

## **Technical Report: Biological remains from a site north-east of High Catton, East Riding of Yorkshire (site code: TSEP218)**

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### **Summary**

*A series of sediment samples, a single small bag of hand-collected shell, and a small assemblage of hand-collected vertebrate remains, from deposits revealed by excavations north-east of High Catton, were examined initially during an evaluation of their bioarchaeological potential.*

*The plant and invertebrate remains recovered from the samples were of no interpretative value beyond that given in the text below and no further work was undertaken on these samples. A group of seven samples from five contexts was subsequently processed primarily for recovery of bone and the washovers from these were checked for the presence of plant and invertebrate remains.*

*Deposits from this site produced a small, but mostly well-preserved assemblage of animal bone, mainly dated to the 4th century. These remains showed a number of characteristics typical of other Roman assemblages in Britain. The major domesticates formed the bulk of the assemblage, with cattle being the most dominant species and providing the largest component of the diet. A high degree of fragmentation was apparent, which was mostly the result of the systematic breaking up of cattle bones, probably for the extraction of marrow. Extensive chopping of all major elements and the splitting of long bones is typical of vertebrate assemblages from many Roman sites throughout Britain. Although limited, age-at-death data suggested that cattle were mature when slaughtered, enabling them to be used for dairying and traction before being killed for the provision of meat. This, too, is consistent with Roman husbandry practices noted elsewhere.*

*A change in the size of cattle during the 3rd and 4th centuries has been reported at a number of sites in Britain leading to a belief by some that larger, improved varieties of livestock were being introduced during this period. The animal represented by a single estimated withers height from the present site is a very large individual and taller than those from 3<sup>rd</sup> century deposits at Lincoln. The latter were thought to indicate the presence of continental imported livestock and the individual from the present site may also represent an attempt to improve the local indigenous animals. Unfortunately, with only very limited data, it is impossible to conclude whether this is the case or whether this single measurement may simply represent a large bull or castrate.*

*Pigs appear to be of some importance at this site. A relatively high frequency of pig remains is quite unusual from sites in this country and particularly for one representing rural occupation. Some researchers have suggested that higher proportions of pig remains provide evidence of higher status occupation or could be related to occupancy by people of Mediterranean origin. A greater degree of adoption of Roman culture by local people could provide an alternative explanation. Classical literature leads us to believe that pork was highly esteemed in the Roman diet. The building material and artefacts recovered from the TSEP218 site near High Catton all suggest high status occupation and point to the presence of a villa in the vicinity of the excavations. The high proportion of pig remains may lend further support to this theory.*

**Keywords:** HIGH CATTON; EAST RIDING OF YORKSHIRE; LATE ROMAN; MACROFOSSIL PLANT REMAINS; MOLLUSCS; VERTEBRATE REMAINS

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## Technical Report: Biological remains from a site north-east of High Catton, East Riding of Yorkshire (site code: TSEP218)

### Introduction and methods

A series of sediment samples ('GBA'/'BS' *sensu* Dobney *et al.* 1992), a single small bag of hand-collected shell, and a small hand-collected vertebrate assemblage, were recovered from the deposits. A group of seven samples from five contexts was subsequently processed primarily for recovery of bone and the washovers from these were checked for the presence of plant and invertebrate remains. This *Technical Report* combines the results presented as part of the assessment of the archaeological record from the site, together with an account of the further work carried out subsequently.

#### *Sediment samples*

The sediment samples were inspected in the laboratory. Three of the samples were selected for investigation during the evaluation and their lithologies were recorded, using a standard *pro forma*, prior to processing, following the procedures of Kenward *et al.* (1980; 1986), for recovery of plant and invertebrate macrofossils. The washovers and residues were examined for plant remains. The washovers were also examined for invertebrates, and the residues were examined for other biological and artefactual remains.

Seven samples were subsequently examined by means of bulk-sieving, primarily for the recovery of bone, though washovers were checked for plant and invertebrate remains. Like the initial group, they gave small amounts of charred material which probably indicates the presence of burnt turves as well as a few cereal grains and other cereal remains and weed seeds.

Table 1 shows a list of the examined samples and notes on their treatment.

#### *Hand-collected shell*

Brief notes were made on the preservational condition of the shell and the remains identified to species where possible.

#### *Hand-collected vertebrate remains*

Data concerning the vertebrate remains were recorded electronically directly into a series of tables using a purpose-built graphical input system and *Paradox* software. Semi-subjective, non-quantitative data were recorded for the material from each context regarding the state of preservation, colour, and the appearance of broken surfaces ('angularity'). Additionally, semi-quantitative information was recorded for the bone from each context, concerning fragment size, dog gnawing, burning, butchery and fresh breakage.

