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Assessment of biological remains from Rear, 3 Little Stonegate (Methodist Chapel Cottage), York (site code 1998.705)

by

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Summary

A total of 22 sediment samples and two boxes of bone were submitted for assessment, of which ten samples and both boxes of bone were examined. With the exception of material from Samples 2 (Context 1034), 4 (1086) and 20 (1283), organic remains were scarce. Plant macrofossils from Samples 2 and 4 indicated the possible presence of animal bedding material and hay respectively. The charred herbaceous material, probably grass, from Sample 20, may indicate that burnt turves formed a part of this deposit.

A fairly small vertebrate assemblage was recovered (607 fragments of which 146 were identifiable to species) from deposits mostly dating to the Roman period. The preponderance of cattle bones and large mammal (assumed to be mostly cattle) fragments is typical of many Roman animal bone assemblages. In addition to the domestic species, bones of red and roe deer, raven and a wader species were recovered. Biometrical data for the major domesticates should be recorded from all well-dated material, to provide useful comparanda for other material of this date.

KEYWORDS: LITTLE STONEGATE; YORK; ASSESSMENT; ROMANO-BRITISH; NGLO-SCANDINAVIAN; VERTEBRATE REMAINS; PLANT REMAINS; INVERTEBRATE REMAINS

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Introduction

During the latter part of 1998, an excavation was undertaken by York Archaeological Trust in advance of development and the sinking of a lift shaft on land to the rear of 3 Little Stonegate, York. A total of 22 sediment samples and two boxes of bone (approximately 20 litres) were submitted for assessment of their potential for further work.

Methods

Sediment samples

Ten samples were selected on the basis of information supplied by the excavator. The samples were initially inspected in the laboratory and their lithology described using a standard *pro forma*. Subsamples were taken from six 'GBA'(*sensu* Dobney *et al.* 1992) samples for extraction of macrofossil remains following procedures of Kenward *et al*. (1980; 1986), whilst three samples were bulk-sieved. Sample 20 (Context 1283) and a coprolite (from Context 1090) were treated as 'Spot' samples. Table 1 details the processing/treatment of the samples.

The resulting flots/washovers and residues were examined for plant, invertebrate remains and vertebrate remains.

One of the samples, together with the coprolite from Context 1090, were examined for microfossils using the 'squash' technique of Dainton (1992).

Vertebrate remains

For the vertebrate remains, data were recorded electronically directly into a series of tables using a purpose-built input system and *Paradox* software. For each context containing more than three fragments, subjective records were made of the state of preservation, colour of the fragments, and the appearance of broken surfaces ('angularity'). Additionally, semi-quantitative information was recorded concerning fragment size, dog gnawing, burning, butchery and fresh breakage.

Where possible, fragments were identified to species or species group, using the reference collection at the Environmental Archaeology Unit, University of York. Fragments not identifiable to species were grouped into categories: large mammal (assumed to be cattle, horse or large cervid), medium-sized mammal 1 (assumed to be caprovid, pig or small cervid), medium-sized mammal 2 (assumed to be dog, cat or hare), unidentified bird and completely unidentifiable.

Total numbers of fragments by species were recorded, together with along with the numbers of 'A' bones i.e. mandibular teeth and mandibles for age at death analysis, measurable fragments, and the number of unfused and juvenile fragments (Dobney *et al*. forthcoming). In addition to counts of fragments, total weights were recorded for all identifiable and unidentified categories.

Results

Sediment samples

Table 1 gives a list of the samples, the action taken and the retention/disposal requirements. Archaeological information and pottery spot dates (provided by the excavator) are given in square brackets.

Context 1034 [fill of garderobe - 4th Century]
Sample 2 (GBA)

Moist, very dark grey (locally paler and black), crumbly (working plastic, rubs brown), slightly humic, slightly sandy, clay silt. Charcoal was abundant, whilst mortar/ash flecks, large mammal bone and rotted marine mollusc shell were all present.

