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**Assessment of biological remains from York Minster Library  
(sitecode: YML97)**

by

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**Summary**

*Twelve sediment samples ('GBA' and 'BS' sensu Dobney et al. 1992) and a quantity of hand-collected bone, from excavations at York Minster Library, were submitted to the EAU for assessment of their bioarchaeological potential.*

*None of the samples yielded any useful or diagnostic plant or invertebrate remains, though the charcoal in the sample from Context 1193 might be worth pursuing if there is a good interpretative reason. Otherwise, no further work is recommended on the sediment samples beyond sieving to recover artefacts.*

*The medieval bone assemblage: although hints of redeposited material have been noted, it is clear that general medieval characteristics are present. However, the dating framework is as yet very broad, which renders any interpretation of limited value. Elements of 'high-status' occupation have been presented. This is not surprising given the proximity of the deposits to the medieval Bishop's Palace.*

*The Roman bone assemblage: in light of the current dating information, most of this material is too broadly dated to warrant detailed zooarchaeological investigation. The small late 4th century assemblage is also too limited in size to be of much interpretative value. However, as with the medieval material, if detailed stratigraphic and finds analysis refined the dating framework then further work would be warranted. If most of the Roman material was of 4th century date, then this small assemblage would be of both regional and national importance.*

KEYWORDS: YORK MINSTER LIBRARY; YORK; ROMAN TO POST-MEDIEVAL; ASSESSMENT; PLANT REMAINS; CHARRED PLANT REMAINS; INVERTEBRATE REMAINS; VERTEBRATE REMAINS

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## Assessment of biological remains from York Minster Library (sitecode: YML97)

### Introduction

An archaeological excavation was carried out by Field Archaeology Specialists at York Minster Library, York (NGR SE 6029 5233), in 1997. Twelve sediment samples ('GBA' and 'BS' *sensu* Dobney *et al.* 1992) and eight and a half boxes (each of approximately 30 litres) of hand-collected bone were submitted to the EAU for assessment of their bioarchaeological potential.

Deposits from this site were broadly dated from the Roman period through to the post-medieval period. Information provided by the excavator suggested that Roman deposits were 'most likely to be 4th or late 4th Century', whilst medieval ones were 'mostly 12th to 13th Century'. No tighter dating framework or pottery spot dates were provided.

### Methods

#### *Sediment samples*

All of the sediment samples were inspected in the laboratory and descriptions of their lithologies recorded using a standard *pro forma*. Eight samples were selected for processing following the procedures of Kenward *et al.* (1980; 1986). Four of the samples were examined for microfossils using the 'squash' technique of Dainton (1992)—this technique was originally developed to quickly assess a sample for the eggs of intestinal parasitic nematodes but has

proved to be more generally useful for a range of microfossils.

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

#### *Vertebrate remains*

The vertebrate remains from all of the 134 bone-bearing contexts were rapidly scanned. Brief records were made of preservation, angularity (i.e. the nature of the broken surfaces) and colour, whilst evidence of butchery, dog gnawing, burning and fresh breakage was noted where appropriate. Total numbers of fragments, of mandibles with teeth, and of measurable bones, were also recorded.

### Results

#### *Sediment samples*

The results are presented in context number order. Archaeological information and/or archaeological questions to be addressed (provided by the excavator) are given in square brackets.

#### **Context 1081** [dark earth - medieval]

Sample 13 (10 kg bulk sieved)

Moist, dark grey brown, crumbly (working soft), slightly sandy slightly clay silt. Mortar, brick/tile (to 50 mm), fragments of mammal bone and modern roots and rootlets were present in the sample.

A large residue of stones and sand was recovered, with some modern root fragments and a small assemblage of bone. The bone, amounting to approximately 150

fragments, included herring (*Clupea harengus* L.), ?smelt (cf. *Osmerus eperlanus* (L.)), amphibian, two small mammal bones and a few bird fragments. The bulk of the fragments remained unidentified.

**Context 1098** [layer - medieval]

Sample 93 (3 kg GBA - washover, 7.5 kg bulk sieved).

Just moist, mid to dark brown, crumbly, silty clay with lumps of light grey clay (to 8 mm). Very small and small stones (2 to 20 mm), brick/tile (to 90 mm), mortar and mammal bone were present in the sample.

The tiny washover comprised 1-2 cm<sup>3</sup> of charcoal (<5 mm), woody roots and root bark. The only invertebrate was a single whole modern contaminant.