Identification was carried out using the PRS modern comparative reference collection. Detailed recording of the assemblage followed the protocol outlined by Dobney *et al.* (forthcoming). Selected elements were recorded using the diagnostic zones method described by Dobney and Rielly (1988). Remaining elements which could be identified to species were merely counted. Other fragments, (classified as 'unidentified') were, where possible, grouped into categories: large mammal (assumed to be horse, cow or large cervid), medium-sized mammal 1 (assumed to be sheep, pig or small cervid), medium-sized mammal 2 (assumed to be dog, cat, hare or equivalent sized mammal), unidentified

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bird and totally unidentified. As well as counts of fragments, total weights were recorded for all identifiable and unidentifiable categories.

Caprovid tooth wear stages were recorded using those outlined by Payne (1973; 1987), and those for cattle and pig followed the scheme set out by Grant (1982). Cattle and caprovid mandibles were assigned to the general age categories outlined by O'Connor (1988) whilst, in addition, recording of caprovid mandibles and isolated teeth were assigned to the age categories detailed by Payne (1973; 1987).

Mammal bones were described as 'juvenile' if the epiphyses were unfused and the associated shaft fragment appeared spongy and porous. They were recorded as 'neonatal' if they were also of small size. Epiphyseal fusion data are presented using the categories of O'Connor (1989).

Measurements followed von den Driesch (1976) unless otherwise specified. Additional measurements, not detailed by von den Driesch, followed those described by Dobney *et al.* (forthcoming). Withers heights for cattle were estimated using calculations recommended by von den Driesch and Boessneck (1974).

## Results

A complete list of the plant and invertebrate remains recorded is given in Table 2 and individual lists for plant remains and other components of residues and washovers from the sediment samples, recorded during analysis of plant material, in Table 3. Table 4 gives a summary of the invertebrate (all snails) remains. Tables 5-7 provide data concerning the vertebrate remains.

### *Sediment samples*

The results are presented in context number order. Archaeological information, provided by the excavator, is given in square brackets. N.B. No insect remains were recovered from the samples.

**Context 1003** [upper fill of ditch 1005]

**Sample 14/T** (2 kg sieved to 300 microns with washover)

Moist, mid grey-brown, crumbly (working more or less plastic), sandy clay silt. A little charcoal, stones (2 to 6 mm), and animal bone were present in the sample.

The moderate-sized residue comprised about 150 cm<sup>3</sup> of sand with a trace of gravel and bone (six fragments which included a pig metapodial, a shrew (*Sorex* sp.) femur and a single fish spine). The washover consisted of a few cm<sup>3</sup> of charcoal (to 20 mm in maximum dimension) with charred heather (*Calluna vulgaris* (L.) Hull) basal twig/root fragments, at least one charred *Potentilla* sp(p). achene, and some charred herbaceous detritus (including root/rhizome material), all of which might indicate that material from the burning of turves was present. The few uncharred seeds in the sample might well be modern.

**Sample 2/BS** (6.9 kg bulk-sieved to 300 microns with washover)

The residue consisted of sand and gravel, the small washover including some burnt bone and charcoal. Also in the washover were some fragments of charred heather basal twig/root and heather shoot, as well as some cereals, including a few well preserved barley (*Hordeum*) grains. Other remains likely to have arrived with burnt turves (along with the heather, if that is what the twig/root material is) were traces of charred heath grass (*Danthonia decumbens*) caryopses, charred herbaceous detritus and

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perhaps also the charred grass (Gramineae), sedge (*Carex*) and sheep's sorrel (*Rumex acetosella* agg.) propagules. Other material from straw or grain processing were traces of cereal awn fragments and unidentified cereal grains. Seventy fragments of bone were recovered from this sample, of which most were less than 10 mm in any dimension and few (16 fragments) were identifiable. Various small mammal bones were present, representing murine (mouse family) and microtine (vole family) remains, but only two fragments could be identified to species and these were both Common shrew (*Sorex araneus* L.).

**Sample 3/BS** (5.5 kg bulk-sieved to 300 microns with washover)

The residue comprised coarse gravel and stone (to 50 mm) with some sand; the small washover contained a little charred plant material, and a few snails. The plant remains here included charcoal (some of which was identified as oak, *Quercus*) and grains of barley, ?wheat (*Triticum*) and brome grass (*Bromus*), the last perhaps a grain contaminant, whilst the presence of ?heather basal twig/root fragments (to 10 mm) indicates that burnt turves might be present. Again, there were a few uncharred seeds probably recent in origin. Animal bone from this sample amounted to 45 fragments, which included a small number of small mammal remains and single fragments of chicken and cow. The bulk of the assemblage (38 fragments) could not be identified and, as with the assemblage from the previous sample, many fragments were less than 10 mm in size.

