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An evaluation of biological remains from excavations at Castle Car Park, York (sitecode: 1995.58)

by

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Summary

Ten sediment samples and three boxes of hand-collected bone were submitted for an evaluation of their potential for bioarchaeological analysis. All of the deposits gave at least small numbers of plant and/or invertebrate remains but the samples from Context 2019, in particular, are considered to merit further investigation. The animal bone assemblage was too small and insufficiently well-dated to allow definite interpretation but Context 2019 could prove interesting if the dating were confirmed.

Keywords: CASTLE CAR PARK; YORK; ROMAN; PLANT REMAINS; INVERTEBRATE REMAINS; ANIMAL BONE

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Introduction and methods

Excavation of two trenches in the Castle Car Park, York, was undertaken by York Archaeological Trust in an attempt to locate the western and eastern gatehouses of the northern gateway to York Castle. Ten samples from deposits of mostly late Roman/Post-Roman date were submitted. Subsamples of sediment from these deposits have been examined to evaluate their bioarchaeological potential.

GBA samples

Ten samples of sediment (8 GBA's and 2 'spot' samples *sensu* Dobney *et al*. 1992) were submitted. The GBA samples were inspected in the laboratory and their lithology recorded using a standard *pro forma*. Subsamples of 1 kg were taken from each of the samples for extraction of macrofossil remains, following procedures of Kenward *et al*. (1980; 1986). Plant macrofossils were examined from the 'flots' and residues resulting from processing. The flots alone were examined for invertebrate remains. Four of the samples were examined for the eggs of parasitic nematodes using the methods of Dainton (1992).

Animal Bone

Three boxes (31 x 31 x 22cm) of animal bones were submitted for evaluation. Thirteen bone-bearing contexts were represented, only four of which could be very broadly dated to either the Roman or Post-Roman periods on the basis of information provided by the excavator.

A total of 556 fragments (160 identified) were recovered; most of these (380) were from backfill deposits of a pit (Context 2019). Only those fragments which came from dated contexts (2013, 2015, 2016 and 2019) were recorded in any detail, the remainder being merely scanned.

Results and Discussion

The sediment samples

The results of the investigations are presented in trench then context number order with archaeological information provided by the excavator in square brackets.

Trench 1

Context 1011 [Backfill of construction cut for one of the walls of the 19th century prison. *Reason for sampling*: the prison wall may have been founded in the original ditch/moat of the medieval castle. Is the sediment primary fill of the moat or backfill?]

Sample 3

Moist, equal parts of grey, sticky, slightly sandy clay and pinkish buff clay with very small to medium-sized stones (2-60 mm). Mortar/plaster, brick/tile, charcoal and marine mollusc shell were present.

The flot contained a moderate quantity of fine plant detritus and some *Sphagnum* sp. leaves. Insect preservation was good, although there were few remains. Some aquatics were present (such as the water flea *Daphnia* sp. and the whirlygig beetle *Gyrinus* sp.), as were a few terrestrial forms. A much larger subsample might permit a useful interpretation. This deposit may represent a mixture of dumped material with sediment (including biological remains) already present in the moat.

Trench 2

Context 2013 [Dump of material on top of a ?Post-Roman hearth. *Reason for sampling:* was this deposit associated with the use/disuse of the hearth?]

Sample 6

Moist, mid orange-brown, soft, slightly sandy silt (or ?ash) with lumps of buff ash. Very small to medium-sized stones (2-60 mm), mortar/plaster and charcoal were present.

A small amount of charcoal, some partly charred wood (to 15mm) and a piece of glassy slag were all that was recovered in the flot. There was no identifiable plant material in the residue.

The analysis has provided no evidence to confirm the status of the deposit.

Context 2015 [As Context 2013, beneath which it lay. *Reason for sampling*: possibly a use deposit associated with the ?Post-Roman hearth.]

Sample 8

Moist, mid to dark grey-brown, brittle (working soft), ?ashy clay silt with fragments of very rotted wood, very small stones (2-6 mm), brick/tile and charcoal.

The flot yielded only a little plant detritus, including some very decomposed wood (to 5mm) and seeds of *Atriplex* sp., *Juncus bufonius* L. (toadrush) and *Rumex* sp. The invertebrates were represented by a land snail and traces of very decayed insect remains

The parasite 'squash' consisted of equal parts of organic detritus and inorganic particles. There were many phytoliths and fungal spores but no parasite eggs.