The residue consisted of about 1 litre of sand and gravel with a little stone (to 100 mm), brick/tile (to 15 mm), mortar (to 10 mm), and bone (to 50 mm).

Flakes of brick/tile, 2 metal ?nails and a single pot sherd were recovered from the moderate-sized bulk residue which was mostly composed of sand, gravel and stones (to 60 mm). Poorly preserved and battered bone fragments were also present; these were mainly unidentified, but several fish bones and a few amphibian fragments were noted.

**Context 1193** [layer - Roman]

Sample 152 (2 kg GBA - washover)

Just moist, varicoloured (from light brown through to black with some orange), crumbly to unconsolidated, slightly sandy, slightly clay, ashy silt with small lumps (to 10 mm) of light to mid brown clay. Very small to medium-sized stones (2 to 60 mm), very rotted charcoal and modern rootlets were present in the sample.

The washover, which amounted to about 40 cm<sup>3</sup> in volume, was of woody roots with moderate amounts of charcoal to 10 mm (including some coniferous wood, perhaps pine, *Pinus*) and a few land snails (a single *Discus rotundatus* (Müller) and unidentified shell fragments). No other invertebrate remains were seen.

The moderate--sized residue of about 800 cm<sup>3</sup> was of sand and gravel.

**Context 1219** [layer - Roman]

Sample 179 (5.5 kg bulk sieved)

Just moist, mid brown, crumbly to unconsolidated, slightly sandy clay silt with very small to medium-sized (2 to 60 mm) stones and rotted ?charcoal present.

The moderate-sized residue was composed mainly of sand, gravel and stones (to 85 mm), with traces of tile/brick and pottery, glass and eggshell. Fragments of land snails, marine molluscs, and bone were all present. Both fish and mammal bone were noted, the latter including three eel (*Anguilla anguilla* (L.)) vertebrae.

**Context 1251** [fill of drain - Roman]

Sample 303 (10 kg bulk sieved)

Moist, light to mid grey brown (locally greyer and browner), soft to crumbly (working soft and slightly sticky), clay silt. Very small and small stones (2 to 20 mm) and very rotted charcoal were present in the sample.

The residue consisted mainly of sand and stones, with some lumps of metal slag and some chunks of a mortar-like concretion. Twenty-five ?nails or parts of nails and approximately 120-150 bone fragments were recovered. Those bones which could be identified included salmonid and gadid.

**Context 1282** [gully fill]

Sample 291 (3 kg GBA - washover, microfossil 'squash')

Moist, light to mid grey brown (lighter and darker in places), brittle to crumbly (working soft), very slightly sandy clay silt.

The tiny washover of no more than 1-2 cm<sup>3</sup> comprised woody roots with some charcoal (<5 mm), *Cenococcum* sclerotia, some mites, fragments of poorly preserved insect cuticle and earthworm egg capsules.

Only about 200 cm<sup>3</sup> of quartz sand and gravel remained in the residue, together with traces of bone (to 20 mm) and charcoal (to 10 mm).

The microfossil 'squash' was mostly inorganic matter with a trace of organic detritus.

**Context 1285** [layer - pre-Roman]

Sample 292 (2 kg GBA - washover, microfossil 'squash')

Just moist, light to mid grey to dark grey, brittle (working soft), clay silt with clasts of light brown clay (to 10 mm).

The tiny washover of 1-2 cm<sup>3</sup> was mainly charcoal (to 5 mm) with some pale ?modern rootlets, a trace of unidentified snail shell and moderate numbers of sclerotia (resting bodies) of the soil-dwelling fungus *Cenococcum*.

The residue, which was very small (about 150 cm<sup>3</sup>), consisted of clean quartz sand and a little stone (to 70 mm).

The microfossil 'squash' was mostly inorganic particles with a trace of organic detritus and a few fungal hyphae and pollen grains.

**Context 1301** [backfill of scoop - Roman]

Sample 293 (Microfossil 'squash' only)

Wet to waterlogged, light to mid grey brown (locally browner and greyer), soft and slightly sticky (working softer and stickier), clay silt.

The microfossil 'squash' was mostly inorganic grains with a trace of organic detritus and a few fungal hyphae.

**Context 1317** [layer - Roman]

Sample 294 (18 kg bulk sieved)

Moist, soft and sticky, mixture of yellow brown sand and light to mid grey silt with some rotted ?charcoal.

