Northamptonshire County Council

Northamptonshire Archaeology

An Early Bronze Age pit, an Iron Age burial and late Iron Age/early Roman settlement at Bluntisham, Cambridgeshire

Excavations 2005

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***OASIS* REPORT FORM: OASIS No. 39228**

PROJECT DETAILS		
Project name	An Early Bronze Age pit, an Iron Age burial and late Iron Age/early Roman settlement at Bluntisham, Cambridgeshire Excavations 2005	
Short description (250 words maximum)	An excavation to the rear of 6 Rectory Road, Bluntisham revealed a series of pits, ditches and postholes representing several phases of activity from the early Bronze Age to the early Roman period. A pit containing rusticated Beaker pottery, some human and animal bones, including aurochs, has been radiocarbon dated to the late 3rd millennium. A crouched inhumation burial was of middle Iron Age date, probably the 2nd century BC. Most of the occupation evidence was dated to the late Iron Age/early Roman period, with ditches and pits suggesting the existence of a farmstead lying mainly beyond the excavated area. A few features, including a pit containing burials of a goose and a dog, were dated in the later 1st or earlier 2nd century AD.	
Project type (eg DBA, evaluation etc)	Excavation	
Site status (none, NT, SAM etc)	none	
Previous work (SMR numbers etc)	Evaluation by Cambridgeshire CC Field Unit (Hatton 2004)	
Current Land use	Disused	
Future work (yes, no, unknown)	No	
Monument type/ period	Prehistoric to early Roman ditches, pits and postholes	
Significant finds (artefact type and period)	Prehistoric pot, Roman pot, bone toggle, human and animal bones	
PROJECT LOCATION		
County	Cambridgeshire	
Site address	6 Rectory Road, Bluntisham, Cambridgeshire	
Study area (sq.m or ha)	0.25 ha	
OS Easting & Northing (use grid sq. numbers)	TL 36907455	
Height OD	14m	
PROJECT CREATORS		
Organisation	Northamptonshire Archaeology	
Project brief originator	Cambridgeshire Archaeology Planning and Countryside Service	
Project Design originator	Northamptonshire Archaeology	
Director/Supervisor	Adrian Burrow	
Project Manager	Andy Mudd	
Sponsor or funding body	Diocese of Ely	
PROJECT DATE		
Start date	November 2005	
End date	December 2005	
ARCHIVES	**Location (Accession no.)**	**Content (eg pottery, animal bone etc)**
Physical	Cambs CC Event No. ECB 2046	Pottery, fired clay, animal bone, human bone, metal,
Paper	ditto	Site records, report, illustrations, colour and monochrome films
Digital	ditto	Report, illustrations, photos

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An Early Bronze Age pit, an Iron Age burial and late Iron Age/early Roman settlement at Bluntisham, Cambridgeshire: Excavations 2005

ABSTRACT
An excavation to the rear of 6 Rectory Road, Bluntisham revealed a series of pits, ditches and postholes representing several phases of activity from the early Bronze Age to the early Roman period. A pit containing rusticated Beaker pottery, some human and animal bone, including aurochs, as well as hazel nuts shells and some carbonised mistletoe stem, has been radiocarbon dated to the late 3rd millennium. A crouched inhumation burial of an older man, accompanied by a bone toggle, has been radiocarbon dated to the middle Iron Age, probably the 2nd century BC. It may have lain within a small sub-circular enclosure. Most of the other activity dated to the late Iron Age/early Roman period, with ditches and pits suggesting the existence of a farmstead lying mainly beyond the excavated area. A few features, including a pit containing burials of a goose and a dog, were dated to the later 1st or earlier 2nd centuries AD.

1 INTRODUCTION

1.1 Background

Northamptonshire Archaeology was commissioned by Stuart Long, Architect, on behalf of the Diocese of Ely, to undertake an archaeological excavation on land to the rear of 6 Rectory Road, Bluntisham, Cambridgeshire, ahead of development for housing (Application Ref. H/01/02277/OUT) (NGR TL 3690 7455, Fig 1). A condition requiring a scheme of archaeological works had been placed upon the planning consent by Cambridgeshire Archaeology Planning and Countryside Advice (CAPCA) to ensure an appropriate record was made of any archaeological deposits before their destruction (Thomas 2005; Event No. ECB2046). The work was undertaken in accordance with an approved Project Design which outlined the scope, aims and methods of the excavation, and the post-excavation assessment of results (NA 2005).

1.2 Site location and archaeological background

The site is situated in the lower Great Ouse valley, a kilometre to the north-west of the river. It lies in the southern part of the village of Bluntisham and to the north of Rectory Road. At the time of excavation the site comprised open land covering an area of about 0.7ha, bounded by existing housing and gardens, with public access on the northern side. The underlying geology is river terrace sands and gravels.

An archaeological trial evaluation was undertaken in 2004 by the Archaeological Field Unit of Cambridgeshire County Council (Hatton 2004). This revealed late Iron Age-early Roman ditches, pits and postholes, and a crouched human burial, which was not excavated at the time. The site was interpreted as being part of a small rural settlement. There was considerable post-medieval disturbance on the eastern side of the site.

1.3 Methods

Topsoil and subsoil were removed across a triangular area of 0.25ha using a large mechanical excavator fitted with a 2m toothless ditching bucket, operating under archaeological direction. A 3m buffer was left around a tree in the centre of the site, which was to be preserved. Overburden was stripped to reveal the natural substrate, there being no significant archaeological remains above this level.

1.3 Summary of chronology

The archaeological deposits fall into four distinct groups by period and character, as summarised below (Table 1).

Table 1: Summary of site chronology

Period (date)	Nature of activity
Early Bronze Age (late 3rd millennium)	Isolated pit containing Rusticated Beaker pottery, human bone, animal bone (including aurochs), hazelnut shells and mistletoe wood.
Middle Iron Age (2nd century BC)	Inhumation burial of older man in oval pit, accompanied by bone toggle, and possibly within a small sub-circular enclosure.
Late Iron Age-early Roman (1st - 2nd centuries AD)	Probable ditched enclosure with internal divisions and scattered pits and postholes. Abandonment of enclosure and replacement with new, slighter boundary ditches.
Medieval and post-medieval	Quarry pits

The excavated evidence and the finds and environmental evidence for each episode of activity is catalogued and discussed below within the period groups. Some tabulated data and methodology statements appear in a series of appendices (A1-A5).

2 THE EARLY BRONZE AGE PIT

2.1 The pit

A large oval pit, 216, near the middle of the excavated area, was 3.0m long, 2.0m wide and 0.6m deep, with a shallow, bowl-shaped profile (Figs 2 and 3). The silty fills were all dark in colour. The primary fill (228) contained seven flints, some cattle and sheep bone, including a radius of an aurochs, a human tooth, charred hazelnut shells and a few grains of wheat and barley.

The secondary fill (215) contained most of the pottery, largely sherds from a single rusticated Beaker (Fig 4 and Plate 1), but few other finds. There were also concentrations of charcoal in the same area as the pottery. Most of the charcoal was of oak and ash, although other species were present, including mistletoe stem.

The upper fill (214) contained a sheep tibia and 18 fragments of human bone comprising lower leg, foot, hand and ribs of an adult.

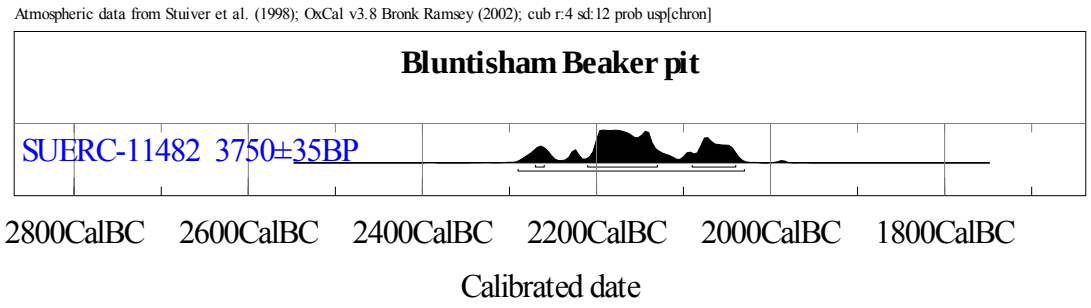
2.2 Radiocarbon dating

A radiocarbon measurement on a hazelnut shell from the primary fill yielded a date of 2290-2030 Cal BC (see Table 2 below), the late 3rd millennium BC.

Table 2: Radiocarbon determination for the Bronze Age pit

Laboratory	Context	Sample details	d13C/12C	Conventional Radiocarbon Age BP	Cal BC 68% confidence 95% confidence
SUERC-11482 (GU-14438)	228 pit fill	Charred hazelnut shells	-21.9	3750 +/-35	2270-2040 (2270-2250, 1.8%) (2210-2130, 51.1%) (2090-2050, 15.3%) 2290-2030

Laboratory: Scottish Universities Environmental Research Centre, AMS dating
Calibration: OxCal v3.8 Bronk Ramsey, 2002



2.3 Worked flint by Andy Mudd

Seven pieces of struck flint came from the primary fill of pit 216. These include two burnt pieces and some crude flakes and irregular fragments, at least some of which had been struck with a heavy hammer. There is one fragment of a blade probably removed with a soft hammer from a prepared core. The edges were almost certainly utilised and possibly lightly retouched, and there is a small notch on the shoulder. There is no suggestion of any special selection of material for deposition in this feature.

A further sixteen struck flints were recovered in Iron Age and early Roman features (Appendix 1). Seven can be described as bashed lumps and thirteen are flakes without worked or utilised edges. These show crude workmanship. There are also two scrapers (from pit 115 and ditch 59).

The flint is generally dark (even black) although there are two pieces of chert. There is no evidence that any was imported from Chalklands and all the raw material may have been gravel and presumably quite local.

2.4 Early Bronze Age pottery by Andy Chapman

There are 93 sherds of pottery, weighing 580g, from the secondary fill of pit 216.

The majority of this comes from a single fragmented vessel, which is hand-built in a fabric, 8-12mm thick, containing sparse small inclusions of quartz, up to 1mm diameter. Although the extreme fragmentation is largely due to crushing, some edges are oblique, indicating that it had partly broken along the joins between coils. It is poorly fired and quite soft and friable, with a brown core and oxidised, orange to orange brown surfaces. The rim sherds indicate a vessel diameter of around 200mm (Fig 4, 1 and Plate 1).

The interior and the top of the rounded rim have been well-smoothed, almost amounting to light burnishing. In contrast, the outer surface is rough and uneven due to the profuse decoration with deep fingertip impressions and adjacent raised bosses of displaced clay. The fragmentation of the vessel makes it difficult to define the decorative scheme, but the larger sherds indicate that there were multiple regular lines of deep fingertip impression with single shallow, oblique fingernail impressions between them.

A single sherd, in a harder and thinner fabric, 5mm thick, light brown throughout, is decorated in the same style, but with much shallower fingertip and fingernail impressions (Fig 4, 2 and Plate 2).

The presence of this large, thick-walled rusticated Beaker would suggest that this material has come from a domestic assemblage, although the disposal of the vessel and a single sherd from a further vessel, as well as some of the other material in this pit, may have had special significance. An early Bronze Age date, towards the end of the third millennium BC, has been confirmed by radiocarbon dating.

Such fingertip and fingernail rusticated vessels are typical of those found in later Beaker assemblages in East Anglia and around the Fen edge. The vessel from Bluntisham is broadly paralleled by numerous examples from immediately east of the River Great Ouse catalogued by Bamford (1982). More recent work has recovered further examples, often in association with classic Beakers. These examples include classic and rusticated beakers from a group of pits at Fenstanton, only 8km to the south-west of Bluntisham on the opposite bank of the Great Ouse (Gibson 2005), which have also been radiocarbon dated to the end of the third millennium (Chapman *et al* 2005, 14).

2.5 Fired clay from the Bronze Age pit by Pat Chapman

Four very irregular chunky pieces of fired clay from the primary fill have a hard pink-brown fabric with very occasional sub-rounded gravel inclusions. The colour is similar to that of the Beaker pottery, suggesting a common origin for the clay, but the pieces have no diagnostic features.

2.6 Disarticulated human bone from the Bronze Age pit by Sharon Clough

A tooth from the primary fill is an upper left first permanent molar, with the wear suggesting that it came from a mature adult.

Eighteen disarticulated human bones came from the final fill, along with some animal bone. The bone is fragmentary but in a fair condition, with some flaking of the cortical bone surface. The fragments comprise elements of the lower leg, foot, hand and ribs of a single individual (see

Appendix 3). Epiphyseal fusion indicates an adult of over 18 years of age. The individual was of gracile build, but there was insufficient bone present to establish sex.