The moderate- to large-sized residue of about 600 cm^3 contained about 15-20% by volume charcoal (to 20 mm maximum dimension), the remainder bone (unidentified large and medium-sized mammal fragments), sand and gravel; the very small flot contained some fine organic detritus and a few charred cereal grains and uncharred weed seeds (including a suite of *Chenopodium* species suggestive of foul waste, such as a dungheap or farmyard), together with small peatland and wetland components, perhaps all introduced with litter used for animal bedding. In addition, a few poorly preserved insect cuticles were noted.

Context 1086 [?occupation - late 1st/early 2nd Century]
Sample 4 (GBA)

Moist, light brown to light grey to black, crumbly (working sticky), clay silt. Rotted ?mortar was present and very degraded charcoal worked into the matrix was abundant.

The large residue mainly of sand and gravel yielded a washover of a few cm^3 consisting mostly of well to moderately well preserved charred hulled barley (*Hordeum* sp.) grains and a single charred bean (*Vicia faba* ssp. *minor*) seed, together with some lumps of ?concreted ash. The presence of a range of smaller charred seeds, including moderate numbers of those of a clover (*Trifolium*) species and some other wet and dry grassland types suggest that partly burnt hay formed a component of the deposit as it formed. A few more barley grains were recorded from the small flot, together with a few earthworm egg capsules.

Context 1090 [coprolite - 3rd/4th Century]

A coprolite was submitted as a SPOT sample. The microfossil 'squash' was mostly inorganic grains with a trace of organic detritus and some fungal hyphae. No eggs of parasitic intestinal nematodes were seen.

Context 1155 [?occupation]
Sample 6 (GBA)

Just moist, colour range from light grey to mid-dark grey brown, crumbly and layered (working soft), clay silt. White flecks (possibly rotted mortar) were noted, together with pot fragments and charcoal flecks.

The moderate- to large-sized residue of about 100 cm^3 consisted of sand and gravel with traces of burnt and unburnt bone, small charcoal fragments (to 2 mm), oyster shell fragments and pottery; the minute flot contained a trace of fine charcoal and a few earthworm egg capsules. The vertebrate remains consisted of two pig fragments, a single bird bone and three unidentified fragments (one burnt).

Context 1183 [?occupation]
Sample 8 (BS)

Just moist, light to mid brown (internally), light to mid grey brown (externally), crumbly, slightly sandy, clay silt. Patches of the matrix contained more sand. Small, medium-sized and large stones, rotted ?mortar and charcoal fragments were present.

There was a moderate- to large-sized residue of 1600 cm^3 of sand and gravel, with traces of occupation material in the form of charcoal, pottery, glass, bone and brick/tile.

Context 1221 [?occupation]
Sample 11 (GBA)

Moist, mid-dark grey and brown, crisp (working crumbly to slightly plastic), slightly silty, slightly clay sand. Recent mould growth was observed.

The large to very large residue of about 700 cm^3 was of sand and gravel with traces of bone, brick/tile, charcoal and iron-rich concretions; the tiny flot contained only a trace of fine charcoal and a single earthworm egg capsule.

Context 1255 [?cess - late 1st/2nd Century]
Sample 15 (GBA)

Moist, mid olive to slightly orangish brown, soft to crumbly and brittle (working plastic), clay silt, with possible concretions present.

The microfossil 'squash' was mostly inorganic with traces of organic detritus and a few fungal hyphae. No eggs of parasitic intestinal nematodes were seen.

Undisaggregated clay sediment, mortar (to 90 mm), sand and gravel made up the bulk of the large to very large residue (in which there were also traces of brick/tile, charcoal and bone); there was a minuscule washover of fine charcoal. The flot was effectively barren of plant remains, but several soil nematode (*Heterodera* sp.) fragments were recovered.

Context 1256 [charcoal spread]
Sample 14 (BS)

Moist, black, with traces of grey, crumbly (working sticky), clay silt. Very degraded charcoal worked into the matrix was abundant.

The large to very large residue of about 250 cm^3 (of which about 75 cm^3 was a washover of charcoal) comprised gravel and sand; there were a few (4) charred barley grains and traces of some other charred seeds of no interpretative significance.

Context 1283 [?turf line]
Sample 20 (Spot)

Moist, mid grey-brown, plastic (working plastic), clay silt. Patches of paler clay and ?humic dark brown material were present.