The residue was composed mainly of sand, gravel and stones (to 60 mm), with a small collection of poorly preserved bone fragments. Concretions of sand and a ?metal compound were also noted but could not be identified.

**Context 1350** [layer - Roman]

Sample 300 (Microfossil 'squash' only)

Moist, light to mid grey, soft and sticky (working soft and slightly plastic), clay silt.

The microfossil 'squash' was mostly inorganic matter with a trace of organic detritus. A few fungal hyphae and fragments of plant silica and a single live soil nematode were noted.

*Hand-collected vertebrate remains*

A total of 134 contexts yielded bone, amounting to 3170 fragments. As can be seen from Table 2, most of the material (2030 fragments) was recovered from the medieval deposits. Total numbers of fragments, numbers of mandibles with teeth *in situ* and measurable bones are given in Table 3.

**Post-medieval**

The post-medieval deposits represented a range of context types, but most of the vertebrate remains were recovered from contexts described as 'path' (169 fragments), 'backfill' (68 fragments) or 'layer' (56 fragments). Preservation, within contexts, was rather variable, with some fragments being well-preserved, whilst others were described as poor and battered in appearance. The overall impression was of mixed material which included varying proportions of residual or redeposited fragments. Additionally, a single fragment of human skull from Context 1016 hints that not all the material originated from straightforward refuse disposal activities. Green concretions were noted on bones from Context 1057.

The proportion of butchered fragments in these deposits was quite high; split cattle shafts, particularly metapodials, being recorded most frequently.

The bulk of the assemblage consisted of the remains of cattle, caprovids and pigs. However, a fallow deer (*Dama dama* (L.)) pelvis fragment was identified from Context 1067. Additionally, a red deer (*Cervus elaphus* L.) metatarsal and a fallow deer phalanx were recovered from Context 1036. Material from Context 1036 ('path') also included hare (*Lepus* sp.), rabbit (*Oryctolagus cuniculus* (L.)), teal (*Anas crecca* L.), ?mallard (cf. *Anas platyrhynchos* L.), ?lapwing (cf. *Vanellus vanellus* (L.)), thirty chicken bones (including juvenile and sub-adult individuals) and six gadid fragments. Cattle and caprovid remains from this deposit were mainly metapodials and phalanges (i.e. non-meat-bearing elements) which are generally interpretable as primary butchery waste. The moderate

quantities of rib and vertebra fragments may also represent carcase preparation. However, the presence of the bird, hare and rabbit probably indicate a component of domestic or kitchen refuse, as the carcasses of these species tended to arrive at the kitchen whole.

This assemblage produced 41 measurable bones, a single mandible with teeth *in situ* and three isolated teeth.

### Medieval (including 'medieval?')

The bulk of the medieval bone assemblage (1931 fragments) was recovered from deposits described as 'backfill of pit', 'backfill of ditch', 'dark earth' and 'layer', representing 37 of the 53 contexts from this period.

Bones from this period were similarly preserved to those from the post-medieval period. Fragments from ditch and pit fills were mainly recorded as 'fair to good', whilst over half of the 'layer' deposits produced fragments described as 'fair to poor', 'good to poor' or 'poor', suggesting a wide degree of variation of preservation within these contexts. 'Dark earth' deposits were on the whole, quite well-preserved. Material from most deposits appeared to have a component of battered and/or rounded fragments. Concretions, sometimes with a greenish hue, were noted on a moderate quantity of bones from eleven of the deposits (Contexts 1040, 1041, 1062, 1079, 1080, 1101, 1100, 1104, 1140, 1150 and 1179). Single human bone fragments were identified from Contexts 1040, 1090 and 1125.

Butchery was noted throughout the medieval assemblage, particularly on cattle fragments. Most of the large concentrations of bone included heavily chopped fragments and, on brief inspection, appeared to include mainly distal limb elements, cranial and mandible fragments and split shaft fragments, probably representing butchery waste. A single cow scapula from Context 1098 showed evidence of the characteristic damage caused by perforation of a butcher's hook through the blade of the bone. This distinctive technique is more commonly associated with Roman assemblages and this fragment may indicate the presence of some reworked material. Bones from this context also showed a high degree of variability of preservation, colour and 'angularity', supporting this inference.