**Context 1017** [lower fill of ditch 1005]

**Sample 13/T** (2 kg sieved to 300 microns with washover)

Moist, mid to dark grey-brown, crumbly (working more or less plastic), sandy clay silt. Charred grains and animal bone were present in the sample.

There was a moderate-sized residue of about 200 cm<sup>3</sup> of gravel (to 50 mm) and sand with a little pottery (to 45 mm), and bone (four unidentified bone fragments to 50 mm, total weight 7 g). There were some well preserved charred cereal grains (wheat and barley) with a little chaff (wheat rachis fragments and one or more glume bases which may be spelt wheat, *Triticum spelta*), as well as a range of charred weed seeds, including moderate numbers of brome caryopses, all perhaps from burning of straw, if not from grain processing. A trace of charred ?heather basal twig/root material may, again, indicate burning of turves or peat.

**Sample 4/BS** (5.4 kg bulk-sieved to 300 microns with washover)

The residue was of sand and gravel, with a little charcoal in the washover; traces of charred ?heather basal twig/root fragments (to 5 mm) were also noted in the latter. Additionally, this sample produced 13 small and unidentified fragments of bone.

**Sample 5/BS** (3.1 kg bulk-sieved to 300 microns with washover)

There was a small residue of sand and gravel with a small washover containing a little charcoal and traces of other charred plant remains: herbaceous detritus, ?heather basal twig/root (to 5 mm) and one or a few barley grains. A single tooth was recovered from this sample, identified as water vole (*Arvicola terrestris* (L.)).

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**Context 1025** [fill of sub-rectangular pit 1026]

**Sample 8/T** (3 kg sieved to 300 microns with washover)

Moist, light to mid grey-brown (locally more brown and more grey), crumbly (working more or less plastic), sandy clay silt with inclusions of light orange-brown clay. Stones (20 to 60 mm), white flecks, red ?burnt soil, and patches of fine ?charcoal were present in the sample.

The large residue of about 500 cm<sup>3</sup> consisted of clean quartz sand and large (to 65 mm) gravel, and there was a small washover of about 20 cm<sup>3</sup> of fine (<5 mm) charcoal and rootlets. Though present as traces, there were distinct suggestions of charred remains (?heather, sedge, herbaceous detritus and root/rhizome fragments) and perhaps even peat originating in, for example, burnt turves; there were also a few very eroded charred cereal grains and a little spelt chaff. Four small bones were recovered—three of mouse or vole (murine/microtine) and one unidentified.

**Sample 7/BS** (5.5 kg sieved to 300 microns with washover)

The residue consisted of sand and gravel, the small washover comprising charred plant remains including moderate amounts of ?heather basal twig/root fragments (to 10 mm). Also present were tentatively identified charred shoot fragments of heather and several other taxa which might be consistent with the presence of material derived from burnt turves (or perhaps peat): sedge and spike-rush (*Eleocharis palustris*) nutlets, grass caryopses and charred herbaceous material, including root/rhizome fragments (to 5 mm). Some remains probably originated with cereals: awn fragments and traces of wheat grains. This deposit produced 53 fragments of bone. Small mammals, including common shrew, were present, together with a single amphibian bone. Eight of the many small unidentified fragments (most less than 10 mm) were burnt.

**Context 1027** [fill in gully 1028]

**Sample 12/BS** (5.8 kg bulk-sieved to 1 mm)

The residue consisted of sand and gravel, the small washover of charred plant material including some ?heather basal twig/root fragments and root/rhizome fragments (both to 5 mm), and traces of barley grains. Four fragments of bone were recovered which were identified as bird and small mammal.

**Context 1033** [fill of ditch 1005 over cobble spread, =1017]

**Sample 9/BS** (9.4 kg, bulk-sieved to 1 mm)

The residue comprised sand and gravel and a little ?iron pan; the washover included a trace of charcoal and charred ?heather basal twig/root fragments (to 5 mm).

### *Hand-collected shell*

Five poorly-preserved oyster (*Ostrea edulis*) valves were recovered from Context 1003. Four of the valves were rather soft and many mm-sized flakes of shell had broken off the valves post-excavation. There were three left valves (two of which showed damage from polychaet worm burrowing), one right valve, and one valve for which the side could not be determined. None of the valves were measurable or showed evidence of having been opened using a knife (or similar implement).