A small area of new woven bone was present on the anterior surface of the distal fibular shaft, measuring 22mm by 6mm. Although the new bone was largely porous and disorganised, some striae were present, indicating healing was in progress at the time of death. This lesion was consistent with active periostitis, an inflammation of the periostium of the bone, perhaps a result of localised soft tissue injury or chronic infection (Roberts and Manchester 1995, 125).

2.7 Animal bone from the Bronze Age pit by Philip Armitage

The bone mainly comprises elements from domestic cattle (*bos*) and sheep (*ovis*), along with some forty small unidentifiable fragments, some burnt, recovered from a soil sample. A cattle rib had superficial cut marks, as did a length of burnt long bone shaft. The sheep elements comprise fragments of three teeth, at least one from a young animal, and a calcaneum with the epiphysis unfused, also from a young animal.

Identification of a *Bos primigenius* (aurochs) radius from the primary fill is based on its large size, which falls outside the range documented for domestic cattle from other comparative prehistoric sites (Table 3). Wild cattle became extinct in Britain during the Bronze Age and are generally uncommon in archaeological contexts at any time.

Table 3: Size of cattle radius from Beaker pit 216 in comparison with cattle from other British prehistoric sites

SITE	PERIOD	RADIUS Bp (mm)
Bluntisham, Cambs	Early Bronze Age	92mm aurochs
Maxey Quarry, Cambs	Late Neolithic/ Early Bronze Age	101.2mm aurochs
Durrington Walls, Wiltshire	Neolithic	63 to 82mm (N = 52) domestic 101mm (N = 1) aurochs
Runnymeade Bridge, Surrey	Later Bronze Age	54 to 71mm (N = 7) domestic

Measurement shown is proximal width (after von den Driesch 1976). Ref. Sources: Maxey Quarry (Armitage 2005); Durrington Walls (Harcourt 1971); Runnymeade Bridge (Done 1980).

2.8 Charred plant remains from the Bronze Age pit by Pam Grinter

Following assessment by Wendy Smith, a single 30-litre sample from the primary fill of pit 216 was selected for full analysis. The sample was processed using water flotation and examined using a low-power microscope at magnifications between x10 and x40. The heavy residue was also sorted for charred plant remains using a microscope at the same magnifications. Nomenclature follows Stace (1997) for indigenous taxa and Zohary and Hopf (2000) for economic plants.

The sample contained two grains of a free-threshing wheat (*Triticum aestivum* type) and two of barley (*Hordeum* sp.). The preservation of the grains was good although some surface features had been eroded. Free-threshing wheat increasingly replaced glume wheat towards the end of the prehistoric period in Britain, but this is a very early date for this species of wheat in Cambridgeshire. The English Heritage Environmental Archaeology Bibliography data base (http://ads.ahds.ac.uk/catalogue/specColl/eab_eh_2004) lists only one other Bronze Age site, that of Flag Fen (Hall and Fischer 1986), where waterlogged deposits produced seeds of waterside taxa with a few weeds of cultivated and waste ground, but no remains of cereal plants were recovered.

Table 4: Charred plant remains from primary fill (228) of pit 216

Grade	**Flot**	**Residue**
Fraction sorted	1/1	1/1
Cereal		
Triticum aestivum L. grain	2	
Hordeum vulgare L grain indet.	2	
Cereal grains	3	1
Wild		
Corylus avellana L., shell fragments	157	30
Corylus avellana L., cf. kernel	1	
Rumex spp.	2	
Chenopodium cf. *album* L.	1	
Chenopodium sp.	1	

A considerable number of hazelnut (*Corylus avellana* L) shell fragments were present, as well as the whole kernel of one nut. Hazelnut shells break into many pieces when broken fresh or after being charred whole. Experiments conducted by Carruthers (pers com) indicated that 100 native hazelnuts were reduced to 42g (many hundreds of fragments) of charred nut fragments. The weight of the hazelnut fragments from the sample is 5g and, on the basis of the above findings, this may represent between 8-12 nuts.

Hazelnuts are frequently found in prehistoric contexts, as they preserve well, probably due to the robust nature of the shell (Jones 2000). Hazelnuts are a useful wild food commodity as they can be stored for long periods supplementing the diet during the winter months. These hazelnuts may have been brought onto a site intentionally as a collected wild foodstuff, and the hazelnut shells may have been incorporated in wood fuel for fires.

Seeds from dock (*Rumex* spp.) and goosefoots (*Chenopodium* cf. *album*) were also present.

2.9 Charcoal from the Bronze Age pit by Rowena Gale

A small assemblage of fairly well-preserved charcoal weighing *c* 90g was examined. It included fragments up to 10mm in radial cross-section, although most were considerably narrower.

Fragments measuring >2mm in cross-section were considered for identification. The charcoal was prepared using standard methods (Gale and Cutler 2000). Anatomical structures were examined using incident light on a Nikon Labophot-2 compound microscope at magnifications up to x400 and matched to prepared reference slides of modern wood. When possible, the maturity of the wood was assessed (ie heartwood/sapwood) and stem diameters recorded. It should be noted that during the charring process wood may be reduced in volume by up to 40%.

Classification of the identified taxa follows that of *Flora Europaea* (Tutin, Heywood *et al* 1964-80). When anatomical differences between related genera are too slight to allow secure identification to genus level, for example, members of the Pomoideae (*Crataegus, Malus, Pyrus* and *Sorbus*), these are grouped together.

The anatomical structure of the charcoal was consistent with the following taxa or groups of taxa:

Corylaceae. *Corylus avellana* L., hazel (4 fragments)

Fagaceae. *Quercus* sp., oak (64 heartwood, 29 sapwood)

Oleaceae. *Fraxinus excelsior* L., ash (93 sapwood, 2 fragments)

Rosaceae. Subfamily Pomoideae, which includes *Crataegus* sp., hawthorn; *Malus* sp., apple; *Pyrus* sp., pear; *Sorbus* spp., rowan, service tree and whitebeam. These taxa are anatomically similar; one or more taxa may be represented in the charcoal. (8 fragments)

Ulmaceae. *Ulmus* sp., elm (3 roundwood)

Viscaceae. *Viscum album*, L., mistletoe (2 roundwood)

The bulk of the charcoal consisted of oak (*Quercus* sp.), roundwood and sapwood, and ash (*Fraxinus excelsior*), mostly sapwood. This material indicated origins from fairly slow-grown trees. Additional species included hazel (*Corylus avellana*), the hawthorn/*Sorbus* group (Pomoideae), elm (*Ulmus* sp.) and mistletoe (*Viscum album*). The latter occurred as fragments of narrow stem with radial measurements of 5mm.

Most of these species are likely to have been common in local woodland. Mistletoe, however, is unusual in archaeological contexts and warrants some comment. Mistletoe is parasitic on deciduous trees and its presence here may be entirely incidental, perhaps having been attached to some of the larger woodland trees mentioned. However, mistletoe has also had economic uses in the past, as a fodder plant (Troels-Smith 1960) and as a source of bird-lime (Mabey 1996). In some ancient cultures, eg the Druidic religion, mistletoe was regarded as sacred and was important for ceremonial use (Mosley 1910; Grigson 1958; Piggot 1968).

2.10 Discussion

The isolated early Bronze Age pit, which has been dated to the later 3rd millennium BC, contained much of a large rusticated Beaker, a single sherd from a second vessel, and an assortment of other material including human bone, some animal bone, including a single bone from an aurochs, charred hazelnuts and oak and ash charcoal with small quantities of other wood including mistletoe stem.

The pit was not associated with further pits or other contemporary activity, and there is no evidence of a ring-ditch or barrow nearby. The site does not seem to have been, or to have become, a focus for ritual or burial and therefore contrasts, for example, with the Beaker burials at Camp Ground, Colne Fen, some 3.5km to the north, where a group of early Bronze Age inhumations became the site of a later 'semi ring ditch' (Regan, Evans and Webley 2004).

Individual or small groups of early Bronze Age pits, normally considered to be in a domestic context, are not uncommon in the region, although the material from the Bluntisham pit appears to be unusual in its nature and diversity (Garrow 2006). It would seem to include both selected items (the human bone, the aurochs bone and the Beaker pottery) and random elements from the surrounding soil (mixed wood charcoal, charred hazelnut shell and a few flints, and a little animal bone). The mistletoe might have been a fortuitous inclusion with the other fuel debris, or it might be seen to part of the selected items.

Mention must also be made of the small quantities of charred grain. The presence of free-threshing wheat at such an early date is surprising and this material might be better seen as possible contamination. For instance, sampling of an intact Bronze Age barrow mound sealed beneath a medieval village at West Cotton, Raunds, Northamptonshire, produced substantial quantities of charred grain that appeared to have been carried down through prolonged worm action (Chapman pers com).

Beaker pits in East Anglia rarely contain animal bone and the pottery tends to be weathered and fragmented suggesting a random input from adjacent occupation (Garrow 2006, 129-130). However, the pottery from this pit was not weathered. At Fenstanton, 8km to the south-east of Bluntisham, a group of small pits represented a standard pattern to the deposition of ceramics of the late 4th through to the early 2nd millennia BC. These pits typically contained small groups of sherds from single vessels although in one instance there was also a substantial part of a single Beaker. These instances suggest the deliberate deposition of material already in a sherd state (Gibson 2005, 11). It has been argued that this represents the burial of token pieces of domestic material (artefacts and ecofacts) in earth rituals which may have been designed to ensure the fecundity of the earth and her resources (Gibson 2000), and a similar interpretation could be applied to the single pit at Bluntisham.

The animal bones comprised a few sheep and cow bones, which suggests an incidental accumulation from nearby occupation. The aurochs radius is more likely to have been selected. Aurochsen are rare in prehistoric animal bone assemblages and the animal is thought to have become extinct in Britain during the Bronze Age (Cotton *et al* 2006). Burials of complete or semi-complete aurochsen are occasionally found. That from the London Borough of Hillingdon dated to the terminal Neolithic appears to have been dispatched by archers and has been interpreted as relating to the 'taming of the landscape' at a time when the land was beginning to be tightly ordered for agriculture (Cotton *et al* 2006, 163). The single aurochs bone from Bluntisham may not have been deposited in comparable circumstances, but the animal is likely to have been hunted and it may have been the object of similar ritual attention. There is also an example of an aurochs from Littleport, although this came from a natural rodden deposit without archaeological context and is only approximately dated (by pollen) to the Bronze Age (Shawcross and Higgs 1961). It may have had a natural death.

3 AN IRON AGE INHUMATION BURIAL

3.1 The burial

An oval pit or grave, 213, on the north-western side of the excavated area, was 1.50m long by 1.00m wide and 0.38m deep. Lying on the base of the pit was a crouched inhumation burial of a man aged in his late 40s (Figs 2 and 5, Plate 3). The body was lying on its right side, face down with the head against the pit wall and facing to the south. It was tightly contracted and it seems likely that the legs had been bound in place. The left arm was flexed, with the hand just below the chin but the right arm was extended, suggesting that the arms had not been bound to the chest. A bone toggle lay among the ribs (Fig 6 and Plate 4). The pit fill contained a single sherd of Iron Age pottery and no other finds.

The burial may have been broadly contemporary with a curvilinear ditch, 69, and, if so, it may have lain within a sub-circular settlement enclosure.

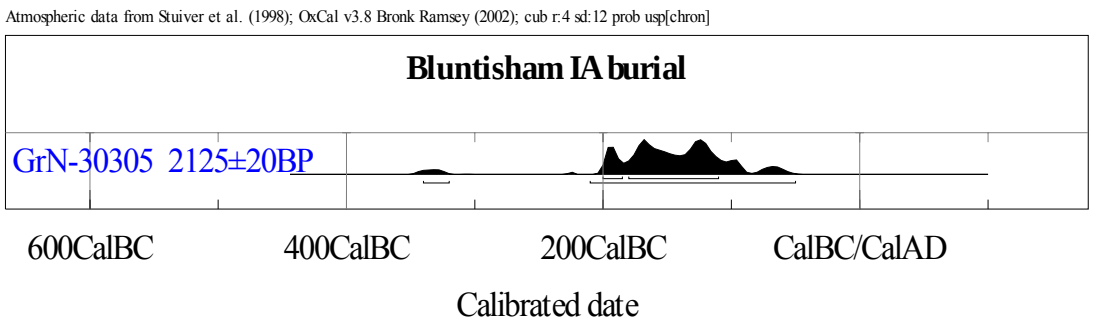
3.2 Radiocarbon dating

A rib bone has been radiocarbon dated to Middle Iron Age, most probably within the 2nd century BC (see Table 6). This indicates that the inhumation either pre-dated the domestic occupation or was contemporary with the earliest part of it.