There was a very small residue of a few cubic centimetres in volume, mostly of undisaggregated clasts of silty clay, and a very small washover of similar size consisting mainly of fine woody and herbaceous charcoal up to about 7 mm in maximum dimension. The charred herbaceous material included a few very small grass fruits and some vegetative material which appeared to be the basal culm and uppermost root/rhizome of a very small monocotyledonous plant, probably a grass (Gramineae) or rush (*Juncus* sp.). Similar, though not identical, material has been observed in some Anglian occupation deposits rich in ash from Flixborough, N. Lincolnshire (Dobney *et al.* 1994; 1998) where it seems possible that burnt turves formed part of the input to the deposits. A few fragments of very rotted, orange, beetle cuticle (mostly not identifiable to species) were recovered from the washover, together with several earthworm egg capsules and fly puparia.

Context 1287 [?occupation]
Sample 19 (GBA)

Moist to wet, mid brown to mid grey brown, sticky (working soft), slightly sandy clay silt. Very small stones (to 6 mm) and some fragments of charcoal were noted.

There was a small- to moderate-sized residue of about 100 cm^3, mostly sand and gravel; the washover of about 10-15% by volume was charcoal; the tiny flot contained only traces of fine charcoal and several earthworm egg capsules.

Context 1292 [backfill of gully]
Sample 21 (BS)

Moist, light to mid grey brown, brittle and sticky (working slightly plastic to soft), clay silt, with charcoal fragments present. A rather jumbled appearance was apparent, created by the presence of patches of light grey, light brown and orangey material.

The minute to small residue of about 200 cm^3 comprised sand and gravel, with traces of charcoal and of burnt and unburnt bone.

Vertebrate remains

Vertebrate material was recovered from a total of 76 contexts and bone from 72 of these was recorded. The remaining four contexts (1000, 1011, 1016, 1021) were excluded, being considered too broadly dated.

A total of 607 fragments (weighing 8,006 g) were examined, of which 146 (weighing 3581 g) were identified to species (Table 2). Most of the vertebrate remains were recovered from deposits dated to the Roman period, with a small proportion of Anglo-Scandinavian material (Table 3 gives the numbers of fragments by date).

Preservation records were made for material from 15 contexts. Overall preservation was described as fair. Colour was variable between contexts but consistently light brown or fawn within them. Angularity (appearance of broken surfaces) was also variable, with most bird bone fragments recorded as 'spiky' and mammal bones generally appearing more battered.

The degree of fragmentation was moderate, with more than 50 % of fragments in most contexts being between 5 and 20 cm in the largest dimension. Overall, 0-10 % of fragments were affected by fresh breakage. Dog gnawing was noted on 0-10% of fragments in all except four contexts. Evidence of butchery was present on material from most contexts, affecting, on average, 0-20% of the fragments. Burnt fragments were noted in contexts 1001 and 1061.

Domestic species included those of economic importance (cattle, caprovid and pig), as well as dog and chicken. Two wild mammal fragments were recovered, a roe deer (*Capreolus capreolus* (L.)) metatarsal and a red deer (*Cervus elaphus* L.) humerus. Of the identified material, cattle fragments were most numerous, with a corresponding high number of large mammal fragments in the unidentified fraction.

Two of the goose fragments were of sufficient size to indicate that they may be from domestic individuals. A single humerus was smaller and consistent in size with barnacle geese specimens in the EAU reference collection. It is therefore likely that this bone represents a wild individual. The duck fragments were of similar size to the mallard specimens in the EAU reference collection, suggesting these may also be from wild individuals.

More unusual bird fragments included a raven (*Corvus corax* L.) humerus from a 2nd Century deposit (Context). In addition, three bones (scapula, radius and tibiotarsus) were tentatively identified as the remains of a small wader.

Human remains were recovered from three deposits, Contexts 1036, 1038, and 1071. The latter included five fragments representing a juvenile individual. These bone suggest the presence of redeposited material.

Within the total of 146 identifiable fragments, 51 were measurable (grouped by date in Table 4), and 23 were subadult and/or juvenile. In addition, 12 mandibles and a single tooth, yielding ageing or sexing information were recovered.