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### *Hand-collected vertebrate remains*

Hand-collected vertebrate remains recovered from this site amounted to three boxes (each box approximately 16 litres), most of the material being late Roman (late 3<sup>rd</sup>/4<sup>th</sup> century and 4<sup>th</sup> century) in date. An assessment of the material (Jaques *et al.* 2000) recommended that the preparation of a basic archive for material from all well-dated contexts be made for the purposes of synthesis and comparanda.

The bulk of the vertebrate remains excavated from this site were recovered from Context 1003, the upper fill of ditch 1005, and from five other contexts which, upon excavation, were recognised as being part of the same deposit. This material, plus a very small quantity from the lower fill of the ditch (Contexts 1017 and 1033), amounted to 569 fragments and provided the assemblage dated to the 4<sup>th</sup> century. A further 34 fragments of a slightly earlier date (late 3<sup>rd</sup>/early 4<sup>th</sup> century) were recorded from Contexts 1025 and 1027, two deposits associated with a possible kiln/drying oven and attached gully. Although too small for detailed examination, a number of comments can be made about this latter assemblage.

Preservation was quite variable, with some contexts producing well preserved bones (Contexts 1003, 1025 and 1027), whilst others (Contexts 1016, 1017 and 1033) contained fragments that were poorly preserved, with rounded edges or a battered appearance. Tooth enamel fragments from Context 1033 probably represented a single horse tooth, but poor preservational conditions had caused the tooth to disintegrate.

Table 5 shows the basic count of identified and unidentified fragments for all contexts from which material was recorded. As can clearly be seen, unidentified fragments formed over 75% of the entire assemblage. This is likely to be the result of the high degree of fragmentation observed within this assemblage, particularly for bones from Contexts 1003 and 1007. Some of the breakage was modern, but much was the result of butchery and other damage in antiquity. Though the cattle remains and large mammal (assumed to be mainly cattle) shaft fragments had been heavily chopped, no consistent patterns of butchery were discernible. However, the systematic reduction of carcasses by the use of cleavers, as interpreted here, is typical of vertebrate assemblages from many Roman sites throughout Britain, e.g. Tanner Row, York (O'Connor 1988); Welton Road, Brough (Hamshaw-Thomas and Jaques 2000); Elms Farm, Heybridge, Essex (Johnstone and Albarella 2002). Additionally, the variable preservation suggests that some of the bones may have been dumped elsewhere prior to their final deposition in the ditch. Damage caused by 'trampling' may also have contributed to the fragmentary condition of the remains.

### **Species representation and abundance of major domesticates**

The identified fragments consisted mainly of cattle, horse, pig and caprovid remains (Table 6). Remains of dog, probably representing a single individual, were recovered from Context 1003, with further fragments in the lower ditch fill, 1017. Vertebrae and ribs, almost certainly part of the same skeleton, were noted in the unidentified fraction. Birds remains were limited to seven duck fragments of mallard size, several chicken bones and a single rook/crow (*Corvus frugilegus* L./*C. corone* L.) ulna.

Concentrating only on the counts for the three main domesticates (cattle, caprovid and pig) and amalgamating data from both dated groups, it can be seen that cattle predominate, forming 62% of the remains (Table 7). Similarly, the 'large mammal' component (assumed to be mainly cattle) makes up 56% of the 'unidentified' fraction (Table 8), in comparison with the 'medium mammal 1' fragments

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(assumed to be mainly caprovid or pig), which form only 9%. Taking into consideration the small size of the assemblage, it is, however, worth noting that the proportion of pig remains (25%) is high and almost twice that of caprovids (13%). The values produced by MNI (minimum number of individual) counts are too small to be statistically significant.

### **Carcass representation**

An examination of the skeletal elements present in the identified assemblage suggested that, for cattle remains, head and lower limb elements, indicative of primary butchery waste, were most common (Table 7). Sixty-six percent of the cattle bones represented this type of waste. Meat-bearing elements (radii, pelvis and femora) were present, however, and the large mammal bones in the unidentified fraction included shaft, rib and vertebra fragments which could represent waste from consumption rather than from butchery.

Pig remains included a range of elements, but isolated teeth and maxilla fragments were the most numerous, again suggesting the presence of butchery waste. Preservation factors may also be responsible for the dominance of teeth in the assemblage as a whole. Teeth generally survive better than bone where the conditions for preservation are less favourable.

Fragments representing caprovids were too few for any disposal trends to be recognised.

### **Age-at-death**

The paucity of age-at-death data precludes any detailed analysis of the age at which the main domesticates were slaughtered. However, data provided by three isolated cattle teeth assigned them to the general age categories of 'adult' or 'elderly' (as outlined by O'Connor 1988). Additionally, an isolated caprovid M3 indicated the presence of an adult individual of 2-3 years (after Payne 1987).