These results suggest that the deposit received organic remains after any episode of burning and was thus, in its final stages at least, no longer a functional part of the hearth.

Context 2016 [Built-up, trampled to form a compacted ground surface of ?Roman date. *Reason for sampling*: routine.]

Sample 10

Moist, mid to dark grey-brown, crumbly (working plastic), sandy clay silt. Very small, small and large stones (2-20 mm and >60 mm), brick/tile and fragments of mammal bone were present, and charcoal was common in the sample.

The flot contained a trace of *Sambucus nigra* L. (elder) seeds, two seeds of deadly nightshade (*Atropa bella-donna* L.), a little charcoal (<1mm) and coal (<2mm).

These resistant remains offer no significant information about the deposit.

Sample 14 - [*spot find for identification*]

Very dense slag, possibly containing a heavy metal such as lead.

Context 2019 [Backfill of late Roman/Post-Roman pit. *Reason for sampling*: may be associated with use as a rubbish pit.]

Sample 9 - [*spot find of ?eggshell/snail shell*]
Moist, mid to dark brown, slightly compressed to crumbly (working soft), silty, amorphous organic sediment. Land snails were present, charcoal and eggshell were common.

The flot yielded a little fine plant detritus, a charred grain, charcoal (to 1mm) and traces of poorly preserved insect remains.

Charcoal (to 1cm) and eggshell were the most abundant remains in the small residue. Four small fragments of mammal bone, a piece of marine oyster and a single fragment of land snail were also present.

The parasite 'squash' consisted of equal parts of organic detritus and inorganic particles. There were a few phytoliths and fungal spores and one *Trichuris* sp. egg.

Sample 11

Moist, mid orange-brown, compressed herbaceous detritus.

The flot contained a substantial quantity of very decomposed 'grassy' plant detritus (probably hay) and weeds. Many quite well preserved seeds were present, especially *Prunella vulgaris* L. (self-heal) and *Chenopodium ficifolium* Sm. (fig-leaved goosefoot). Invertebrates were represented by a small but distinctive group of beetles (and a bug) associated, as a community, with mouldering hay and similar material. *Typhaea stercorea* (Linnaeus)

was the most abundant of these species. A few colonists of rather fouler material, such as *Platystethus arenarius* (Fourcroy), were also present. One *Damalinia* sp., perhaps *D. bovis* (the cattle louse), was present, but a definite identification would require detailed investigation. The whole assemblage deserves further study.

The residue was not examined closely but appeared to consist chiefly of 'grassy' plant detritus.

The parasite 'squash' consisted mostly of organic detritus with many mineral grains and fungal spores, some phytoliths and two live soil nematodes. Parasite eggs were not seen.

Sample 12

Moist, mid to dark orange-brown, brittle, amorphous organic material with charcoal and fragments of eggshell.

The flot contained a few, well-preserved insects, subjectively similar in character to the assemblage present in sample 11/T. The plant remains however, were less abundant than in 11/T and not 'grassy'. Some lumps of very decayed bark (to 15mm), and traces of seeds or fruits of *Atriplex* spp., *Atropa bella-donna* and *Aethusa cynapium* L. were present, together with earthworm egg capsules.

The residue contained only a moderate quantity of organic matter.

The parasite 'squash' was largely inorganic with some organic detritus, many fungal spores and some fungal hyphae. A few phytoliths were observed but no parasite eggs.

Sample 13

Wet, mid to dark orange-brown, crumbly and brittle (working slightly plastic), humic silt with patches of compressed herbaceous detritus. Small flints (6 to 20 mm) and charcoal were also present.

The invertebrate assemblage in this flot appeared to be a variation on those found in sample 11/T but with fewer colonisers. They may have been redeposited from a patchy original layer or were from deeper down in the deposit. The plant remains were mostly 'weedy' (*Atriplex* spp., *Aethusa cynapium* L.) with some grassy, fine plant debris, but did not appear to represent grassland, unlike sample 11/T.

The organic component of the residue was moderate in quantity.

The parasite 'squash' contained mostly organic detritus, many inorganic 'grains', phytoliths and some fungal spores. No parasite eggs were observed.