Discussion and statement of potential

Sediment samples

The one sample warranting closer archaeobotanical examination (Sample 4 from Context 1086) was, unfortunately, small, and insufficient material remains for further analysis. Identification of the herbaceous material from Sample 20 might be achieved in the future but the concentration of remains is not sufficient to warrant further work at this stage. No further work is warranted on the invertebrate remains.

The coprolite seems most likely to have been formed from dog faeces.

Vertebrate remains

Although the assemblage was quite small, the tight dating of many deposits allowed a few observations to be made on the material. The preponderance of cattle and large mammal (assumed to be mostly cattle)

fragments is typical of many Roman vertebrate assemblages. The presence of raven is interesting as although remains of this bird have been found in many Anglo-Scandinavian and medieval deposits from York (O'Connor 1989, Bond and O'Connor 1999), few have been recovered from Roman levels. This is likely to be a reflection of the paucity of Roman assemblages recovered and studied from York.

The tight dating of the deposits would allow a limited amount of further work to take place, in particular, measurements should be taken to provide useful comparanda for other material of this date.

Recommendations

Sediment samples

It is probably not worthwhile to examine the remaining samples from the corpus collected unless specific questions can be addressed through their study.

No futher investigation of the samples' microfossil content is recommended.

Vertebrate remains

An archive should be made of the tightly dated material and measurements should also be taken.

Retention and disposal

Sediment samples

It is probably not worthwhile keeping the undisaggregated parts of the samples selected for analysis in this assessment and the samples not examined are, likewise, probably of very little value in the long-term.

Vertebrate remains

Bone should be retained for the present to allow an archive to be made and analysis to be undertaken as part of a possible synthetic project.

Archive

All material is 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. Action taken and retention/disposal requirements for samples from Rear, 3 Little Stonegate, York (in context number order).

Context	Sample	Action taken	Retention/disposal
1016	1	Not processed	Need not be retained
1034	2	GBA - 3 kg subsample sieved to 300 *µm* with paraffin flotation, residue kept wet.	Need not be retained
1046	3	Not processed	Need not be retained
1086	4	GBA - 0.5 kg subsample sieved to 300 *µm* with paraffin flotation, residue kept wet.	Retain for possible future analysis
1090	-	SPOT - coprolite examined by microfossil 'squash'	Retain
1145	5	Not processed	Need not be retained
1155	6	GBA - 0.5 kg subsample sieved to 300 µm with paraffin flotation, residue dried.	Need not be retained
1155	22	Not processed	Need not be retained
1183	7	Not processed	Need not be retained
1183	8	BS - 9kg sieved to 500 µm, residue dried.	Need not be retained
1184	9	Not processed	Need not be retained
1191	10	Not processed	Need not be retained
1221	11	GBA - 3 kg subsample sieved to 300 *µm* with paraffin flotation, residue dried.	Need not be retained
1246	13	Not processed	Need not be retained
1249	12	Not processed	Need not be retained
1255	15	GBA - 3 kg subsample sieved to 300 *µm* with paraffin flotation, after being soaked with sodium pyrophosphate, residue kept wet. Microfossil 'squash'.	Need not be retained
1256	14	BS - 1 kg sieved to 300 *µm* with the washover also sieved to 300 *µm*, residue kept wet.	Need not be retained
1256	17	Not processed	Need not be retained
1256	18	Not processed	Need not be retained
1283	20	SPOT - soaked in warm water for 2-3 hrs then soaked with sodium pyrophosphate overnight, rewashed and resoaked with sodium pyrophosphate for 2 nights, residue kept wet.	Retain for possible future analysis
1287	19	GBA - 1.5 kg subsample sieved to 300 *µm* with paraffin flotation, residue kept wet.	Need not be retained
1292	21	BS - 12 kg sieved to 300 *µm*, residue dried.	Need not be retained

Table 2. Total numbers of vertebrate fragments, together with numbers of measurable and subadult bones, numbers of mandibles and isolated teeth yielding ageing and sexing information and weights, by species, from Rear 3 Little Stonegate, York. Key: Total frags = total number of fragments; No. meas = number of measurable fragments; No. mand = number of mandibles with teeth in situ*; No. teeth = number of isolated mandibular teeth; No. unfused = number of unfused fragments; No. juv = number of juvenile fragments.*