Fusion data were rather scant. For cattle, most of the recorded elements were fused or were adult in appearance, which correlates with the few teeth records. Pig skeletal elements showed that most of the individuals represented were aged between 12 and 24 months when slaughtered. This is consistent with the use of pigs purely for meat consumption. Few caprovid remains were recovered and little evidence concerning fusion was produced. Several metapodials, however, were either recorded as having unfused distal articulations or their porosity suggested that the bones represented juvenile or sub-adult individuals. These are likely to be young individuals of 2 years old or less.

### **Biometry**

Biometrical data from this assemblage were not extensive. It was possible to reconstruct withers heights using measurements from two cattle bones (both from Context 1003) – a radius and a metatarsal. The resulting heights were 1211.5 mm and 1324.4 mm. Data, from various other sites of differing types and representing a range of dates from Iron Age through to late Roman (Figure 1), were plotted for comparison. It can be observed that the radius measurement from this site near High Catton represents the tallest individual.

Biometrical data from one of the dog femurs from Context 1003 produced an estimated withers height of 450.6 cm.

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## Discussion

All the sediment samples examined yielded very sparse remains of plants preserved by charring and these included a few well preserved cereal grains and chaff fragments. In addition, there were charred vegetative remains perhaps consistent with the burning of turves from heathland or grassland and perhaps also peat. This and the cereal remains and charred weed seeds might all have originated in the destruction of a roof of cereal straw with a turf underlay, though ash from fires in which both turves and straw were used as fuel is another likely source.

A very few land snail remains were recovered from each of the two bulk samples from Context 1003 (Table 4). The taxa present indicated a local environment of dry, short-turfed grassland with some damper areas or additional cover – there were too few remains to afford much weight to this interpretation, however.

The hand-collected shell was of no interpretative value.

Deposits from this site, particularly Context 1003, produced a small, but mostly well-preserved assemblage of animal bone, mainly dated to the 4<sup>th</sup> century. These remains showed a number of characteristics typical of other Roman assemblages in Britain. In common with, for instance, sites in York (Tanner Row, O'Connor 1988), Brough (Hamshaw-Thomas and Jaques 2000) and Lincoln (Dobney *et al.* 1996), cattle were dominant and clearly provided the largest component of the diet. These sites also showed the systematic breaking up of cattle bones, probably for the extraction of marrow, as recorded at the present site near High Catton. Although limited, age-at-death data suggested that cattle were mature when slaughtered enabling them to be used for dairying and traction before being killed for the provision of meat. This, too, is consistent with Roman husbandry practices noted elsewhere. A change in the size of cattle during the 3<sup>rd</sup> and 4<sup>th</sup> centuries has been reported at a number of sites in Britain (e.g. Dobney *et al.* 1996; Albarella 1997). This has led people to believe that larger, improved varieties of livestock were being introduced during this period (Dobney 2001). In the north of England, the evidence for this phenomenon does not appear to be confined to the 3<sup>rd</sup> century alone, but has been noted from sites throughout the Roman period. However, it is still uncertain as to whether its occurrence was restricted to certain areas of the country or confined to specific high status centres. The animal represented by a single estimated withers height from this site near High Catton is a very large individual and taller than those from 3<sup>rd</sup> century deposits at Lincoln. The latter were thought to indicate the presence of continental imported livestock and the individual from High Catton may also represent an attempt to improve the local native stock. Unfortunately, with only very limited data, it is impossible to conclude whether this is the case or whether this single measurement may simply represent a large bull or castrate.

Pigs appear to be of some importance at this site. Relatively high frequency of pig remains is quite unusual from sites of this period in this country and particularly in association with rural occupation. King (1978) states in his survey of vertebrate assemblages from Roman sites that assemblages with 10% or more pig bones tend to be either from villa sites or 'Roman' settlement sites. Some researchers have suggested (King 1978; 1984, Dobney 2001) that higher proportions of pig remains provide evidence of higher status occupation or could be related to occupancy by people of Mediterranean origin. A greater degree of adoption of Roman culture by local people could provide an alternative explanation. Classical literature leads us to believe that pork was highly esteemed in the Roman diet. The building material and artefacts recovered from TSEP 218 site at High Catton all suggest high status occupation and point to the presence of a villa in the vicinity of the excavations. The high proportion of pig remains may lend further support to this theory.



