite is a product of reducing conditions in a smelting furnace whilst the presence of iron could distinguish the type of iron being utilised; but it is not possible to differentiate between iron and magnetite without further analysis.

Slag with a metallic smooth, ropery, flowed surface is considered to derive from the bloomery smelting process whereby iron ore is converted direct into wrought iron, but contained within a 'spongy' mass of slag called a bloom. This type of slag is called Tap slag because it would have been 'tapped' out of the furnace as a molten liquid. To obtain a usable iron the bloom needs to be worked to remove the slag termed 'primary smithing'.

The secondary smithing process converts bar iron into tools, equipment and utensils and repairs damaged items. Slags with no characteristic shape and a rough, coarse exterior are thought to derive from this process, but they can sometimes be formed in the smelting furnace. Smithing hearth bottoms are an exception; they have a distinctive plano-convex shape, created by the shape of smithing hearth's base from a heated agglomeration of iron, slag, hearth lining, flux and charcoal. Iron smithing slag is rarely found in primary smithing contexts because the hearths were regularly cleaned out and more importantly were built above ground at about waist height, so are susceptible to being destroyed by later activity. Hammer-scale is small flakes and droplets of slag and iron emitted as showers of sparks during smithing. Sampling for hammerscale from post-holes and pits could locate the smithy building. Hammerscale is small and can be left near to the place where it was created, i.e. smithing hearth, unlike larger slag fragments that can be dumped further away.

Cu-alloy metallurgy can be divided into two main categories: copper smelting, the extracting copper metal from the mineral ore; and Cu-alloy casting, melting and casting Cu-alloy into objects. Copper ore occurs in a limited number of locations and which dictates the potential

for recovering copper smelting debris. Cu-alloy casting on the other hand would have been a much more widespread activity, and would have consisted of melting Cu-alloy in a crucible over a hearth, pouring it into a mould to create the artefact and then finishing to the required standard.

2 Results Metalworking debris

Context	Related feature	Type	Mass (kg)	Magnetic?	Description
246	ditch	stone	0.025	No	blackened micaceous sandstone?
246	ditch	undiagnostic	0.014	No	flowed glassy top, rough base
318	ditch	undiagnostic			grey ash like around orange interior
202	ditch	undiagnostic	0.039	Yes	13 pieces: small porous bubbly slag
234	gully	SHB	0.19	Yes	9 pieces: fragments of plano-convex smithing hearth bottom
103	pit	Crucible	0.074	No	16 pieces: small crucible fragments
103	pit	Crucible	0.143	no	5 pieces: small crucible fragments, 1 cu-alloy droplets attached
103	pit	C.B.M	0.021	no	1 piece: ceramic burnt material

Table A4.1: Metalworking waste by context, debris type and mass

3 Discussion

A small amount of metallurgical debris was recovered from the site and the assemblage is insufficient to confirm that metallurgy was practised. The slag fragments would have been transported from elsewhere, probably accidentally. The undiagnostic slag could not be classified into smelting or smithing categories due to the small size. The smithing hearth bottom had a positive magnetic response indicating that some iron was trapped inside and would enable the type of iron being smithed to be identified. A greater number of smithing hearth bottoms would be required as evidence that smithing was occurring on this site.

The crucible fragments are interesting because they are made of a brittle over-fired clay and their survival is less common than slag. The form of the crucible appears to have been roughly triangular. Given the lack of copper ore sources in Cambridgeshire, this crucible was probably used for the melting of Cu-alloy to create small household and ornamental objects for inhabitants of the local, rural area.

Appendix 5: Worked Flint

by Stephen Kemp

1 Quantity and Provenance

A total of 70 flint artefacts were recovered from 29 contexts. The majority of the material, 32 pieces of debitage and tools, were recovered from context 400, an interface between natural geology and the overlying archaeological horizons. Otherwise a maximum of 4 flint artefacts were found within contexts 137 and 139.

2 Range and Variety

The lithic artefact assemblage consists of both flake and blades manufacture using hard and soft hammers, platforms were only occasionally prepared particularly where blades were being struck from core. The blade assemblage was largely represented by proximal ends and occasionally by the distal end, medial fragments are absent from the assemblage and presumably used as tools off site. All blades were on a grey slightly patinated flint. Flakes occur on a diverse assemblage of flint raw material. All debitage and tools appears to have been made from river gravel flint.

Many of the flint flakes and irregular blades show traces of edge damage, commonly only on one side suggesting they have been used as tools. Formal tools include two notched flakes, a serrated blade, a side scraper, a spurred piece which was broken presumably in use, and a broken arrow head.

The two distinctive tools in the excavated assemblage are the Early Neolithic backed serrated blade, probably used as a knife and the Bronze Age barbed and tanged arrowhead. The latter significantly occurs alongside a quantity of other flint debitage or similar flint types in context 400 suggesting a degree of contemporaneity of this material, however there are no refits. The serrated blade has slight traces of patination and therefore may be associated with the low-level blade production.

Debitage products >5mm were also collected from the environmental samples and all of the flint types present in the main assemblage are represented. This shows that knapping did occur on-site and that the assemblage does not consist of artefacts curated or manufactured elsewhere for use on this site.

Burnt flint was also collected, however only one of the artefacts, a core fragment, shows any trace of burning. Burning appears to have been quite intense, presumably within a hearth where it was discarded after being worked out.

3 Discussion

The evidence suggests at least two phases of early prehistoric activity within the area with flint knapping occurring on site as shown by the debitage, particularly blade fragments, the burnt core and broken arrowhead. During the Bronze Age flint flakes appear to have been opportunistically used as tools. During the Early Neolithic on the other hand tools seem to be more stylised and the assemblage that remains is the detritus, the proximal ends of blades that were a by-product of tool manufacture in this period. The site is not rich in formal, stylised tools and evidence suggests that these were used elsewhere.

The assemblages for both periods of activity are small and largely found in Roman pits and ditches. The most coherent assemblage comes from the interface (400), although this may contain earlier components.

4 Conclusions

Overall the assemblage provides little information on site economy as raw materials would have been gathered locally and no specialist tool kit can be identified. No further work is suggested other than to provide archive drawings of the arrowhead and serrated blade for future reference.

The small quantity of worked flint recovered from recent excavations and lithic collection in the vicinity of the site (the HAT excavations yielded 16 artefacts), or within Bottisham suggests that at present it is inappropriate to map these materials across the village as a means of highlighting likely focuses of occupation and activity.

Appendix 6: Querns, Millstones and Other Worked Stone

by Carole Fletcher

1 Introduction

The fieldwork (evaluation and excavation) generated a small assemblage of nine fragments of quern or probable quern, four rubbing stones, a small hammer or anvil stone which may also have been used as a rubbing stone, and a piece of dressed limestone. The condition of the overall assemblage is poor with several of the small fragments of Millstone Grit having lost their surface and breaking up. The larger fragments where a dressed face survives are in better condition. The two largest fragments were recovered from ditch fill 312.

The evaluation trenches were excavated by machine and the main excavation was open area in two phases. 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.

2 Methodology

The basic guidance in MAP2 has been adhered to (English Heritage 1991). The assessment was carried out using OA East's in-house system. Stephen Kemp supplied a geological identification. All fragments have been counted classified, and weighed. Fragments warranting possible illustration have been flagged.

All the quern, millstone or worked stone fragments have been recorded on a context-by-context basis; this information was entered directly onto an Access 2000 database, which allows for the appending of further data.

3 Functional Assemblage and Geology

The assemblage breaks down by geology and use as follows:

Geology	Lava	Millstone Grit	Old Red Sandstone	Basalt	Micaceous Sandstone	Quartzite	Flint	Shelly Limestone
Form	Rotary Quern	Quern fragments and uncertain fragments	Small millstone	Possible Saddle Quern	Hammer or anvil stone & possible rubbing stone	Rubbing Stones	Burnt flint nodule used as tool with polished surface	Tile?
Weight in grams	178	1380	3915	>5000g	251	1684	415	95

Table A6.1: Worked stone by type and use

The assemblage was not phased as the information was not available to the author at the time of writing but the geology and use should be illustrated against phase.

3.1 Quernstones

3.1.1 Vesicular lava

Two small fragments of Lava were recovered, from separate contexts. One is fine textured while the second has a more granular texture. Both pieces are obviously abraded. On the smoother fragment no dressed or worn surface can be identified, as the piece is very worn and rounded. The second more granular fragment has a small area of flat surface that may be the remnants of a dressed surface.

3.1.2 Millstone Grit

Five fragments of Millstone Grit were recovered of which two are very abraded and retain no traces of a dressed or polished surface. Two others retain a small area of polished surface, the remains of the grinding surface. All of these fragments are decayed and in poor condition. The last fragment, the largest surviving piece of gritstone, is obviously part of a rotary quern and retains both its worn and therefore polished grinding surface and its dressed upper surface. Part of the central spindle hole also survives.

3.1.3 Basalt

A large fragment of glacially derived Basalt was excavated from context 312. The stone is irregular in shape but may have been worked in antiquity. The larger face appears somewhat curved as if used as a grinding surface-possibly as a saddle quern; the surface however is not particularly polished. The reverse of the stone also appears to have undergone modification, with some evidence of polishing.

3.2 Millstones

3.2.1 Old Red Sandstone

A large fragment of a coarse Old Red Sandstone millstone was recovered. This is a small millstone with a diameter in excess of 600mm. It appears to be a fragment of an upper stone-the rim survives as does part of the grinding surface. The upper surface has two short but deep grooves running across it that may indicate that once broken it was reused as a sharpening stone.

3.3 Other Worked Stones

3.3.1 Quartzite

Four quartzite stones were recovered. Two of these are rounded and show evidence of use, with polishing on one surface. On the quartzite stone from context 246 (SF 122), this polishing is very pronounced. The third stone, which is sub-rectangular, has been broken in half and shows slight evidence of polishing.

3.3.2 Micaceous Sandstone

A single sub-rectangular stone was found that has been broken in half in antiquity. One surface shows evidence of polishing, similar to that on the quartzite stones. The reverse surface appears to have been pecked, an effect seen on upper surfaces of quern stones. This pecking may be the result of the stone having been used as a hammer stone.

3.3.3 Flint

An irregular flint nodule, which shows evidence of burning and polishing. A small area shows a very developed polished area.

3.3.4 Shelly Limestone

A single piece of shelly slightly oolitic limestone was recovered, with dressed surfaces and a single surviving portion of dressed edge. The surfaces are slightly polished; this is likely to be a stone tile.

4 Conclusions

This assemblage is relatively small. No preservation bias has been recognised and no long-term storage problems are likely with correct packaging. The assemblage contains several partial querns whose condition warrants illustration, in particular the Old Red Sandstone millstone and the possible saddle quern both from context 312.

This assemblage provides information pertaining to settlement function including processing and storage and trade. Potential to aid local, regional and national priorities is limited by the small size of the group.

Appendix 7: Worked Shale

by Ian Riddler

1 Introduction

A single piece of shale was recovered from fill 318 in the Phase 3 east to west main boundary ditch. Upon cleaning the piece several incised markings became apparent and the shale was given the small find number SF135.

2 Description

Five single ring-and-dot motifs are clustered towards one edge of the flat upper surface of a rhomboidal-shaped fragment of shale. Three of the patterns are half-circles and two are complete circles. All five motifs are lightly incised and have the same external diameter of 12.5mm. The pattern covers an area of 31 x 38mm. The shale has been smoothed on its upper surface and includes a number of scratches, as well as the patterns. The motifs were inscribed with an iron tool that had a central bit and recessed points to either side. When turned on a lathe or rotated in the hand, the blade would provide a ring-and-dot design. Tools of this specific type have been recovered from medieval contexts (Gróf and Gróh 2001, 281-2 and fig 2).

3 Discussion

It is very unusual for a piece of shale to be used in this way during the Roman period. Shale was generally used as the raw material for bracelets and for palettes. Although this piece possibly stems from a palette, it is very large for that purpose and it does not have a lightly indented upper face, which is often seen with the object type (Riha 1986, 43-55 and tafn 18-24). As an alternative, it may originally have been used as a decorative inlay within a structure.

The object conforms with O' Meadhra's definition of a motif-piece, as 'a small portable raw piece, or scrap, of any material...or waste fragment of a disused artefact, with carved or incised, discrete, positive, patterns comprising art motifs, sporadically positioned over its surface' (O'Meadhra 1987, 11). The Bottisham example, which stems from a secure Roman context, is therefore one of the earliest motif-pieces yet to be discovered and one of comparatively few found outside of Ireland (O'Meadhra 1987, 78-83).

The smooth upper surface served as a working surface and in that sense it can be compared with several worked stone slabs from Kingscote, which have smoothed or polished upper surfaces covered in fine cuts, allowing them to be described as chopping boards (Gutierrez and Roe 1998, 179). A shale plaque from Frocester has

scored marks on its surface, arranged in a diagonal pattern, and was probably also a working surface (Price 2000, 185 and fig 13.1.13). Waste material from medieval Dublin adds a further dimension to the use of working surfaces. Excavations at Christ Church Place produced strips of bone bead-making waste, as well as a stone working surface neatly incised with a lathe-cut drill mark of the same diameter as the waste material (Pat Wallace, pers comm.). The stone slab had been used as a base whilst drilling the bone beads.

Smoothed and flattened working surfaces of bone are also known and some of them are of Roman date. Medieval Spanish examples with incised triangular patterns occurring in lateral rows across the bone have recently been interpreted as anvils for securing sickle blades whilst saw teeth were added to their cutting edges (Nadal and Roure 2004). Several cattle and horse bones from Roman contexts at Dragonby have sequences of perforations arranged in rows at one end, and they appear to be trials for drill-bits of several different sizes. The closest parallels, however, lie with several bone surfaces with irregular shapes from Maastricht, which have been decorated on one or more sides with ring-and-dot patterns (Dijkman and Ervynck 1998, 25 and fig 18). They are described as 'practice pieces or misfits'. A similar function can be suggested for this object, which in essence was used as a surface for experimenting with ring-and-dot patterns before applying them to an object. The bone handle from Bottisham (see Appendix 12) includes deeply-scored, lathe-cut ring-and-dot motifs which, however, have an external diameter of just 9mm, smaller than the designs on the shale surface. During the Roman period ring-and-dot designs were applied to antler combs, as well as handles and furniture mounts, and are commonly found on bone casket mounts; accordingly, the designs may well have been made by a bone and antler worker.

4 Catalogue

A rhomboidal section of shale, smoothed and flattened on the upper surface, with five ring-and-dot patterns lightly inscribed towards one edge was recovered from the main Phase 3 east to west ditch. The patterns include three half-circles forming a guilloche design, as well as two complete circular motifs.

Length:	96.5mm
Width:	79mm
Thickness:	10mm
Weight:	62.1g
Context 318	SF 135

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Appendix 8: Glass

by John Shepherd

1 Introduction

A total of twenty eight fragments of glass were submitted for identification. All appear to be consistent with a Roman date, and a few can be dated more closely. In general, the glass assemblage is very fragmentary and contains only vessels – no glass objects were submitted and no window glass was identified.

All of the datable fragments come broadly from the late 1st and 2nd centuries. The bowl and jar (nos 1 and 3) are common vessel types of the late 1st and early 2nd century whereas the base fragment from a jar or bowl (no.2) is in a glass 'metal' and technique consistent with a range of drinking and tablewares of the late 1st through to the end of the 2nd century. The wide bowl (no.1) is in a brown glass that is unlikely to date beyond the first quarter of the 2nd century (note that no.7 comes from an indeterminate vessel in brown glass also). The square-sectioned and cylindrical bottle fragments (nos.4-6) come from very commonplace storage and in-transit containers of the late 1st and 2nd centuries.

Unfortunately the assemblage is too small to be able to make any specific comments about the nature of glass supply to this site, other than it occurring during the late first and second centuries. As for function, there is a mix of both tablewares (nos 1, 2, probably 3, 7 and 8-20) and storage vessels (possibly no.3, definitely 4-6).

2 Catalogue

1. [101]

Fragment from the rim of a wide bowl. Blown; dull brown glass. Lip folded over to form a hollow tubular rim. Late 1st or 2nd century. To be illustrated.

2. [21] <2>

Fragment from the base of a jar or bowl. Blown; colourless glass. Pushed-in, cut out base forming a thin hollow tubular base ring. Wide, probably bulbous body to vessel. Late 1st or 2nd century. To be illustrated.

3. [276]

Fragment from the rim of a jar or bowl (probably Isings form 67c). Blown; natural green blue glass. Lip folded inwards and then out and down to form a collared rim. Late 1st or early 2nd century. To be illustrated.

4-5. [17]; [33]

Fragments from the bodies of square-sectioned, prismatic bottles (Isings form 50). Mould blown; natural green blue glass. Late 1st or 2nd century.

6. [383]

Fragment from the body of a cylindrical bottle (Isings form 51). Blown; natural green blue glass. Late 1st or 2nd century.

7. [19]

Fragment of dull brown glass from the body of an indeterminate vessel. Blown. Late 1st or early 2nd century.

8-20. [103]; [110] <114>; [110] <116>(x10 from same vessel); [246]

Thirteen fragments, ten from one vessel (<116>), of free-blown colourless glass from vessels of indeterminate form. Roman.

21-28. [21] <3>; [125]; [127]; [246]; [317]; [318]; [313]? x2

Eight fragments of free-blown natural green blue glass from vessels of indeterminate form. Roman.

3 Recommendations

The catalogue above will suffice as both an archive listing of the glass and, if deemed necessary, a publishable catalogue of the assemblage as a whole. Further references to parallels could be gathered together but the vessels represented here are common types.

Subject to publication format, only three fragments (nos 1-3) require illustration.

There are no conservation requirements.

The state of packaging is very good.

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Appendix 9: Pottery

by Jeremy Evans

1 Introduction

The following comprises a full report on pottery from stratified Roman period contexts from Bottisham. Some 3,984 sherds, weighing 80.475 kg were fully recorded. The fabrics have been recorded using a slightly adapted version of the fabric series as that used at Little Paxton (Evans forthcoming a), which is also being used in the English Heritage Southern Fen Edge Roman pottery project (Macaulay 2002).

The excavation has succeeded in recovering a reasonable sized assemblage with a large component of Horningsea wares, as might be expected given its proximity to the kiln site. This will be of considerable value particularly since most of the material is of Flavian to Hadrianic date, a period not represented in any of the kiln groups currently available.

2 Site chronology

2.1 Overview

The site chronology can be assessed by two means, from the collection as a whole, and from the assemblage from each phase.

The site samian list consists of 49% South Gaulish pieces, all of Flavian-Trajanic date, 10% from Les Martres-de-Veyre, largely of Trajanic date, 39% from Central Gaul, of Hadrianic to Antonine date, and 1% from East Gaul, a Chemery(?) Dr 27 of Trajanic to Hadrianic date. Only 1.4% of the assemblage consists of 'Belgic' type grog tempered fabrics and this low occurrence combined with the absence of pre-Flavian samian ware strongly suggests a lack of pottery deposition and activity at Bottisham before the Flavian period. The South Gaulish samian includes a number of pieces that must be of Flavian date, although much of this material could be Trajanic, and the relatively strong representation of Les Martres material suggests strong deposition of pottery on the site in this period. Amongst the Central Gaulish material late Antonine forms are almost absent.

There is a single possible Dr 31 from context 201 in phase 6.1, dated c.AD 140-60, compared with one type 18/31 and five type 18/31R. Form Dr 31R, dating to after AD 160, is completely absent, as are mortaria dated to after c.AD 170. It is well known that Dr 27 cups are gradually replaced by Dr 33, and Willis (1998, fig 1) demonstrated that Dr 33 is at least four times as common as Dr 27 in assemblages dated to c.AD 160, whilst his fig. 9 shows a marked increase in Dr 33 in

assemblage from c.AD 130 onwards. It is, therefore, of note that Dr 27 and Dr 33 numbers are equal here at 6 each amongst the Central Gaulish material, suggesting most of this was deposited early in the Hadrianic-Antonine range. Thus it would appear that the vast majority of the Central Gaulish samian from the site is of Hadrianic, rather than later, date.

The coarse pottery would also suit a later 1st to early 2nd century date range for most of the assemblage. Amongst the Horningsea storage jars only two are of the later 2nd century bifid rimmed type, reeded rimmed flanged bowls (class B9, perhaps of Trajanic date), are common, whereas they are usually a rare type, and bead rimmed dishes and bowls copying BB2 types of Antonine or later date are infrequent here, whereas they are usually one of the commonest dish and bowl types.

Trajanic forms such as London ware and mica-dusted wares are relatively common and the occurrence of Nene Valley colour-coated wares is rare and the latter form a small minority of the finewares present, rather than dominating the group as is usual in this region, confirming little pottery deposition on the site after c.AD 160.

There are a few pieces of much later date such as the developed beaded and flanged bowl (R04 B6.1) from context 201 in phase 6.1, and the Oxfordshire white-slipped mortarium from context 203 in phase 6.1, date to after c.AD 240.

A further site at Bottisham was excavated by HAT in Tunbridge Lane (McDonald 2000). This appears to be of generally later date, although it is very unspecific about the dating evidence available. The presence of 36 sherds (in 524) of Nene Valley colour-coated ware demonstrates pottery deposition here in some scale in at least the mid to late Antonine period.

2.2 Phase 2

This phase produced a relatively small group of 99 sherds. No sherds of class E were present, suggesting no material earlier than c.AD70 was present. Two sherds of samian were present, a South Gaulish Curle 11 bowl sherd from context 278, dated AD 70-100 and an indeterminate Central Gaulish bodysherd of Hadrianic to Antonine date from context 150. The assemblage is dominated by Horningsea fabrics in forms that were generally not closely datable. Context 135 produced a Verulamium region ware jar [W05 J2.1] of Flavian to Trajanic date.

The evidence would seem to suggest a Flavian to Trajanic or Trajanic range for the phase, although the Central Gaulish samian sherd suggests it extended into the Hadrianic period if this was not intrusive.

2.3 Phase 3

Phase 3 contains a much larger assemblage, by far the largest from the site at 3061 sherds. BB1 is present in contexts 103 and 110, 195 and 318, all of which must be at least of Hadrianic date, 103 and 110 containing Hadrianic-Antonine BB1 flange rim bowls [B01 B1.1] and 318 containing a jar [B01 J1.1] of Hadrianic or more likely Antonine date.

Horningsea wares include many carinated bowls [R02 B1.1] probably of later 1st-earlier 2nd century date and many reeded rimmed bowls of class B9, which should have a later 1st to early 2nd century date.

Contexts 158 and 311 contain bead rimmed dishes [R02 D2.1] of probable Antonine date, although much earlier forms, including D5.1 and classes D7 and D8, most likely of later 1st century date as they are Gallo-Belgic or 1st century copies are also present in larger numbers in the phase. Lids are very common in the phase.