Table 6: Radiocarbon determination for the inhumation burial

Laboratory	Context	Sample details	d13C/12C	Conventional Radiocarbon Age BP	Cal BC 68% confidence 95% confidence
GrN-30305	Burial 221 Grave 213	Inhumation ribs	__	2125 +/-20	200-110 340-320 (1.3%) 210-50 (94%)

Laboratory: Centrum voor Isotopen Onderzoek, Gronigen, radiometric dating
Calibration: OxCal v3.8 Bronk Ramsey, 2002



3.3 The human bone by Jonny Geber

The skeletal remains of this individual were in good condition. Some of the elements, however, had been exposed to erosion, but not to the extent that made the osteological analysis problematic.

Age, sex and stature

The skeleton was of a male, aged 45-49 years at the time of death. Stature was estimated to 1.66 ± 0.04m (5 feet 5 inches) according to Sjøvold's method, and 1.68 ± 0.03m (5 feet 6 inches) according to Trotter (1970).

Non-metric traits

Well-developed medial squatting facets on the distal tibiae and a considerable medial talar squatting facet on the right talus, suggest that this individual often sat in a squatting posture (Kennedy 1989, 150-151).

Skeletal pathology

Spinal degenerative joint disease (SDJD)

Degenerative changes in the spine are very common in skeletal material. Physical labour will causes stress and pressure on the back, which reflects in degenerative changes in the vertebral joints or as compression lesions (Schmorl's nodes), osteophytic growth at the superior and inferior surfaces of the vertebral bodies (vertebral osteophytosis) and bony resoption (porosity) of the bodies and superior and inferior articular processes.

Stress on the spine of this individual is indicated by the presence of vertebral osteophytosis and Schmorl's nodes, especially in the mid to lower spine. These may well be associated with prolonged squatting, as indicated by the squatting facets. Wear and tear associated with advancing age, as well as activity-related trauma are also possible causes.

Trauma

A healed hairline fracture was identified on an unsided rib fragment. The fracture was well healed and no evidence for secondary infection on the bone was present.

Infectious disease

Well-healed plaques of new bone lined parts of the right maxillary sinus. This indicates that the individual had suffered from chronic sinusitis some time before death. This condition may be associated with chronic upper respiratory infection, but may also be precipitated by chronic exposure to severe air pollution and smoke (Roberts and Manchester 1995).

Respiratory infection is suggested by considerable reactive periostitis present on the pleural surface of a number of the right ribs. The lesions were a mixture of unhealed and partly healed new bone formation. Such lesions were believed to be indicative of tuberculosis, but more recent studies (eg Roberts *et al* 1998) suggest a much wider aetiology, including pneumonia, metastatic carcinoma, treponemal disease and bronchiectasis.

Active periostitis was also present on the entire diaphysis of the right tibia and on the lower half of the left tibia. It was also present on the medial surface of the right calcaneus. It is difficult to identify the aetiology of these lesions. P eriostitis is the most common infectious reaction found in human bones, and may be caused by localised or systemic infections, trauma, tumours, blood circulation disorders (venous stasis), excess of vitamin A (hypervitaminosis A) and scurvy (Maat in Arcini 1999, 117). It manifests as an extra layer of porous bone overlying the original bone surface. The symptoms experienced by the sufferer are pain, tenderness and swelling of the part of the body that is affected.

Periostitis on the tibia is common, as the bone lies close to the skin surface and is therefore very exposed to injuries (Ortner 2003, 206-207). The lesions on the calcaneus may indicate infection

secondary to injury or mechanical stress of the Plantar aponeurosis muscle, a condition known as plantar fasciitis (Narváez *et al* 2000; Singh *et al* 1997). This could very possibly also be associated with the squatting posture.

Dental pathology

Three maxillary molars had carious lesions (3/30; 10% of all teeth), and these were all located at the dental cervixes. The right third maxillary molar had been lost antemortem (1/32; 3% of all alveoli), and the corresponding mandibular molar had been lost, possibly through trauma since parts of the root was still in situ.

The lower front teeth displayed very marked lines of dental enamel hypoplasia. This condition is a developmental defect in the dental enamel that manifests itself as horizontal bands, pits and/or grooves on the surface of the teeth. It is usually associated with malnutrition and acute infection during the first seven years of life, but has also been attributed to genetic factors (Hillson 1986, 129-130). Multiple bands on the teeth of this individual indicate that he had suffered two independent episodes of physical stress: the first around the age of two years and the second around the age of four years.

3.4 The bone toggle by Tora Hylton

A plain bone toggle lay among the ribs, and presumably had been used to fasten clothing (Fig 6 and Plate 4). It is manufactured from a hollow section of a sheep/goat metapodia, (Karen Deighton pers com), with the epiphyses removed and the terminals roughly trimmed. It is 40mm long and 12-14mm in diameter. The central perforation is 3mm in diameter, and is slightly conical on each face. This suggests that it had been cut, or at least finished, using a pointed implement from each side, rather than drilling through from one side only. The surfaces of the toggle display signs of considerable polish as a result of wear, suggesting that the piece must have been in use for some time. It is within the upper size range of examples recovered from Danebury, see Sellwood 1984 (378).

3.5 Contemporary settlement

A curvilinear ditch, 69, in the northern part of the site pre-dated the late Iron Age enclosure system (Fig 2). The ditch was 1.10m wide and 0.50m deep, with a V-shaped profile and a narrow rounded base, it terminated to the south-east in a shallow butt-end. It may have formed part of a sub-circular enclosure at least 25m in diameter, and pottery from the ditch indicates an early to middle Iron Age date. The enclosure was therefore at least broadly contemporary with the inhumation burial in pit 213, which lay within the enclosed area.

3.6 Discussion

A crouched body posture was the standard praxis in Bronze Age and Iron Age burials, and persisted as a minority rite throughout the Roman period (Philpott 1991, 71). While inhumation appears to have been a minority rite in the Iron Age, aspects of this burial are typical of practices found more widely, including its isolation from other burials and the tightly crouched body posture. The deposition of such burials within former storage pits is widely attested, and there are a number of examples from Cat's Water, Fengate, near Peterborough (Pryor 1984, burials 2, 3 & 4, figs 92-94), all also male. In this instance the pit may have been a purposely excavated grave although, like many pit burials, the inhumation only occupied part of the available space, being set towards the southern side of the pit with the head leaning against the pit wall.

The tightly crouched position of the legs suggests that they were bound, but the extended right arm suggests that the torso was not fully bound. Burial 2 at Cat's Water was probably bound, and perhaps also Burial 1 at that site (Pryor 1984, fig. 91). At Prickwillow Road, Ely, two crouched inhumations (a young man and an older woman) were found within or on the margins of an Iron Age settlement (Atkins and Mudd 2003). At Colne Fen there were two or three crouched inhumations of either Bronze Age or Iron Age date (Dodwell 2004, 34). The possibility that the Bluntisham burial had been interred within an enclosure would suggest that, like other examples, it lay within the limits of the contemporary settlement, but perhaps towards the margins.

These examples show that inhumation was not uncommon in the Iron Age of the region, but there seem to be no clues as to why this burial rite was chosen for a minority of individuals of both sexes.

4 THE LATE IRON AGE/EARLY ROMAN SETTLEMENT

4.1 The excavated evidence

The enclosure and boundary ditches

The late Iron Age occupation was marked by two substantial ditches. A slightly curving ditch, 143, ran west to east at right angles to a broad linear ditch, 59, aligned NNE-SSW (Fig 2). Ditch 59 was 3.0m wide and 0.85m deep, with a broad, fairly steep profile and a flat base. It may have formed the perimeter of a sub-rectangular enclosure, but with such a short length lying within the excavated area this cannot be established with certainty. The primary fill appeared to have accumulated from the western edge, perhaps suggesting the presence of a bank on this side. There was a shallow, flat-based recut through the upper fill, ditch 225, which followed the line of the earlier ditch, indicating a major episode of reinstatement.

Ditch 143 was 1.75m wide by 0.55m deep, although to the east it became very shallow, averaging 0.15m deep. The fill of firm greyish brown sandy silt was consistent throughout. Large amounts of pottery date it securely to the late Iron Age, while large amounts of animal bone attest to nearby settlement. It may have formed either an internal sub-division within a larger enclosure, or part of an external ditch system.

Further minor ditch and gully systems lay to the south, also either parallel with or at right angles to ditch 59. These were all quite shallow, at 0.20-0.30m deep. Ditches 39 and 151, aligned at right-angles, were very similar in profile and fill, and may have formed an L-shaped system. Ditch 187 ran parallel to ditch 151 and 10m to the south. This ditch also contained late Iron Age pottery. Ditch 233, which butt-ended 2m from ditch 39, contained Gallo-Belgic pottery (1st century AD) and a fragment of quern.

Two ditches, 63 and 169, ran on parallel north-south alignments, which were slightly oblique to the late Iron Age ditches, and ditch 169 cut two late Iron Age ditches, 151 and 187. Ditch 63 was 0.74m wide by 0.30m deep while ditch 169 was only 0.20m deep. Both ditches produced pottery of late Iron Age/early Roman date, which suggests that in the later 1st century AD at least part of the late Iron Age boundary system had been abandoned, and was replaced by a new system of boundary ditches on a different alignment. The western ditch, 63, terminated next to ditch 59, perhaps suggesting that this major boundary or enclosure ditch had been retained.

Iron Age and Roman pits and postholes

There was a scatter of oval and circular pits which are assumed to be of contemporary date, although only a few produced datable pottery (Fig 2). Three pits at the southern end of the site, including pit 85, had similar steep-sided and flat bottomed profiles and similar dark grey silty

clay fills. Several undated small pits or postholes were scattered in the vicinity. In the northern part of the site, oval pit 153 contained Iron Age pottery.

There were several clusters of postholes across the northern part of the site, two of which formed discrete clusters (Fig 2). A cluster of 15 postholes (Group 40) formed a square structure roughly 7m across. The rectangular plan form and a nail from one of the postholes, suggests a Roman date, but the evidence is too meagre to be conclusive. Group 98 was a rectangular arrangement of four postholes forming a small structure 2.5m long and 1.0m wide, perhaps a rack for hanging or drying cloth or skins. To the east there was a large irregular cluster of postholes, Group 3, which included a line of five postholes running north-south, possibly forming part of a fence-line.

Early Roman pit 115 with goose burial

On the northern edge of the site there was a large, sub-circular pit 2.4m wide and 1.9m deep with steep, well-formed edges and a curved base (Fig 7). On top of the primary silting there was an articulated goose skeleton (Fig 7 and Plate 5), presumably deliberately deposited. Above this there was a complex sequence of fills, including redeposited gravel, 113 and 114, which was probably a result of rapid backfilling. Within the dumped gravel there was a jumbled partial dog skeleton (Plate 6). The pit fills contained Iron Age and early Roman pottery.

4.2 Iron Age and Roman pottery by Andy Fawcett

A total of 236 sherds, weighing 3440g, with a rim estimated vessel equivalent (EVE) of 1.84 were recorded from the evaluation and excavation stages of work. The vast majority of pottery on the site is typical of the later Iron Age, but most features contain few sherds with little diagnostic data and are therefore considered poorly dated. The ceramics as a whole display only slight abrasion and are deemed to be in their original place of deposition or discard.

Fabrics

A full record of fabrics is listed below but specific detail, such as unsourced coarsewares and detailed fabric division can be found in the site archive. The fabric codes are based upon a style developed by Going (1987) and further enhanced by Tomber and Dore (1998). The few form matches present within the assemblage are taken from Thompson's late Iron Age and early Roman corpus (1982).

UNS OX	Unsourced oxidised ware,
BSW	Black surfaced/Romanising grey ware
HAD RE 1	Hadham reduced ware (category 1)
SOB GT	Southern British grog tempered ware
UNS SH	Unsourced shell tempered ware
UNS SG	Unsourced sand and grogged ware
UNS SB	Unsourced sand based ware
UNS SC	Unsourced sand and calcite ware
UNS SO	Unsourced sand and organic tempered ware
UNS CT	Unsourced chalk tempered ware,
UNS SF	Unsourced sand and flint tempered ware.