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*Table 1. List of examined sediment samples from excavations north-east of High Catton, with notes on their treatment.*

<b>Context</b>	<b>Sample</b>	<b>Notes</b>
1003	14	2 kg sieved to 300 microns with washover (assessment)
	2	6.9 kg bulk-sieved to 300 microns with washover
	3	5.5 kg bulk-sieved to 300 microns with washover
1017	13	2 kg sieved to 300 microns with washover (assessment)
	4	5.4 kg bulk-sieved to 300 microns with washover
	5	3.1 kg bulk-sieved to 300 microns with washover
1025	8	3 kg sieved to 300 microns with washover (assessment)
	7	5.5 kg bulk-sieved to 300 microns with washover
	8	3.3 kg bulk-sieved to 300 microns with washover
1027	12	5.8 kg bulk-sieved to 300 microns with washover
1033	9	5.4 kg bulk-sieved to 300 microns with washover

Table 2. Complete list of plant and invertebrate taxa recorded from deposits at TSEP site 218, north-east of High Catton. Nomenclature and taxonomy for plant remains follow Tutin et al. (1964-80). Uncharred material clearly or probably of modern origin has been excluded; all plant material listed here was therefore charred. Nomenclature and taxonomy for snails follow Kerney and Cameron (1979).

<b>Taxon</b>	<b>Vernacular name</b>	<b>Remains recorded</b>
Plantae		
<i>Quercus</i> sp(p).	oak	charcoal fragment(s)
<i>Rumex acetosella</i> agg.	sheep's sorrel	fruit(s)
<i>Rumex</i> sp(p).	docks	fruit(s)
<i>Atriplex</i> sp(p).	oraches	seed(s)
<i>Stellaria media</i> (L.) Vill.	chickweed	seed(s)
<i>Agrostemma githago</i> L.	corncockle	seed(s)
<i>Potentilla</i> sp(p).	cinquefoils, etc.	achene(s)
Leguminosae	pea family	seed(s)
cf. <i>Calluna vulgaris</i> (L.) Hull	?heather, ling	basal twig and/or root fragment(s), shoot fragment(s)
<i>Anthemis cotula</i> L.	stinking mayweed	achene(s)
Gramineae	grasses	caryopsis/es
Cerealia indet.	cereals	awn(s)/awn fragment(s)
		caryopsis/es
<i>Bromus</i> sp(p).	bromes, etc.	caryopsis/es
<i>Triticum</i> cf. <i>spelta</i> L.	?spelt wheat	caryopsis/es, glume-base(s)
<i>T.</i> cf. ' <i>aestivo-compactum</i> '	?bread/club wheat	caryopsis/es
<i>Triticum</i> sp(p).	wheats	caryopsis/es, rachis fragment(s)
<i>Hordeum</i> sp(p).	barley	caryopsis/es
<i>Danthonia decumbens</i> (L.) DC. in Lam. & DC.	heath grass	caryopsis/es
<i>Eleocharis palustris sensu lato</i>	common spike-rush	nutlet(s)
<i>Carex</i> sp(p).	sedges	nutlet(s)
Invertebrata (all shells or fragments)		
<i>Vallonia ?excentrica</i> Sterki		
<i>Cochlicopa ?lubricella</i> (Porro)		
<i>Discus rotundatus</i> (Müller)		
<i>Trichia ?hispida</i> (Linnaeus)		
<i>Ostrea edulis</i> Linnaeus	oyster	

Table 3. Complete lists of plant remains and other components of samples recorded during examination of plant material from site TSEP218. Samples are presented in context and sample order and within each list components are listed by decreasing abundance, using a semi-quantitative four-point scale (/T series) or three-point scale (/BS series).

Abbreviations: ch—charred; dec—decayed; fgts—fragments; glb—glumes, glume-bases; max—maximum dimension; rt-tw—basal twig/root; sht—shoot; v—very.

**Context 1003, Sample 2/BS**

gravel	2
stone	2
Atriplex sp(p). (ch)	1
cf. Calluna vulgaris (ch rt-tw fgts)	1 max 10 mm
cf. Calluna vulgaris (ch sht fgts)	1 max 3 mm
Carex sp(p). (ch)	1
Cerealia indet.	1
Cerealia indet. (awns)	1
Danthonia decumbens (ch)	1
Gramineae (ch)	1
Hordeum sp(p).	1
Pre-Quaternary megaspores	1
Quercus sp(p). (charcoal)	1 max 15 mm
Rumex acetosella agg. (ch)	1
Sambucus nigra	1
amphibian bone	1
bone fgts	1 max 5 mm
brick/tile	1 max 5 mm
burnt bone fgts	1 max 5 mm
chalk/lime	1 max 5 mm
charcoal	1 max 15 mm
coal	1 max 5 mm
herbaceous detritus (ch)	1
mussel shell 'fibres'	1
sand	1
small mammal bone	1
snails	1

