

Palaeoecology Research Services

**Evaluation of biological remains from excavations at  
site OSA02EX08, East Riding of Yorkshire  
(site code: OSA02EX08)**

by

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**Summary**

*Ten sediment samples (selected from 27 collected) recovered from excavations of deposits of late Iron Age/Romano-British date at a site on the Transco West Hull reinforcement pipeline (centred on NGR SE 95103 28333), in the East Riding of Yorkshire, were submitted to PRS for an evaluation of their bioarchaeological potential.*

*Ancient plant remains were rather sparse in the examined deposits and, in most cases, restricted to small fragments of charcoal of no interpretative value. Charred wheat, oats, barley and one ?rye grain were noted from Context 1244 (a fill of an oven). Many of the wheat and barley grains were rather small, perhaps indicating this to be waste from sieving a crop during cleaning, or low-grade cereal intended for feeding animals. Traces of ?mineralised plant remains were noted from Contexts 1216 and 1220.*

*No eggs of intestinal parasitic nematodes (or other microfossils) were seen in the 'squash' subsample from the abdominal area of the inhumation (Context 1167), or in ?faecal material examined from Contexts 1216 and 1220.*

*Only one of the recovered snail assemblages (Context 1020, Sample 1 – fill of a truncated gully/ditch) was of sufficient size to be of interpretative value. This assemblage was fairly typical of a ditch in a generally exposed calcareous area. The remains of the burrowing snail *Cecilioides acicula* (present in all of the sieved deposits) were almost certainly intrusive and of no interpretative value.*

*Most of the examined samples from this site produced moderate-sized assemblages of bone, however, preservation of the remains was not particularly good. Overall, the bones represented a mix of domestic and butchery waste. Contexts 1216 and 1220 produced completely different assemblages of bone. All the fragments were less than 20 mm in maximum dimension and most showed damage caused by acid etching. Some of the fish vertebrae recovered had a 'squashed' appearance consistent with their having been eaten. These bones almost certainly derive from faecal material, but it is difficult to determine whether this is of human or animal origin. However, on the basis of the size of the fragments, and some of the elements that have been ingested whole (e.g. sheep and pig phalanges), the remains are perhaps most likely to represent dog faeces.*

*No further work is recommended on the current material. However, if the deposits can be more closely dated then further study of some of the remains (in particular the bone) could usefully be undertaken. All of the material should be retained against this eventuality.*

**KEYWORDS:** SITE OSA02EX08; EAST RIDING OF YORKSHIRE; EVALUATION; LATE IRON AGE/ROMANO-BRITISH; PLANT REMAINS; CHARRED PLANT REMAINS; CHARRED GRAIN; SNAILS; VERTEBRATE REMAINS

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## Evaluation of biological remains from excavations at site OSA02EX08, East Riding of Yorkshire (site code: OSA02EX08)

### Introduction

An archaeological evaluation excavation was carried out by On-Site Archaeology, at a site in the East Riding of Yorkshire (centred on NGR SE 95103 28333), between the 3<sup>rd</sup> and the 30<sup>th</sup> of May 2002, as part of a series of interventions along the route of the Transco West Hull reinforcement gas pipeline.

The site was situated at the bottom of the southern scarp slope (spring line) of the Yorkshire Wolds within an extensive late Iron Age/Romano-British landscape. Nearby during the Romano-British period there was a fort, town and ferry crossing point at Brough on Humber (*Petuaria*), a probable entrepôt at Redcliff, and villa sites at Welton and Brantingham. This site forms a continuation of that excavated as OSA01WB33 (Elloughton), the biological remains from which were reported by Hall *et al.* (2002).

Washovers and residues from nine pre-processed bulk sediment samples, mostly from fills of cut features, were submitted for an evaluation of their bioarchaeological potential. One further sample (from Context 1216 – a pit fill) was processed by PRS. One subsample, from an inhumation (Context 1167), was examined for the eggs of intestinal parasitic nematodes (concreted material from two of the pre-processed residues was also examined – Contexts 1216 and 1220).

### Methods

Eight bulk sediment samples ('BS' *sensu* Dobney *et al.* 1992) were processed to 1 mm (with a 300 micron sieve for the lighter washover fraction) by the excavator.