A Rhenish mortarium, M31 [M1.1], of mid 2nd to mid 3rd century date occurs in context 246, but other mortaria are fairly local and of later 1st to 2nd century date. An Antonine BB copy dish [R04 D6.1] occurs in context 246. Context 238 also contains an Antonine BB copy bowl [R04 B5.1]. A Nene Valley beaker [F02 BK3.1] of later 2nd to mid 3rd century date comes from context 158.

South and Central Gaulish samian are both well represented in the phase. Most of the Central Gaulish material is of Hadrianic or Hadrianic-early Antonine date. The latest pieces are a Les Martres dish from context 307 date 'AD 120-200, probably AD 140-200' and a Central Gaulish Dr 27 from context 311 dated AD 130-160.

Three coins come from phase 3, contexts 101 and 104 produce an illegible bronze each of 1st-3rd century date, whilst pit fill context 102 contained an illegible bronze of 3rd to 4th century date.

Overall the weight of the material in the phase would seem to be Hadrianic, with some earlier material, but there is a consistent Antonine element. Context 158 at least would seem to close after c.AD160.

2.4 Phase 4.1

This phase contains only 57 sherds. It contains no material datable to later than phase 3. The latest samian sherd was a Dr 33 dated AD 120-145.

2.5 Phase 4.2

Phase 4.2 stratigraphically succeeds Phase 4.1 and contained 173 sherds. Again nothing in this group dated later than material from

Phase 3. The latest pieces were an Antonine bowl [R02 B5.1] from context 382 and a dish [R04 D2.3] from context 381.

2.6 Phase 4.3

Phase 4.3 contained 62 sherds, none of which was datable to later than material from Phase 3.

2.7 Phase 5

Phase 5 contained an assemblage of 234 sherds. It has no stratigraphic relationship to the preceding phases. Contexts 127 and 156 contain Nene Valley colour-coated ware dating to after c.AD160. Antonine bead rimmed dishes [R04 B5.1] occur in contexts 166 and 187, whilst context 165 contained a bowl [R02 B5.2] perhaps of earlier 3rd century date. The phase is presumably of Antonine to early 3rd century date.

Phase 5 contained a single coin from context 127 of later 4th century date, which is presumably intrusive.

2.8 Phase 6.1

Some 201 sherds come from Phase 6.1. This small group includes a shell tempered ware bowl [C12 B2.1] probably of later Roman date, along with a sherd of Oxfordshire fabric WC, dated to after AD 240, both from context 203 and a Nene Valley simple rimmed dish [F01 D2.1] from context 274 of 3rd century or later date.

The latest piece from the phase is a Horningsea BB copy developed bead and flanged bowl [R04 B6.1] from context 201 which must date to after c.AD 270. Phase 6.1 also contained a single coin from context 274 of 4th century date. The phase is presumably of later 3rd to 4th century date.

2.9 Phase 6.2

Phase 6.2 stratigraphically succeeds Phase 6.1 and therefore must date after c.AD 270. It contains only 29 sherds, none of which are closely datable.

3 Taphonomy

Table A9.1 shows the occurrence of pottery by phase from Bottisham. It is clear that the vast majority of pottery comes from Phase 3 with small quantities only from the other phases. It is also of note that the pottery from Phase 3 and Phase 4.2 is of much greater average weight than from the other phases.

Phase	% of pottery in this phase	Average sherd Wt	Average sherd % of rim
2	2.5	11.2g	9.3%
3	70.4	21.9g	13.1%
4.1	1.4	9.6g	-
4.2	2.2	25.1g	-
4.3	1.6	11.1g	-
5	5.1	10.1g	11.2%
6.1	7.4	13.2g	11.1%
All	3,984 sherds	20.2g	12.5%

Table A9.1 Bottisham proportions of pottery from each phase

Some possible explanations for the variation in sherd size between phases are listed below:

- 1) Pottery was travelling less far before deposition, or being moved in fewer stages.
- 2) Pottery was being deposited more quickly after disposal, perhaps due to greater ceramic throughput. This may have been because the economy was more vibrant, leading to conspicuous consumption.
- 3) Better quality or stronger vessels may have broken less easily, and into larger sherds.
- 4) Catastrophic sudden disposal may have occurred after a local social upheaval, a major fire or other extensive property damage.

Given that the other material in the contexts from these phases suggests destruction and demolition, it seems likely that 4) above is the most reasonable fit as an explanation.

There are several major changes in the use and layout of the site over time, even if the time span involved (as indicated by the pottery) is relatively short. It seems likely that a building nearby was accidentally destroyed or deliberately demolished during Phase 3 and the remains used to backfill the main ditch at the time. Some of this material must have been reworked from earlier deposition because of the bias towards low sherd weight, but the large sherds probably indicate that additional material was introduced at this point. The Phase 4.2 assemblage may have been the result of a similar change in status of nearby structures. The bias is even more pronounced towards low sherd weight, and the assemblage includes even larger sherds than Phase 3, suggesting even hastier deposition without allowing those new sherds to undergo any abrasion or further reduction in size.

Table A9.2 shows the occurrence of pottery from features at Bottisham by context type. The vast majority of the pottery comes from ditch/gully fills, 75.6%, as is typical on rural sites (Evans 2003). This is followed by 12.7% from pits, with less than 2% coming from any other context type. The quantity of pottery from pits on rural sites seems to be rather more variable, the Bottisham figure is comparable with the 8.3% from Haddon (Evans 2003) and similar levels from Essex sites

(Martin forthcoming a and b), but well below the 22% from little Paxton, or Bulls Lodge Dairy, Boreham Essex (Martin forthcoming a and b).

Context type	% Nosh	% Wt	Average sherd weight	% Min no rims	% RE	Average % rim per vessel
Layers	0.1	0	0	0	0	0
Posthole & beam slot	0.1	0.0	4.5g	0	0	0
Pit	12.7	11.7	18.6g	18.3	19.5	13.3%+
Ditch /gully	75.6	76.4	20.3g+	70.6	70.4	12.5%
Hearth	0.3	0.1	7.3g	0.6	0.4	9.3%
Corn drier	1.1	0.4	6.5g	0.4	0.3	8%
Grave	0.4	0.3	19.0g	0.8	0.6	9.3%
Well	0	0	0	0	0	0
n	3984	80.475Kg	20.2g	507	6343	12.5%

Table A9.2 The occurrence of Roman pottery at Bottisham by context type

Average sherd weight is marginally higher than the site mean from ditch/gully deposits, unusually, and it is reasonable from pit fill and the grave, but is very low from the postholes and hearths, as is usual. Average percentage of rim per vessel falls on the mean for the ditch fills, but is slightly above it for pits, this is more the expected pattern for pits which tend to have higher than average sized sherds.

Largely complete vessels consist of a miniature dish (R02 O1.1) from context 206, a ditch fill, from phase 6.1 and a large part of a Ver ware bowl (W05 B1.1) from pit 103 of phase 3. The former, in particular, may be a 'ritual' deposit.

4 Fabric Supply

4.1 Amphorae

Amphorae are unusually well represented in the Bottisham assemblage. It is most unusual for a rural site to yield anything near 1% amphorae by sherd count, yet at Bottisham the level is 3.1%. As might be expected the vast majority of the amphorae are Baetican Dressel 20 oil amphora sherds, 91%, but, very unusually for a rural site, Gallic wine amphorae are also represented, at 6.3%. There is further a very unusual ribbed vessel (2.4%).

The presence of so much amphora on the site must suggest that activities taking place here were not those of a typical low-status rural site.

4.2 Carrot Amphora by David Williams, Department of Archaeology, University of Southampton

Three sherds were recovered: a small everted-rimmed sherd, a bodysherd with a complete small loop-handle and a small rilled bodysherd, all joining and belonging to a 'carrot' amphora (Peacock and Williams, 1986, Class 12). The rim probably belongs to Vipard's 3b1 rim typology and to his Type B or C vessel form (1995). All three sherds are in a hard, rough, very sandy fabric, with frequent small-sized quartz grains protruding through the surfaces and with a scatter of small white pieces of limestone. The sherds are light red in colour throughout (Munsell 2.5YR 6/6).

Tomlin has claimed an Egyptian origin for this rather unusually shaped amphora form, with the locally grown doum palm as the main contents carried, based on a reading of an inscription on a carrot amphora bodysherd from Carlisle (199). However, thin sectioning shows that the fabric of carrot amphora are quite different from the typical locally made Egyptian amphorae, which were invariably made from the Nile silt (Tomber and Williams, 2000). Carrot amphorae are also said to have been made in Beirut (Hayes, 1997; Reynolds, 2000), though it is not entirely clear if the vessels referred to are indeed of this form or something similar. In addition, a comparison with known Palestine amphorae suggests that a source in this region appears possible and, if as appears likely dates were carried in these vessels rather than doum palms, then perhaps in the Jericho region, which was famous for its date plantations (Carreras and Williams, 2002). Like the Rhodian style amphorae, carrot amphorae are often, but not exclusively, found on early Roman military sites in Britain, and at an earlier date in Germany (Reusch, 1970; Hawkes and Hull, 1947; Sealey, 1985). They are found after AD 75 at Fishbourne (Cunliffe, 1971) and late 1st century AD to early 2nd century from Barcelona (Carreras and Williams, 2002).

Form catalogue

A21	3	66	1 A	1.1
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4.3 Black-Burnished wares

BB1 is very rare in the assemblage at 0.5%, which is hardly surprising given that it is at the edge of its distribution and local Horningsea products could have fulfilled its function perfectly adequately. All the sherds come from the largest group in Phase 3. A single sherd of possible BB2 comes from context 125 in Phase 5.

Only three BB1 forms are represented in the assemblage, a jar of Hadrianic to Antonine date and two flange rimmed bowls [B1.1] with chamfered base of Hadrianic to Antonine date.

Form Catalogue

Fabric B01

- J1.1 A BB1 necked jar with everted rim, Hadrianic to Antonine, possibly Antonine.
 B1.1 A flange rimmed bowl with a chamfered base, Hadrianic to Antonine.

4.4 *Shell-tempered wares*

Shell-tempered wares only comprise 1% of the assemblage at Bottisham. This is a very minor element of the assemblage compared with many sites in Cambridgeshire, and reflects the proximity of the Horningsea kiln site, c.5 km to the north-west. (about 3 miles). Horningsea greywares were clearly largely used as cooking and storage vessels, like shell-tempered ware ones, and clearly had a considerable advantage close to the kiln site.

The vast majority of the shell-tempered wares were wheel-made, in a heavily coarse shell tempered reduced fabric C12, 45% and a similar oxidised fabric C11, 26%. Only 24% of the shell-tempered wares were handmade, 21% in the oxidised fabric C13 and 3% in the reduced fabric C15. There was a small element of a wheel-made fine shell tempered ware, C19, which only amounted to 5% of the shell-tempered sherds.

Forms represented consist of three storage jars in C11 and a lid-seated jar and two bowls in C12, both of which are probably later Roman and from Harrold (Brown 1994).

Form catalogue

Fabric C11

- SJ1.1 A necked storage jar with a wedge-shaped, triangularly-sectioned rim.

Fabric C12

- J3.1 A lid-seated jar with a straight, everted rim.
 B1.1 A large bowl (?) with a pushed down rim.
 B2.1 A bowl with a flanged rim and rilled wall, cf Harrold (Brown 1994) No 355, later 4th century.

4.5 *Class E, grog tempered 'Belgic' wares*

As noted above Class E fabrics are scarce in the Bottisham assemblage at 1.4% and this is very probably for chronological reasons, the site being first occupied after the bulk of them were current. They have been split into a number of fabric groups although with these fabrics it is doubtful that such divisions are of great significance. The largest single group is fabric E21, a wheelmade reduced, 'soapy' fairly coarsely grog-tempered fabric, which represents 64% of sherds in this group. Most of the sherds in this group are wheelmade, although around 14% were from handmade grog-tempered vessels.

A single form was represented, a jar rimsherd with a bifid beaded rim in E11, a sand and grog tempered oxidised fabric.

Form catalogue

Fabric E11

J1.1 A rather globular jar with a grooved wall and horizontal beaded rim grooved on the tip, 1st century

4.6 **Class F, Colour-coated and other finewares**

Non-samian finewares are very reasonably represented on the site at 2.7%, the vast majority (75%) consisting of London type wares (F31, R19, R35 and R361). These consist of F31 with abundant fine sand (2%), R19 with abundant fine calcareous inclusions (36%), R35, a 'clean' fabric with a 'soapy' texture (23%), and R361, with abundant fine sand and some calcareous inclusions (14%). All of these are most likely to date to the early decades of the 2nd century.

Forms consist of four jars, a cup, a beaker, three bowls and a dish in R19, five bowls in R35, and a bowl and a jar in R361. Many of the bowls are Dr 37 copies, as might be expected. It is unusual for London type wares to be the dominant fineware type and this clearly reflects the chronological emphasis of the site on the early 2nd century. Most of the rimsherds come from Phase 3, with one residual example in Phase 4.3.

The second largest fineware group from the site consists of mica-dusted wares at 13%. These are represented in three fabrics, F09, with common moderate sand (2.8%), F12, with common coarse sand (8.5%), and F13, with abundant fine sand (1.9%). Forms represented consist of three bowls and a dish in F12 (all from Phase 3), and a single bowl in F13 (residually from Phase 6.1), most are reeded rimmed bowl and dishes with an occasional segmental bowl. The forms are all consistent with an early 2nd century date for this material.

Nene Valley colour-coated ware occurs rarely on the site, as might be expected for a fabric dating to after c.AD 160, the parchment ware fabric F01 amounting to only 4% of the fineware sherds and the oxidised ware fabric, F02, only another 1%. Only two forms are represented: a Rhenish beaker of later 2nd to early 3rd century date [BK3.1] from context 158 and a simple rimmed dish [D2.1] from context 274 of the 3rd century phase 6.1.

Sherds of sandy red-slipped fabrics F04 and F05, probably of fairly local origin and 2nd century date, occur in Phase 3, and residually in Phase 6.1. Only one form occurs in each fabric, a Dr 37 copy bowl. These fabrics also occurred at Little Paxton (Evans forthcoming a) they appear too early to be related to Harston wares, but perhaps they might be related to the Northamptonshire fabric discussed by Woods (nd, 39-44).

Two roughcast ware fabrics F51 (2.8%) and F52 (0.9%) are represented by bodysherds only.

One other fabric is certainly of note, F61 (0.9%), Southeast English green glazed ware of which there is a pear-shaped flagon rim [F1.1]

from context 190 of Phase 3. Arthur (1978) fig 8.1 shows that this site is on the edge of the distribution for this fabric, although an example is cited from Cambridge. Glazed wares are quite rare, and are more likely to be found on highly 'Romanised' sites.

Form catalogue

Fabrics F01 and F02, Nene Valley colour-coated ware

BK3.1 A necked beaker with an everted, out curving rim, cf Howe (et al) 1980 nos 36, 40 and 41, later 2nd to mid 3rd century.

D2.1 A simple rimmed dish, cf Howe (et al) 1980 no 87, 3rd to 4th century.

Fabric F04, local redware

B1.1 A Dr 37 copy bowl, probably 2nd century.

Fabric F05, local redware

B1.1 A Dr 37 copy bowl, probably 2nd century.

Fabric F12, mica-dusted ware

B1.1 A segmental mica-dusted bowl with a rising flange, later 1st to early 2nd century.

B2.1 A mica-dusted reeded rimmed carinated bowl, later 1st to early 2nd century.

D1.1 A mica-dusted reeded rimmed deep dish, later 1st to early 2nd century.

Fabric F13, mica dusted ware

B1.1 A mica-dusted reeded rimmed probably carinated bowl with beaded flange, later 1st to early 2nd century.

Fabric F61, SE English glazed ware

F1.1 A cup-mouthed pear-shaped flask rim in SE English glazed ware, cf Arthur (1978) type 1, perhaps later 1st century to Hadrianic.

Fabric R19, London type ware

J1.1 A small necked jar or constricted-necked jar with a slightly beaded rim, probably early 2nd century.

J2.1 A small jar or beaker with a sub-cornice rim, probably early 2nd century.

BK1.1 A simple rimmed carinated(?) biconical(?) beaker/jar, probably later 1st to early 2nd century.

B1.1 A Dr 37 copy bowl, later 1st to 2nd century.

D1.1 A curving walled dish with triangularly beaded rim, probably early 2nd century.

Fabric R35

B1.1 A simple rimmed, curving walled bowl rim fragment, possibly from a carinated vessel.

B2.1 A beaded, curving walled, Dr 37 copy bowl, later 1st to 2nd century.

Fabric R361

J4.1 A jar with a long, thin, everted, rising rim.

B1.1 A bead rimmed bowl, perhaps a Dr 37 copy, perhaps later 1st to 2nd century.

4.7 Mortaria

Mortaria occur relatively rarely on the site with only 0.5% in the total assemblage. Most of the fabrics are of unknown, but probably fairly local source, the commonest is M06, a whiteware with limestone and sand temper, which is represented by a single mortarium [M1.1] of later 1st to early 2nd century date. Other local mortaria fabrics probably of a similar date are M07, and M41 and M42. Also of this date is M01, upper Nene Valley mortaria, and M04, Verulamium region products. A Rhenish mortarium, M31 [M1.1], occurs in context 246 of phase 3.

Nene Valley mortaria sherds, M03, and Oxfordshire fabric WC, M13, occur in Phase 6.1

Form catalogue

Fabric M06

M1.1 An unusual beaded and flanged mortarium with wedge-shaped flange, beaded at the distal end, later 1st to early 2nd century.

Fabric M31

M1.1 A curving hammerhead mortarium rim, Rhenish, cf Gose (1984) type 451, later 2nd to mid 3rd century.

4.8 Oxidised wares

Oxidised wares form a very minor element of the assemblage at 2.4%. The commonest fabric is O04 tempered with abundant coarse sand, this represents 37% of the oxidised wares. Forms represented in O04 consist of three bowls, a jar and a lid. The fabric occurs from phase 2 and is probably of later 1st to 2nd century date.

The second commonest fabric is O22, a rather soapy fabric with some-common buff grog temper, which provides 12% of the oxidised wares. All examples of the fabric come from phase 3.

The third commonest fabric is O01, a fabric with some moderate sand temper, which amounts to 11% of the oxidised wares. It first occurs in Phase 3 and the only form represented is a single Dr 37 copy bowl, B1.1.

Form catalogue

Fabric O01

B2.1 A Dr 37 copy bowl with incised acute lattice decoration, probably 2nd century.

Fabric O04

J1.1 A necked jar with a beaded, rising rim. [Not illustrated]

B1.1 A segmental bowl with an undercut rim, later 1st to early 2nd century.

L1.1 A lid with a hooked rim.

Fabric O05

CJ1.1 A constricted-necked jar or jug with a beaded rim.

Fabric O18

F1.1 A cup mouthed flagon (or small dish).

4.9 White-slipped oxidised wares

White-slipped fabrics are poorly represented in the assemblage at 0.7%. The commonest fabric is Q01, which represents 68% of the white-slipped fabric class. The fabrics do not appear until Phase 3. Unusually both of the vessels in these fabrics (J4.1 in Q01 and J1.1 in Q05) are jars, rather than flagons.

Form catalogue

Fabric Q01

J4.1 A 'Honey pot' jar with a reeded rim, later 1st to early 2nd century.

Fabric Q05

J1.1 A jar with a triangularly-sectioned, grooved rim, with cordoned neck.

4.10 Greywares

Greywares form the vast bulk of the assemblage, some 82.1%, and amongst the greywares 87.9% are Horningsea products, these comprise some 70.5% of the total assemblage.

Here the Horningsea wares have been separated into three groups, wheelmade greywares, R02, some 59.9% of the greyware, handmade greywares, R021, 26.8% of the greywares, and black surfaces BB copies, R04, (a slightly ill-defined category) 1.2% of the greywares.

Horningsea products dominate the sequence from the beginning of the site, providing 81.5% of the Phase 2 assemblage and 70.6% of the Phase 3 assemblage, and 59.4% of the Phase 5 assemblage, suggesting some decline with time in the industry's penetration of the local market.

The quantity of Horningsea handmade ware, R021, varies through the sequence from 9.3% in Phase 2, rising to 23.9% in Phase 3, and falling again to 8.9% in Phase 5. This fabric was predominantly in storage jar forms, but not exclusively and a number of other jar forms were certainly handmade in small numbers. Some 85% of the 26 rimsherds in R021 were storage jars compared to 15% in jar forms. It is of note that the vast majority of storage jars here come from class SJ1.1, simple everted rimmed storage jars, with only two vessels coming from class SJ2 which has bifid rims or cordons under the rim tip. This would appear to be a chronological feature, as Joyce Pullinger (pers comm) has noted, although, since both the two rims of class SJ2 come from context 150 of Phase 2 and context 190 of Phase 2, it would appear class SJ2 emerged fairly early, but was much less common than class SJ1, before the later 2nd century. Three jar forms occurred in R021: J3.2, J9.1, and J10.4.

Fabric R02 is the dominant single fabric in the assemblage, running at 72.1% of the total assemblage in Phase 2, 46.1% in Phase 3, and 46.5% in Phase 5. Table A9.3 shows the functional analysis of vessels in this group. Jars are the dominant type, but not so dominant as amongst most greywares and there is a substantial component of bowls, and unusually lids.

That the Horningsea assemblage tended to be more functionally diverse than most greywares was a feature of this fabric noted at Little Paxton (Evans forthcoming a) and it is also the case here. The high level of lids, however, is not seen at Little Paxton at all (the type being absent) and the high level here is likely to be largely an effect of the chronology of the site, lids in general being commoner in the early Roman period.

Constricted-necked jar	Other jar	Wide-mouthed jar	Bowl	Dish	Lid	Other	N
0.7	59.4	0.7	23.2	4.4	11.4	0.3	298 rims
0.8	56.1	0.4	24.7	3.8	13.0	1.3	3706%

Table A9.3 Functional analysis of vessels in fabric R02

Table A9.4 shows the functional analysis of all Horningsea fabrics from Bottisham, these are directly comparable with the Little Paxton figures,

and again the Horningsea assemblage is much more functionally diverse than the average greyware.

Constricted-necked jar	Storage jars	Other jar	Wide-mouthed jar	Bowl	Dish	Lid	Other	N
0.6	6.5	53.6	0.6	23.7	4.7	10.1	0.3	338 rims
0.7	5.1	53.3	0.3	24.1	3.8	11.6	1.2	4131%

Table A9.4 Functional analysis of vessels in R02, R021 and R04

Common forms in R02 at Bottisham are the carinated bowl, B1.1, which seems likely to have a later 1st to early 2nd century date, and the reeded rimmed bowls in class B9, which are very rare on most sites but of which there are sixteen examples from Phase 2, suggesting these are a late 1st century to early Hadrianic type, as might be expected from their general form parallels. Bead rimmed bowls of class B5, which are generally BB2 copies are rare, and generally from later phases, as might be expected given that they should be Antonine or later types. The commonest jar types are J10.2 (20 examples from Phase 3), J10.7 (9 examples from Phase 3), and J9.1 (14 examples from Phase 3). As noted above the presence of a high proportion of Horningsea lids here and their absence from Little Paxton, where Horningsea material is Antonine or later would suggest that most Horningsea lids had ceased production by the Antonine period.