Conclusions

The only context with a useful assemblage is Ditch 143, containing some 115 sherds dated to the late Iron Age. The fabrics are wholly compatible with those encountered at Prickwillow Road, Ely (Jackson 2003, 25) and from the Ely/Haddenham area (Fawcett 2006). They are principally composed of shell, grog and ill-sorted sand, the latter often with varying amounts of grog (typical locally produced fabrics found on the edge of the main grog tempering area).

The form assemblage from this feature is restricted to everted rim jars most of which are too small to be identified beyond their general class. Nonetheless, three clear forms are noted: an everted rim necked jar (B1-1), a long necked version of B1-1 (B1-4) and a small shouldered jar with an everted rim (C8-1). It is the last two forms that provide the pre-conquest date from Thompson's *corpus* (1982). However, a slight 'incursion' into the very early Roman period cannot entirely be ruled out, though on balance the forms and fabrics suggest not.

Pit 115 holds the best verification of an early Roman presence on the site, but the only diagnostic element within this group is a small reed-rimmed bowl rim. A single sherd of Hadham reduced ware hints at some form of later Roman activity. Indeed, the identification of a coin dated to AD 260 during the evaluation stage (Hatton 2004, 16) seems to confirm this possibility.
Little can be gleaned from this small assemblage to help interpret the status, economy or the activity that this site represents, although it more likely signifies low grade rural settlement.

4.3 Ceramic building material by Pat Chapman

There is a small piece of roof tile and two small fragments of brick or tile. All these items are in a hard red brown fabric and are probably Roman in date.

4.4 Other finds by Tora Hylton

An iron nail complete with tapered rectangular-sectioned shank and T-shaped head with ferruginous wood deposits visible on the shank, length 65mm, came from a posthole in Group 40.

4.5 Animal bone by Philip Armitage

Of the total of 248 hand collected bones, 220 (88.7% of the total) were identified to taxon/species and anatomy, together with sieve-retrieved bones from 12 soil samples. They represent the usual range of domesticates – cattle, sheep and pig in descending order of frequency - including the skeletons of a goose and a dog in early Roman pit 115.

The sieved material has revealed some additional information, of most interest being the freshwater fish bones – roach, perch, pike and eel, some of these are from pre-Roman contexts suggesting a little recorded aspect to the diet of the native population. The pike tooth from Ditch 143 was over twice the size of modern examples indicating a huge fish, probably over a metre in length.

Goose skeleton from Pit 115
Virtually all the major parts of the (articulated) skeleton of a mature goose are represented apart from the cervical vertebrae and extremities of the feet (Fig 7 and Plate 5). There is some post-depositional damage to the skull, mandibles, and the sternum (all anciently broken) and part of the pelvis is eroded/leached, possibly from contact with groundwater during burial. There is no evidence of butchery/de-fleshing/cooking or consumption and it would appear the entire goose had been disposed of uneaten in the pit. Such complete/semi-complete goose skeletons are rare archaeological finds and a search through the University of Sheffield database carried out by Pirnie (pers comm) turned up only one reference to "several partial goose skeletons" from a late 10th-century pit in Lincoln (O'Connor 1982, 41). Another colleague (Grimm pers comm) pointed out a further reference to a nearly complete skeleton of goose/grey-lag from an early 14th-century rubbish dump at Alkmaar, The Netherlands (Clason 1972, 101).

Wild or domestic?
As discussed by O'Connor (1982, 42) modern domestic goose is larger and more heavily built than the modern wild grey-lag but these differences may not be so apparent in early archaeological specimens. It is therefore not possible to say with any degree of certainty whether the Bluntisham goose was a domestic locally reared bird or a wild grey-lag hunted in surrounding marshes.

Gnawed bones.
Of particular interest in the Bluntisham specimen is the evidence of animal gnawing on proximal and distal ends of conjoining (articulated) bones: distal radius/ulna & proximal humerus; distal femur & proximal tibiotarsus; distal tibiotarsus & proximal tarsometatarsus. The epiphyseal ends of these bone elements exhibit tooth (cusp) puncture marks and small areas of surface destruction, with the most severe destruction of bone structure seen in the distal articular (condylar) ends of the two tarsometatarsi. This type and pattern of damage is observed in bones chewed/gnawed/crunched by cats (see O'Connor 2000, 49 and Moran & O'Connor 1992) but could also be attributed to polecat (Somerville pers comm).

Bones of a dog from Pit 115
The skull and the virtually complete skeleton of a dog was recovered but, unlike the goose, the bones were not articulated but were "jumbled up", as if parts of the semi-decomposed carcass had been thrown unceremoniously into the pit. No cause of death could be established from the skeletal remains but it is noteworthy that two of the cervical vertebrae (3rd & 5th) exhibit chopping marks suggesting repeated blows to the left side of the neck. Whatever the sharp implement used (axe, chopper or large knife) the blows apparently had not been delivered with sufficient force to cause decapitation.

Age and sex
The dog was a fully-grown adult at time of death, as indicated by the full dentition and the fusion in all epiphyses of the long bones. Using the criteria of The and Trouth (1976), the surface markings of the basioccipital of the skull indicate the animal was male; this identification is confirmed by the presence of an os penis.

Stature
Based on the length measurements in the limb bones, the shoulder height in the Bluntisham dog is estimated to have been 608mm (method of Harcourt 1974) and therefore taller than the Iron Age dogs from Gussage All Saints, Dorset, documented by Harcourt (1979) (360 to 580mm) but comparable to the tallest dog (shoulder height 605mm) at Ashville Trading Estate, Oxfordshire, recorded by Wilson (1978).

Appearance & Type
In terms of head shape, the Bluntisham animal would have conformed to what Harcourt (1974) classified as a "plain dog"; characterised by an unmodified cranium with fairly broad zygomatic arches (cephalic index 45.5), and with a snout of moderate length (snout index 51.3). The Bluntisham dog however had a relatively narrow muzzle (snout width index 37.6) unlike the fairly broad form seen in most other Iron Age dogs. There is a prominent saggittal crest and parietal ridge, which are cranial features found in modern terriers.

Rough diet and harsh treatment
From the generally poor condition of its teeth, the Bluntisham dog during its lifetime apparently had a rough diet. There is a considerable degree of wear in the lower and upper carnassials/molar teeth and ante-mortem loss of lower premolar cheek teeth with healed over (bone filled) alveoli (as in place of the right P2, & left P4). The point of the left canine is broken off and the remaining stump is much worn down/rounded. Further evidence of the unfortunate life history of the Bluntisham dog is provided by the presence of a healed traumatic injury to the right side of the skull just above and behind the eye socket – there is an impacted elliptical (22.2 X 12.1mm)

area of the frontal bone located just posterior to the zygomatic process and immediately below the temporal line. Owing to the thickness/robustness of the bone in the affected cranial region, this injury apparently did not penetrate through to the brain cavity. In time the external wound healed over but the impact injury left in its wake a shallow crater-like depression in the skull.

Similar traumatic lesions have been recorded in early Neolithic to Roman dogs from other archaeological sites, which have been interpreted as caused by humans striking at the head of dogs "to stave off aggressive behaviour on the part of the animals or for other reasons of control or rebuke" (see Baker and Brothwell 1980, 93-94). There is perhaps an alternative explanation, which may be advanced if the Bluntisham dog had been a working dog deployed in herding livestock. Whilst the dog was assisting its owner in moving cattle, one of the cows could have become sufficiently agitated to kick out at the head of the dog in a defensive or aggressive action, causing the observed lesion.

Pike dentary

Pike is represented by a left dentary from the fill of ditch 143. The extraordinary large size of this dentary indicates it derived from a very large fish probably of great age when caught for eating. The anterior height measures 11.2mm in comparison to 4.4mm for a modern specimen with a total length of 457mm (Morales and Rosenlund 1979). According to Newdick (1979) adult pike range in size from 400mm to 1000mm and live to a considerable age (twenty years is not uncommon). The Bluntisham pike probably was at least 1000mm in length (if not greater than this) as evidenced by comparison with the dentary from the modern specimen. Very large pike have also been recorded from two other prehistoric sites in Britain: at Runnymeade (contexts dated to the Middle Neolithic and to the Late Bronze Age) and at Haddenham (Iron Age) (Serjeantson, Wales and Evans 1994).

Conclusion

Analysis of the late Iron Age/early Roman period domestic food debris has revealed a diet dominated by meat from cattle, which was supplemented by mutton, pork, and the occasional freshwater fish. There is no evidence for consumption of domestic fowl and it would appear from the absence of butchery marks on its skeleton that the inhabitants had not eaten the flesh of the goose found in pit 115. Perhaps this goose had been a victim of a predator (polecat or young fox?) or had died from disease, and the flesh in consequence was considered unfit for human consumption.

Another "mystery" concerns the dog represented by the skeletal remains found in pit 115. If this dog had been kept for herding and controlling the livestock, why was such a useful animal apparently treated so badly? It does appear, however, that dogs in the prehistoric period frequently were kept under far from ideal conditions, including feeding them poor quality/rough food, as evidenced by their heavily worn teeth and ante-mortem tooth loss. Both of these conditions featured in the Iron Age dogs from Abingdon, Oxfordshire, examined by Wilson (1978, 125, 135).

4.6 Charred plant remains by Pam Grinter

Samples from late Iron Age and Roman features were not very productive and yielded an unremarkable range of cereal and weed species typical of the period.

4.7 Discussion

Little can be said about the nature of the settlement at this time due to the limited area available and the generally mundane nature of the excavated material. The pottery is generally within the late Iron Age tradition and there is also some early Roman pottery, so it appears that the

occupation lasted into later 1st century AD if not beyond. The site is likely to have been part of a farming settlement. The charred plant remains included cereal grains, but these were poorly preserved. The animal bones showed the usual range of domestic animals for this period, although there were also fish bones which are unusual before the Roman period (Serjeantson, Wales and Evans 1994).

The settlement at Bluntisham lies within a region where Iron Age and Roman settlements are common if little understood (Fig 8). Most information comes from the gravel areas on the fen skirtland to the east and south - from cropmarks, finds made casually or unsystematically (in gravel quarries in particular), and from modern excavations. There is less information from the higher ground where the records relate mostly to occasional finds.

There are reported findings of Iron Age pottery in Bluntisham, about 300m north-east of the present site, and 3rd-4th-century Roman coins from a similar area. These finds encompass a wide range of date and there is no reason to suspect a link with the present site. There are also Iron Age and Roman potsherds recorded further north near Colne.

Clear evidence of settlement is relatively rare on the high ground, although recent excavations ahead of housing development at Parkall Road, Somersham, have revealed early to middle Iron Age remains that are clearly part of a much wider settlement (Roberts 2002). It is to be suspected that more sites of this nature await discovery where systematic fieldwork is undertaken. Roman finds have also come from this area.

From Causeway Meadow, within a kilometre east of Bluntisham, stray finds include a small bronze statue of Jupiter, which as led to the suggestion of a later Roman religious site here. There is also possible evidence of a Roman period shrine at Crane's Fen Terrace, south of the Ouse, following the recovery during an evaluation of a perforated human skull and an ulna, together with a sheep burial (Evans and Webley 2003).

There have been extensive investigations on the fen edge to the east. Both Iron Age and Roman settlements have been mapped from aerial photographs and excavated ahead of mineral extraction at the Camp Ground, Colne Fen complex (Regan, Evans and Webley 2004) and the Rhee Lakeside settlements (Regan 2003; Appleby *et al* 2007), and a Roman settlement was excavated earlier at Fenland Edge, Earith (White 1967). A large Roman settlement was partly examined at Fen Drove, Earith (Green 1955), while finds from Earith itself suggest that a Roman settlement of some sort underlies the present town.

A little over 1km south-west of Bluntisham, extensive cropmarks and remains recovered from the Barleycroft Farm area include the possible evidence of a Roman villa. Similar dense complexes of cropmarks and surface finds from the fen skirtland north of Willingham suggest a villa at West Fen, and there also enclosures and droveways at Middle Fen.

The present site contributes to the picture of prehistoric and Roman settlement in the fen hinterland, although this small intervention is ill-equipped to contribute to an understanding of the detail and trajectory of settlement and landscape development. There is considerable research interest in assessing the degree of continuity from the Iron Age to Roman periods, and examining the influence of the Roman military and administrative system upon the indigenous population, particularly in a region where historical records indicate a marked degree of friction at the time of the conquest and there is continued archaeological debate about the status of the fenland in Roman times.

5 LATER LAND USE

5.1 Post-medieval quarries and recent pits

Along the eastern margin of the site there were extensive irregular areas of disturbed ground from post-medieval quarrying, which were not investigated (Fig 2).