One sample was processed by PRS following the procedures of Kenward *et al.* (1980;

1986), for recovery of plant and invertebrate macrofossils.

The washovers and residues resulting from processing were examined for plant and invertebrate macrofossils. The residues were examined for larger plant macrofossils, bone, and other biological and artefactual remains.

Three of the samples were examined for the eggs of intestinal parasitic nematodes using the 'squash' technique of Dainton (1992).

Nine of the samples gave at least some snails. These were scanned and the remains were identified to species (main source, Kerney and Cameron 1979) where possible (within the constraints of the project).

For the vertebrate remains recovered from the samples, records were made concerning the state of preservation, colour of the fragments, and the appearance of broken surfaces ('angularity'). Other information, such as fragment size, dog gnawing, burning, butchery and fresh breaks, was noted, where applicable. Fragments were identified to species or species group using the PRS modern comparative reference collection.

### Results

The results are presented in context number order. Archaeological information, provided by the excavator, is given in square brackets. A brief summary of the processing method and an estimate of the remaining volume of unprocessed sediment follows (in round brackets) after the sample numbers.

No insect remains were recovered from the samples.

**Context 1020** [fill of truncated gully/ditch]

Sample 1/BS (25 litres processed to 1 mm with 300 micron washover; approximately 5 litres of unprocessed sediment remain)

Moist, light to mid grey-brown, unconsolidated to crumbly (working more or less plastic), slightly silty clay, with chalk fragments (2 to 60+ mm) common and traces of rotted charcoal, modern rootlets and snails present.

The very small washover (approximately 30 ml) was mostly of land snails with some modern rootlets and a few fragments of charcoal (to 3 mm). The small land snail assemblage included many *Vallonia ?excentrica* Sterki, *Carychium ?tridentatum* (Risso), *Trichia ?hispidia* (Linnaeus), and *Cecilioides acicula* (Müller). There were also some *Vallonia ?costata* (Müller), *Cochlicopa ?lubrica* (Müller), and *Oxychilus ?cellarius* (Müller), a few *Discus rotundatus* (Müller) and *Cepaea/Arianta* sp., and a single fragment of an unidentified clausilid.

There was a large residue (approximately 20 kg) mostly of chalk (to 110 mm), with some flint (to 40 mm), a few snails (further individuals of the same taxa noted from the washover), a little bone, and rare fragments of charcoal (to 6 mm).

The vertebrate material recovered from this sample was rather poorly preserved, with the bones having rounded edges and eroded surfaces. A high degree of fragmentation was noted, but this was mainly the result of fresh breakage damage. The assemblage amounted to 80 fragments of bone, ranging in size from less than 10 mm to 95 mm in maximum dimension. Most fragments, although unidentifiable to species, represented large or medium-sized mammals. Some cattle cranium and pelvis fragments were identified, together with a single caprovid upper premolar. Several small mammal and amphibian bones were also noted.

**Context 1071** [fill of small pit]

Sample 2/BS (25 litres processed to 1 mm with 300 micron washover; approximately 5 litres of unprocessed sediment remain)

Moist, mid grey-brown, crumbly (working soft), clay silt with abundant chalk fragments (2 to 60 mm).

The very small washover (approximately 20 ml) was mostly of land snails with a few fragments of charcoal (to 3 mm) and modern rootlets. The small land snail assemblage was mostly of *Cecilioides acicula* (of which there were very many), with *Trichia ?hispidia*, *Vallonia ?excentrica*, *Pupilla muscorum* (Linnaeus), and *Cepaea/Arianta* sp. also represented (the last two by only single individuals). There were also many unidentified fragments of snail shell.

The large residue (approximately 20 kg) was of chalk (to 70 mm), with a little flint (to 40 mm), a few fragments of bone and charcoal (to 8 mm), and a very few snails (as in the washover).

A rather poorly preserved assemblage of bones was produced by this sample. Most fragments were small (less than 15 mm) and unidentifiable, with the exception of a caprovid tibia and a few fragments of pig mandible and tooth enamel. Two fragments representing a small thrush-sized bird (ulna and ?carpometatarsus) were noted, but were too eroded to identify to species. Several of the fragments were burnt.