**Context 1003, Sample 3/BS**

stone	2
Bromus sp(p).	1
Hordeum sp(p).	1
Polygonum aviculare agg.	1 ?modern
Quercus sp(p). (charcoal)	1 max 10 mm
Sambucus nigra	1
bone fgts	1 max 60 mm
cf. Calluna vulgaris (ch rt-tw fgts)	1 max 10 mm
cf. Triticum sp(p).	1
chalk/lime	1 max 5 mm
charcoal	1 max 10 mm
gravel	1 max 50 mm
sand	1
snails	1

**Context 1003, Sample 14/T**

sand	2
cf. Calluna vulgaris (ch rt-tw fgts)	1
Gramineae	1 modern
Potentilla sp(p). (ch)	1
Sambucus nigra	1
Urtica dioica	1 ?modern
bone fgts	1 max 60 mm
brick/tile	1 max 10 mm
charcoal	1 max 20 mm
gravel	1 max 10 mm
herbaceous detritus (ch)	1
root/rhizome fgts (ch)	1 max 5 mm
root/rootlet fgts (?modern)	1
wood fgts	1 v dec, max 2 mm

**Context 1017, Sample 4/BS**

gravel	2
cf. Calluna vulgaris (ch rt-tw fgts)	1 max 5 mm
?iron pan fgts	1 max 5 mm
brick/tile	1 max 15 mm
charcoal	1 max 10 mm
sand	1

**Context 1017, Sample 5/BS**

gravel	2
cf. Calluna vulgaris (ch rt-tw fgts)	1 max 5 mm
Hordeum sp(p).	1
charcoal	1 max 10 mm
herbaceous detritus (ch)	1
sand	1

**Context 1017, Sample 13/T**

Bromus sp(p).	2
Hordeum sp(p).	2
Triticum cf. spelta	2
gravel	2 max 50 mm
sand	2
Agrostemma githago (ch)	1 fgt(s) only
Anthemis cotula (ch)	1
Atriplex sp(p).	1 ?modern
cf. Calluna vulgaris (ch rt-tw fgts)	1 max 5 mm
Carex sp(p). (ch)	1

Gramineae (ch)	1
Leguminosae	1 max 2 mm
Polygonum aviculare agg.	1 ?modern
Rumex sp(p). (ch)	1
Triticum cf. aestivo-compactum	1
Triticum cf. spelta (glb)	1
Triticum sp(p). (rachis fgts)	1
bone fgts	1 max 50 mm
brick/tile	1 max 10 mm
burnt bone fgts	1 max 25 mm
charcoal	1 max 15 mm
coal	1 max 5 mm
pottery	1 max 45 mm

#### Context 1025, Sample 7/BS

sand	2
cf. Calluna vulgaris (ch rt-tw fgts)	1 max 10 mm
cf. Calluna vulgaris (ch sht fgts)	1 max 1 mm
Carex sp(p). (ch)	1
Cerealia indet. (awns)	1
Eleocharis palustris sl (ch)	1
Gramineae (ch)	1
Rumex sp(p). (ch)	1
Sambucus nigra	1 ?modern
Triticum sp(p).	1
bone fgts	1 max 10 mm
burnt bone fgts	1 max 5 mm
coal	1 max 2 mm
gravel	1
herbaceous detritus (ch)	1
root/rhizome fgts (ch)	1 max 5 mm
small mammal bone	1 max 5 mm

#### Context 1025, Sample 8/T

sand	3
gravel	2 max 65 mm
cf. Calluna vulgaris (ch rt-tw fgts)	1 max 10 mm
Carex sp(p). (ch)	1
cf. Hordeum sp(p).	1
Rumex sp(p). (ch)	1
Stellaria media (ch)	1
Triticum cf. spelta (glb)	1
?burnt peat fgts	1 max 5 mm
charcoal	1 max 5 mm
coal	1 max 5 mm
herbaceous detritus (ch)	1
root/rhizome fgts (ch)	1 max 10 mm
root/rootlet fgts (modern)	1
small mammal bone	1

#### Context 1027, Sample 12/BS

cf. Calluna vulgaris (ch rt-tw fgts)	1 max 5 mm
Carex sp(p).	1
Cerealia indet. (awns)	1
Chenopodium album	1 ?modern
Hordeum sp(p).	1
Roman pottery	1 max 40 mm
Rumex sp(p). (ch)	1
brick/tile	1 max 10 mm
burnt bone fgts	1 max 5 mm
charcoal	1 max 10 mm
coal	1 max 5 mm
gravel	1
root/rhizome fgts (ch)	1 max 5 mm
sand	1
small mammal bone	1 max 5 mm

#### Context 1033, Sample 9/BS

gravel	2
cf. Calluna vulgaris (ch rt-tw fgts)	1 max 5 mm
?iron pan fgts	1 max 5 mm
charcoal	1 max 10 mm
sand	1

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*Table 4: Lists by sample of non-marine mollusc taxa represented in the assemblages recovered from bulk sediment samples from site TSEP218. Taxa are listed in rank order then taxonomic order. Numbers are minimum numbers of individuals (MNI).*

Key: ReM: D = Recording Method: Detailed. Ecological codes are given following the MNI as follows: dv—damp grassland; mm—marine; sn—synanthropic; tv—dry grassland; ws—woodland/scrub.