Fabric R04, Horningsea black surfaces BB copies, represents around 1.2% of the greywares. They occur from Phase 3 onwards. Forms represented are all dishes and bowls, three dishes and eleven bowls, most being BB2 copies.

Combed decoration is particularly common on Horningsea vessels in fabrics R02 and R021. Some 15.7% of sherds in R02 have combed decoration and 48.1% of sherds in R021. On R02 the commonest combed decoration is rilling, which accounts for 13.2% of all sherds in R02, with small numbers of sherds with horizontal, vertical, oblique or wavy combed bands.

On sherds in R021 the commonest combed decoration is of combed lines on the interior of vessels, with 23.9% of all sherds in R021 showing this feature. The second commonest motif is rilling of the exterior at 10.5%, with vertical combed bands coming in at 9.1% and horizontal combed bands at 4.6%.

Fabric R01, a reduced fabric with common moderate sand temper (Lucas (1997) fabric 40), amounts to only 0.4% of all the greywares, whereas it was the commonest fabric at Little Paxton (Evans forthcoming a). It appears in Phase 3, only a single form being represented, a Dr 37 copy bowl [B1.1].

Fabric R011, a reduced fabric with common large sub-rounded quartz, some organic temper voids and common fine silver mica, is not much commoner at 0.6% of all greywares. It occurs in Phases 2, 3, 4.3 and 5, the only form present was a single necked jar with a beaded rim [J1.1].

Fabric R05, a reduced ware with common-abundant fine sand temper (Lucas (1997) fabric 38), also amounts to just 0.6% of all greywares. It occurs in Phases 2, 3, and 5, the only form represented being a small globular jar of perhaps 1st to early 2nd century date [J1.1].

Fabric R06, Hadham greyware, is even rarer at 0.06% of all greywares, markedly less common than at Little Paxton (Evans forthcoming a). It occurs in Phase 3 and no forms are represented.

Fabric R31, a reduced 'clean' fabric with occasional very fine sand, amounts to 0.5% of the greyware assemblage. It is represented by a flagon and a Gallo-Belgic dish copy [F1.1 and D1.1] and only occurs in Phase 3. The forms and occurrence of this fabric here and at Little Paxton suggest it is a later 1st to early 2nd century fabric

Fabric R33, a reduced fabric with abundant fine sand and common fine silver mica, is probably from the Wattisfield kilns. It amounts to 9.2% of the greywares from the site, making it the second commonest greyware fabric after Horningsea. It is present from Phase 2 onwards, few of the forms are closely datable, but they seem to span the date range of the site with the assemblage including a bead rimmed dish [D3.1] which should be Antonine.

Table A9.5 shows a functional analysis of vessel in fabric R33, the assemblage being dominated by jars with a few bowls and an occasional dish.

Constricted -necked jar	Other jar	Beaker	Bowl	Dish	Lid	N
2.4	73.8	2.4	14.3	4.8	2.4	42 rims
1.7	80.2	3.1	7.0	4.6	3.3	582%

Table A9.5 Functional analysis of vessels in fabric R33

Fabric R53, a reduced fabric with common fine sand and common fine organic temper voids, is the final greyware comprising 0.6% of all the greyware sherds. It is only present in phase 3, two jar forms being represented by single examples [J1.1 and J2.1].

One other point worth noting in terms of greywares is the complete absence from the site of Nene Valley greywares (R21 and R22). It might be relevant that the small quantity at Little Paxton did not apparently reach that site until the Antonine period.

Form catalogue

Fabric R01

B1.1 A Dr 37 copy bowl with London type ware incised decoration, perhaps early 2nd century.

Fabric R011

J1.1 A necked jar with a hooked, beaded rim.

Fabrics R02, R021 and R04, Horningsea greyware

- CJ 1.2 A constricted-necked jar with a straight, everted, rising rim, slightly cordoned underneath.
 CJ3.1 A constricted-necked jar with a near vertical rim grooved below the tip.
 SJ1.1 A large storage jar with an everted, rising rim, cf Evans (1991) nos 1 and 2.
 SJ1.2 A large storage jar with an everted rising rim, generally beaded at the tip and slightly undercut.
 SJ1.3 A large storage jar with an everted rising hooked undercut rim.
 SJ1.5 A large storage jar with an everted rising rim grooved under the rim.
 SJ2.1 A large storage jar with an everted, bifid rim, grooved on the tip.
 SJ2.2 A large storage jar with a bifid rim, cordoned below rim.
 J3.1 A lid-seated jar with a straight, everted, rising rim, cf Evans (1991) No 34 and Evans (forthcoming a) Nos R02.2 & R02.9.
 J3.2 A necked lid-seated jar with an everted, slightly undercut rim, cf Evans (1991) No 30.
 J3.3 A necked lid-seated jar with an everted beaded rim, lid-seated, cf Evans (1991) No 33.
 J5.1 A carinated jar with a straight, everted, rising rim, slightly beaded, rilled on the neck. Cf J14.1.
 J6.1 A straight walled jar with a straight, everted, rising rim.
 J6.2 A bead rimmed straightish walled jar, cf Evans (1991) No 43, and Evans (forthcoming a) R02.10, R02.13 and R02.14.
 J6.4 A small jar with a short, everted, straight rim.
 J9.1 A necked, cordoned jar with an everted, swelling, rising rim, cf (Evans 1991) Nos 18 and 19.
 J9.2 A small necked jar, cordoned, with an everted swelling rim, cf Evans (1991) No 22.
 J9.3 A necked jar with an everted, hooked rim and cordoned shoulder, cf Evans (1991) No 25.
 J10.1 A necked jar with everted, rising, swelling rim, cf Evans (1991) No 29.
 J10.2 A necked jar with an everted, rising rim, body often rilled, cf Evans (forthcoming a) R02.11. Cf J9.1
 J10.3 A necked jar with an everted, horizontal, beaded rim, cf Evans (forthcoming) R02.15. Cf J10.1
 J10.4 A necked jar with a triangularly-sectioned rim, slightly undercut, cf Evans (1991) No 44 and Evans (forthcoming a) R02.4 and R02.5.
 J10.5 A necked jar with a triangularly-sectioned rim and rilled body, a Braughing type jar, cf Evans (1991) No 41.
 J10.7 A necked undercut bead rimmed jar with cordoned neck, cf Evans (1991) No 42.
 J10.8 A large necked jar with a triangularly-sectioned rim. Cf J10.1.
 J10.9 A necked jar with an everted, rising, straight rim, slightly beaded, cf Evans (1991) No 27.
 J10.10 A necked jar with an everted, rising rim, cordoned underneath, cf Evans (1991) No 37.
 J10.14 A necked jar with an out-curving rim, possibly a BB copy, perhaps Hadrianic-Antonine. Cf J10.2.
 J13.1 A small rilled necked jar with an out-curving rim.
 J14.1 A tall necked jar with an everted, beaded rim, with grooved neck.
 J14.2 A necked jar with an everted rising rim.
 B1.1 A carinated bowl with an everted, often beaded rim, cf Evans (1991) No 15.
 B2.1 A segmental bowl, beaded and flanged, cf Evans (1991) No 54, later 1st to early 2nd century.
 B2.3 A segmental bowl, beaded, with a deeply undercut flange, grooved at the tip, later 1st to early 2nd century.
 B3.1 A flange rimmed bowl, a BB copy, Hadrianic to Antonine, cf Evans (1991) No 59.
 B3.2 A flange rimmed bowl with triangularly-sectioned flange, cf Evans (1991) No 5, Hadrianic to Antonine.
 B3.5 A bowl with a straight, rising, stubby rim and deeply corrugated curving wall. Perhaps 1st century.
 B5.1 A straight walled bowl with a beaded rim, a BB2 copy, c.AD 150-200, cf Evans (1991) No 58 and Evans (forthcoming a) R04.6.
 B5.2 A straight walled bowl with beaded, undercut rim, a BB2 copy, Evans (1991) No 57, for date of Gillam (1970) type 225, AD 200-250.
 B5.3 A bowl or dish with a triangularly-sectioned beaded rim, possibly a BB2 copy, cf Evans (1991) No 60, perhaps Antonine.
 B5.4 A bead rimmed dish with undercut, ovoid bead.
 B6.1 A developed beaded and flanged bowl, cf Evans (1991) No 52, later 3rd to 4th century.
 B6.5 A beaded and flanged bowl (or box) with a tall vertical bead and triangularly-sectioned flange.
 B7.2 A splaying, curving walled bowl with a beaded rim.
 B7.4 A curving walled bowl with a straight, everted stubby rising rim.
 B9.1 A bowl with a reeded flanged rim with out-curving or vertical wall, cf Evans (forthcoming a) R04.3, probably Flavian to Trajanic.
 B9.2 A curving walled bowl with an everted, rising, reeded rim and pronounced neck, perhaps Flavian to Trajanic.
 B9.3 A horizontal, reeded rimmed, carinated bowl, Flavian to Trajanic.
 B9.4 A carinated bowl, decorated on wall with wavy line combing, with an everted, wedge-shaped, rising rim with lid-seating groove, probably later 1st to early 2nd century.
 B9.5 A reeded rimmed bowl with an in-sloping wall and horizontal rim, probably later 1st to early 2nd century. Cf B9.1.

- B9.6 A reeded rimmed, carinated bowl with a rising rim, probably later 1st to early 2nd century. Cf B9.3.
- B9.8 A reeded rimmed, shallow bowl (or dish) with a rising reeded rim and in-sloping wall. Cf B9.5
- D1.1 A simple rimmed dish.
- D2.1 A bead rimmed dish, possibly Antonine.
- D2.3 A dish with a triangularly-sectioned bead rim and basal chamfer, a BB2 copy, AD 150-200.
- D3.2 A simple rimmed dish with double groove below rim.
- D5.1 A reeded-rimmed curving-walled dish, cf Camulodunum (Hawkes and Hull 1947) type 42, 1st century
- D6.1 A dish with a bead rim and basal chamfer, a BB2 copy, AD 150-200.
- D7.1 A curving walled dish, heavily grooved beneath simple rim and internally grooved, a Gallo-Belgic dish copy, Camulodunum (Hawkes and Hull 1947) type 32c, 1st century.
- D8.1 A Gallo-Belgic dish copy, perhaps derived from Camulodunum (Hawkes and Hull 1947) type 24, 1st century.
- D8.2 A concave walled Gallo-Belgic dish copy with interned rim, perhaps derived from Camulodunum (Hawkes and Hull 1947) type 28C, 1st century.
- O3.1 A miniature groove rimmed dish with a basal chamfer, perhaps 2nd century.
- L1.1 A lid with a beaded rim.
- L1.2 A lid with an undercut, beaded rim.
- L2.1 A simple rimmed lid.
- L2.2 A simple rim with a squared end.
- L2.3 A lid with a squared, stepped rim.
- L3.1 A lid with an internally beaded rim.
- L4.1 A lid with an out-turned rim, squared and grooved at the tip.
- L5.1 A curving walled lid, heavily grooved near the rim.
- L6.1 A lid with an internally beaded rim.

Fabric R05

- J2.1 A small globular jar with a short, straight, everted rim, perhaps 1st to early 2nd century.

Fabric R11

- J1.1 A necked jar with a thickened, squared rim.

Fabric R151

- J1.1 A jar with an everted, wedge-shaped rim.

Fabric R18

- J1.1 A globular jar with a short everted rim cordoned underneath.

Fabric R31

- F1.1 A flagon with a short, straight, everted rim.
- D1.1 A straight walled dish with an intumed simple rim, internally grooved, a Gallo-Belgic derived copy, cf Camulodunum (Hawkes and Hull 1947) type 28, probably 1st century.

Fabric R33, Wattisfield(?)

- CJ1.1 A constricted-necked jar(?) with a rising, wedge-shaped rim.
- J1.1 A necked jar with an everted rim, possibly a BB copy.
- J1.2 A jar with an everted rising rim.
- J1.3 A cordoned necked jar with an everted, rising rim, perhaps 1st to 2nd century
- J1.4 A jar with an everted, undercut rim and a short neck. Cf J2.3
- J2.1 A necked wide-mouthed jar with a beaded rim.
- J2.2 A necked jar with a rising beaded rim. Cf J2.3.
- J2.3 A necked jar with an undercut, beaded rim. Cf J2.2 and J1.4.
- J3.1 A bead rimmed jar with a thick beaded rim.
- J4.1 A poppyhead beaker with a slightly everted rim, early 2nd century.
- J5.1 A necked jar with an everted, wedge-shaped rim.
- J6.1 A small globular jar with a stubby, straight, everted rim, probably later 1st to early 2nd century.
- J7.1 A lid-seated jar with an everted, beaded, lid-seated rim.
- BK1.1 A beaker with an everted, rising rim with a broad cordon beneath.
- B1.1 A bowl with a horizontal, undercut flange, later 1st to 2nd century.
- B2.1 A bowl with a squared, beaded rim, perhaps a distant Dr 37 copy.
- B3.1 A carinated bowl with a thickened, rising rim. Cf B3.2
- B3.2 A carinated bowl with an undercut, beaded rim.
- D1.1 A simple rimmed dish.
- D3.1 A dish with a beaded rim, a sub BB2 copy, AD 150-200.
- L1.1 A lid with a squared rim.

Fabric R53

- J1.1 A necked jar with a triangularly-sectioned rim.
- J2.1 A large globular jar with a straight, everted, rising rim.

4.11 Samian by M Ward

Sherds from around 72 vessels were recovered. Only nine of these were from decorated vessels, giving an occurrence of decorated samian of around 12.5%. This is a very low figure, most urban sites producing around 25%, and some military sites levels of up to 40% and beyond. As such the level of decorated samian ware here clearly falls into a distinctly rural range (Willis 1998).

S10	B	Sum of MV	6
		Sum of RE	31
	C	Sum of MV	7
		Sum of RE	109
	D	Sum of MV	9
		Sum of RE	114
S10 Sum of MV			22
S10 Sum of RE			254
S20	B	Sum of MV	2
		Sum of RE	14
	C	Sum of MV	7
		Sum of RE	99
	D	Sum of MV	4
		Sum of RE	24
	J	Sum of MV	1
		Sum of RE	8
S20 Sum of MV			14
S20 Sum of RE			145
S21	B	Sum of MV	1
		Sum of RE	10
	D	Sum of MV	4
		Sum of RE	24
S21 Sum of MV			5
S21 Sum of RE			34
S30	C	Sum of MV	1
		Sum of RE	4
S30 Sum of MV			1
S30 Sum of RE			4

Table A9.6: Samian

Context	Sherd No	Phase	Fabric	Les Martres	Form	Plain/Dec/Stamp	Potter	Comments	Start Date	End Date	Nos of sherds	Nos of vessels	Rim sherd	Footing sherd	Condition
18	1	4.2	SG	27g	Pin			Probably Flavian. Footing battered, but with evidence of wear from use.	70	100	1	1	0	1	W
18	2	4.2	SG	dish	Pin			Footing of indeterminate form (dish or conceivably dish form 36?), slightly worn	60	100	1	1	0	1	W
19	1	3	CG	27	Pin			Rimsherd	120	140	1	1	1	0	
19	2	3	CG	27	Pin			Rimsherd	120	140	1	1	1	0	
19	3	3	CG	33	Pin			W/B sherd	120	140	1	1	0	0	
19	4	3	CG	Curie 11	Pin			Rim and flange with barbotine leaves	100	140	1	1	0	0	
19	5	3	CG	1	Curie 11	Pin		Footing only a little worn; Les Martres ware? Apparently not the same vessel as sherd 5	100	125	1	1	0	1	W
19	6	3	CG	18/31R	Pin			Bag labelled (19) <3> - A rim frag, probably Hadrianic CG ware rather than SG ware of c80-110	120	140	1	1	1	0	
21	1	4.2	SG	36	Pin			Frag of rim of form 36 probably (rather than flange of Curie 11) with frag of barbotine?	70	100	1	1	0	0	
24	1	3	SG	Curie 11	Pin			Flange frag with barbotine leaves	70	100	1	1	0	0	
102	1	3	SG	37	Dec			Frag of blurred ovolo with a large rosette-tipped tongue above a festoon	75	95	1	1	0	0	
102	2	3	SG	15/17	Pin			Rimsherd, probably Flavian	60	85	1	1	1	0	
102	3	3	SG	36	Pin			Rim frag with barbotine leaves (probably c 80+)	70	110	1	1	1	0	
103	1	3	SG	37	Dec			Rim frag with the top of an ovolo (rosette-tongued?); probably c75-90/95	70	100	1	1	1	0	
103	2	3	SG	18	Pin			Adjoining rimsherds	70	100	2	1	2	0	
103	3	3	SG	33a	Pin			Sherds of W/B, burnt almost black	70	100	2	1	0	0	B
104	1	3	SG	35	Pin			Rimsherd with barbotine leaves	70	110	1	1	1	0	
105	1	3	SG	37	Dec			Large piece: ovolo with trifid-tipped tongue, not one of Germanus's, above large, figured panels and a neat basal wreath of leaves. In a style related to Germanus's probably, and possibly slightly later: c75-90/95?	75	95	1	1	0	0	
106	1	3	SG	ind	Pin			Rim frag	70	100	1	1	1	0	
107	1	3	SG	15/17 or 15/17R	Pin			Large rimsherd (probably c80+)	70	100	1	1	1	0	
107	2	3	SG	18R	Pin			Rimsherd	70	100	1	1	1	0	
107	3	3	SG	27	Pin			Adjoining rim and wallsherd (probably c80+)	70	100	2	1	1	0	
109	1	3	SG	35	Pin			Rim with barbotine leaves and worn footing; probably c70-90	70	100	1	1	1	1	W
109	136	3	SG	27	Stp	Vitalis ii		Complete profile with worn footing; stamped VITA See Polak 2000, (Vechten), stamp V90	70	90	1	1	1	1	W
110	1	3	CG	1	37	Dec	X-13	Frieze of acanthus plants above a scroll with 6-petalled dot-rosettes and a basal beadrow. Probably the style of Potter X-13 at Les Martres ware	110	125	1	1	0	0	
110	2	3	SG	36	Pin			Complete profile with barbotine leaves and a worn footing	80	110	1	1	1	1	W
110	3	3	SG	18	Pin			Rimsherd	70	110	1	1	1	0	
110	3	3	SG	27	Pin			Frag	70	100	1	1	0	0	
111	1	3	SG	35	Pin			Tiny frag of rim with barbotine leaves	70	100	1	1	0	0	
111	2	3	SG	27	Pin			Rimsherd	70	100	1	1	1	0	
117	1	3	SG	37	Pin			Rimsherd	75	100	1	1	1	0	
125	1	5	SG	ind	Pin			Flake	70	110	1	1	0	0	
127	1	5	CG	33	Pin			W/B frag	120	150	1	1	0	0	
150	1	2	CG	ind	Pin			Probably early 2nd-century, but this fragment is badly burnt	120	200	1	1	0	0	B
156	1	5	CG	dish	Pin			W/B frag, perhaps of form 18/31R and c120-160	120	200	1	1	0	0	
158	1	3	CG	18/31R	Pin			Basal frag, not closely datable	120	160	1	1	0	0	
158	2	3	CG	33	Pin			W/B sherd with a little burning (possibly from Les Martres)	100	160	1	1	0	0	B
158	3	3	CG	ind	Pin			A fragment only, possibly from Les Martres rather than SG ware	100	140	1	1	0	0	
158	4	3	CG	ind	Pin			Flake, not closely datable	120	160	1	1	0	0	
158	5	3	CG	Walters 81?	Pin			A burnt rimsherd probably of a small bowl of form 81 rather than a large beaker	120	145	1	1	0	0	B
190	1	3	SG	37	Dec			Rimsherd with a frag of ovolo	80	110	1	1	1	0	
190	2	3	SG	15/17R	Pin			W/B frags	80	100	3	1	0	0	
195	1	3	CG	27	Pin			Rimsherd	120	140	1	1	1	0	
195	2	3	CG	27	Pin			5 frags including footing (little worn?); probably a Hadrianic product.	120	160	5	1	0	1	
196	1	3	CG	1	18/31R	Pin		Rimsherd from Les Martres	100	125	1	1	1	0	
201	1	6.1	CG	18/31R	Pin			4 adjoining sherds including rim, c.120/130-160	120	160	4	1	1	0	
201	2	6.1	CG	18/31 or 31	Pin			Rimsherd, c120-160 and probably early-Antonine	120	160	1	1	1	0	
203	1	6.1	SG	18	Pin			Basal sherd	80	110	1	1	0	0	
203	2	6.1	CG	1	18/31	Pin		2 adjoining sherds probably of form 18/31, including rim, from Les Martres	100	125	2	1	1	0	
203	3	6.1	SG	18 or 18R	Pin			Basal frag	70	110	1	1	0	0	
203	4	6.1	SG	ind	Pin			Frag	70	110	1	1	0	0	

Context	Sherd No	Phase	Fabric	Les Martres	Form	Plain/Dec/Stamp	Potter	Comments	Start Date	End Date	Nos of sherds	Nos of vessels	Rim sherd	Footring sherd	Condition
206	1	6.1	CG		18/31 or 31	Pin		Rimsherd, probably early-Antonine	140	160	1	1	1	0	
246	1	3	SG		Curie 11	Pin		2 adjoining sherds	70	110	2	1	0	0	
246	2	3	SG		ind	Pin		Frag	70	110	1	1	0	0	
250	1	3	CG		33	Pin		Rimsherd, probably Hadrianic	120	160	1	1	1	0	
258	1	4.1	CG		37	Dec	Druisus I.	Swag with 6-petalled dot-rosettes, spirals and gladiators above a basal beadrow. Les Martres ware	100	120	1	1	0	0	
269	1	4.3	CG		33	Pin		W/B frag, probably c 120-160	120	200	1	1	0	0	
276	1	4.1	SG		bowl	Pin		SF 15. Rim frag	70	110	1	1	1	0	
276	2	4.1	CG		33	Pin		SF 15. Rimsherd, burnt and covered in accretion	120	200	1	1	1	0	B
278	1	2	SG		ind	Pin		Frag (of form Curie 11?)	70	110	1	1	0	0	
307	1	3	CG		18/31R	Pin		Rimsherd from Les Martres	100	125	1	1	1	0	
307	2	3	CG		dish	Pin		W/B sherd, not closely datable but perhaps early-Antonine	120	200	1	1	0	0	
307	3	3	CG		ind	Pin		Chip, not closely datable	120	160	1	1	0	0	
308	1	3	CG		33	Pin		Rim frag	120	145	1	1	1	0	
311	1	3	CG		27	Pin		2 adjoining sherds form the almost complete profile, lacking only the stamp. The footring is broken but it probably was extremely worn from use as is the basal interior. Covered in accretion..	130	160	2	1	2	1	W
313	1	3	CG		27	Pin		A rimsherd whose gloss is dulled by accretion, but apparently CG rather than SG ware	120	140	1	1	1	0	
314	1	3	SG		Curie 11	Pin		Large rimsherd	70	110	1	1	1	0	
317	1	3	SG		37 or 30	Dec		Flake of ovolo	70	110	1	1	0	0	
318	1	3	CG		37	Dec	X-11	Rimsherd: frag of ovolo with a corded rosette-tipped tongue from Les Martres	100	125	1	1	1	0	
318	2	3	CG		18/31R	Pin		Rimsherd from Les Martres	100	125	1	1	1	0	
318	3	3	CG		27	Pin		Rim frag in an orange fabric. More probably CG ware from Les Martres than from an early EG centre, but its origin and precise date is uncertain: at any rate in the range c100-160	100	160	1	1	1	0	
343	0	4.3	CG		18/31R	Pin		Flake of W/B	120	160	1	1	0	0	

Table A9.7: Samian

4.12 Whitewares

Whitewares are quite well represented at Bottisham, representing 5.2% of the total recorded assemblage. The commonest fabric was W09, a 'soapy' buff fabric with some sub-angular coarse sand in a fairly 'clean' matrix, which represents 41.0% of the whiteware sherds. It occurs from Phase 3 onwards. Forms represented consist of two bowls, two flagons and a lid, in later 1st to early 2nd century forms.