**Context 1077** [pit fill]

Sample 9/BS (25 litres processed to 1 mm with 300 micron washover; approximately 5 litres of unprocessed sediment remain)

Moist, mid grey-brown, crumbly to unconsolidated (working more or less plastic), slightly sandy slightly silty clay. Chalk fragments (2 to 60+ mm) were common and traces of very rotted charcoal and snails were present.

The tiny washover (approximately 3 ml) was mostly mm-size pieces of undisaggregated sediment, a few fragments of charcoal (to 2 mm), some snails, and a single unidentified charred seed. Most of the snails present were *Cecilioides acicula*, with a few other fragments of land snails (mostly unidentified but including two *Trichia ?hispidia*, and single representatives of *Pupilla muscorum* and *Cochlicopa ?lubrica*).

The small residue (2.45 kg) was mostly of chalk (to 70 mm) with a little flint (to 30 mm), sand, bone, charcoal (to 6 mm), and two fragments of very rotted ?oyster shell.

Fourteen bone fragments were recovered from this sample. Most were small (less than 10 mm in maximum dimension), poorly preserved and could not be identified.

**Context 1167** [backfill of grave – sample taken from stomach area of inhumation]

Sample 12/P (microfossil ‘squash’ only; approximately 10 litres of unprocessed sediment remain)

Moist, mid grey-brown, crumbly (working soft), clay silt, with fragments of chalk (2 to 60 mm).

The ‘squash’ was wholly inorganic – no parasite eggs or other microfossils were seen.

**Context 1173** [pit fill]

Sample 8/BS (15 litres processed to 1 mm with 300 micron washover; approximately 5 litres of unprocessed sediment remain)

Moist, mid grey-brown, crumbly (working soft), clay silt. Stones (chalk, 2 to 60 mm) were common and modern rootlets present, in the sample.

The very small washover (approximately 15 ml) was mostly land snails (primarily *Cecilioides acicula*, with some other snails which were mostly represented by unidentified fragments but included at least eight *Pupilla muscorum*), with a few modern rootlets and traces of charcoal (to 2 mm).

The small residue (2.3 kg) was of chalk (to 55 mm) and occasional fragments of charcoal (to 5 mm).

**Context 1214** [fill of linear slot]

Sample 20/BS (8 litres processed to 1 mm with 300 micron washover; approximately 2 litres of unprocessed sediment remain)

Moist, light to mid grey-brown, crumbly to unconsolidated (working more or less plastic), slightly sandy slightly silty clay. Chalk fragments (2 to 60+ mm) were common and modern rootlets were present.

The tiny washover (less than 1 ml) was of a few *Cecilioides acicula*, fragments of other unidentified snail shell and modern rootlet, and a single unidentified charred seed.

The small residue (0.63 kg) was mostly chalk (to 50 mm), with a little bone, a few snail fragments (including 2 *Trichia hispida*), and an iron nail.

This sample produced a collection of bones which were mainly identified as pig. Twenty of the thirty fragments recovered from this deposit were pig phalanges (including unfused epiphyses), carpals and metapodial fragments. Preservation was recorded as 'fair', although the bones were rather battered in appearance. A single fragment had been burnt.

**Context 1216** [pit fill]

Sample 16/BS (25 litres processed to 1 mm with 300 micron washover; approximately 5 litres of unprocessed sediment remain)

Just moist, mid brown, unconsolidated to crumbly (working more or less plastic), slightly silty clay, with chalk fragments (2 to 20 mm), bone, and traces of charcoal.

The small washover (approximately 70 ml) was mostly mm-size pieces of undisaggregated sediment, with some charcoal (to 10 mm), modern rootlets. There were also many *Cecilioides acicula* and a few fragments of other unidentified land snails.

The residue (2.9 kg) was mostly small lumps of undisaggregated sediment (to 5 mm) and chalk (to 30 mm), with a little bone, a few fragments of charcoal (to 5 mm), and some mineralised plant remains. Subjectively, the lumps of concreted sediment appeared to be faecal (this was supported by the acid etching noted on the recovered bones, see below), and a 'squash' subsample from this material was examined but no eggs of intestinal parasitic nematodes were seen.