Species		**No. meas**	**No. unfused**	**No. juv**	**No. mand**	**No. teeth**	**Total frags**	**Weight (g)**
Canid	Canidae	-	-	-	-	-	1	1.9
?Canid	cf. Canidae	-	-	-	-	-	1	0.8
Pig	*Sus* f. domestic	-	9	6	4	1	29	438.0
Cow	*Bos* f. domestic	13	-	-	2	-	53	2596.1
Red deer	*Cervus elaphus* L.	1	-	-	-	-	1	102.4
Roe deer	*Capreolus capreolus* (L.)	1	-	-	-	-	1	11.8
Sheep/goat	Caprovid	4	1	1	6	-	15	184.2
Goose	*Anser* sp.	2	-	-	-	-	3	19.6
Duck	*Anas* sp.	11	-	-	-	-	12	22.7
Chicken	*Gallus* f. domestic	16	1	-	-	-	19	41.5
Wader sp.	Charadriidae	2	-	-	-	-	3	0.6
Raven	*Corvus corax* L.	1	-	-	-	-	1	2.9
Human	*Homo sapiens*	-	-	5	-	-	7	158.3
Subtotal		***51***	***11***	***12***	***12***	***1***	***146***	***3580.8***
Unidentified bird		-	-	-	-	-	22	19.7
Medium-sized mammal 2		-	-	-	-	-	1	8.3
Medium-sized mammal 1		-	-	-	-	-	149	543.2
Large mammal		-	-	-	-	-	246	3796.4
Unidentified		-	-	-	-	-	43	57.6
Subtotal		***-***	***-***	***-***	***-***	***-***	***461***	***4425.2***
Total		**51**	**11**	**12**	**12**	**1**	**607**	**8006.0**

Table 3.Total numbers of vertebrate fragments, by date, from Rear, 3 Little Stonegate, York. Key: RB = Romano-British.

Species		**1st/2ndC**	**2nd/3rdC**	**3rd/4thC**	**RB**	**9th-11thC**	**Total**
Canid	Canidae	-	1	-	-	-	1
?Canid	cf. Canidae	-	-	1	-	-	1
Pig	*Sus* f. domestic	5	-	8	14	2	29
Cow	*Bos* f. domestic	3	1	24	18	7	53
Red deer	*Cervus elaphus* L.	-	-	-	1	-	1
Roe deer	*Capreolus capreolus* (L.)	-	-	1	-	-	1
Sheep/goat	Caprovid	6	-	4	5	-	15
Goose	*Anser* sp.	-	-	1	2	-	3
Duck	*Anas* sp.	-	-	10	2	-	12
Chicken	*Gallus* f. domestic	2	-	8	8	1	19
Wader sp.	Charadriidae	-	-	3	-	-	3
Raven	*Corvus corax* L.	1	-	-	-	-	1
Human	*Homo sapiens*	-	-	-	7	-	7
Subtotal		***17***	***2***	***60***	***57***	***10***	***146***
Unidentified bird		1	-	14	7	-	22
Medium-sized mammal 2		-	-	1	-	-	1
Medium-sized mammal 1		26	-	58	55	10	149
Large mammal		27	5	114	80	20	246
Unidentified		2	-	10	31	-	43
Subtotal		***56***	***5***	***197***	***173***	***30***	***461***
Total		**73**	**7**	**257**	**230**	**40**	**607**

Table 4. Numbers of measurable fragments by date, from Rear, 3 Little Stonegate, York

Species	**1st/2nd C**	**3rd/4th C**	**4th C**	**Romano-British**	**9-11th C**	**Total**
Cattle	1	7	-	4	1	13
Red deer	-	-	-	1	-	1
Roe deer	-	-	1	-	-	1
Sheep/goat	-	3	-	1	-	4
Goose	-	-	-	2	-	2
Duck	-	9	-	2	-	11
Chicken	2	4	1	8	1	16
Wader sp.	-	2	-	-	-	2
Raven	1	-	-	-	-	1
Total	**4**	**25**	**2**	**18**	**2**	**51**