The second commonest whiteware is W05, Verulamium region ware, representing 34.2% of whitewares from the site. It occurs from Phase 2 onwards. Forms consist of two flagons and two lagenae, two jars and two bowls, all of later 1st to early 2nd century date.

The third commonest is W01, a whiteware with a 'clean' matrix, with some moderate red ironstone inclusions, amounting to 7.3% of the whiteware sherds. It occurs from Phase 2 onwards. Forms consist of three flagons of later 1st-2nd century date. The other whitewares are all of very minor significance, although the absence of Nene Valley Creamware (W04) is probably worth noting.

Form catalogue

Fabric W01

- F1.1 A ring-necked flagon, deeply grooved and unbeaded, later 1st to early 2nd century.
- F2.1 A ring-necked flagon with heavily beaded rim, 2nd century.

Fabric W05

- F1.1 A cup-mouthed flagon with cordoned rim, later 1st to early 2nd century.
- LAG1.1 A lagena(?) with a beaded, squared rim, later 1st to early 2nd century.
- J1.1 A lid-seated jar, later 1st to early 2nd century.
- J2.1 A necked jar with an everted, rising rim, grooved on the tip, and lid-seated, later 1st to early 2nd century.
- B1.1 A reeded rimmed carinated bowl, later 1st to early 2nd century.

Fabric W06

- L1.1 A lid with a hooked rim.

Fabric W081

- CJ1.1 A constricted-necked jar with an everted, rising, straight, thickened, lid-seated rim.
- J1.1 A jar with an everted, wedge-shaped rim.

Fabric W09

- F1.1 A flagon with a flaring ring-neck and finely beaded rim, perhaps later 1st to early 2nd century.
- B1.1 A bead rimmed bowl with a cordoned neck, probably a Dr 37 copy, later 1st to early 2nd century.
- L1.1 A simple lid with a squared rim.

Fabric W14

- BK1.1 A campanulate cup or bowl with stubby, everted, rim. Possibly a Dr 27 copy, later 1st to early 2nd century.

5 Functional analysis and finewares

Table A9.6 shows a functional analysis of the site by minimum numbers of rims and Table A9.7 another by Rim Equivalent. The assemblage is jar dominated, but there does seem to be a consistent trend for jars to become less frequent as time goes on, this being reflected in both measures (Tables A9.6 and A9.7). Similarly tablewares tend to be much more strongly represented in the later phases. Unfortunately these groups are too small to be very reliable,

but there does seem to be a possible indication that later assemblages on the site may have a less rural composition.

Phase	Flagons	Constricted -necked jars	Jars	Storage jars	Beakers/ Cups	Bowls	Dishes	Mortaria	Lids	Amphorae	Other	No.
2	6	6	65	6	0	0	6	0	0	0	0	17 rims
3	2.5	0.8	48.2	5.6	4.1	21.8	7.6	0.5	8.6	0.3	0	394 rims
4.2	0	0	50	0	4	35	8	0	4	0	0	26 rims
5	4	0	28	4	4	48	8	4	0	0	0	25 rims
6.1	0	0	33	4	0	33	17	4	4	0	4	24 rims
All	2.4	1.0	47.1	4.9	3.9	24.3	7.7	0.8	7.5	0.2	0.2	507 rims

Table A9.8 Functional analysis of the Bottisham assemblage by phase (by minimum numbers of rims)

Mortaria are notably poorly represented, this is probably a combination of the site type and its date. Rural sites rarely are as well supplied with mortaria as urban ones and in this region mortaria tend to become commoner in the 3rd and 4th centuries when lower Nene Valley products predominate.

Lids are common in the Bottisham assemblage, occurring mainly in phase 3, which as noted earlier is probably a result of the early chronological emphasis of the assemblage.

Phase	Flagons	Constricted -necked jars	Jars	Storage jars	Beakers/ Cups	Bowls	Dishes	Mortaria	Lids	Amphorae	Other	n
2	1	12	66	2	0	0	3	0	17	0	0	158%
3	5.9	0.7	46.7	4.3	4.3	20.6	7.1	0.8	9.4	0.3	0	5176%
4.2	0	0	57.5	0	4.6	31.2	2.8	0	3.9	0	0	285%
5	8.3	0	51.1	1.1	6.8	27.7	2.7	2.3	0	0	0	264%
6.1	0	0	25.8	2.6	0	31.8	15.0	3.0	3.7	0	18.0	267%
All	5.1	1.1	47.0	3.7	4.4	21.7	6.7	0.9	8.4	0.2	0.8	6343%

Table A9.9 Functional analysis of the Bottisham assemblage by phase (by Rim Equivalent)

The overall fineware level in the assemblage is 4.9%. For an early Roman assemblage this is a high level for a basic level rural site, most falling well below 3% (cf Haddon (Evans 2003)). It suggests the site may have had a rather higher status than the average basic level rural site, although this is not reflected in the samian ware, where the proportion of decorated ware is low, as is often the case on basic level rural sites.

6 Discussion of site status and supply to the site and its relationships to other local sites

Indicators of site type from the ceramics are rather mixed from Bottisham. Functionally it falls into the range of basic level rural sites, but it is rather at the high end of the range. Finewares, however, are more strongly represented than might be expected for a basic level rural site of this date. Similarly, as noted earlier, amphorae are unusually well represented in the Bottisham assemblage, and well beyond the range for a basic level rural site. The Bottisham amphorae sherds are unusual both in their quantity and in their range of fabrics, most basic level rural sites only producing Dressel 20 oil amphora sherds.

The high levels of pig bones noted in the faunal assessment report (Appendix 14) may also correlate with these ceramic indicators for rather higher-status activity here than on the average basic level rural site.

In terms of supply the assemblage is dominated throughout by Horningsea wares, as might be expected given its proximity to the kiln site. It does seem likely given the evidence from Bottisham that the Horningsea kilns were operating by the Flavian period, and they certainly must have been by the Trajanic period at the very latest. The site produces a very useful range of early Horningsea types, particularly the carinated bowl [B1.1], and the range of reeded rimmed bowls [class B9], as well as a number of Gallo-Belgic dish copies [classes D7 and D8]. It also confirms the evidence from Cambridge (Pullinger pers comm) that bifid rimmed storage jars do not appear in any quantity before the Antonine period.

Interestingly Wattisfield products [R33] appear in small quantity here in the later 1st-2nd centuries, whereas they have not been observed by this author on any other Cambridgeshire site yet examined. Finewares are dominated by London type wares, and to a lesser extent mica-dusted fabrics, which reflects the chronological emphasis of the site. There seems to be several different sources to the London type wares. A particularly unusual fineware is the SE English glazed ware pear-shaped flask rim [F61 F1.1]. Shell tempered wares are very rare, no doubt suppressed by the Horningsea wares that would have provided an adequate replacement as cooking and storage vessels.

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Addendum 1: Fabric Occurrence Tables

Fabric	% No sherds	% Wt	% MV	% RE
Phase 2				
C12	1.0	0.5		
C19	1.0	0.2		
O04	1.0	0.5		
R011	1.0	1.2		
R02	70.7	74.8		
R021	9.1	12.2		
R05	3.0	3.0		
R19	1.0	0.1		
R33	3.0	1.8		
S10	1.0	0.5		
S20	1.0	0.3		
W01	1.0	0.7		
W05	3.0	2.1		
W081	1.0	1.2		
Z00	2.0	0.9		
N	99	1.105kg	17	158%
Phase 3				
A01	3.4	10.2	0	0
A11	0.3	1.1	0	0
A21	0.1	0.1	0.3	0.3
B01	0.6	0.5	0.8	1.3
C00	0.0	0.0	0	0
C11	0.3	0.8	0.8	0.5
C12	0.1	0.0	0	0
C13	0.2	0.2	0	0
E02	0.1	0.1	0	0
E04	0.0	0.1	0	0
E07	0.0	0.0	0	0
E08	0.1	0.3	0	0
E11	0.1	0.0	0.3	0.4
E15	0.0	0.0	0	0
E21	1.2	1.7	0	0
E23	0.2	0.2	0	0
F02	0.0	0.0	0.3	0.4
F05	0.1	0.0	0.3	0.2
F12	0.3	0.2	1.0	1.1
F31	0.0	0.0	0	0
F51	0.1	0.0	0	0
F52	0.0	0.0	0	0
F61	0.0	0.0	0.3	0.4
M04	0.0	0.1	0	0
M06	0.3	2.5	0.3	0.7

M07	0.0	0.3	0	0
M31	0.0	0.1	0.3	0.1
M41	0.0	0.1	0	0
O01	0.3	0.2	0.3	0.0
O04	0.6	0.4	1.0	0.6
O06	0.1	0.0	0	0
O07	0.2	0.0	0	0
O12	0.2	0.1	0	0
O15	0.0	0.0	0	0
O17	0.1	0.0	0	0
O18	0.0	0.0	0.3	0.3
O19	0.1	0.0	0	0
O21	0.0	0.0	0	0
O22	0.4	0.1	0	0
Q01	0.6	0.2	0.3	0.4
Q02	0.0	0.1	0	0
Q03	0.0	0.0	0	0
Q05	0.1	0.0	0.3	0.3
R01	0.3	0.1	0.3	0.1
R011	0.3	0.1	0.3	0.4
R02	46.7	34.3	59.7	58.7
R021	23.6	34.4	5.8	6.1
R04	0.6	0.4	1.3	0.8
R05	0.3	0.1	0.8	0.5
R06	0.1	0.0	0	0
R14	0.0	0.1	0	0
R151	0.0	0.0	0.3	0.3
R16	0.0	0.0	0	0
R18	0.0	0.0	0.3	0.2
R19	1.0	0.3	4.8	1.7
R31	0.5	0.3	0.5	1.6
R33	7.2	3.4	8.6	7.8
R35	0.7	0.0	1.0	0.6
R361	0.5	0.0	0.5	0.4
R51	0.0	0.0	0	0
R53	0.6	0.4	0.5	0.6
S10	1.1	1.0	5.1	0.5
S20	0.7	0.3	2.3	2.0
S21	0.2	0.2	1.0	0.5
S30	0.0	0.0	0.3	0.1
W01	0.3	0.2	0.5	2.2
W02	0.1	0.0	0	0
W03	0.1	0.0	0	0
W05	1.6	2.1	1.3	2.2
W06	0.2	0.2	0.3	0.1
W08	0.1	0.0	0	0
W081	0.2	0.1	0	0

W09	2.2	1.6	1.0	1.6
W12	0.0	0.0	0	0
W13	0.3	0.3	0	0
N	3061	67.817kg	394	5176

Phase 4.1

A01	1.8	0.7		
R02	70.1	72.5		
R021	8.8	11.9		
R04	1.8	0.7		
R19	1.8	0.4		
R33	5.3	3.9		
S10	1.8	0.4		
S20	1.8	2.0		
S21	1.8	4.2		
W09	5.3	3.3		
N	57	0.545kg		

Phase 4.2

A01	0.6	0.4	0	0
F12	0.6	0.0	0	0
M06	1.2	2.9	0	0
O01	0.6	0.4	0	0
O04	2.3	1.5	0	0
O12	0.6	0.3	0	0
R02	53.8	48.4	73.1	75.8
R021	22.0	33.9	0	0
R04	1.2	0.7	3.9	1.8
R05	0.6	0.2	0	0
R11	0.6	0.4	3.9	0
R33	6.4	5.6	3.9	11.2
R35	0.6	0.5	3.9	2.1
R361	0.6	0.1	0	0
S10	1.7	0.5	3.9	1.1
W01	1.2	0.3	0	0
W05	2.3	1.6	0	0
W09	2.9	1.9	3.9	0.4
W14	0.6	0.4	3.9	4.6
N	173	4.024kg	26 rims	285%

Phase 4.3

A01	1.6	2.0		
C12	1.6	0.3		
M01	1.6	3.0		
O05	1.6	0.9		
Q02	3.2	0.4		
Q04	1.6	1.3		
R011	1.6	3.0		
R02	53.2	54.1		
R021	9.7	19.7		

R19	1.6	1.0		
R33	3.2	3.3		
R52	1.6	1.0		
S20	3.2	0.9		
W05	8.1	6.2		
W081	1.6	0.7		
Z20	4.8	2.0		
N	62	0.691kg	7	76%
Phase 5				
A01	0.4	4.9	0	0
B11	0.4	0.6	0	0
C12	2.1	2.3	8	6.1
C19	0.4	0.1	0	0
F01	0.9	0.3	0	0
F09	1.3	1.7	0	0
F13	0.4	0.0	0	0
F31	0.4	0.0	0	0
M04	0.4	1.9	0	0
M07	0.4	0.5	4	2.3
M42	0.4	0.1	0	0
O04	3.4	2.2	4	1.9
O07	0.4	0.0	0	0
O12	0.4	0.1	0	0
O15	0.9	0.5	0	0
O19	0.4	0.2	0	0
Q01	0.4	0.8	0	0
Q04	0.9	0.4	0	0
R01	1.3	1.1	4	3.4
R011	2.6	0.8	0	0
R02	45.7	36.6	40	22.0
R021	10.7	15.8	4	1.1
R04	3.4	4.7	20	12.1
R05	2.1	1.2	0	0
R19	1.7	0.5	0	0
R33	13.7	20.1	12	42.8
R35	0.4	0.1	0	0
S10	0.4	0.0	0	0
S20	0.9	0.5	0	0
W05	1.3	1.5	4	8.3
W09	1.3	0.5	0	0
N	234	2.406kg	25	264%
Phase 6.1				
A01	2.5	10.9	0	0
C11	0.5	0.2	0	0
C12	1.5	1.1	4.2	3.0
C13	1.5	1.0	0	0
C15	0.5	0.2	0	0

F01	1.0	2.4	4.2	8.2
F04	0.5	0.8	4.2	3.4
F13	0.5	0.8	4.2	3.0
F51	0.5	0.0	0	0
M03	0.5	0.8	4.2	3.0
M13	0.5	2.6	0	0
O04	2.0	3.1	0	0
O07	1.5	0.9	0	0
Q01	0.5	0.5	0	0
R02	48.8	35.2	37.5	54.3
R021	15.9	28.7	4.2	2.6
R04	3.5	2.2	8.3	3.8
R33	6.0	3.2	4.2	3.4
S10	1.5	0.5	0	0
S20	3.0	1.4	12.5	7.5
S21	1.0	0.2	4.2	2.2
W01	1.5	0	0	0
W05	1.0	0.6	4.2	1.9
W081	0.5	0.3	4.2	3.8
W09	3.0	1.0	0	0
Z20	0.5	0.2	0	0
N	201	2.613 kg	24	267%

Addendum 2: Pottery Fabric Descriptions

Class A, Amphorae

- A01 Dressel 20 amphorae (Peacock and Williams 1986). Lucas (1997) fabric 73.
 A11 A fairly hard buff Gallic amphora fabric; some very fine sand temper c.0.1mm and abundant fine mica. Source - southern Gaul.
 A21 An oxidised rilled amphora with an orange core, margins and surfaces, with abundant moderate sand c.0.3mm.

Class B, BB wares

- B01 BB1 (Williams 1977), Poole Harbour, Dorset. Lucas (1997) fabric 43.
 B11 BB2 (Farrar 1973), Thames estuary, Essex/Kent.

Class C, Shell-tempered wares

- C11 An oxidised, wheelmade, shell-tempered ware with abundant shell-temper c1-3mm.
 C12 A reduced, wheelmade, shell-tempered ware with abundant shell-temper c1-3mm.
 C13 A handmade, oxidised, shell-tempered ware with abundant shell-temper c1-4mm and some limestone c2-5mm. Hancocks (19xxx) fabric SHCV.
 C15 A reduced, handmade shelly fabric with a grey core, margins and surfaces, with abundant shell-temper c.0.5-3mm. Hancocks (19xxx) fabric SHCV.
 C19 A wheelmade reduced fabric with a mid grey core, brown margins and mid grey surfaces, with abundant fine shell temper c.0.1-0.4mm.

Class E, 'Belgic' wares

- Grog
 E02 A handmade reduced fabric with a pale grey core and mid-dark grey surfaces, with abundant angular white grog c.0.5-2mm. Hancocks (19xxx) fabric GRCC.
 E04 A reduced, handmade fabric with a very 'soapy' texture, with a dark grey core, orange-brown margins and dark grey surfaces, with some angular grey grog c.0.5-1.5mm and some fine organics up to 1mm long.
 E07 A wheelmade reduced (?) fabric with a pale grey core and margins and mid grey exterior, with common angular grey grog c.0.4-1.5mm and occasional-some fine sand c.0.1mm.
 E08 A handmade reduced fabric with a light grey core and mid grey margins and surfaces, with common angular grey and black grog c.0.5-1.5mm.

Grog and sand

- E11 A wheelmade oxidised fabric with a grey core and thin orange margins and surfaces, with some moderate sand c.0.3mm and some rounded red grog(?) c.0.1-0.3mm.
 E15 A handmade reduced fabric with a grey core and orange-brown margins and dark grey surfaces with some large grog c.0.5-2mm and occasional large rounded quartz c1mm and common very fine silver mica c.0.05mm.
 E21 A wheelmade, reduced fabric with a black core, margins and surfaces, with a fairly 'soapy' texture, and common angular grey grog c.0.5-1mm. This fabric is a reduced version of E01. Hancocks (19xxx) fabric GRCF and perhaps GRMM.
 E23 A wheelmade reduced(?) fabric with a dark grey core and buff-white margins and surfaces, with angular grey grog c.0.3-3mm. Cf Hancocks (19xxx) fabric GRCC/ROMC.

Class F, Colour-coated and other finewares

- F01 Nene Valley colour-coated ware on a parchment ware fabric (Howe et al 1980; Perrin 1999).
 F02 Nene Valley colour-coated ware on an oxidised fabric (Howe et al 1980; Perrin 1999).
 F04 A redware, an oxidised fabric with an orange core and margins and a fairly thick orange-brown slip on the exterior, with common-abundant sand temper c.0.2-0.3mm.
 F05 A redware, an oxidised fabric with an orange-brown core and margins, with an orange-brown slip, with some sand c.0.3mm. Similar to F04 but much less sandy. Source probably fairly local.
 F09 An oxidised mica-dusted ware with a dark grey core and orange-brown margins and surfaces, with eroded traces of a gold 'mica-dusting', with common sand c.0.1-0.3mm.
 F12 An oxidised mica-dusted ware with buff-orange core, margins and surfaces, with common sand temper c.0.3-0.5mm. Gold mica dusted flakes c.0.1-0.2mm.
 F13 An oxidised mica-dusted ware with a black core and thin orange-buff margins and surfaces, with abundant fine sand c.0.05mm. Gold mica-dusted, c.0.05-0.2mm.
 F31 London type ware. A reduced ware with a grey core and black margins and surfaces, with abundant very fine sand >0.05mm.
 F51 A clay pellet roughcast brown-slipped fabric with a buff-yellow core and margins with some fine sand c.0.05-0.1mm and some fine red ironstone c.0.05-0.1mm.
 F52 A black slipped clay pellet roughcast fabric with an orange core and thin black margins, hard, with some fine sand temper c.0.05mm.
 F61 SE English green glazed ware. A reduced fabric with mid grey core and margins, with a thick olive green glaze. Inclusions; abundant fine sand c.0.1mm and occasional fine rounded black ironstone c.0.1mm.

Class M, Mortaria

- M01 A white-slipped oxidised mortarium fabric with a grey core and orange-brown margins, with common sand temper c.0.3mm. Trituration grits; black iron slag c1-4mm. Cf Lucas (1997) fabric 61.
- M03 Lower Nene Valley mortaria in a pipeclay fabric. Trituration grits; angular black slag c2-4mm. Lucas (1997) fabric 60.
- M04 Verulamium region mortaria with a pale orange core and white margins and surfaces, with abundant sand c.0.2-0.4mm.
- M06 A whiteware mortarium with a buff-white core, margins and surfaces, with some angular sand c.0.2-0.4mm, some-common rounded white limestone c.0.3-0.6mm, and occasional ironstone c.0.3-0.4mm. Trituration grits; common quartz c1-2.5mm, occasional pink sandstone c1-2.5mm and occasional angular white flint c2-3mm.
- M07 A buff whiteware mortarium with buff-brown core and margins and buff surfaces, with common fine brown ironstone c.0.05-0.1mm. No trituration grits survive.
- M13 Oxfordshire mortarium fabric WC. An oxidised fabric with a grey core and orange margins, fairly 'clean' with occasional fine silver mica. Trituration grits; abundant pink and translucent polycrystalline quartz c 2-3mm.
- M31 A whiteware Rhenish mortarium with a buff-white core, margins and surfaces, with common coarse angular quartz c.0.5-1mm and some angular orange grog
- M41 An oxidised mortarium with an orange core and margins, and buff-orange surfaces, 'clean'. Trituration grits; white and pink sub-angular quartz, c.0.5-2mm.
- M42 A buff mortarium with a buff core, margins and surfaces, with occasional coarse sand c.0.3-0.4mm and some fine rounded red ironstone c.0.1mm. Trituration grits; common angular white quartz c2-3mm and occasional flint c2-3mm and red grog(?) c2-3mm.

Class O, Oxidised wares

Sand

- O01 An oxidised fabric with mid grey core and orange-brown margins and surfaces, with some moderate sand c.0.2-0.3mm.
- O04 An oxidised fabric with an orange core, margins and surfaces, with abundant coarse sand c.0.3-0.5mm.
- O05 An oxidised fabric with orange-brown core, margins and surfaces, with a 'soapy' texture, 'clean', with some fine silver mica and some brown ironstone.
- O06 An oxidised fabric with a black core and buff margins and surfaces, 'clean', with a 'soapy' texture.
- O07 An oxidised fabric with orange-brown core, margins and surfaces, with abundant very fine sand c.0.05mm and occasional rounded red ironstone c.0.5-1.5mm.