Some very small (most less than 10 mm in any dimension) fragments of bone were recovered from this sample. Preservation was extremely variable, although on the whole, it was considerably better than that recorded for Samples 1 and 2. It was clear from the extensive acid etching on a number of bones, including both pig and caprovid phalanges, that much of the assemblage derived from faecal material. Several fish vertebrae showed characteristic damage consistent with the bones having been digested. Although it is possible that the faecal material may be of human origin, the size of the phalanges (and the lack of parasite eggs) suggests that this material represents dog coprolites.

The fish remains included eel (*Anguilla anguilla* (L.)), flatfish (Pleuronectidae) and small gadid vertebrae and a number of stickleback (Gasterosteidae) spines. The part skeleton of a mouse (*Mus* sp.) was also identified. The bones belonging to the latter showed excellent preservation and were paler in colour than the rest of the assemblage; this individual is likely to be an intrusive component within the deposit and is probably of recent origin.

Sample 18/T (1.7 kg processed to 300 microns with washover; no unprocessed sediment remains)

Sediment description as Sample 16 above.

The small washover (approximately 10 ml) gave the same components as that from Sample 16 but with lesser proportions of bone and charcoal (to 5 mm).

The components of the modest residue (0.5 kg) were as described for Sample 16 (above).

This sample produced a similar assemblage of bone to that recovered from Sample 16. Acid etching was again apparent on pig and caprovid phalanges and sesamoids, again suggesting the bones mainly originated from faecal material. Additionally, the remains of a small

corvid were identified; several fish bones were also present.

#### **Context 1220** [pit fill]

Sample 19/BS (8 litres processed to 1 mm with 300 micron washover; approximately 2 litres of unprocessed sediment remain)

Moist, mid grey-brown, crumbly (working soft) clay silt. Fragments of chalk (2 to 60 mm) were common and modern rootlets were present.

The very small washover (approximately 10 ml) was mostly pieces of undisaggregated sediment (to 2 mm) with a few small fragments of charcoal (to 3 mm), some *Cecilioides acicula*, and a single fragment of another unidentified land snail.

The small residue (0.7 kg) was mostly chalk (to 60 mm) and lumps of concreted sediment (to 25 mm), with a little charcoal (to 20 mm), some bone, a few pieces of coal (to 6 mm), ?mineralised plant material, and a few unidentified fragments of snail shell. Subjectively, the lumps of concreted sediment appeared to be faecal (this was supported by the acid etching noted on the recovered bones, see below), and a 'squash' subsample from this material was examined but no eggs of intestinal parasitic nematodes were seen.

This sample produced a small assemblage of bone, of variable preservation, which showed similarities with the assemblages recovered from samples 16 and 18. Acid etching was prevalent and had almost completely destroyed a caprovid third phalanx. Again, it seems likely that these remains derived from faeces. Caprovid phalanges, several fish bones and a small mammal vertebra were noted, however, most fragments remained unidentified; all were less than 20 mm in any dimension.

#### **Context 1244** [deposit from oven]

Sample 23/BS (15 litres processed to 1 mm with 300 micron washover; approximately 5 litres of unprocessed sediment remain)

Moist, mid grey-brown, crumbly (working soft), clay silt. Stones (2 to 20 mm), fine charcoal and occasional charred grains were present.

The very small washover (approximately 30 ml) was mostly charcoal and charred grains, with many *Cecilioides acicula* and a few fragments of other unidentified snail shell. The grain was rather variable in its state of preservation but there were many fragments and rather puffed specimens. Wheat, oats, barley and one ?rye

(*Secale cereale* L.) grain were noted, the oats being usually rather shrunken-grooved in appearance.

The residue (1.4 kg) was mostly of baked clay/daub (to 30 mm, presumably part of the oven lining), with some chalk (to 35 mm) and other stone (including oolitic limestone to 60 mm and a little flint to 20 mm). There was also a trace of unidentified snail shell, a little charcoal (to 8 mm), and an occasional charred grain.