There was also a sparse scatter of small pits or recent origin, one of which was cut into a backfilled quarry. Over part of the north-eastern quarry there was a rectangular bottle dump (Fig 2).

5.2 Post-medieval finds by Tora Hylton

A cast copper alloy hooked tag was recovered from subsoil deposits. It comprises a circular plate ornamented with a floral/rose motif, and a hook protrudes from the bottom and a squared loop at the top. Hooked tags of this type date to the 16th and 17th centuries and were used to fasten clothing.

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Appendix 1: Worked flint catalogue by Andrew Mudd

Feature	*Context*	*Description*
Pit 216	228	Tertiary blade fragment with shoulder notch. Soft hammer. Black flint
	228	Heavily calcined secondary pebble flake fragment. Possible edge retouch
	228	Primary flake from a pebble. Half patinated white
	228	Long thin flake, which could be described as a blade although dorsal surface shows previous flake removals from several directions. Chert.
	228	Broken secondary flake with light crazing from heat. Possibly utilised on one edge. Hard hammer
	228	Broken lump of cherty flint
	228	Broken pebble with thin white cortex. Probably natural.
	228	Broken lump of black flint showing hard hammer bashing, possibly attempting flake removal
Ditch 59	57	Secondary flake from gravel core. Dorsal face shows 1 flake and 1 trim removal
	57	Small, broken, secondary flake. Gravel flint
	57	Scraper on a thin, broken, secondary flake. Retouch on distal end and possibly side. Thick white cortex which has been trimmed
	58	Bashed lump from pebble. Possibly utilised but perhaps more likely just edge damage
	58	Secondary flake with thin white cortex. Hard hammer struck with hinge fracture
	58	Bashed lump with pronounced cone of percussion and hinge fracture
	58	Tertiary flake fragment
	58	Thick, broken flake or bashed lump
Pit 115	110	Bashed lump from a pebble. Probably natural break
	111	Small, sharp tertiary flake
	114	Scraper on a thick flake, lightly crazed by heat. The end retouch angle is about 90°. The dorsal face shows several heavy attempts at flake removal
	114	Fine thin flake with 2 dorsal flake removal scars. Possibly utilised as a small cutting implement
	114	Thick, hard hammer struck, broken flake
	114	Small bashed piece
	114	Tiny fragment of bashed pebble
	114	Fragment of broken pebble
	114	Large broken pebble
	194	Thick, broken tertiary flake
	194	Broken pebble fragment. Possibly natural
Ditch 143	142	Secondary flake from a pebble. Dorsal face shows several previous flake removals
Ditch 69	69	Bashed lump of gravel flint. Probably natural

Appendix 2: Iron Age and Roman pottery catalogue by A R Fawcett

Fabric & Form Key

BSW	Black surfaced/Romanising wares
GRS	Unsourced sandy grey wares
UNS SB	Unsourced sand based wares
UNS SS	Unsourced sand & shell based wares
UNS SH	Unsourced shell tempered ware
UNS SG	Unsourced sand & grog tempered ware
SOB GT	Southern British grog tempered ware
UNS FT	Unsourced flint tempered ware

G = jar, italics = uncertainty.

Catalogue

Key: C = bowl, G = jar, ND = non-diagnostic, tsm = too small for identification, asv = all the same vessel, sli = slightly abraded, abr = abraded.

Evaluation

Pit 12				
10 Late Medieval				
Glazed oxidised ware	1	46g	0.07	Dish late med 0.07 sli
Grave 15 (=pit 213)				
13 LIA?				
UNS SC	1	10g	0.06	?G Tho C1-2 style LIA?+ 0.06 sli
Ditch 17				
16 Roman				
BSW	1	2g	-	ND, sli
UNS SH	1	4g	-	ND, sli
Total	2	6g	-	
Pit 19				
18 Unknown				
?Pot	1	3g	-	ND, abr
Ditch 22				
23 MIA-LIA				
UNS SO	4	32g	-	ND, IA, sli
UNS SH	6	137g	0.04	G [?storage] IA 0.04 abr-sli
UNS SG	2	3g	-	ND, sli
SOB GT	1	3g	-	ND, 1st C abr
Total	13	175g	0.04	
Ditch 33				
32 LIA to c AD70				
UNS SG	18	153g	0.18	Gx2 B1-1 1st C 0.018 sli

Pit 40				
36 LIA to c AD50/60				
UNS OX	1	9g	-	ND, sli
UNS SH	1	6g	-	ND, abr
UNS SO	1	10g	0.04	G tsm style C2 or 4 1st C 0.04 sli
SOB GT	1	8g	0.06	G tsm style 1st C 0.06 sli
Total	4	33g	0.10	
38 LIA to cAD70				
UNS SG	3	37g	-	ND, 1st C sli
Pit 45				
44 Early Roman				
BSW	1	12g	0.06	G tsm 0.06 sli
Ditch 59				
60 LIA to Roman				
UNS SH	1	14g	-	ND, sli
Trench 5				
(U/S) LIA to cAD70				
SOB GT	1	44g	-	ND, 1st C sli
Excavation				
Ditch 59				
57 LIA?+				
UNS SG	3	26g	-	ND, [asv] sli
UNS SO	1	2g	-	ND, abr
UNS SH	1	44g	-	ND, abr
Total	5	72g	-	
58 MIA to LIA				
UNS SG	2	9g	-	ND, 1st C sli
UNS SO	1	29g	-	ND, [HM] sli
UNS SC	3	30g	-	ND, [HM] sli
UNS SH	5	18g	-	ND, abr
UNS CT	3	38g	-	ND, unknown rim abr
Total	14	124g	-	
Gully 67				
66 Roman				
HAD RE 1	1	5g	-	ND, [not a classic version of the fabric] abr
UNS SH	1	8g	-	ND, abr
Total	2	13g	-	
Ditch 69				
68 c MIA				
UNS SF	1	12g	-	ND, [HM] (similar to fab 5, Prickwillow) sli
69 Unknown				
?Pot	1	6g	-	ND, very

Posthole 95				
94 LIA to c AD70				
UNS SH	1	4g	-	ND, abr
Pit 115				
110 Early Roman				
BSW	2	7g	-	ND, [asv] sli
111 Mid/late 1st to early/mid 2nd century AD				
BSW	3	12g	0.05	C reed rim tsm M/L1st-E/M2nd C abr-sli
UNS SC	1	6g	-	ND, abr
Total	4	18g	0.05	
114 LIA to c AD70				
UNS OX	1	<1g	-	ND, very
BSW	2	13g	-	ND, sli
SOB GT	1	2g	-	ND, 1st C very
UNS SG	1	7g	-	ND, 1st C sli
Total	5	23g	-	
194 Mid to later 1st century AD				
GRS	1	17g	-	ND, abr
BSW	1	4g	-	ND, sli
SOB GT	1	1g	-	ND, 1st C very
Total	3	22g	-	
Ditch 143				
142 LIA				
UNS SH	24	419g	0.07	Gx3 tsm style 1st C 0.07, base 0.08 abr-sli
SOB GT	19	94g	0.09	G tsm style Tho B1 1st C 0.09 abr
UNS SG	21	387g	0.28	G Tho C8-1 LIA 0.12, Gx2 tsm 0.16, base x3 0.58 sli
UNS SB	45	1060g	0.55	G Tho B1-1 1st C 0.23, G Tho B1-4 c20BC-AD50, 0.32, base 0.49 sli
UNS SC	6	92g	0.09	G tsm 0.04, ?T tsm 0.05 abr-sli
Total	115	2052g	1.08	
Pit 145				
144 LIA/Early Roman				
?POT	4	12g	-	ND, sli
Pit 153				
152 LIA				
UNS GS (+distinct shell)	1	66g	0.05	G Tho C8-1 LIA 0.05 sli

Ditch 169				
168 LIA to c AD70				
UNS SG	1	5g	-	ND, abr
Gully 187				
222 LIA to c AD70?+				
UNS SH	2	12g	-	ND, ?1st C sli
Pit 199				
198 EIA-LIA				
UNS SO	1	7g	-	ND, ?HM sli
Gully 201				
200 LIA to c AD70				
SOB GT	3	23g	-	ND, 1st C abr
UNS SG	1	8g	-	ND, 1st C sli
UNS CT [BSW style]	1	8g	-	ND, ?1st C sli
Total	5	39g	-	
Pit 221				
220 LIA				
SOB GT	10	232g	-	ND, 1st C base 0.32 sli
UNS SG	1	32g	-	ND, sli
UNS SH	3	53g	0.06	G [HM] tsm IA 0.06 sli
Total	14	317g	0.06	
Pit 224				
223 LIA to cAD70				
SOB GT	2	7g	-	ND, 1st C sli

Appendix 3: Disarticulated human bone from Beaker pit 216 by Sharon Clough

Inventory of bone:

Context 214

1 right rib
1 distal shaft of right fibula
Left and right calcaneus
2 metacarpals (one being the shaft of metacarpal 1)- unsided
1 proximal 1st phalanx of the foot
1 middle phalanx of the hand- unsided
11 unidentified fragments of human bone

Bone has eroded flaking surface, but robust.
It represents minimum number of 1 adult individual.

Context 228

1 upper first left molar, with attrition - mature adult

Appendix 4: Human osteology for Iron Age burial 211 by Jonny Geber

Osteological methodology

General terminology and equipment used

The anatomical terminology used in this report strictly accords with international nomenclature described by Feneis and Dauber (2000). The descriptive teeth formula used is the Zsigmondy system (Zsigmondy 1861 in Hillson 2003, 8-9). The vertebrae are usually only mentioned in an abbreviated form, for example, the fifth cervical vertebra is C5, the eighth thoracic vertebra is T8, the second lumbar vertebra is L2 and the first sacral vertebra is S1.

An osteometric board was used to measure the length of the long bones with 0.5mm accuracy and a sliding calliper with 0.01mm accuracy. All bones have been examined macroscopically. No weights were taken and the bones have not been reconstructed. Where necessary, and ensuring that no damage was done, some bone fragments were temporarily united using masking tape for the purpose of measurements and description.

Estimation of age at death

Age at death was assessed from the degeneration of the auricular surface on the hipbones (Lovejoy *et al* 1985), dental attrition (Brothwell 1981; Miles 1962) and ectocranial suture obliteration (Meindl and Lovejoy 1985).

Estimation of sex

Osteological sex was estimated according to the descriptions of Sjøvold (1988) using the following categories:

-2	Hyperfeminine
-1	Feminine
0	Indeterminable sex *(Allophysis)*
+1	Masculine
+2	Hypermasculine

Osteometric methods for sex estimations were made using the length of the glenoid cavity (Bass 1995, 129), the epicondylar breadth of the humerus (France in France 1998), and the maximum diameter of the femoral head, and the epicondylar breadth of the femur (Pearson in Bass 1995, 230).

Morphology of the hipbones was used as the primary indicator of sex, and cranial morphology as the secondary indicator. Sexually diamorphic osteometrics were taken into consideration but are the least reliable of the three due to large interpopulational diversity.

Estimation of stature

Calculation of stature was estimated using the maximum length of the long bones and was based on methods for Caucasians developed by Sjøvold (1990) and by Trotter and Gleser (Trotter 1970). Sjøvold's method does not overestimate the stature of short persons and underestimate the stature of tall persons, unlike the methods developed by Trotter and Gleser. However, use of the latter method is standard practice in British osteology (Brickley and McKinley 2004).

The most precise formula (*i.e.* the one with the smallest standard deviation), which in this case was the femur, was used to determine stature. The mean value of the calculations from the left and right side was used with Sjøvold's method, while the combined lengths of the left femur and the left tibia was used with the Trotter and Gleser method.

For comparative studies on stature between populations, it is recommended to present the actual bone measurement rather than the calculated estimates (Brothwell and Zakrzewski 2004, 33). The raw long bone lengths are presented in Table 2.

Non-metric traits
The descriptions given in Berry and Berry (1967) and Finnegan (1978) were used to identify non-metric traits.

Metrics
Measurements on the skull and postcranial elements were taken in accordance with descriptions made in Brothwell (1981). The raw bone measurements are presented in Tables 1 and 2.

Skeletal and dental pathology
The terminology and descriptions of the skeletal pathologies used in the report are based upon Ortner (2003) and Aufderheide and Rodríguez-Martín (1998).

Dental pathologies were described according to Brinch and Møller-Christensen (1949), Hillson (2003) and Ortner (2003). Dental calculus was recorded using Brothwell's methods (1981), and dental enamel hypoplasia using the methods of Goodman and Song (1999). Dental caries were described by their location on the tooth: occlusal caries, approximal caries or cervical caries (Brinch and Møller-Christensen 1949).