Lime

- O12 An oxidised fabric with a grey core and buff-orange margins and surfaces, with some coarse sand c.0.3-0.5mm, and some fine lime c.0.3mm.
- O15 An oxidised fabric, rather crudely wheelmade and poorly levigated, with a grey core and thin orange margins and surfaces, with abundant fine lime sand c.0.05mm.
- O17 An oxidised fabric with a buff-orange core, margins and surfaces, 'cleanish' with some fine lime c.0.1mm and occasional sand c.0.3mm.
- O18 An oxidised fabric with an orange core, margins and surfaces, with common coarse sand c.0.3-0.5mm and some lime sand c.0.1-0.5mm.
- O19 An oxidised fabric with a pale grey core and buff-orange margins and surfaces, with occasional sand c.0.2-0.3mm and occasional rounded calcareous inclusions c.0.3-1mm.
- O191 An oxidised fabric with an orange core, margins and orange to buff-orange surfaces, with some sand c.0.2-0.3mm and common rounded white limestone/chalk inclusions c.0.3-1.5mm.
- O21 An oxidised fabric with buff-orange core, margins and surfaces, with common moderate sand c.0.2-0.3mm and occasional-some orange angular grog c.0.3-1.5mm.
- O22 An oxidised, rather 'soapy' fabric, with orange-yellow core, and orange margins and surfaces, with some-common buff grog c.0.3-1mm.

Class Q, White-slipped oxidised fabrics

- Q01 An oxidised white-slipped fabric with orange-brown core and orange margins, with common sand temper c.0.2-0.3mm.
- Q02 An oxidised white-slipped fabric with an orange core, margins and surfaces with a thin white slip, with common sand temper c.0.2-0.3mm and some fine lime c.0.1mm in a 'clean' matrix.
- Q03 An oxidised white-slipped fabric with a black core, orange margins and grey surfaces under a thin white slip, with some sand c.0.2-0.3mm in a 'clean' matrix.
- Q04 A white-slipped oxidised fabric with a brown core and margins, exterior white slipped, with abundant fine sand c.0.05mm.
- Q05 A white-slipped oxidised fabric with blue-grey core and orange margins, surfaces have a thick white slip. With some sand c.0.1-0.2mm and common rounded red ironstone c.0.3mm.

Class R, Reduced wares

Sand

- R01 A reduced fabric with mid-dark grey core, margins and surfaces, with common sand temper c.0.2-0.3mm, surfaces sometimes dark grey slipped. Lucas (1997) fabric 40.

- R011 A reduced fabric with a dark grey core, orange-brown margins and dark grey surfaces, with common large sub-rounded quartz c.0.7-1mm and some organic temper voids up to 2mm long, and common fine silver mica up to 0.1mm.
- R02 Horningsea greyware. A reduced wheelmade fabric with a dark grey core, margins and mid-dark grey surfaces, with abundant coarse sand temper c.0.2-0.5mm, and very occasional grey flint up to 4mm. Surfaces sometimes dark-grey slipped. Lucas (1997) fabric 39. R02 at Little Paxton is used for both R02 and R021 here.
- R021 As R02 but handmade. This Horningsea group consists mainly, but not exclusively, of storage jars.
- R04 Black surfaced Horningsea greyware, i.e. mainly BB copies. A reduced fabric with a dark grey-brown core, margins and black surfaces, with abundant sand temper c.0.2-0.4mm. Lucas (1997) fabric 44.
- R05 A reduced ware with a grey core and margins and dark grey surfaces, with common-abundant fine sand temper c.0.05mm. Lucas (1997) fabric 38.

Lime

- R11 A reduced fabric with a mid-grey core, margins and surfaces, with some fine sand c.0.2mm and common fine rounded calcareous inclusions c.0.2mm and occasionally up to 2mm. Lucas (1997) fabric 41.
- R14 A reduced fabric with an orange-brown core and margins, and dark grey-brown surfaces, with common sand c.0.2-0.3mm, occasional-some very rounded quartz c1mm and occasional-some rounded white calcareous inclusions c.0.3-1mm.
- R151 A reduced fabric with a mid grey core, margins and surfaces with common fine sand c.0.1mm and occasional calcareous inclusions c.0.1-0.5mm.
- R16 A reduced fabric with a mid grey core, margins and surfaces, with common large rounded calcareous inclusions c.0.3-0.6mm and occasional-some sand c.0.3mm.
- R18 A reduced fabric with a mid grey core, margins and surfaces, with abundant coarse sand c.0.4-0.5mm and occasional calcareous inclusions c.0.5mm.
- R19 London type ware. A reduced fabric with a black core, margins and surfaces, with abundant fine rounded calcareous inclusions c.0.1-0.2mm, 'clean'
- R31 A reduced fabric with a brownish-grey core and margins and black surfaces, 'clean' with occasional sand c.0.1mm.
- R33 A reduced fabric with a mid grey core, margins and surfaces, with abundant fine sand c.0.05mm and common fine silver mica up to 0.5mm.
- R35 London type ware. A reduced fabric with a dark grey core, pale grey margins, and darker grey surfaces, 'clean' and 'soapy'.
- R361 London type ware. A reduced fabric with a dark grey core and margins and black surfaces, with abundant fine sand c.0.05-0.1mm and occasional fine calcareous inclusions

Organics

- R51 A reduced fabric with a dark grey core, sometimes brown margins, and dark grey surfaces, with some sand c.0.2-0.3mm and occasional-some fine organics up to 0.5mm in length.
- R52 A reduced fabric with brown core, orange margins and black surfaces, with some-common fine organic voids up to 0.4mm and common very fine calcareous inclusions c.0.1mm.
- R53 A reduced fabric with a blue-grey core, orange-brown margins and black surfaces, with common fine sand c.0.1mm and common fine organic temper voids up to 0.5mm in length.

Class S, Samian ware

- S10 South Gaulish, La Graufesenque ware
- S20 Central Gaulish, Lezoux ware
- S21 Central Gaulish, Les Martres-de-Veyre ware
- S30 East Gaulish ware

Class W, Whitewares

- W01 A whiteware with a white core, margins and surfaces, with a 'clean' matrix, with some red ironstone c.0.2-0.5mm.
- W02 A whiteware with a buff-white core, margins and surfaces, with common fairly coarse sand c.0.3-0.4mm and some orange ironstone(?) up to 5mm.
- W03 A whiteware with a white core, margins and surfaces, with common translucent sand c.0.2-0.4mm.
- W05 Verulamium region whiteware. A whiteware with a white or pinkish core and white margins and surfaces, with abundant translucent sand c.0.3-0.5mm and very occasional red ironstone c.0.3mm.
- W06 A whiteware with a pinkish-buff core, margins and surfaces, with common sand temper c.0.1-0.2mm.
- W08 A whiteware with a dark grey core and white margins and surfaces, with abundant fine sand c.0.1-0.2mm.
- W081 a whiteware with a white core, margins and surfaces, with common very fine sand c.0.05mm in a 'clean' matrix.
- W09 A 'soapy' buff fabric with a pale grey or buff core, and buff margins and surfaces, with some sub-angular sand c.0.3-0.6mm in a fairly 'clean' matrix.
- W12 A buff fabric with a buff-orange core and margins and buff surfaces, with common moderate sand temper c.0.3mm and common orange grog c.0.1-0.5mm.
- W13 A whiteware with a white core, margins and surfaces, with some sand c.0.1-0.3mm in a 'clean' matrix.

W14 A buff fabric with a pale orange core and buff margins and surfaces, fairly 'clean' with some very fine red ironstone c.0.05mm.

Class Z, Intrusive

Z20 Intrusive medieval pot.

Z30 Intrusive post-medieval pot.

Addendum 3 - Form Occurrence by Phase

Form occurrence is listed for each fabric in each phase by minimum numbers of rims. Figures in square brackets represent the RE values for each vessel in that form.

Phase 2

Fabric	Forms
R02	D1.1 [5] JAR x2 [4,3] J3.1 [26] J6.4 [12] J9.1 [14] J10.4 x2 [3,11] J10.8 [7] LID [1] L2.1 [26]
R021	SJ2.1 [3]
R33	JAR x2 [7,8]
W01	F1.1[1]
W05	J2.1[9]
W08	CJ1.1[19]

Phase 3

Fabric	Forms
A21	A1.1 [15]
B01	B1.1 x2 [38,10] J1.1 [19]
C11	SJ1.1 x3 [6,12,8]
E11	J1.1 [21]
F02	BK3.1 [18]
F05	B1.1 [8]
F12	BOWL [6] B1.1 [7] B2.1 [29] D1.1 [13]
F61	F1.1 [20]
M06	M1.1 [35]
M31	M1.1 [5]
O01	B2.1 [1]
O04	BOWL [3] B1.1 x2 [6,11] L1.1 [11]
O18	F1.1 [13]
Q01	J4.1 [20]
Q05	J1.1 [13]
R01	B1.1 [5]
R011	J1.1 [21]
R02	BOWL [5] B1.1 x20 [14,20,13,17,16,26,9,11,6,14,23,8,13,10,18,37,12,17,9,21] B2.1 x2 [23,5] B2.3 [12] B3.1 [3] B3.2 [3] B3.5 [8] B5.3 [9] B6.5 [17] B7.4 x2 [29,35] B9.0 x2 [4,14] B9.1 x4 [15,10,17,17] B9.3 x2 [14,10] B9.4 [17] B9.5 x2 [10,9] B9.6 x3 [17,20,16] B9.7 [11] B9.8 [10] B11.1 [9] B12.1 [16] CJ1.2 [13] CJ3.1 [15] D1.1 x2 [10,2]

D2.1 x3 [4,22,9]
 D5.1 x2 [5,4]
 D7.1 [9]
 D8.1 [52]
 D8.2 [11]
 JAR x37 [9,2,7,4,7,14,6,7,5,15,5,4,2,5,7,5,9,9,3,3,2,11,6,6,6,3,3,5,7,3,4,3,10,7,10,7,6]
 J1.1 [10]
 J3.1 x2 [12,9]
 J3.2 x4 [18,9,44,15]
 J3.3 x2 [43,11]
 J5.1 [11]
 J6.1 [7]
 J6.2 x2 [8,5]
 J6.4 x2 [25,5]
 J9.1 x17 [3,20,7,17,20,58,9,11,5,12,4,7,9,7,25,7,8]
 J9.2 x6 [15,7,10,14,9,10]
 J9.3 x3 [11,3,10]
 J10.0 [7]
 J10.1 x12 [12,7,5,5,8,8,14,11,12,18,13,15]
 J10.2 x20 [15,44,26,17,14,16,15,6,2121,22,8,95,21,7,7,8,6,9,6]
 J10.3 x2 [23,16]
 J10.4 x4 [20,9,5,21]
 J10.5 x7 [35,12,12,8,6,18,10],
 J10.7 x9 [13,12,9,23,7,10,20,11,9]
 J10.8 [11]
 J10.9 x2 [7,6]
 J10.10 [8]
 J10.14 [18]
 J13.1 [22]
 J14.1 [19]
 J14.2 [27]
 L1.1 x12 [25,8,24,6,9,8,18,8,14,12,18,14]
 L1.2 x2 [4,10]
 L2.1 x10 [9,9,25,34,10,8,11,4,12,21]
 L2.2 [6]
 L2.3 [16]
 L3.1 [3]
 L4.1 [32]
 L5.1 [48]
 L6.1 [7]
 WIDE-MOUTHED JARS x2 [6,8]
R021 J3.2 [45]
 J9.1 x2 [49,16]
 J10.4 [12]
 SJ1.1 x3 [3,6,2]
 SJ1.2 x13 [6,19,5,23,4,6,6,5,6,12,5,7,7]
 SJ1.3 [51]
 SJ1.5 [9]
 SJ2.2 [14]
R04 B3.2 [23]
 B5.1 [3]
 B5.4 [6]
 D1.1 [5]
 D6.1 [5]
R05 JAR x2 [4,5]
 J2.1 [15]
R151 J1.1 [14]
R18 J1.1 [10]
R19 B1.1 x3 [4,3,4]
 BK1.1 [9]
 D1.1 [20]
 JAR x2 [8,3]
 J1.1 [18]
 J2.1 [17]
R31 D1.1 [27]
 F1.1 [53]
R33 BOWL [5]
 B1.1 x2 [11,11]
 B2.1 [4]
 B3.1 [7]
 CJ1.1 [10]
 D1.1 [11]
 D3.1 [16]
 JAR x6 [7,6,7,6,8,6]
 J1.1 x5 [17,6,15,10,6]

	J1.2 [27]
	J1.3 [7]
	J1.4 [36]
	J2.1 x3 [8,6,6]
	J2.2 [31]
	J2.3 [6]
	J3.1 [12]
	J4.1 [41]
	J5.1 [4]
	J6.1 x2 [7,11]
	J8.1 [16]
	L1.1 [19]
R35	BOWL [11]
	B1.1 [5]
	B2.1 x2 [9,4]
R361	B1.1 [4]
	J4.1 [19]
R53	J1.1 [11]
	J2.1 [19]
S10	DR15/17 [10]
	DR15/17/15/17R [40]
	DR18 x2 [15,6]
	DR18R [4]
	DR27 x3 [6,30,16]
	DR33A [14]
	DR35 x3 [8,35,1]
	DR36 x2 [6,26]
	DR37 x2 [4,7]
	CU11 x3 [4,8,6]
	DISH [4]
S20	DR18/31R [6]
	DR27 x5 [16,28,15,15,6]
	DR33 x2 [5,6]
	JAR [8]
S21	DR18/31 [9]
	DR18/31R x2 [5,4]
	DR37 [10]
S30	DR27 [4]
W01	FLAGON [15]
	F2.1 [100]
W05	B1.1 x2 [24,30]
	FLAGON [12]
	LAG1.1 x2 [18,28]
W06	L1.1 [3]
W09	B1.1 [21]
	FLAGON [20]
	F1.1 [25]
	L1.1 [18]

Phase 4.1

Fabric	Forms
R02	B1.1 [12]
	B7.2 [8]
	J10.1 x2 [12,5]
S10	BOWL [2]
S20	DR33 [14]

Phase 4.2

Fabric	Forms
R02	B1.1 x2 [14,22]
	B5.1 [8]
	B9.3 [9]
	B9.5 [12]
	B9.8 x2 [10,7]
	JAR x5 [4,8,6,8,5]
	J9.1 [37]
	J10.2 [14]
	J10.4 x2 [9,20]
	J10.5 [5]
	J10.7 [7]
	L1.1 [11]
R04	D2.3 [5]
R11	J1.1 [9]

R33	J2.2 [32]
R35	B2.1 [6]
S10	DR36 [3]
W09	BOWL [1]
W14	BK1.1 [13]

Phase 4.3

Fabric	Forms
O05	CJ1.1 [13]
R02	B1.1 [10]
	JAR x2 [3,4]
	J9.2 [22]
	J10.14 [13]
R19	C1.1 [11]

Phase 5

Fabric	Forms
C12	B1.1 [9]
	J3.1 [7]
M07	MORT [6]
O04	J1.1 [5]
R01	JAR [9]
R02	B3.1 [3]
	B3.2 [3]
	B5.2 [6]
	B9.5 x2 [4,13]
	D3.2 x2 [4,3]
	JAR x2 [3,7]
	J10.9 [12]
R021	SJ1.1 [3]
R04	B3.2 x3 [4,8,6]
	B5.1 x2 [5,9]
R33	BOWL [3]
	BK1.1 [18]
	J7.1 [92]
W05	F1.1 [22]

Phase 6.1

Fabric	Forms
C12	B2.1 [8]
F01	D2.1 [22]
F04	B1.1 [9]
F13	B1.1 [8]
M03	MORT [8]
R02	B9.1 [29]
	B9.3 [13]
	JAR x2 [6,6]
	J9.1 [10]
	J9.3 [12]
	J10.4 [11]
	L2.1 [10]
	O1.1 [48]
R021	SJ1.3 [7]
R04	B5.1 [6]
	B6.1 [4]
R33	J5.1 [9]
S20	DR18/18/31 [5]
	DR18/31R [7]
	DR31 [8]
S21	DR18/31 [6]
W05	J2.1 [5]
W081	J1.1 [10]

Phase 6.2

Fabric	Forms
R02	JAR [6]

Appendix 10: Ceramic Building Material

by Carole Fletcher

1 Quantity and date range of material

The fieldwork (evaluation and excavation) generated a small assemblage of ceramic building material (CBM) consisting of 478 fragments weighing 28.653kg, including unstratified material, from 55 contexts.

The main period represented is Roman and the pottery suggests that the date of most material is mid 1st to 2nd century, but some later material is also present suggesting a continuation of activity into the 3rd century. The dating can be implied for the CBM but it should be remembered that CBM might have its origins in the earlier activities on site before being re-used and finally discarded.

2 Methodology

The basic guidance in MAP2 has been adhered to (English Heritage 1991). In addition the Archaeological Ceramic Building Materials Group (ACBMG) *Draft: Minimum Standards for the Recovery, Analysis and Publication of Ceramic Building Material* act as a standard.

The assessment was carried out using OA East's in-house system. A basic fabric classification has been carried out and new types have been given descriptive identifiers. Full fabric descriptions using binocular microscope and x20 magnification have yet to be carried out for these. All fragments have been counted, classified, and weighed. Fragments warranting possible illustration have been flagged, as have possible cross-fits.

All the CBM has been recorded on a context-by-context basis; this information was entered directly onto an Access 2000 full quantification database, which allows for the appending of further quantification data.

3 Contamination, bias and condition

The assemblage was small and statistical analysis is not viable. It is likely that most of the CBM on the site was produced in Norfolk or Essex, with some manufactured locally. Only two fragments of modern brick were identified in the assemblage.

4 Sampling bias

The evaluation trenches were excavated by machine and the main excavation was open area. 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 CBM. These are only small amounts, however, and serious bias is not expected to result.

5 Condition

The assemblage is very small. On average the fragment size is also fairly small (59.94g). No preservation bias has been recognised and no long-term storage problems are likely.

This assemblage has only a single near complete tile, in this case a box or half box flue tile. A partial elbow joint from a water pipe was also recovered.

6 Provenance and functional assemblage

The assemblage is very small and it appears that the fabric types are from the Essex or Norfolk region with some more local products.

The form types represented in the assemblage are summarised in table A10.1.

Form	Brick / Tile	Tile	Tegula	Imbrex/ ridge tile	Box Flue (<i>Tubulus</i>)	Wall Tile	Water Pipe (<i>Tubili linguati</i>)	Lining?	Un-class
Weight	1459	14417	4443	1481	1459	201	231	2470	1496
Count	42	95	25	16	5	19	1	176	97

Table A10.1 The CBM assemblage by form

The form descriptors used are in some cases self-evident i.e. tegula others less so. Where a single surface survives, either upper or lower, the material has been classified as brick/tile, where both surfaces survive the material is classified as tile. Those fragments with no surviving surface features have been recorded as unclassified. No effort has been made to identify specific types of tile other than the obvious forms at this stage, as further measurements would be required.

The material recorded under the heading Lining? Is at present a problem awaiting further investigation. The material appears to have undergone a regulated firing, rather than having been burnt *in situ* and may be some form of wall tile. The material is very fragmented but on almost all fragments can be seen the imprint of fingertips pressed into the wet clay as if to form a keying for example a plaster surface.

Only six tile/tegula fragments show curved finger signatures and one tile has the imprint of a paw (animal as yet unidentified).

7 Conclusions

The CBM assemblage though small can provide information pertaining to local and regional trade, also evidence for settlement function.

Appendix 11: Fired Clay

by Carole Fletcher

1 Quantity and date range of material

The fieldwork (evaluation and excavation) generated a small assemblage of 23.779kg of fired clay, including unstratified material, from 33 contexts.

The main period represented is Roman and the pottery suggest the date of most material is mid 1st to late 2nd century, but some later material is also present suggesting a continuation of activity into the 3rd century. This dating can be implied for the fired clay.

2 Methodology

The basic guidance in MAP2 has been adhered to (English Heritage 1991). In addition the Archaeological Ceramic Building Materials Group (ACBMG) *Draft: Minimum Standards for the Recovery, Analysis and Publication of Ceramic Building Material* act as a standard.

The assessment was carried out using OA East's in-house system. A partial fabric classification has been carried out and new types have been given descriptive identifiers. Full fabric descriptions using binocular microscope and x20 magnification have yet to be carried out for these. All fragments have been counted, classified, and weighed.

All the fired clay has been recorded on a context-by-context basis and this information was entered directly onto an Access 2000 full quantification database. This allows for the appending of further quantification data including a full fabric identification.

3 Contamination, bias and condition

The evaluation trenches were excavated by machine and the main excavation was open area. Excavation was carried out by hand and selection made through standard sampling procedures on a feature-by-feature basis. As such, there is unlikely to be any cross-contamination and there are not expected to be any inherent biases deriving from the collection strategy.

This assemblage is very small. On average the fragment size is also fairly small (47.65g). No preservation bias has been recognised and no long-term storage problems are likely with correct packaging. The condition of the overall assemblage was good, with sizes ranging from 130x70x30mm to very small fragments. The average size of fragments from individual contexts was small, averaging about 50mm.

The majority of the assemblage was recovered from 364, the main fill of the Phase 6.2 malting oven; much of this material was in poor condition and has not been cleaned.

This assemblage has only seven contexts containing daub fragments with suitable structure for further analysis. The daub showing wattle impressions makes up 33.93% of the assemblage as a whole. The majority of the assemblage (55.37%) consists of unclassified fragments, i.e. material that has no identifiable features. A single fired clay object or structural fragment was recovered from context 318, and this may relate to the structure of the possible malting oven or corn dryer.

4 Functional assemblage

4.1 Overview

The fired clay types represented in the assemblage are summarised in table A11.1.

<i>Form</i>	<i>Unclassified Fired Clay</i>	<i>Wattle Impressions</i>	<i>Plastered Surface</i>	<i>Painted Plaster</i>	<i>Un-plastered surface</i>	<i>Fired Clay Object</i>
Weight (g)	13167	8068	1194	1254	1254	92
Count	352	69	49	16	16	5

Table A11.1 Quantification of the assemblage by form

The form descriptors used are in some cases self-evident i.e. painted plaster, while the others may be less clear. Where a single surface survives, this has been noted, while those fragments with no surviving features have been recorded as unclassified fired clay. No effort has been made to identify or measure wattle impressions at this stage.

Six possible fabric types have initially been identified (this number may be reduced with further analysis) but due to time constraints these have not been applied to the whole assemblage. Seven fragments of what may be *opus signinum* have also been identified.

4.2 Plaster

Eleven contexts were found to contain daub covered with a thin layer of whitewash, or in the case of one fragment, white plaster subsequently painted. These plaster-covered fragments make up 5.04% of the complete assemblage. The plaster layer was less than 0.02mm thick and adhered to the flat face of the fragment. Other fragments were recovered with a flat face but showing no evidence of plaster. Some material could be described as mortar rather than daub.