**Context: 1003 Sample: 2/BS ReM: D Weight: 6.9 kg**

Notes: a few other fragments including ?1 of another unid larger land snail; 1 fragment of eggshell

Vallonia ?excentrica	2	n	tv
Cochlicopa ?lubricella	1	n	tv
Discus rotundatus	1	n	ws-dv-sn

**Context: 1003 Sample: 3/BS ReM: D Weight: 5.5 kg**

Notes: some other fragments including some of another unid larger land snail

Discus rotundatus	2	n	ws-dv-sn
Trichia ?hispidia	1	n	dv-tv-ws

*Table 5. Number of identified and unidentified bone fragments from deposits at TSEP site 218, north-east of High Catton.*

Key: No. id. = total number of identified fragments; No. unid. = total number of unidentified fragments.

<b>Date</b>	<b>Context</b>	<b>No. id.</b>	<b>No. unid</b>	<b>Context type</b>
4thC	1003	95	376	upper fill of ditch 1005
4thC	1007	14	35	same as 1003
4thC	1012	1	5	same as 1003
4thC	1014	0	2	same as 1003
4thC	1015	0	2	same as 1003
4thC	1016	0	5	same as 1003
4thC	1017	3	8	lower fill of ditch 1005
L3rd/E4thC	1025	6	26	fill of oven/drying kiln base
L3rd/E4thC	1027	2	0	fill of gully 1028
4thC	1033	0	23	fill of ditch 1005 over cobble spread, =1017



Table 6. Hand-collected vertebrate remains from excavations at TSEP site 218, north-east of High Catton by date. \* – percentages for identified remains refers the main domesticates (cattle, sheep/goat and pig) only.

Species		L3rd/ E4thC	4thC	Total	%*
<i>Canis f. domestic</i>	dog	-	9	9	
<i>Equus f. domestic</i>	horse	2	5	7	
<i>Sus f. domestic</i>	pig	-	24	24	25
<i>Bos f. domestic</i>	cattle	5	53	58	62
Caprovid	sheep/goat	1	11	12	13
<i>Anas sp.</i>	duck	-	7	7	
<i>Gallus f. domestic</i>	chicken	-	3	3	
<i>Corvus corone L./C. frugilegus L.</i>	crow/rook	-	1	1	
<i>Sub-total</i>		8	113	121	
Unidentified bird		-	9	9	2
Large sized mammal		14	258	272	56
Medium-sized mammal		4	37	41	9
Medium-sized mammal 2		-	14	14	3
Unidentified		8	138	146	30
<i>Sub-total</i>		26	456	482	
Total		34	569	603	

*Table 7. Skeletal element representation for the main domesticates from 3<sup>rd</sup>/4<sup>th</sup> century deposits at TSEP site 218, north-east of High Catton.*

<b>Element</b>	<b>Cow</b>	<b>Caprovid</b>	<b>Pig</b>	<b>Horse</b>
cranium/maxilla + teeth	2	-	4	-
mandible	5	1	-	-
isolated teeth	10	3	5	1
scapula	-	1	1	2
humerus	-	-	2	-
radius	6	-	1	-
ulna	1	-	-	-
metacarpal	-	4	2	-
pelvis	3	2	-	1
femur	2	-	1	-
tibia	4	-	1	-
astragalus	2	-	1	-
calcaneum	2	-	1	2
metatarsal	6	1	2	-
metapodial	-	-	-	1
carpals/tarsals	4	-	-	-
phalanx 1	5	-	2	-
phalanx 2	5	-	-	-
phalanx 3	1	-	1	-

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*Figure 1. Estimated cattle withers heights from various various archaeological sites of Late Iron Age/Early Roman and later Roman date. Sources of data: TSEP222 – Kenward et al. (2002); TSEP901 – Jaques et al. (2002); Garforth – Jaques (2000); Lutton – Carrott et al. (1997); Welton Road, Brough – Hamshaw-Thomas and Jaques (2000); York Minster – Jaques (1999); Lincoln – Dobney et al. (1996); Dragonby – Harman (1996).*