Conclusion

The skeletal remains were those of an older adult male, aged 45-49 years, with a stature of approximately 1.66m. He was suffering from a chronic infection in his right lung that was active at the time of his death. Additional articular facets on the bones of his ankle joints and possible a relating injury of his right foot indicated that he was often assumed a squatting posture during life. Dental enamel hypoplasia on his front teeth indicated that he had suffered at least two periods of physical stress as a young child.

Catalogue

Skeleton number: 211
Completeness: 95%: Virtually complete skeleton
Preservation: Good
Period: Iron Age
Age: 45-49 years *(Older Adult)*
Sex: Male (+1)
Stature: 1.66 ± 0.04m (Sjøvold); 1.68± 0.03m (Trotter and Gleser)
Dental inventory:

	DC	C											MC	MC	
													C	C	
X	P	P	P	P	P	P	/	P	P	P	P	P	P	P	-
8	7	6	5	4	3	2	1	1	2	3	4	5	6	7	8
8	7	6	5	4	3	2	1	1	2	3	4	5	6	7	8
P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P
R															
PU															

Abbreviations:

1	=	dental alveolar present	R	=	root only
⊣	=	dental alveolar not present	PU	=	pulp exposed
P	=	tooth present	DCC	=	distal cervical caries
X	=	antemortem tooth loss	MCC	=	mesial cervical caries
/	=	postmortem tooth loss	-	=	unknown antemortem or postmortem tooth loss

Dental Pathology: Antemortem tooth loss, cervical caries, enamel hypoplasia (2 and 4 years), slight dental attrition, minor to moderate dental calculus deposits.

Skeletal pathology: Healed maxillary sinusitis in the right maxilla (9 x 7mm). Minor to moderate osteophytes on the mandible condyles with corresponding osteophytes on the tempero-mandibular joints on the temporal bones. Minor to considerable osteophytes on the bodies of C3, T7-T9, T11-L2 and L5. Moderate and considerable porosity on the body of L1. Minor to considerable Schmorl's nodes on T4-S1, increasing caudally. Minor porosity on the left inferior articular process of T8. Moderate osteophytes on the right inferior articular process of L2. Minor internally ossified ligamentum flavum on T3. A chest infection with reactive periostitis on the pleural surface of the right ribs (> 9); the most extensive lesions appearing on the true ribs. Healed vertical hairline fracture on the pleural surface of one rib (4mm). A dorso-lateral plaque formation at the head of the right first metacarpal (~ 8 x 9mm). Reactive periostitis on the diaphyses on both tibiae (left: 92 x 10 mm; right: 32 x 19mm, 11 x 9mm, 41 x 12mm, 17 x 17mm, 16 x 9mm); more extensive on the right tibia. Reactive periostitis on the medial surface of the right calcaneus (> 30 x 9mm).

Metrical indices:
Cranial: 72.32 *(Dolichocephalic)*
Platymeric (left): 79.46 *(Platymeria)*
Platymeric (right): 78.65 *(Platymeria)*
Platycnemic (left): 70.06 *(Eurycnemia)*
Platycnemic (right): 67.22 *(Mesocnemia)*

Non-metric traits and anomalies: Bilateral parietal foramina, bilateral plaque formations, bilateral third trochanteres, bilateral vastus notches, bilateral medial tibial squatting facets, medial talar squatting facet (right).

Table 1: Craniometrics (mm)

Measurement	Left	Right	Unsided
L	--	--	194.00
B	--	--	140.31
B'	--	--	110.41
G'_1	--	--	52.39
G'_2	--	--	40.78
S_1	--	--	131.00
S_2	--	--	139.00
S_3	--	--	112.00
S'_1	--	--	115.30
S'_2	--	--	117.11
S'_3	--	--	88.96
CrH	72.16	71.99	--
RB'	36.94	37.46	--
CYL	21.91	23.37	--
W_1	--	--	117.31
ZZ	--	--	48.51
H_1	--	--	38.32
GoGo	--	--	103.45
ML	--	--	105.5

Table 2: Osteometrics (mm)

Measurement	Left	Right
FeL_1	452.00	442.00
FeL_2	446.00	439.50
FeD_1	29.60	30.95
FeD_2	37.25	39.35
FeE_1	81.86	82.33
TiL_1	353.00	--
TiD_1	40.01	40.09
TiD_2	28.03	26.95
TiE_1	79.15	77.79
HuL_1	--	332.50
HuE_1	66.91	65.81
UiL_1	275.50	--

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Appendix 5: The mammal, bird and fish bones

by Philip L Armitage

Introduction

A total of 248 hand-collected animal bone elements/fragments were submitted for identification and analysis. Of these, 220 (88.7% of the total) are identified to taxon/species and anatomy, and 28 (11.3%) remain unidentified owing the absence of diagnostic features.

Seven species are represented, five mammals, one bird and one fish: in order of abundance (based on estimated minimum number of individuals) these are domestic cattle, sheep, domestic pig, aurochs (wild ox), dog, goose, and pike. No amphibians or reptiles are represented.

NISP summaries for the groups of bone from the two periods represented at the site are given in Table 1 (early Bronze Age) and Table 2 (late Iron Age/early Roman period).

In addition to the hand-collected bones, the sieved bones from 12 soil samples (1 Bronze Age and 11 late Iron Age / early Roman) were identified as far as possible. These samples expanded the range of species from the late Iron Age / early Roman samples to included amphibians, reptiles and fish.

Taphonomy

With the exception of the specimens noted below, all of the animal bones are well-preserved and have the appearance of having been rapidly buried. There are however two scrappy/eroded cattle-sized fragments from 186, fill of late Iron Age/early Roman-period ditch 187, and a single eroded/leached cattle-sized long bone fragment from 228, fill of early Bronze Age pit 216. Four dog gnawed bones are identified (all from late Iron Age/early Roman period contexts): 1 scapula and 1 tibia of pig from 58, fill of ditch 59; 1 sheep radius from 96, fill of pit 97; 1 cattle first phalanx from ditch 169. Evidence of possible cat chewing/gnawing on the goose skeleton from 195 is considered in detail, below. A cattle cervical vertebra from ditch 169 had been transversely chopped. Knife cuts on the surfaces of the four bone elements listed below are interpreted as the result of de-fleshing: 1 scapula and 1 tibia of pig from 58; 1 cattle rib and 1 pig mandible, both from 142 fill of ditch 143.

Bones from the early Bronze Age pit 216

Hand collected bones

Table 1: Early Bronze Age. Summary counts of the total numbers of identified specimens (NISP) by taxon/species

Taxon/Species		NISP
MAMMAL:		
Domestic cattle	***Bos*** (domestic)	2
Wild cattle (auroch)	***Bos primigenius***	1
Sheep	***Ovis*** (domestic)	1

Sieved Bones, fill 228

All the bone elements/fragments listed below are mammalian:

Unburnt bone:

Cf. Cattle ***Bos*** (domestic)
1 piece of rib shaft; with superficial cut marks

Sheep ***Ovis*** (domestic)
1 lower first molar (young animal)
2 fragments of another cheek tooth

Unidentified mammal bone
26+ very small, scrappy abraded fragments

Burnt (charred/blackened) bone:
3 very small/"scrappy" fragments

There is also a blackened distal epiphysis/part of shaft of a **small mammal** (slightly larger than a stoat). It may be the dark colouration is a result of staining from contact with ground water? This specimen remains to be identified.

Burnt (calcined) bone:

1 piece of long bone shaft; with superficial cut marks

1 sheep ***Ovis*** (domestic) calcaneum; epiphysis unfused (young animal)

10 + very small/"scrappy" fragments – which are not possible to determine whether these are human and/or animal

Late Iron Age/early Roman period

Hand collected bones

Table 3: Late Iron Age/Early Roman Period. Summary counts of the total numbers of identified specimens (NISP) by taxon/species

Taxon/Species		NISP
MAMMAL:		
Domestic cattle	***Bos*** (domestic)	50
Sheep	***Ovis*** (domestic)	21
Domestic pig	***Sus*** (domestic)	10
Dog	***Canis*** (domestic)	91(a)
BIRD:		
Greylag/domestic goose	***Anser anser***/(domestic)	43(b)
FISH:		
Pike	***Esox lucius***	1

Notes: (a) parts of a single skeleton; (b) articulated skeleton

The Livestock
Cattle – Based on the dental eruption and wear in the mandibles from contexts 96 and 200, young calves as well as adult cattle had been slaughtered for their meat.

Sheep – The sheep resembled the primitive modern Soay sheep, as evidenced by the young adult female horn core from 57 and radius from 96, which came from an adult with an estimated withers height of 50.8 cm (calculated from the bone length after the method of Teichert). Two of

the sheep were slaughtered at ages 2 – 3 years and 3 – 4 years, respectively (aged on tooth eruption and wear in their mandibles, method of Payne 1973).

Pig – Pigs were killed at age 2 – 3 years, and included at least two males as evidenced by the morphology of the canine teeth (criteria of Mayer & Brisbin 1988) in specimens from 142 and 196.

Bones from sieved samples

Pit 85, fill 84

Mammal bones:
Domestic cattle ***Bos*** (domestic): 1 lower premolar tooth
House mouse ***Mus musculus:*** 1 mandible
Unidentified mammal bones: 39 very small, scrappy fragments

Fish bones:
Roach ***Rutilus rutilus:*** 1 pharyngeal bone; complete;
measurements: Length (L) 15.5mm Width (Da) 1.84mm
Estimated Total length (TL) is 229mm
(Method of Libois & Hallet-Libois 1988)
1 pharyngeal bone; incomplete; measurement: Width (Da) 1.92mm
Estimated Total length (TL) is 238 mm
(Method of Libois & Hallet-Libois 1988)
Cyprinid (possibly roach): 1 dentary
Freshwater eel ***Anguilla anguilla:*** 1 angulare; 1 cleithrum (Chord length CL = 18.64 mm); 33 vertebrae
Perch ***Perca fluviatilis:*** 2 scales
Pike ***Esox lucius:*** 1 dentary; left; measurement: anterior height 3.8mm
Unidentified fish species: 8 spines & bone fragments

Reptile bone:
Grass snake ***Natrix natrix:*** 1 vertebra

Amphibian bones:
Common frog ***Rana temporaria:*** 2 long bones (including one femur)

Pit 97, fill 96
Mammal bones:
Domestic cattle ***Bos*** (domestic): 1 cattle radius shaft; some weathering
Cattle sized: 3 fragments
Unidentified mammal bones: 11 very scrappy fragments (including one burnt/calcined specimen)

Fish bones:
Freshwater eel ***Anguilla anguilla:*** 3 vertebrae
Unidentified fish species: 1 vertebra

Pit 115, fill 111
4 very small/"scrappy" unidentified mammal bone fragments
1 unidentified fish bone

Pit 115, fill 112
1 cattle long-bone shaft; leached/eroded/abraded

Pit 115, fill 113
1 unidentified mammal bone fragment

Pit 69, fill 68
1 sheep ***Ovis*** (domestic) lower molar tooth
Ditch 143, fill 142
4 very small, scrappy mammal bone fragments

Pit 145, fill 144
1 sheep ***Ovis*** (domestic) calcaneum; sub adult (unfused epiphysis)
11 very small/"scrappy" mammal bone fragments (include. One burnt/calcined)

Ditch 169, fill 168
1 cattle ***Bos*** (domestic) distal humerus (fused)
1 cattle-sized rib shaft fragment with cut/chop mark
1 sheep ***Ovis*** (domestic) patella
17 very small/"scrappy" mammal bone fragments

Pit 115, fill 194
1 unidentified mammal bone fragment

Ditch 59, fill 217
1 unidentified mammal bone fragment

Discussion
The sieved material adds further information to that already obtained from analysis of the hand-collected bones, showing that the inhabitants in the Late Iron Age/Early Roman period consumed a surprisingly wide range of freshwater fish. The calculated size of two of the roach (TL 229 and 238 mm) falls within the length range 150 to 250mm for modern adult roach (Newdick 1979, 70). The ditches on the site would have formed ideal habitats from both frog and grass snake. Stored food (grain) in the settlement would have attracted house mice. The white colour and chalky texture of the majority of the burnt bones indicates these were subjected to high temperatures (thrown/accidentally dropt into cooking fires??).