4.3 Hearths/flues

None of the daub was directly recovered from a hearth or flue (323/328/367/372) related to the corn dryer/malting oven, the material

from these features having been subsequently deposited in the main drying chamber pit (**340/365**). There are however daub fragments that have certainly come from these features. Those likely to be from the hearth/flue are yellowish in colour with a crumbly sandy texture or a dull red sandy fabric that may be quite hard or soft and friable. Material from evaluation Trench 2 that was ascribed to the Phase 6.1 east to west ditch was in fact recovered from the final fills of that feature and contain material derived from raking out the Phase 6.2 dryer.

Appendix 12: Bone Objects

by Ian Riddler

1 The Pins and Needles

The bone pin (SF 1) has lost the lower part of its shaft and its point, but is otherwise complete. It has a conical head with two transverse grooves and belongs to Crummy's type 2 and Greep's type A2.2 (Crummy 1979, 160-1; 1983, 21; Greep 1995, 1116-7). The type was produced in the early Roman period and has an overall date range of AD 50 – 250, but with an emphasis on the 2nd and 3rd centuries, with comparatively few examples from 1st century contexts. It is a common type within Roman settlements in East Anglia, with over fifty examples from Colchester, and five or more from Gorhambury, Orton Hall Farm and Stonea, as well as single examples from a range of sites (Crummy 1983, 21; Wardle 1990, 157; Mackreth 1996, 98 and fig 63.66-8; Greep 1996, 526-8 and fig 194; Gurney 1999, 45 and fig 30.51). Crummy noted that it was a relatively unsuccessful design and large quantities of pins of this type had fractured across the lower parts of their shafts, as is the case here (Crummy 1983, 21).

A second bone object (SF 125) consists only of the point and part of the shaft, and could stem from a pin or a needle. It has been stained to a light green colour, a characteristic of both bone pins and needles of the early Roman period (Crummy 1983, 20; Greep 1996, 530; Deschler-Erb 1998, 82-4).

Incomplete bone pin with conical head and two transverse grooves, the shaft tapering evenly towards the point, which is missing. Draw knife lines are visible on the shaft.
Length: 7mm, Diameter: 3mm
SF 1, Context 21, 2nd – 3rd Century

Fragmentary bone pin or needle with a rounded point and a shaft of circular section; the upper part of the shaft and the head are missing.
Length: 52mm, Diameter: 2.5mm
SF 125, Context 246, Early Roman

2 The Knife Handle

The bone scale tang handle (SF 115) has rounded sides that widen slightly towards the outer end and a tapered edge near to the blade. The blade is now missing, although part of the tang survives. It was fastened by three closely spaced iron rivets, each set at the centre of a deeply cut single ring-and-dot motif. A close parallel is provided by a bone handle with the same decoration from Mainz (Mikler 1997, taf 46.5). Mikler noted that the form of this handle was unusual and difficult to parallel in the Roman world (*ibid*, 58-9). It is a comparatively rare type, although there are further examples from Verulamium and Amiens, both of which are of 2nd century date (Frere 1972, 152 and

fig 55.208; Dubois-Thuet 1999, 39 and pl 7.101). In each case the handle is relatively short, with three ring-and-dot motifs, each with a small iron rivet at its centre. Part of the knife blade survives on the Amiens example, and it is rectangular in shape and as narrow as the handle, with an angled front section.

Bone scale tang plate for a knife handle, with rounded sides and a bevelled front edge. Decorated by three ring-and-dot motifs, each with a small iron rivet at the centre.

Length: 41mm, Width: 17mm, Thickness: 5mm

SF 115, Context 110, 2nd Century

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Appendix 13: Human Skeletal Remains

by Natasha Dodwell

Perinatal bones were recovered from 190 (a lower fill of the Phase 3 east to west boundary ditch) and 158 (a fill of the Phase 4.2 recut of the same ditch). The former was associated with a corncrake skeleton, domestic fowl, domestic goose, cattle (including three articulating neck vertebrae), pig, eel and cyprinid (chub family) bones, while the latter was found with crow/rook, cattle, sheep/goat and pig bones. Although separated by several distinct phases of activity on the site, chronologically, the two burials could have occurred as little as 5 or 10 years apart.

In addition, an articulated neonate placed on its left side was recovered from a nearby section in fill 245 of the Phase 3 ditch. Age was determined using the diaphyseal length of long bones (Scheuer and Black 2000) combined with dental development in the case of the articulated skeleton. The remains represent three immature individuals, probably stillbirths or babies who died in their first few weeks of life. It is not unusual for the dead, particularly neonates to be placed where the living would be aware of them and integrated into other land uses.

Context	Skeletal element	Side	Portion	Length of diaphysis(mm)	Age
158	skull	-	fragment of frontal	-	perinatal
	femur	r	prox & mid	-	
	tibia	l	prox 1/3rd	-	
	humerus	r	prox 1/2	-	
190	femur	l	complete	80.4	perinatal - c.40 wks
	tibias	l & r	complete	69.8 & 70.4	
	ribs	l & r	heads x 13	-	
	vertebrae	-	neural arches x 12, centrum x 2	-	
245	skull	-	all except right side of face	-	perinatal- c. 40 wks
	mandible	-	complete (inc. 3 tooth crowns)	-	
	vertebrae	-	neural arches x 24, centrum 13	-	
	ribs	l & r	heads x 9	-	
	pelvis	l & r	ilium, pubis, ischium	-	
	scapula	l	complete	-	
	humeri	l & r	complete	65.5 & 65.7	
	radii	l & r	complete	51.1 & 51.6	
	ulnae	l & r	complete	59.2 & 60	
	femora	l & r	complete	74.9 & 75.5	
	tibias	l & r	complete	64.9 & 65	
	fibulas	l	complete	62	
	hands & feet	l & r	metacarpals/tarsals & phalanges	-	

Table A13.1 Quantification of the human remains

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Appendix 14: Faunal Remains

by Ian Baxter

1 Quantity and Provenance

A total of 157 'countable' (see below) fragments of animal bones were hand-collected from the site (Table A14.1) and a further 54 fragments recovered from environmental samples (Table A14.2). The bone is generally well preserved and found in ditches, pits, gullies and postholes. Most of the features at the site date from the 1st to 2nd century AD with less evidence of activity after the middle of the 2nd century (Evans unpublished). This contrasts with the site to the west across Tunbridge Lane excavated by Hertfordshire Archaeological Trust (HAT) with features dating from the 2nd to 4th centuries AD (McDonald 2000). Both sites had been provisionally thought to belong to the same villa complex.

2 Methods

The mammal bones were recorded following a modified version of the method described in Davis (1992) and Alberalla and Davis (1994). In brief, all teeth (lower and upper) and a restricted suite of parts of the postcranial skeleton was recorded and used in counts. These are: horncores with a complete transverse section, 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), centrotarsale, 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) and medium (sheep/pig size) vertebrae and ribs was recorded for each context, although these were not counted. "Non-countable" elements of particular interest were recorded but not included in the counts. For birds the following were always recorded: scapula (articular end), proximal coracoid, distal humerus, proximal ulna, proximal carpometacarpus, distal femur, distal tibiotarsus, distal tarsometatarsus.

The separation of sheep and goat was attempted on the following elements: horncores, dP3, dP4, distal humerus, distal metapodials (both fused and unfused), distal tibia, astragalus, and calcaneum using the criteria described in Boessneck (1969), Kratochvil (1969), and Payne (1969 and 1985). The shape of the enamel folds (Davis 1980; Eisenmann 1981) was used for identifying equid teeth to species. Equid postcrania were checked against criteria summarised in Baxter (1998).

Wear stages were recorded for all P4s and dP4s as well as for the lower molars of cattle, sheep/goat and pig, both isolated and in mandibles. Tooth wear stages follow Grant (1982).

Measurements are listed in Addendum 2. These in general follow von den Driesch (1976). All 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. Measurements taken on equid teeth follow Levine (1982).

3 Frequency of Species

Two partial perinatal human infant skeletons were found in ditch fills 190 (Phase 3) and 158 (Phase 4.2). These are detailed in Appendix 13.

In common with the later HAT site, cattle are by far the most frequent taxon accounting for 61% of the main domestic mammals (Addendum 1). The OA East Tunbridge Lane site contrasts with the later site and other Cambridgeshire Romano-British rural sites in the relatively high frequency of pig remains at 20%. Like HAT's site and unlike Haddon Lodge and Orton Hall Farm, sheep are relatively infrequent accounting for only 15% of the major domestic mammals. Horse is much less common than at HAT's site accounting for 4% compared to nearly 20%. Wild mammals together with both wild and domestic bird species are much more frequent at OA East's site. That this is not due entirely to the fact that no environmental samples were taken at HAT's site is demonstrated by the wide range of bird species hand-collected at OA East's site (Table A14.1).

3.1 Cattle

Only two measurable cattle horncores were recovered. Both are from adult oxen (castrates) but in neither case can their length be established. While shorthorns and "Celtic" smallhorns are the most common cattle types found in Romano-British Cambridgeshire, mediumhorns, i.e. cores with an outer curve measuring 220-360mm (Armitage 1982), comprised one third of the cattle types at Orton Hall Farm (King 1996). The Tunbridge Lane cores could derive from mediumhorn cattle. The only suitable bone sufficiently complete to be used to calculate a withers height is a radius from Phase 3 ditch fill 109. This came from a beast 1.23m high at the shoulder based on the multiplication factors of Matolcsi (1970) which is the same as the mean recorded at HAT's site (Baxter 2001). Plots of the few measurable cattle metapodials from the OA East site show little difference in size from those found at HAT's site (Addendum 2).

As with the HAT site, the majority of mandibles recovered (Addendum 3) and long bones with epiphyseal ends preserved derive from adult and old adult cattle. All parts of the cattle skeleton are represented in the assemblage and cattle sized rib and vertebra fragments were

widespread indicating the onsite butchery of whole carcasses. Butchery marks are frequent with most bones fragmented. Three articulating neck bones (CV6-TV1) were found associated in Phase 3 ditch fill 190.

An ankylosed (fused) centrotarsale and tarsal 2+3 were found in Phase 3 ditch fill 318. This probably came from a draught animal (Baker & Brothwell 1980; Bartosiewicz et al. 1997). A mandible found in Phase 4.2 ditch fill 106 has a vestigial supernumerary pillar between the normal pair on the lingual side of M1. A more usual dental abnormality is the absence of the third pillar or hypoconulid of M3 demonstrated by a mandible from Phase 6.1 ditch fill 304. Metallic calculus deposits were seen on several cattle teeth. The precise cause is presently unknown but may be associated with wetland grazing.

3.2 Sheep

As already noted above, sheep remains are relatively infrequent at both Tunbridge Lane sites. No bones or teeth attributable to goat were seen and the ovicaprid remains most probably exclusively derive from sheep. Fragments from site II include a foetal/perinatal metatarsal diaphysis shaft found in Phase 3 pit fill 101 and a perinatal humerus diaphysis found in Phase ditch fill 314, suggesting that sheep were being bred in close proximity. Most of the few available mandibles belong to animals with M3 unerupted or not in full wear and less than four years old. All parts of the skeleton are represented in the assemblage including sheep sized vertebra and rib fragments suggesting that entire carcasses were being processed. The only suitable bone sufficiently complete to provide a withers height estimate is a calcaneum from Phase 3 ditch fill 107. This came from an animal 0.69m high at the shoulder based on the multiplication factors of Teichert (1975).

3.3 Pig

After cattle, pig is the most frequent domestic mammal. All parts of the skeleton are represented indicating the processing of entire carcasses. Some bones are scorched and probably derive from roasts. Both male and female canines were recovered, a perinatal femur diaphysis was found together with immature cranial fragments in Phase 3 ditch fill 190 and the partial skeleton of an unweaned piglet was found in Phase 3 gully fill 234, suggesting that pigs were being raised in close proximity.

High frequencies of cattle and pig compared to sheep/goat are generally considered to characterize more Romanized settlements (King 1978). In cases where pigs are being raised on site, as at the OA East Tunbridge Lane site, they would presumably also require a sufficiency of adjacent woodland in which to forage.

Taxon	Period						Total
	C1st	C1st/2nd	C2nd	C2nd/3rd	C3rd/4th	Roman/undated	
Human (<i>Homo sapiens</i>)	-	-	2 ¹	-	-	-	2
Cattle (<i>Bos f. domestic</i>)	1	28	40	-	2	8	79
Sheep/Goat (<i>Ovis/Capra f. domestic</i>)	1	6	7	-	1	4	19
Sheep (<i>Ovis f. domestic</i>)	(-)	(-)	(2)	(-)	(-)	(1)	(3)
Roe Deer (<i>Capreolus capreolus</i>)	-	-	-	1	-	-	1
Pig (<i>Sus f. domestic</i>)	-	9	15	-	-	2 ²	26
Horse (<i>Equus caballus</i>)	1	-	2	1	-	1	5
Dog (<i>Canis familiaris</i>)	-	2	1	-	-	-	3
Cat (cf. <i>Felis catus</i>)	-	1 ³	1 ³	-	-	-	2
Fox (<i>Vulpes vulpes</i>)	-	1	-	-	-	-	1
Mouse/Vole (Mund/Microtine)	-	-	-	-	-	1	1
Domestic Fowl (<i>Gallus f. domestic</i>)	-	+	9	-	-	-	9
Goose (<i>Anser anser</i>)	-	+	2 ⁴	-	-	1 ⁴	3
Duck (<i>Aythya sp.</i>)	-	-	-	-	-	1	1
Kite (<i>Milvus sp.</i>)	-	-	+	-	-	-	+
Raven (<i>Corvus corax</i>)	-	1 ⁵	+	-	-	-	1
Crow/Rook (<i>Corvus corone/frugilegus</i>)	-	-	+	-	-	-	+
Woodcock (<i>Scolopax rusticola</i>)	1	-	-	-	-	-	1
Wader (cf. <i>Tringa sp.</i>)	-	-	-	-	-	1	1
Cormorant (<i>Crex crex</i>)	-	-	1 ⁶	-	-	-	1
Bird (Aves)	+	-	+	-	-	-	+
Anuran Amphibian (<i>Rana/Bufo sp.</i>)	-	-	-	-	-	1	1
Fish (Pisces)	-	1	-	-	-	-	1
Total	4	49	80	2	3	20	157

Table A14.1. Tunbridge Lane, Bottisham. Number of hand-collected mammal, bird and amphibian bones (NISP).

"Sheep/Goat" also includes the specimens identified to species. Numbers in parentheses are not included in the total of the period. "4" means that the taxon is present but no specimens could be "counted" (see text).

¹three and eleven bones from partial skeletons

²fifteen bones from a partial skeleton

³eleven and five bones from partial skeletons

⁴five and five bones from partial skeletons

⁵three bones from a partial skeleton

⁶nine bones from a partial skeleton

Taxon	Period							Total
	C1st	C1st/2nd	C2nd	C2nd/3rd	C3rd/4th	Roman/undated	Total	
Human (<i>Homo sapiens</i>)	-	-	1 ¹	-	-	-	-	1
Sheep/Goat (<i>Ovis/Capra</i> f. domestic)	-	-	1	-	-	-	-	1
Mouse/Vole (Murid/Microtine)	-	1	10	-	-	1	-	12
House Mouse (<i>Mus</i> sp.)	(-)	(-)	(1)	(-)	(-)	(-)	(-)	(1)
Wood Mouse (<i>Apodemus</i> sp.)	(-)	(-)	(1)	(-)	(-)	(-)	(-)	(1)
Field Vole (<i>Microtus agrestis</i>)	(-)	(1)	(2)	(-)	(-)	(+)	(-)	(3)
Common Shrew (<i>Sorex araneus</i>)	-	1	1	-	-	1	-	3
Water Shrew (<i>Neomys fodiens</i>)	-	-	-	-	-	1	-	1
Comcrake (<i>Crex crex</i>)	-	-	1 ²	-	-	-	-	1
Bird (Aves)	-	-	+	-	-	-	-	+
Anuran Amphibian (<i>Rana/Bufo</i> sp.)	-	+	4	-	-	3	-	7
Frog (<i>Rana</i> sp.)	(-)	(+)	(-)	(-)	(-)	(-)	(-)	(+)
Toad (<i>Bufo bufo</i>)	(-)	(-)	(-)	(-)	(-)	(-)	(-)	(1)
Herring (<i>Clupea harengus</i>)	-	1	-	-	-	-	-	1
cf. Pike (<i>Esox lucius</i>)	-	1	-	-	-	-	-	1
Cyprinid sp.	-	-	7	-	-	-	-	7
Eel (<i>Anguilla anguilla</i>)	-	-	13	-	-	1	-	14
Fish (Pisces)	-	-	3	-	-	1	-	4
Total	0	4	42	0	0	8	0	54

Table A14.2. Tunbridge Lane, Bottisham. Number of identified mammal, bird and amphibian bones (NISP) in sample residues.

“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).

¹fifteen bones from a partial skeleton

²four bones from a partial skeleton

3.4 Other domestic mammals

The other domestic mammals are horse, dog and cat.

3.4.1 Horse

As already noted above, horse remains are relatively infrequent in contrast with the later HAT Tunbridge Lane site. They include two M2s found in ditch fills 203 (Phase 6.1) and 109 (Phase 3) from animals approximately 6 and 8 years old based on the comparative wear curves of Levine (1982). In common with other Romano-British rural sites, the horses will generally have been pony-sized animals little changed from the pre-Roman Iron Age.

3.4.2 Dog

Bones of domestic dogs are also scarce. Two adjacent metacarpals from the foot of a fairly large animal 54cm high at the shoulder (based on Clark 1995) were found in Phase 3 pit fill 101 and the innominate of an animal of similar size in Phase 6.1 ditch fill 203. Foxes or other dogs had gnawed the metacarpals.

3.4.3 Cat

Two cat partial skeletons were found in Phase 5 ditch fills 127 and 346. From the size of the bones and teeth these seem more likely to be domestic animals than wild cat (*Felis silvestris*). Domestic cats are uncommon on rural Romano-British sites in Cambridgeshire, being absent from HAT's Tunbridge Lane site and Haddon Lodge but present in the last three phases (AD 225/250-early 6th century) at Orton Hall Farm (King 1996). Both of the individuals were fairly young animals with unfused or recently fused epiphyses.

3.4.4 Domestic birds

The remains of domestic birds are relatively frequent and account for 8.5% of domestic food species. Isolated chicken bones outnumber goose occurrences by 3:1. However, the geese include two partial skeletons in Phase 3 ditch fills 190 and 246. The five bones in 190 are from the right wing. The six bones from 246 include a posterior cranium and a furcula (wishbone) with a cut near the point of attachment. All the goose bones are greylag/domestic in size and could equally well belong to either domestic or wild birds.

3.5 Wild species

The remains of wild species are relatively frequent, particularly birds. This is not entirely due to the adoption of an intensive environmental sampling strategy as many of the bones were hand-collected.

3.5.1 Mammals

The metacarpal of a fox (*Vulpes vulpes*) was found in Phase 3 pit fill 101 and a fragment from the shaft of a roe deer (*Capreolus capreolus*) metatarsal in Phase 5 ditch fill 156. Micro-mammals recovered from

the sample residues include shrews (*Sorex araneus* and *Neomys fodiens*), house mouse (*Mus* sp.), wood mouse (*Apodemus* sp.) and field vole (*Microtus agrestis*).

3.5.2 Amphibians

The bones of anuran amphibians, including both frog (*Rana* sp.) and toad (*Bufo bufo*) were found in the sample residues.

3.5.3 Birds

The wide range of wild bird species found is a particularly interesting aspect of this site. At least seven taxa are present. Raven, crow/rook, waders (especially woodcock) and kite are relatively common finds (Parker 1988). Perhaps surprisingly only one bone of a duck is present and this is not of the commonly found mallard/domestic, teal, or wigeon. Instead the morphology matches one of the diving ducks with scaup (*Aythya marila*) the closest probable match. This is a relatively common winter visitor. A large individual of the resident tufted (*A. fuliga*) is also possible. The putative scaup bone came from Phase 3 ditch fill 246. As noted above, the goose remains could be from either domestic geese or the wild greylag.

Also present is the almost complete skeleton of a corncrake (*Crex crex*), a rare find at any period. This is a summer visitor (mainly present May to August) to northern Europe from Africa, breeding in hay meadows, cereal crops and similar habitats (Snow & Perrins 1998). It is now absent in England and uncommon in the former stronghold of Ireland, due in part to changes in agricultural practises (Reid-Henry & Harrison 1988). The moist hay meadows of the Cambridge area would have been ideal for this ground-nesting migrant. The corncrake skeleton was found in Phase 3 ditch fill 190 along with other remains including a stillborn human infant.

The only butchery evidence seen on any of the wild bird bones is on a woodcock (*Scolopax rusticola*) tarsometatarsus from Phase 3 ditch fill 109, which has been cut at the proximal joint.

3.5.4 Fish

Eel (*Anguilla anguilla*), herring (*Clupea harengus*), pike (*Esox lucius*) and *Cyprinidae* (chub/roach family) are present. Apart from the herring, which is an obligate marine species, all the fish could have come from local streams.

4 Discussion and conclusion

This is a small assemblage and the only really significant difference that can be ascertained in the relative proportions of the domestic stock represented at this site and HAT's later Romano-British site to the west, or other rural Romano-British sites in Cambridgeshire as a whole, lies in the high numbers of pig remains. This is much higher than the other sites and implies that this site is possibly more

Romanized and/or more proximate to adjacent woodland suitable for pigs to forage in. The wild mammal, bird, amphibian and fish remains also suggest woodland nearby, together with bodies of water and moist hay meadows. It is also possible that the OA East site was closer to areas of human habitation and food preparation/consumption than the HAT site, as such a location would be expected to contain greater evidence of the smaller domestic mammals, in particular sheep and pigs, and birds than more peripheral locations (Wilson 1996).