Eight bone fragments were recovered from this sample. Only a common shrew (*Sorex araneus* L.) humerus could be identified and this was probably intrusive and of modern origin. The other fragments were poorly preserved, being rather eroded and battered in appearance.

## **Discussion and statement of potential**

Only the sample from the oven deposit (Context 1244, Sample 23) gave ancient plant remains other than small fragments of charcoal. Many of the charred wheat and barley grains recovered from this sample were rather small, perhaps indicating this to be waste from sieving a crop during cleaning, or low-grade cereal intended for feeding animals.

No eggs of intestinal parasitic nematodes (or other microfossils) were seen in the 'squash' subsample from the abdominal area of the inhumation (Context 1167), or in ?faecal material examined from Contexts 1216 and 1220.

Only one of the recovered snail assemblages (Context 1020, Sample 1 – fill of a truncated gully/ditch) was of sufficient size to be of interpretative value. This assemblage was fairly typical of a ditch in a generally exposed calcareous area – there were taxa indicative of both very exposed places (e.g. the *Vallonia* species) and of the areas of greater moisture/shade (e.g. *Cochlicopa ?lubrica*, *Discus rotundatus*, and *Carychium ?tridentatum*) that might be provided by vegetation in and around the ditch. Similar assemblages have been recorded from OSA01WB33 (Hall *et al.* 2002) and from other nearby sites (e.g. Melton, Carrott *et al.* 1999; Carrott 2002). The remains of the

burrowing snail *Cecilioides acicula* (present in all of the sieved deposits) were almost certainly intrusive and of no interpretative value.

Most of the samples from this site produced moderate-sized assemblages of bone, however, preservation of the remains was not particularly good. Vertebrate material recovered from Contexts 1020, 1071 and 1077 appeared rather battered and may have been deposited elsewhere prior to being incorporated into the ditch and pit fills. Fragmentation was quite extensive, some of which was the result of damage during excavation and post-excavation processes. Overall, the bones represented a mix of domestic and butchery waste.

Contexts 1216 and 1220 (fills from the same pit?) produced completely different assemblages of bone. All the fragments were less than 20 mm in maximum dimension and most showed damage caused by acid etching. Some of the fish vertebrae recovered had a 'squashed' appearance consistent with their having been eaten. These bones almost certainly derive from faecal material, but it is difficult to determine whether this is of human or animal origin. However, on the basis of the size of the fragments, and some of the elements that have been ingested whole (e.g. sheep and pig phalanges), the remains are perhaps most likely to represent dog faeces.

## Recommendations

There does not seem to be any value either in recording the present plant material in more detail or in pursuing further analyses for these samples unless there are clear archaeological questions to address.

No further investigation for the eggs of intestinal parasitic nematodes is warranted.

Further study and quantitative recording of the snail assemblage from Context 1020 would be

of some academic value, but would not add to the interpretative information for the site given in this report. Detailed recording of this assemblage would be of value in adding data to a synthetic study of the late Iron Age/Romano-British landscape of the Yorkshire Wolds, if the dating of the deposit could be refined.

The absence of any dating framework makes it difficult to make recommendations for further work on the vertebrate remains. The nature of the bone assemblage itself provides few clues to the temporal context. Iron Age sites (certainly in the north of England) have produced almost no fish remains (although a lack of systematic sieving may be partly responsible for this). Fish bones have not been commonly recovered from rural Romano-British sites either, but they are present from urban Roman contexts such as York (O'Connor 1988) and Lincoln (Dobney *et al.* 1996). Fish remains tend to be more prevalent from sites of the high and late medieval period onwards. Should a tighter chronological framework be achieved then this assemblage would warrant further consideration. Without dating evidence, it is of little further value.

## Retention and disposal

All of the current material should be retained for the present (against the possibility of closer dating of the deposits being achieved which would allow further study of at least some of the biological remains, e.g. the bone, to be usefully undertaken).

## Archive

All material is currently stored by Palaeoecology Research Services (Unit 8, Dabble Duck Industrial Estate, Shildon, County Durham), along with paper and electronic records pertaining to the work described here.

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