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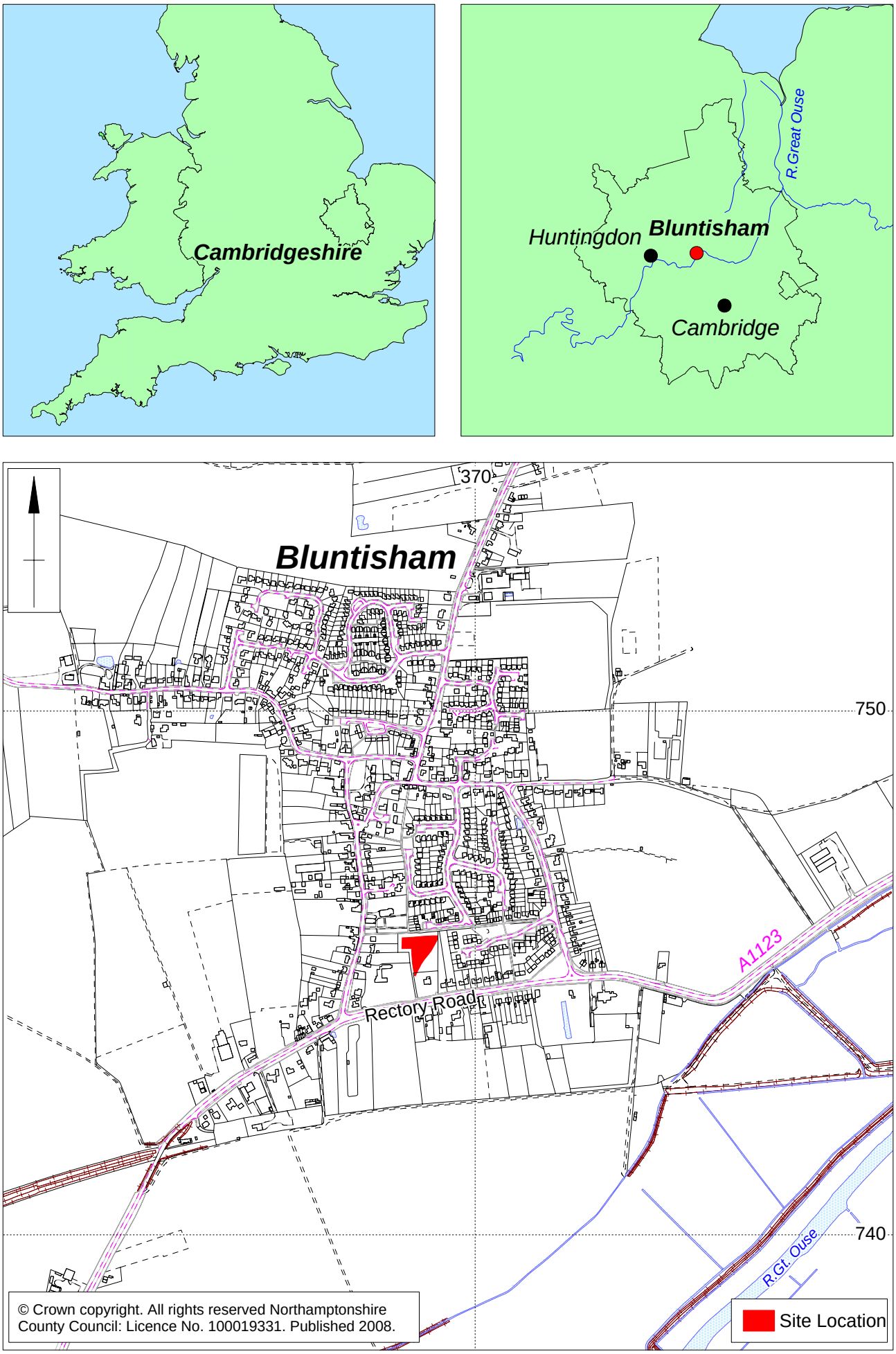
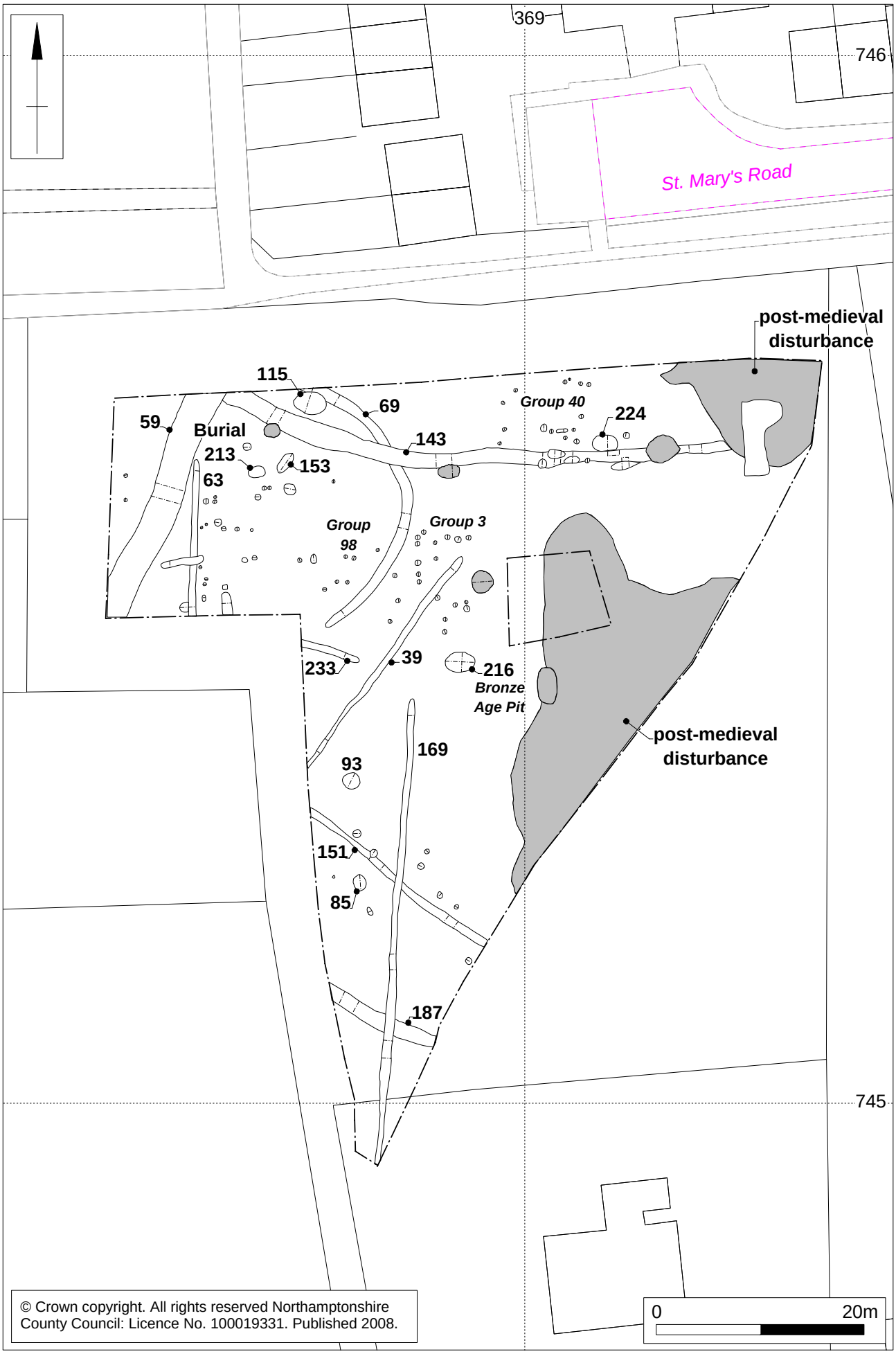