Acknowledgement

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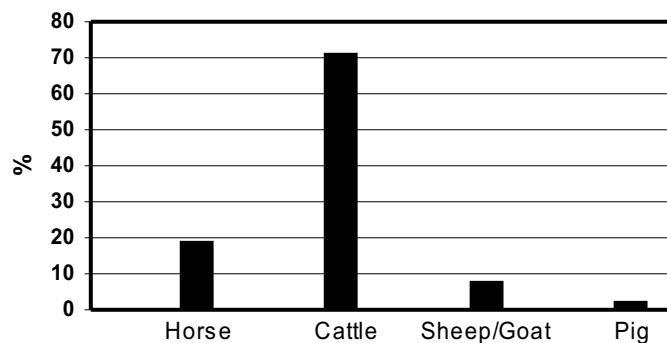
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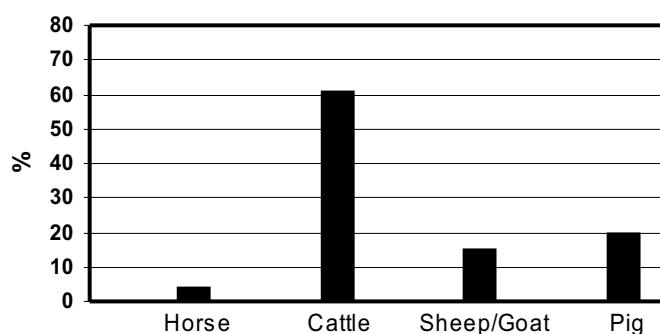
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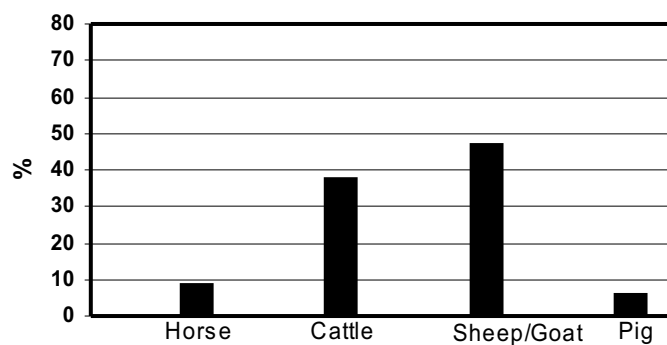
Addendum 1: Frequency of the main domesticates on selected Romano-British rural sites in Cambridgeshire



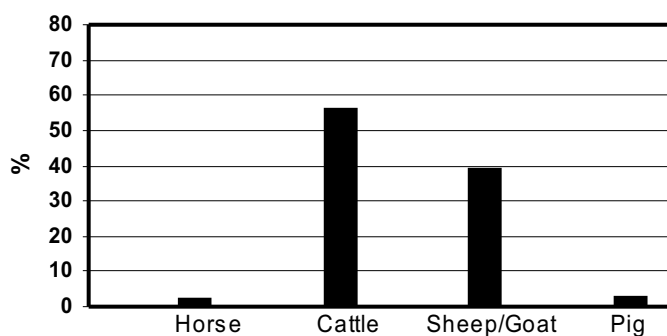
Tunbridge Lane, Bottisham (HAT), Late Romano-British; Tot NISP=221.5



Tunbridge Lane, Bottisham (OA East), Early Romano-British; Tot NISP=129

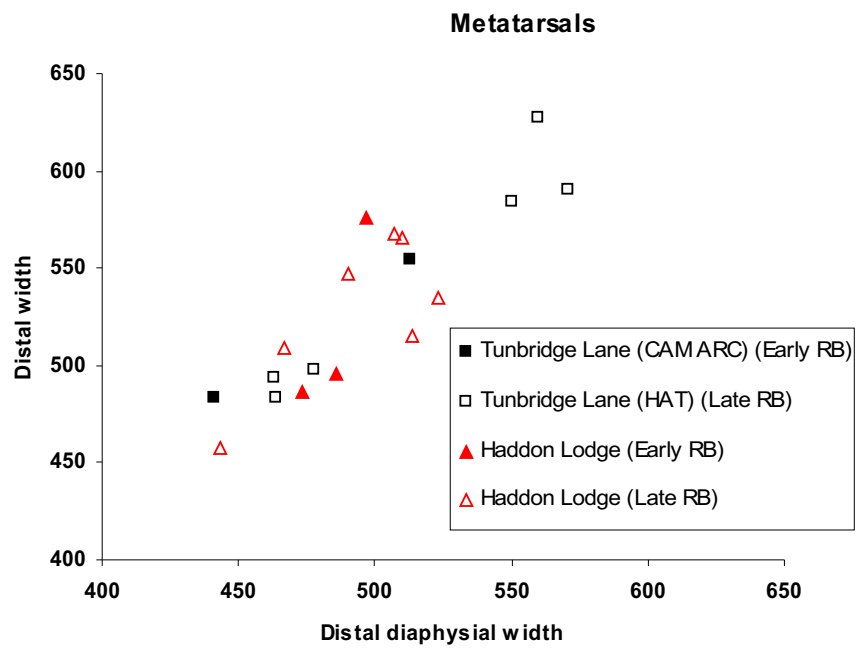
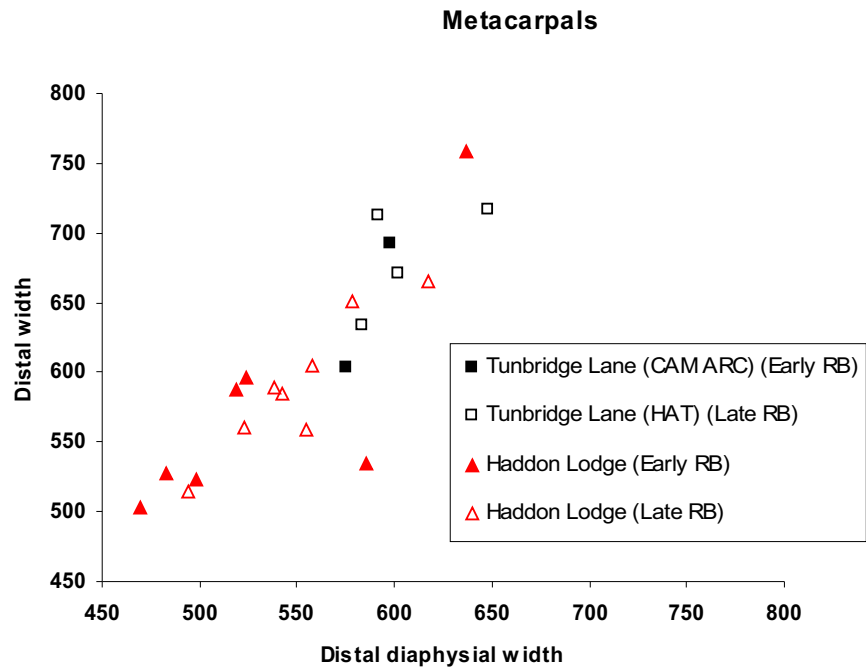


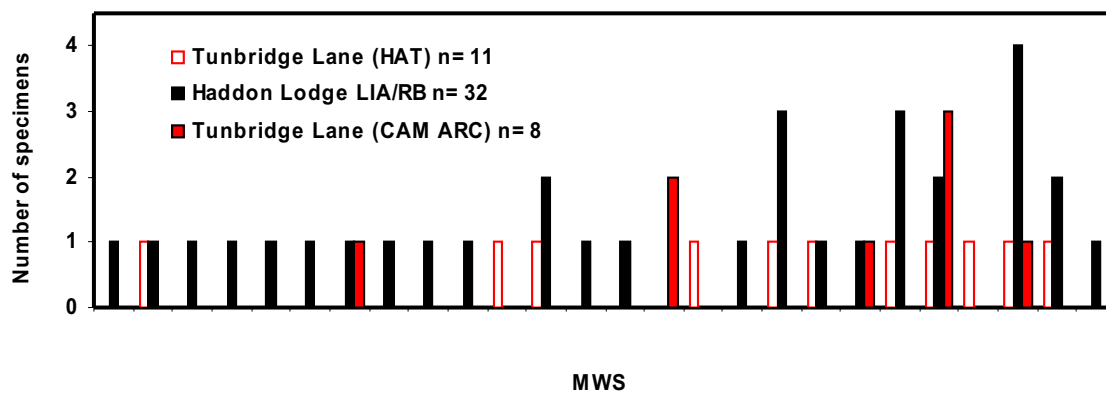
Haddon Lodge, Late Iron Age/Romano-British; Tot NISP=1578.5



Orton Hall Farm, Romano-British c.AD175-375; Tot NISP=6183

**Addendum 2: Size of Cattle metapodials at Tunbridge Lane (OA East)
Measurements in tenths of mm**



Addendum 3: Size of Cattle metapodials at Tunbridge Lane (OA East)

Cattle mandible wear stages at Tunbridge Lane (OA East) compared with those at Tunbridge Lane (HAT) and Haddon Lodge

Appendix 15: Environmental Remains

by Val Fryer

1 Introduction

Samples for the extraction of the plant macrofossil assemblages were taken from across the excavated area and fifteen were submitted for assessment.

2 Methods

The samples were processed by a member of the OA East team, collecting the flots in a 500 micron mesh sieve. The dried flots (or sub-samples thereof) were scanned under a binocular microscope at magnifications up to x 16, and the plant macrofossils and other remains noted are listed on Tables 15.1–15.3. Nomenclature within the tables follows Stace (1997). All recorded plant remains were preserved by charring. Modern contaminants including seeds/fruits and arthropod remains were present throughout.

3 Results

3.1 Plant macrofossils

Cereal grains/chaff and seeds of common weed species were present at varying densities in all samples. Although the macrofossils were generally well preserved, some grains were puffed and distorted as a result of high temperatures during combustion and a small proportion of the chaff elements were very fragmented.

3.1.1 Cereals

Oat (*Avena sp.*), barley (*Hordeum sp.* - including rare asymmetrical lateral grains of six-row barley (*H. vulgare*)), rye (*Secale cereale*) and wheat (*Triticum sp.*) grains were recorded, with wheat being predominant. Elongated 'drop-form' grains typical of spelt wheat (*T. spelta*) were abundant throughout but rounded grains, probably of bread wheat (*T. aestivum/compactum*) type were also noted. Spelt glume bases were also common or abundant and complete spikelets, with the glumes still enclosing the grains, were recorded from samples 12 and 14. Indeterminate silica skeletons (predominantly awn fragments but possibly including glume beak fragments) were common in samples 8 and 13.

3.1.2 Wild flora

Seeds/fruits of common weed plants were present at low to moderate densities in all but sample 6. Segetal taxa were predominant, and included corn cockle (*Agrostemma githago*), stinking mayweed

(*Anthemis cotula*), brome (*Bromus sp.*), corn gromwell (*Lithospermum arvense*), indeterminate grasses (*Poaceae*), dock (*Rumex sp.*) and vetch/vetchling (*Vicia/Lathyrus sp.*).

Wetland plant macrofossils, principally nutlets of sedge (*Carex sp.*), spike-rush (*Eleocharis sp.*) and saw-sedge (*Cladium mariscus*), were noted in samples 3, 4, 5, 10, 15 and 16.

A single small fragment of hazel (*Corylus avellana*) nutshell was the only tree/shrub macrofossil recorded.

3.1.3 Other plant macrofossils

Charcoal fragments were common or abundant in all but sample 8. Other plant macrofossils included indeterminate culm nodes, inflorescence fragments, seeds and small pieces of charred tuber.

3.2 Molluscs

Although specific sieving for molluscan remains was not undertaken, shells (including burnt specimens) were noted in all but sample 6. Some (including the abundant specimens of *Cecilioides acicula*) may be modern in origin, but the remainder are probably contemporary with the contexts in which they were found.

All four of Evan's (1972) ecological groups are represented, namely woodland/shade-loving species (*Carychium sp.*, *Clausilia sp.*, *Discus rotundatus* and *Punctum pygmaeum*), open country species (*Pupilla muscorum*, *Vallonia costata*, *V. pulchella*), catholic species (*Cochlicopa sp.* and *Trichia hispida* group) and marsh/freshwater slum species (*Lymnaea sp.* and *Vertigo sp.*). Rare shells of freshwater obligate species (namely *Anisus leucostoma* and *Valvata cristata*) were noted in samples 3, 5, 9, 15 and 16.

3.3 Other materials

The fragments of black porous 'cokey' material, black tarry material and the siliceous globules may be derived from the combustion of organic remains (including cereal grains and straw/grass) at very high temperatures. Other materials included fragments of bone, fish bone and eggshell and mineralised or faecal concretions.

4 Discussion

Of the fifteen samples assessed, five (samples 10, 11, 12, 13 and 14 – Table A15.1) were taken from a group of features tentatively identified by the excavator as a corn dryer or malting oven. Cereals (principally wheat) and chaff are predominant within the assemblages and a small number of segetal weed seeds are also present. Although detached cereal embryos and sprout fragments are recorded, the density is very low and it appears most likely that all are derived from grains that accidentally germinated during storage. It therefore appears unlikely

that the structure functioned as a malting oven. However, the presence of a small number of whole spelt spikelets may indicate that it was used for parching grain prior to threshing. Processing waste was commonly used as a fuel for this process and evidence from other Roman sites (for example Rectory Farm, Godmanchester (Murphy, forthcoming)), suggests that accidental catastrophic fires often occurred which resulted in mixed batches of burnt grain and fuel residues, as are seen at the current site. The mineralised faecal concretions within samples 13 and 14 appear inconsistent with the remainder of the assemblages and cannot be adequately explained at present.

A further five samples (2, 4, 5, 6 and 15 – Table A15.2) were taken from other hearths or flue type structures. Of these, samples 5 and 15 both possibly contain fuel residues, including cereal chaff, weed seeds and charcoal. The presence of common saw-sedge nutlets in sample 15 may be of particular interest. Similar densities of fruits were noted at Rectory Farm, Godmanchester (*ibid.*) where they have been provisionally interpreted as residues from either sedge litter or sedge peat, which were used as fuel in the corn-dryers. The remaining assemblages contain insufficient material to be conclusively interpreted.

Of the remaining samples (Table A15.3), 3 and 9 were taken from the fills of ditch **247** and sample 16 was taken from a later re-cut of the same feature. All appear to contain a low to moderate density of burnt cereal processing debris (possibly fuel residues), which was presumably deliberately dumped within the ditch. The presence of wetland plant macrofossils and occasional marsh and freshwater mollusc shells within these assemblages is currently somewhat puzzling. Although the former may be derived from fuel (see above), the mollusc shells are not burnt, and as it appears unlikely that the ditches were ever wet enough to sustain a freshwater mollusc population, their origin is uncertain. However, it is possibly of note that unburnt freshwater mollusc shells were also noted in flues **232** and **276**. This may indicate that the shells are derived from river clays, which were used as lining material for the flues. Sample 8 was taken from the ashy fill of ditch **273**. The composition of the assemblage is very similar to the material found within the 'corn-dryer' (see above), and this may be a discrete dump of material from a similar source.

5 Conclusions

In summary, the predominance of cereal processing debris within the assemblages would appear to indicate that the preparation and processing of grain (principally wheat) was of prime importance to the local economy. The presence of a possible corn-dryer or parching oven appears to support this hypothesis. Whilst some of the debris recovered may be indicative of primary processing waste, which has been burnt and deposited across the site, some assemblages (most

notably those from the 'corn-dryer') appear to contain debris in a secondary context where it has been used as fuel. The assemblages recovered are closely paralleled by material from a later Roman site at Rectory Farm, Godmanchester (*ibid.*).

Assemblages from Roman corn dryers are now reasonably well documented. For the current site, although the assemblages are quantifiably viable (i.e.200+ specimens), further analysis would add little to the overall interpretation of this structure or other features noted during the excavation. Therefore, no further work is recommended.

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Sample No.	10	11	12	13	14
Context No.	327	366	364	371	377
Context type	Pit/kiln	Flue	Pit	Pit	Pit
Cereals					
<i>Avena</i> sp. (grains)			x	x	x
Cereal indet. (grains)	xx	xx	xxx	xx	xxx
(detached embryos)		x		x	
(sprout frags.)	x			x	
(silica skeletons)				xx	
(rachis node frags.)		x			
<i>Hordeum</i> sp. (grains)			x	xcf	x
(rachis nodes)			xcf		
<i>H. vulgare</i> L. (asymmetrical lateral grains)					x
<i>Triticum</i> sp. (grains)	xx	xx	xx	xx	xxx
(glume bases)	x	xxx	xx	xx	x
(spikelet bases)		x	x	x	xx
(rachis internodes)	x	x	x	x	
<i>T. spelta</i> L. (glume bases)	x	xxx	xx	xx	x
(spikelet forks)			x		
(spikelets)			x		x
Herbs					
<i>Agrostemma githago</i> L.	x			x	
<i>Anthemis cotula</i> L.	x	x	x		
Asteraceae indet.		x			
<i>Atriplex</i> sp.	x				
<i>Bromus</i> sp.		x		x	x
Chenopodiaceae indet.	x				
Small Poaceae indet.	x				
Large Poaceae indet.	x	x		x	
<i>Ranunculus acris/repens/bulbosus</i>		x			
<i>Rumex</i> sp.	x				
<i>Stellaria media</i> (L.) Vill.		x			
<i>Vicia/Lathyrus</i> sp.	xcf				x
Wetland plants					
<i>Carex</i> sp.	x				
Other plant macrofossils					
Charcoal <2mm	xx	xx	x	xx	x
Charcoal >2mm			x		x
Charred root/rhizome/stem				x	
Indet.culm nodes				x	
Indet.inflorescence frags.	x	x	x		
Indet.seeds				x	x
Molluscs					
Woodland/shade loving species					
<i>Carychium</i> sp.	x	x	xb		
<i>Clausilia</i> sp.			x		
<i>Discus rotundatus</i>			x	x	x
<i>Oxychilus</i> sp.				xcf	
<i>Punctum pygmaeum</i>			x		
<i>Retinella nitidula</i>			xcf		
Open country species					
Helicidae indet.	x	x	x	x	x

<i>Pupilla muscorum</i>	x	xb	x xb	x xb	
<i>Vallonia</i> sp.			x	x	x
<i>V. costata</i>			x		x
<i>V. pulchella</i>		xcfb			
Catholic species					
<i>Cochlicopa</i> sp.	x	x	x	x	
<i>Trichia hispida</i> group			x		
Marsh/freshwater slum species					
<i>Lymnaea</i> sp.				x	
<i>Vertigo</i> sp.				xb	
Other material					
Black porous 'cokey' material	x	xxx	xxx	xx	xxx
Black tarry material			x		
Bone		x			
Eggshell					xx
Mineralised/faecal concretions				xx	x
Mortar/plaster/daub		x			
Siliceous concretions			xx	x	xx
Small mammal/amphibian bones				x	
Sample volume (litres)					
Volume of flot (litres)	<0.1	<0.1	0.3	<0.1	0.3
% flot sorted	100%	100%	50%	100%	50%

Table 15.1

Sample No.	2	4	5	6	15
Context No.	135	224	232	244	276
Context type	Hearth	Flue	Flue	Hearth	Flue
Cereals					
<i>Avena</i> sp. (grains)			x		
Cereal indet. (grains)	x	x	xx	x	xx
(detached embryos)			x		
(sprout frags.)		x			
(rachis node frags.)	x				
<i>Hordeum</i> sp. (grains)		x	x		
<i>Secale cereale</i> L. (grains)			x		
<i>Triticum</i> sp. (grains)	x	x	xx		xx
(glume bases)					x
(spikelet bases)			x		x
<i>T. spelta</i> L. (glume bases)	x		x		
Herbs					
<i>Atriplex</i> sp.					x
<i>Bromus</i> sp.		xcf	x		
Caryophyllaceae indet.			x		
Chenopodiaceae indet.			x		x
Fabaceae indet.			x		
<i>Fallopia convolvulus</i> (L.)A.Love			x		x
<i>Fumaria officinalis</i> L.					x
<i>Lithospermum arvense</i> L.		xx	x		x
<i>Medicago/Trifolium/Lotus</i> sp.			xcf		
Small Poaceae indet.			x		x
Large Poaceae indet.	x				
<i>Polygonum aviculare</i> L.					x
Polygonaceae indet.					x
<i>Rumex</i> sp.					xx
<i>Tripleurospermum inodorum</i> (L.)Schultz-Bip.			x		
<i>Vicia/Lathyrus</i> sp.	x	x	x		x
Wetland plants					
<i>Carex</i> sp.		x	x		
<i>Cladium mariscus</i> (L.)Pohl					xx
<i>Eleocharis</i> sp.			x		
Trees/shrubs					
<i>Corylus avellana</i> L.					x
Other plant macrofossils					
Charcoal <2mm	xxx	xxx	xxx	xxx	xxx
Charcoal >2mm		x	xx	xxx	x
Charred root/rhizome/stem			x		
Characeae indet.	x		x		
Indet.culm nodes			x		
Indet.seeds	x	x	x		x
Indet.tuber frags			x		
Mineral replaced root channels				x	
Molluscs					
Woodland/shade loving species					
<i>Discus rotundatus</i>		x			x
<i>Oxychilus</i> sp.		xcf			
<i>Punctum pygmaeum</i>	x				
<i>Retinella nitidula</i>			xcf		xcf

Open country species					
Helicidae indet.	x	x	x		x
<i>Pupilla muscorum</i>		x	x xb		x
<i>Vallonia</i> sp.	x		x		x
<i>V. costata</i>		x	x		
<i>V. excentrica</i>		xcf			
Catholic species					
<i>Cochlicopa</i> sp.		x			
<i>Trichia hispida</i> group		x			x
Marsh/freshwater slum species					
<i>Lymnaea</i> sp.			x		
<i>Vertigo</i> sp.					x
Freshwater obligate species					
<i>Anisus leucostoma</i>			x		x
Other material					
Black porous 'cokey' material	x	x	x		x
Black tarry material		x			x
Bone		x	x		
Burnt/fired clay		x		x	
Burnt stone			x		
Eggshell		x	x		
Marine mollusc shell frags.		x			
Mortar/plaster/daub			x		
Small coal frags.	x				x
Sample volume (litres)					
Volume of flot (litres)	<0.1	<0.1	0.1	0.4	0.1
% flot sorted	100%	100%	100%	25%	100%

Table 15.2

Sample No.	1	3	9	16	8
Context No.	103	190	314	382	275
Context type	Pit	Ditch 247	Ditch 247	Ditch	Ditch
Cereals					
<i>Avena</i> sp. (grains)				xcf	xcf
Cereal indet. (grains)	x	xx	xx	xx	xx
(detached embryos)			x	x	
(sprout frags.)					x
(silica skeletons)					xxx
<i>Hordeum</i> sp. (grains)		x	xcf	x	xcf
(rachis nodes)					x
<i>Secale cereale</i> L. (grains)		xcf			
<i>Triticum</i> sp. (grains)	x	xx	xx	xx	x
(glume bases)		x	x	xx	xx
(spikelet bases)					x
(rachis internodes)					xx
<i>T. spelta</i> L. (glume bases)				x	xxx
Herbs					
<i>Aphanes arvensis</i> L.					xcf
<i>Atriplex</i> sp.			x	x	
<i>Bromus</i> sp.					x
<i>Chenopodium album</i> L.	x				x