This pit was clearly heterogeneous; the remains in the fills range from being hay-like to somewhat 'weedy' in character, while others were rather indeterminate. There is no strong evidence for particularly foul conditions.

Context 2022 [Dump of redeposited natural material. *Reason for sampling*: routine.]

Sample 15

Just moist, moderately heterogeneous, stiff (working slightly plastic), pinkish buff clay sand grading to dark grey slightly clay sand. Very small to medium-sized stones (2-60 mm) and charcoal were present.

Only traces of unidentifiable insect cuticle, charcoal (to 5mm) and some ?rootlets were present in the flot.

These remains are of no interpretative value.

Animal bone

Table 1 shows the results of the examination of animal bones from the dated contexts (2013, 2015, 2016 and 2019). The assemblage consisted of 131 identified fragments (weighing 4191g) and 344 unidentified fragments.

Most of the recorded bone groups were variable in terms of preservation and the appearance of broken surfaces. The exception was the group from Context 2019, which showed uniformly good preservation. Colour ranged from dark brown to fawn, with little variation within contexts. However, Contexts 2013 and 2015 contained bones with differing degrees of burning, ranging from

scorched bones to white calcined fragments. This is not surprising since these ?post-Roman deposits were associated with a hearth.

The largest proportion of identifiable fragments were from the remains of the major domesticates - cattle, caprine, pig, and chicken. Goose was represented by five fragments of tibiotarsus, all of a size consistent with either the large grey geese (*Anser* spp.) or a small domestic variety.

Bones from Context 2019 were perhaps the most interesting in that twelve of the 32 caprine fragments were from juvenile individuals. Five of the six mandibles recovered had mainly deciduous teeth present (Dp2, Dp3 and Dp4). Four fragments of juvenile metapodials appeared to have been chopped longitudinally, as did two adult cattle metatarsals. In addition, two juvenile sheep cranial fragments showed unusual butchery to the horncores. This, in one case, consisted of a series of somewhat oblique chops to the base and middle portion. A skull fragment, identified as pig, had also been chopped along the sagittal plane in order to allow access to the brain.

Statement of potential

Providing the deposits from which they came can be dated with reasonable accuracy, certain of the sediment samples deserve further investigation as they include characteristic biota of considerable interpretative significance. The samples from Context 2019 fall in this category.

The bone assemblage has little interpretative value because of its small size and very tentative dating framework. There are no obvious characteristics of the material which might throw further light on its date. If a late Roman date were confirmed, the remains of juvenile sheep would be extremely interesting, since sheep are generally present in only small proportions in deposits of this date, and then usually with a predominance of adults.
The deposits in the Castle Car Park area clearly may contain biological remains of considerable interpretative value and should not be destroyed without appropriate excavation and sampling.

Recommendations

As a result of extensive building works that occurred in this area of York during the 19th and 20th centuries, there was considerable destruction of earlier deposits. It is possible that further excavation would recover little sufficiently well-dated and undisturbed material, although this eventuality should not be ruled out. Any destruction of these deposits should be accompanied by a detailed watching brief, with a substantial contingency for excavation and sampling, with appropriate provision for an adequate post-excavation programme.

No further work is recommended on the bone assemblage in hand. Ideally, the biota of Context 2019 should be put on record as a characteristic assemblage, providing reasonably close dating can be achieved.

Retention and disposal

With the exception of the material from Context 2019, the samples recovered during this exercise are not thought worthy of retention. Selected GBA samples should be retained for further investigation.

Archive

All extracted fossils from the test subsamples, and the residues and flots are currently stored in the Environmental Archaeology Unit, University of York, along with paper and electronic records pertaining to the work described here.

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Table 1. Hand-collected bone from the four dated contexts (2013, 2015, 2016, 2019).

Taxon		**Total no.**	**No. measurable**	**No. mandibles**
Bos f. domestic	cattle	59	10	3
Caprinae sp.	sheep/goat	38	4	6
Sus f. domestic	pig	24	4	3
Equus f. domestic	horse	1	-	-
Gallus f. domestic	chicken	4	2	-
Anser spp.	goose	5	4	-
Sub-total		***131***	***24***	***12***
Unidentified		344	-	-
Sub-total		***344***	**-**	**-**
Total		**475**	**24**	**12**