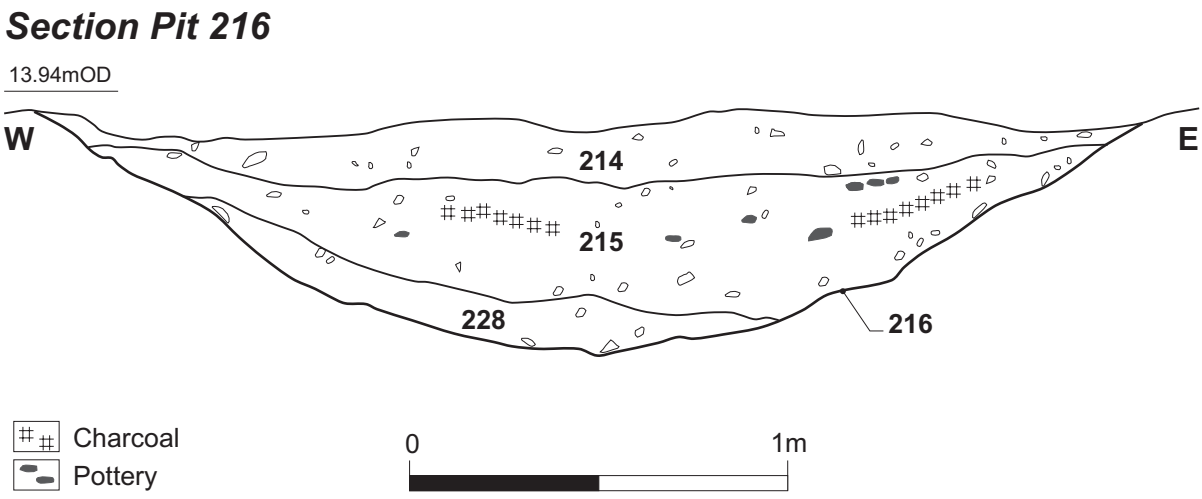
Scale 1:10,000

Site location Fig 1

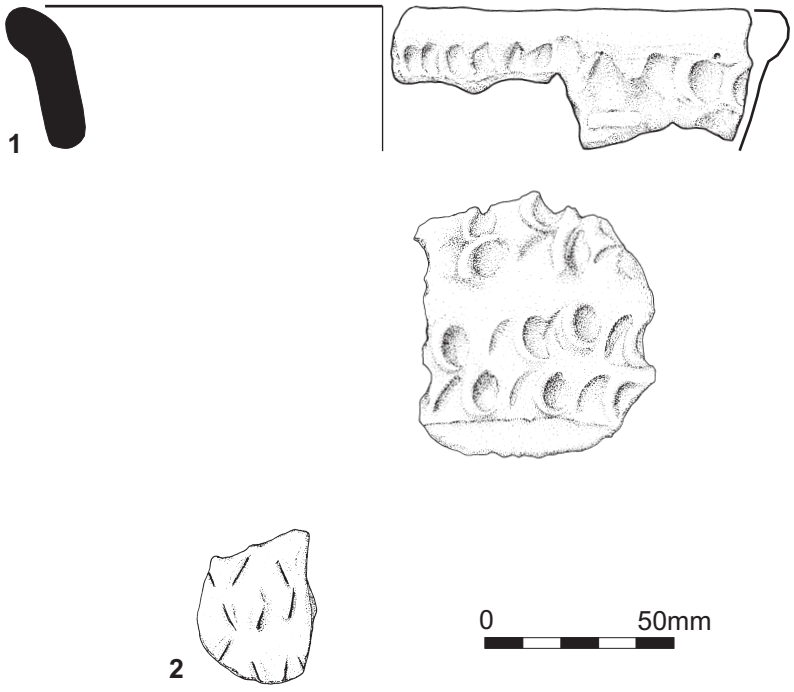


Scale 1:500

General plan Fig 2



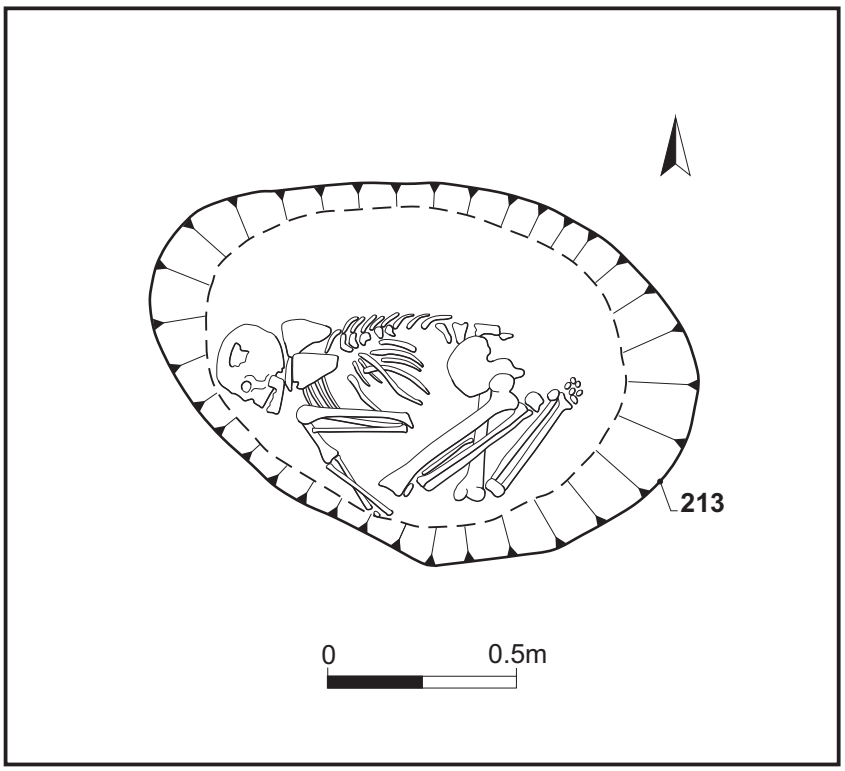
Bronze Age pit, 216 Fig 3



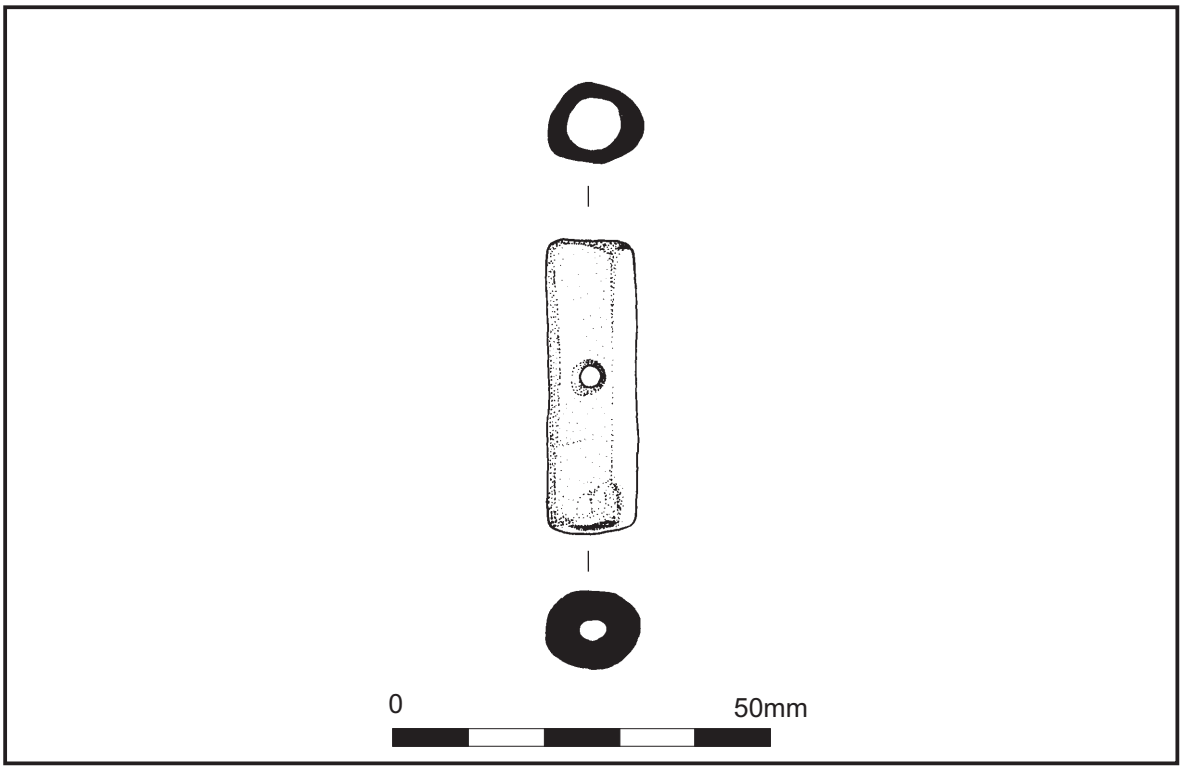
Beaker pottery from pit 216 Fig 4

Plate 1: Rim and body sherds from early Bronze Age rusticated, domestic Beaker from pit 216, showing rows of alternating deep fingertip and finger nail impressions (Scale 10mm)

Plate 2: Single body sherd from pit 216, from a more finely fingernail decorated Beaker (Scale 10mm)



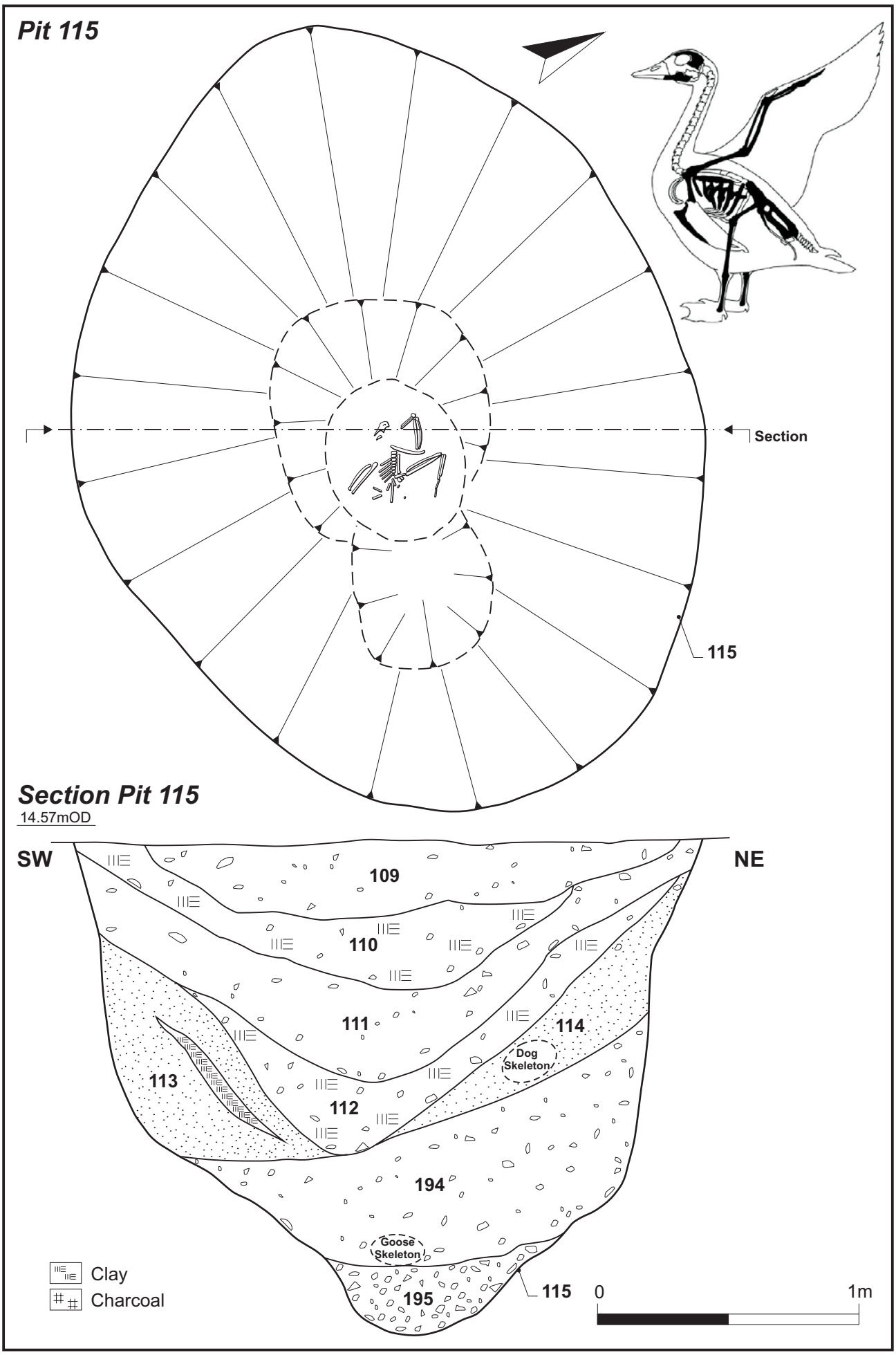
Iron Age inhumation burial, 211 Fig 5



Bone toggle with Iron Age burial 211 Fig 6

Plate 3: The Iron Age inhumation burial, 211, looking west (Scale 0.5m)

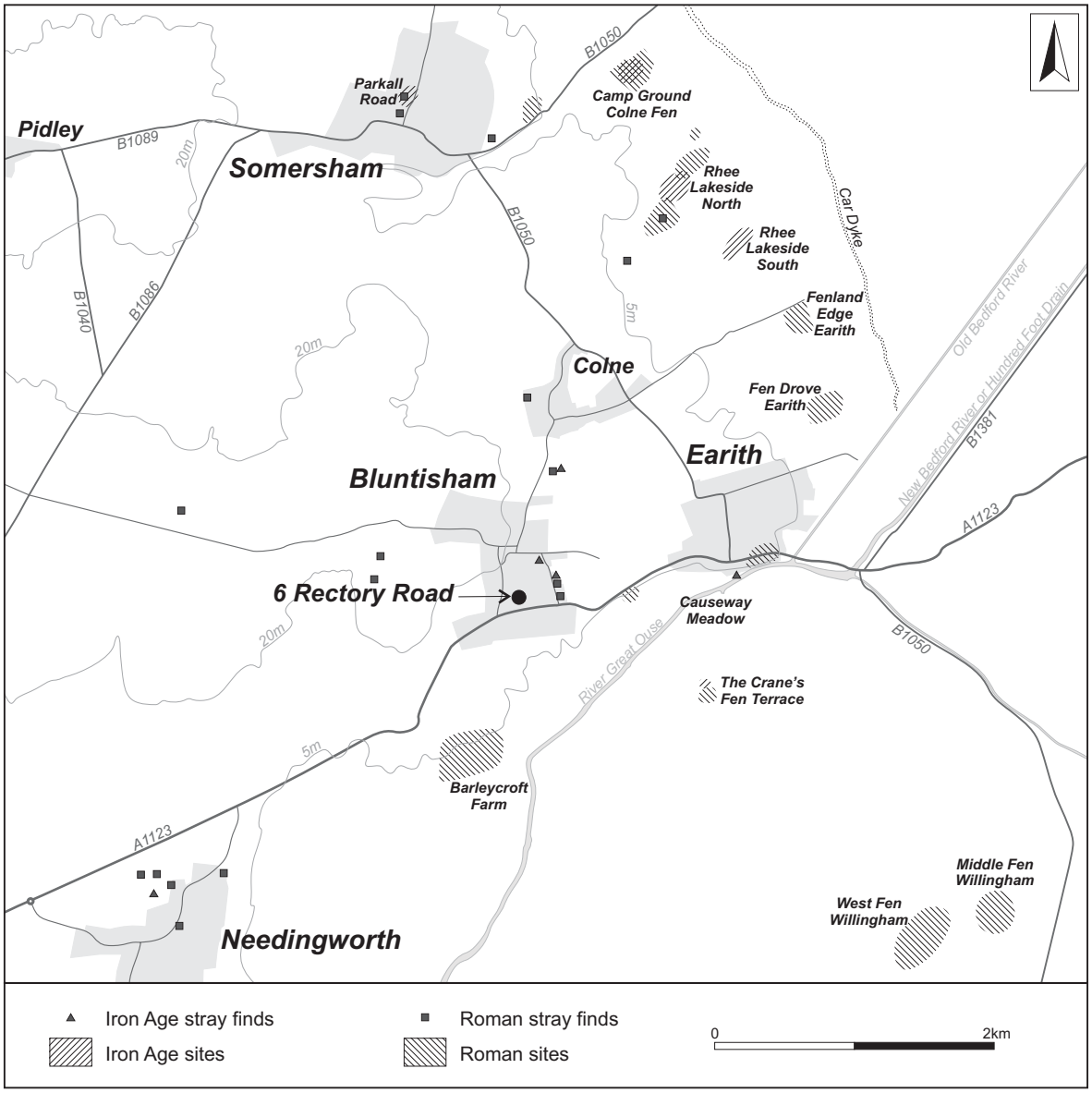
Plate 4: The bone toggle found with the Iron Age inhumation burial (Scale 10mm)



Plan and section of Roman pit 215, and diagram showing goose bones present Fig 7

Plate 5: The Roman goose skeleton in pit 115 (Scale: pencil = *c*150mm)

Plate 6: The disordered Roman dog skeleton in pit 115 (Scale 10mm intervals)



Iron Age and Roman sites in the Bluntisham area Fig 8