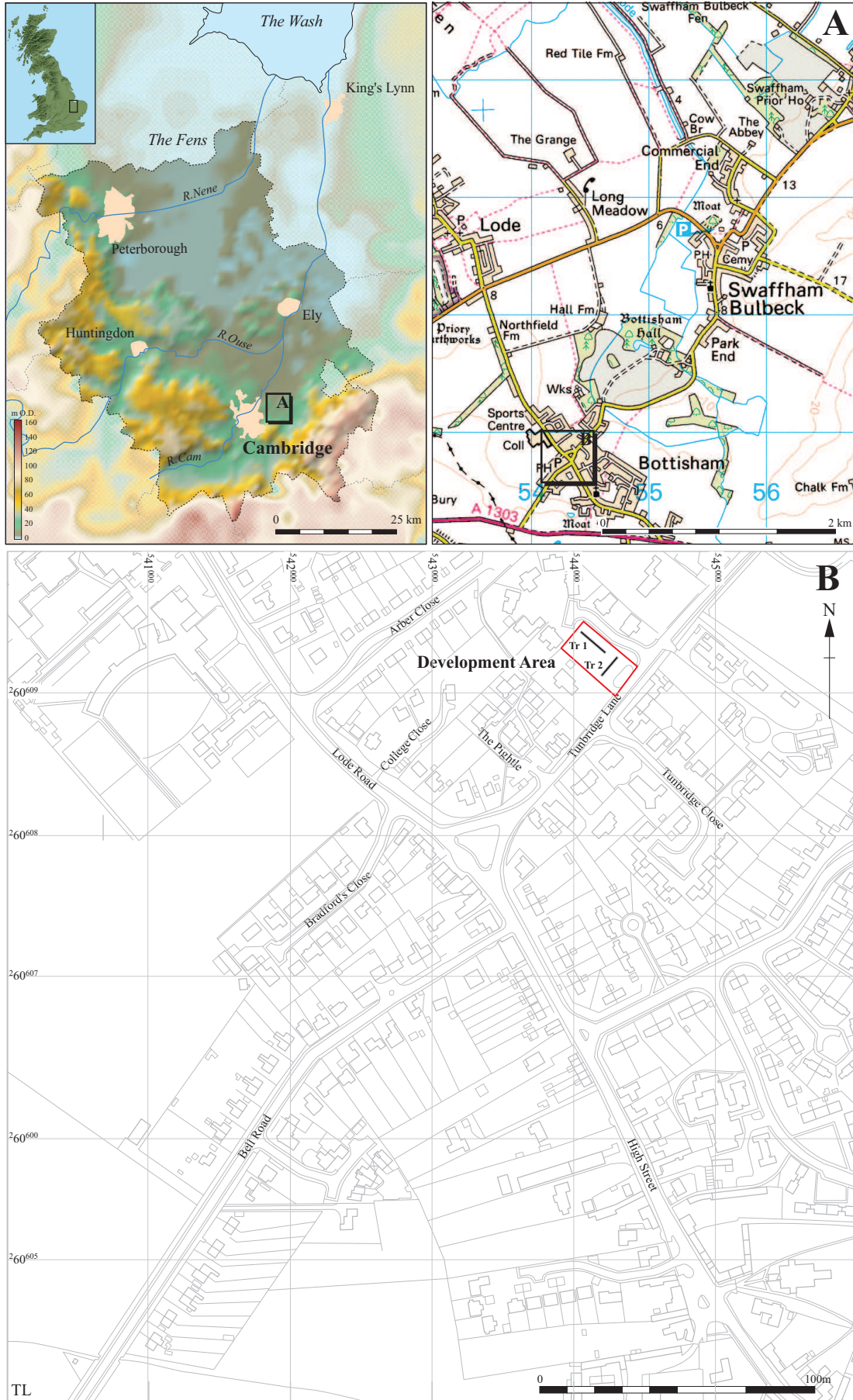
Chenopodiaceae indet.				x	
Fabaceae indet.		xcotyfg			
<i>Fumaria officinalis</i> L.			x		
<i>Galium aparine</i> L.			x	x	
<i>Lithospermum arvense</i> L.			x	xx	
<i>Medicago/Trifolium/Lotus</i> sp.			x		
<i>Plantago lanceolata</i> L.					xcf
Small Poaceae indet.			x	xcf	x
Large Poaceae indet.				x	x
<i>Polygonum aviculare</i> L.				x	
Polygonaceae indet.					x
<i>Rumex</i> sp.			x	x	x
<i>Sheradia arvensis</i> L.					xcf
<i>Tripleurospermum inodorum</i> (L.)Schultz-Bip.				xcf	
<i>Vicia/Lathyrus</i> sp.		x	x	x	
Wetland plants					
<i>Carex</i> sp.				x	
<i>Cladioum mariscus</i> (L.)Pohl				x	
<i>Eleocharis</i> sp.		x		x	
Other plant macrofossils					
Charcoal <2mm	xxx	xxx	xxx	xxx	
Charcoal >2mm	xxx	xx	xx	x	
Charred root/rhizome/stem		x	x	x	
Characeae indet.		x			
Indet.culm nodes			x		
Indet.inflorescence frags.					x
Indet.seeds				x	
Indet.tuber frags				x	
Molluscs					
Woodland/shade loving species					
<i>Carychium</i> sp.				x	
<i>Discus rotundatus</i>		x			
<i>Oxychilus</i> sp.					xcf
<i>Nesovitrea hammonis</i>		xcf			
<i>Vitrea</i> sp.		x			
<i>V. crystallina</i>		x			
Open country species					
Helicidae indet.		x	xb	x xb	
<i>Pupilla muscorum</i>		x		x	x
<i>Vallonia</i> sp.	xb		x	x	x
<i>V. costata</i>		x		x xb	x
<i>V. excentrica</i>		xcf			
<i>V. pulchella</i>		x			
Catholic species					
<i>Cochlicopa</i> sp.		x	x	x	x
<i>Trichia hispida</i> group		xcf			
Marsh/freshwater slum species					
<i>Lymnaea</i> sp.		x		x	
<i>Vertigo</i> sp.			x	x	
Freshwater obligate species					
<i>Anisus leucostoma</i>		x	x	x	
<i>Valvata cristata</i>		x			
Other material					

Black porous 'cokey' material		x		xx	x
Bone		xb			
Eggshell		x			
Fish bone		x			
Siliceous concretions		xx		x	
Small mammal/amphibian bones		xx	x	x	x
Sample volume (litres)					
Volume of flot (litres)	0.8	0.2	0.4	0.2	<0.1
% flot sorted	<10%	50%	25%	100%	100%

Table 15.3

Key to Tables

x = 1 – 10 specimens xx = 10 – 100 specimens xxx = 100+ specimens
b = burnt coty = cotyledon fg = fragment



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 Figure 1 Location of trench with the development area outlined (red)



Figure 2: Phase 1: Neolithic and Bronze Age



Figure 3: Phase 2: Roman (AD 100-120)



Figure 4 Phase 3: Roman (AD 120-140)

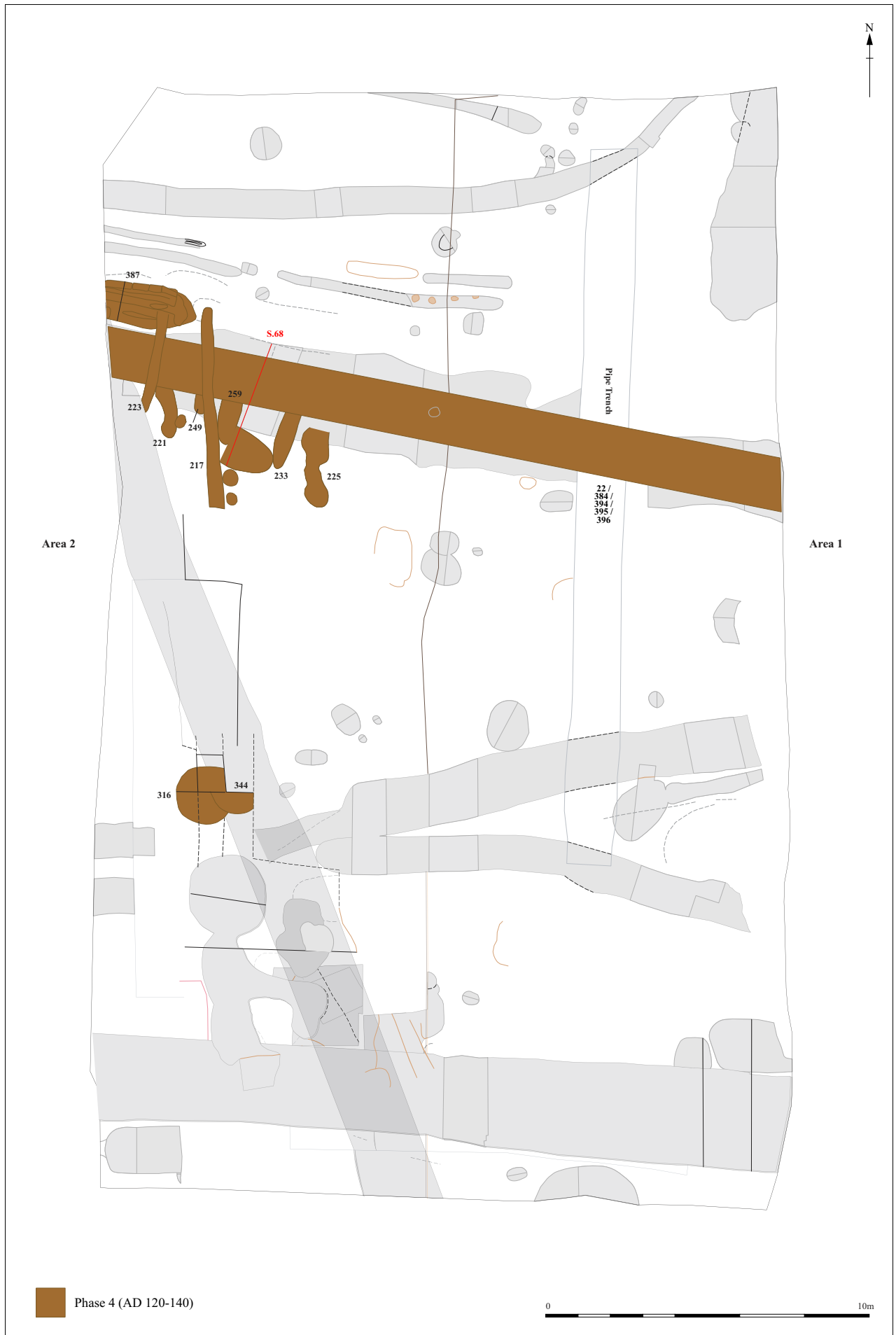


Figure 5: Phase 4: Roman (AD 120-140)



Figure 6: Phase 5: Roman (AD 150-250)



Figure 7: Phases 6 (AD 270-410) & 7 (AD 410+)

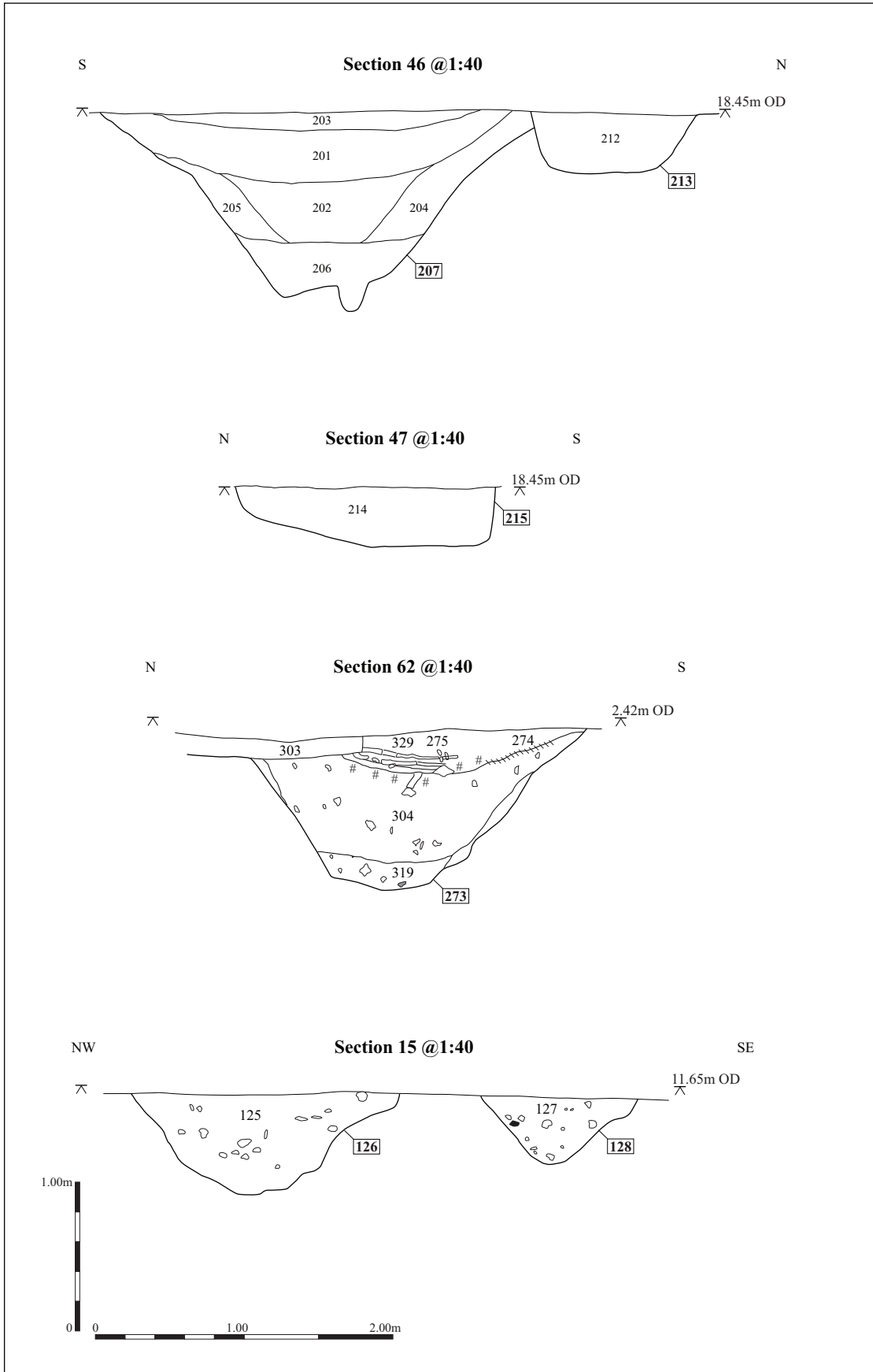


Figure 8: Sections

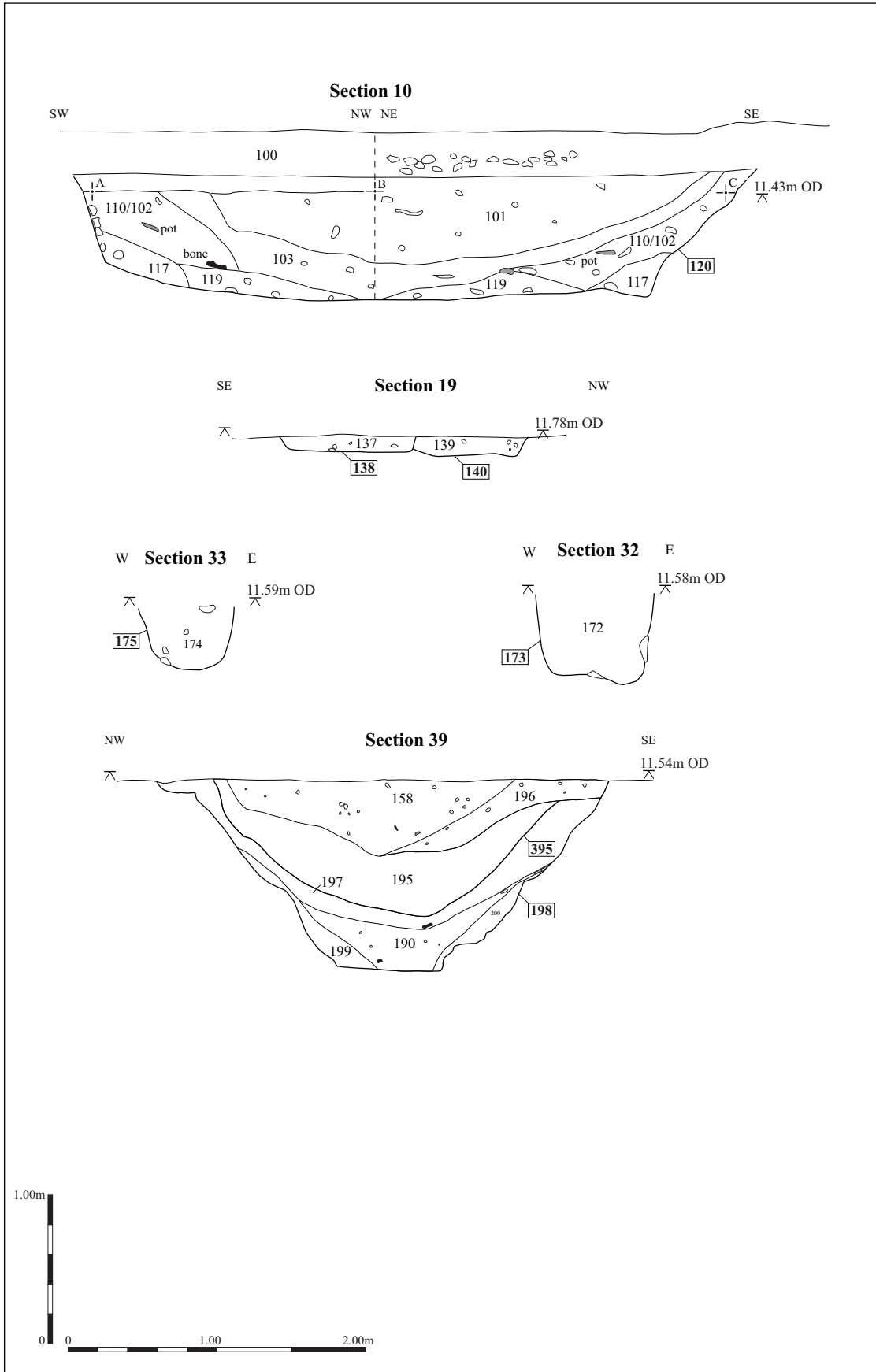


Figure 9: Sections

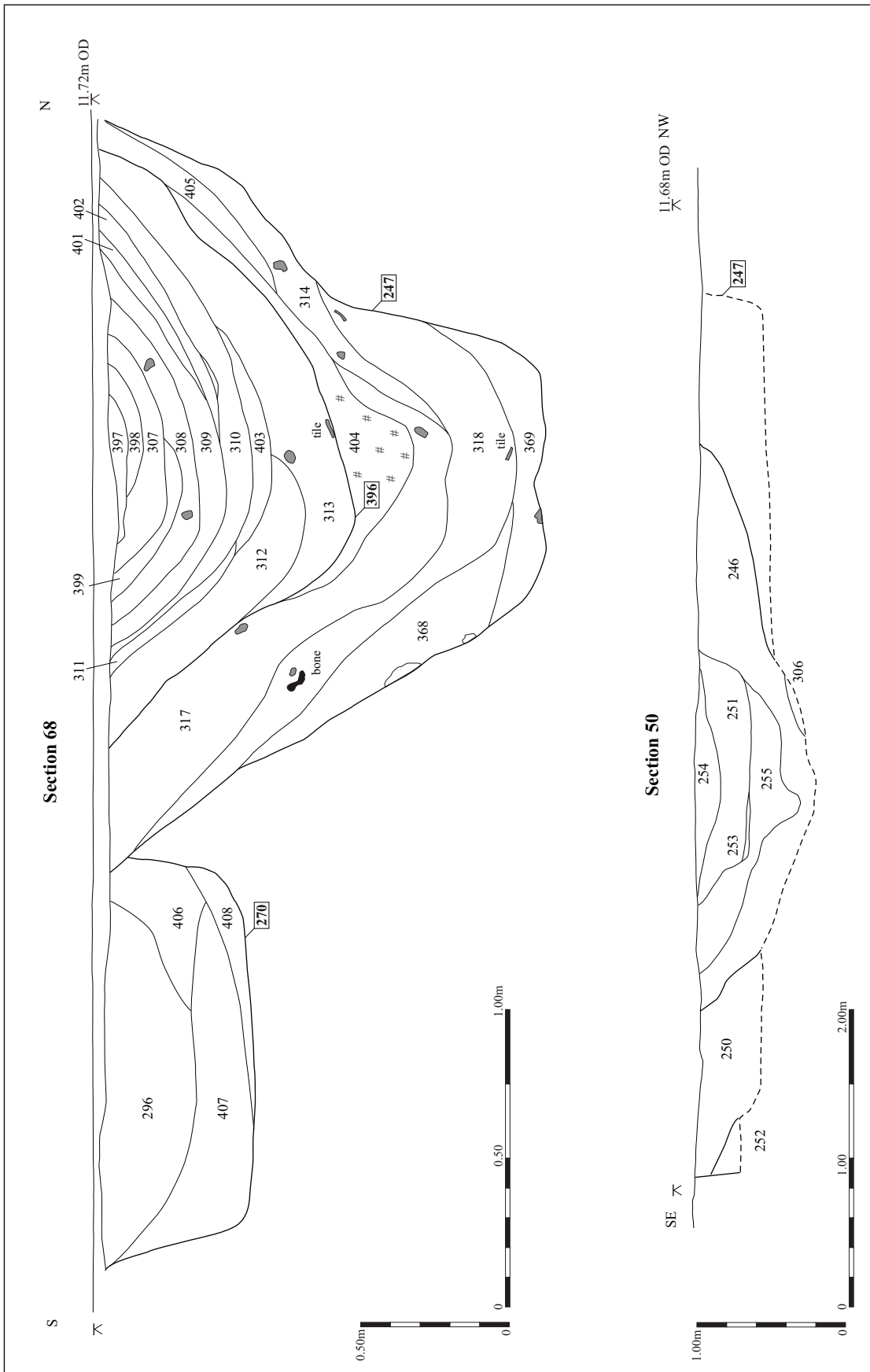


Figure 10: Sections



Head Office/Registered Office

Janus House
Osney Mead
Oxford OX2 0ES

t: +44 (0) 1865 263 800
f: +44 (0) 1865 793 496
e: info@thehumanjourney.net
w: <http://thehumanjourney.net>

OA North

Mill 3
Moor Lane
Lancaster LA1 1GF

t: +44 (0) 1524 541 000
f: +44 (0) 1524 848 606
e: [oanorth@thehumanjourney.net](mailto: oanorth@thehumanjourney.net)
w: <http://thehumanjourney.net>

OA East

15 Trafalgar Way
Bar Hill
Cambridgeshire
CB23 8SQ

t: +44 (0) 1223 850 500
f: +44 (0) 1223 850 599
e: [oaeast@thehumanjourney.net](mailto: oaeast@thehumanjourney.net)
w: <http://thehumanjourney.net/oaeast>

OA Méditerranée

115 Rue Merlot
ZAC La Louvade
34 130 Maugeio
France

t: +33 (0) 4.67.57.86.92
f: +33 (0) 4.67.42.65.93
e: [oamed@oamed.fr](mailto: oamed@oamed.fr)
w: <http://oamed.fr/>



Director: David Jennings, BA MIFA FSA

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