A range of species was recorded, with the remains of the major domesticates predominating. Cattle fragments included numbers of juvenile individuals (particularly noted from Contexts 1038, 1039 and 1041), an occurrence more usually associated with late medieval and post-medieval deposits. The assemblage was notable for the presence of red and fallow deer bones, which were recorded from ten deposits (Contexts 1039, 1041, 1076, 1079, 1080, 1131, 1134, 1139, 1172 and 1179). Of the 22 fragments identified, half were noted from Contexts 1039 and 1041, and consisted of femur and tibia fragments, and metapodials. Antler (almost certainly red deer), was also present, but was not recovered from deposits with post-cranial material. A small number of horse, dog and cat bones were observed in the assemblage. The dog remains were mostly of a similar size to the greyhound in the EAU reference collection, although they were slightly more robust. This suggests that the dogs may have been quite large animals, similar in size and confirmation to a lurcher or deerhound or some other variety of hunting dog.

Birds were represented by the remains of geese and chicken, whilst two swan (*Cygnus* sp.) bones (a humerus and a phalange) were also identified (Contexts 1038 and 1039). Fish remains were not numerous. Those which could be identified were mainly gadid; a single salmonid vertebra was recovered from Context 1081.

Most of the material from this period represents probable butchery waste, with a small component of domestic refuse mixed with it. Craft activities may be hinted at by the presence of a number of cattle and caprovid horncores, (chopped from the skull), several antler tines and a single, large, red deer burr with the tines sawn through (Context 1131).

Two hundred and fifteen measurable bones, 32 mandibles with teeth *in situ* and 79 isolated teeth were recorded.

### Late/post Roman

Four contexts of late/post Roman date produced only 23 fragments, of which two were measurable and two were mandibles with teeth *in situ*. This assemblage is too small to be of any further interpretative value.

**Late Roman (including 'late Roman?')**

Thirteen deposits from this period produced bone, amounting to 80 fragments. Most of the bones were slightly better preserved than the later material, with the exception of fragments from Context 1221. Some of the bones from this deposit were poorly preserved and concretions (as described previously) were noted.

Cattle, caprovid and pig remains were identified, along with horse, chicken and a single red deer tibia (Context 1166). The assemblage included eight measurable bones, two mandibles with teeth *in situ* and five isolated teeth.

**Roman (including Roman?)**

Overall, a total of 555 fragments were recovered, but although 44 deposits produced bone, only five yielded more than 15 fragments in total.

Preservation of the bones from this period was generally better than for the post-medieval and medieval material. Bones from individual contexts showed a greater degree of homogeneity in both their 'angularity' and their colour. However, a few contexts still contained a small number of battered and rounded fragments and some bones exhibited concreted surfaces.

Evidence of butchery was fairly extensive for the larger assemblages and again included split cattle shaft fragments.

A more restricted range of species was noted, including the usual domesticates - cattle, caprovid and pig, also the remains of horse and dog. Birds were represented only by chicken. Thirty-five measurable bones, eight mandibles with teeth *in situ* and three isolated teeth were recorded.

**Discussion and statement of potential***Sediment samples*

None of the samples yielded any useful or diagnostic plant or invertebrate remains, though the charcoal in the sample from Context 1193 might be worth pursuing if there is a good interpretative reason.

*Vertebrate remains*

Deposits from Minster Library yielded moderate-sized assemblages of bone, the largest body of material being recovered from deposits of medieval date. Variability of preservation, angularity and colour was observed within material from most of the post-medieval and medieval deposits represented. Human bones were also recovered from a small number of contexts, as well as fragments indicating Roman butchery practices. These factors imply the presence of redeposited or residual bone in varying amounts throughout the later assemblages. The small Roman assemblage, however, showed better preservation, but has limited potential because of its small size and the rarity of fragments of use for providing age-at-death and biometrical information.

Material from the medieval deposits shows an interesting range of species, which suggests high status occupation at the site. The post-cranial remains of both red and fallow deer imply the consumption of venison, whilst swan (in the medieval period) was most definitely a bird of the banquet table. Juvenile cattle remains may indicate veal production and/or dairying and may reflect the high status nature of the site. Such remains were also noted at the Bedern (Bond and O'Connor 1999), but are more typical of later post-medieval sites (Dobney *et al* 1996a).

**Recommendations***Sediment samples*

No further work is recommended on the sediment samples (other than, perhaps, the identification of the charcoal from Context 1193) beyond sieving to recover artefacts.

*Vertebrate remains*

This assemblage of vertebrate remains shows some potential for providing useful zooarchaeological and archaeological information. However, with the possibility that redeposited/residual material is present, further work on the pottery and other finds may be necessary to address the problems of residuality and to provide a more secure dating framework. This would need to be undertaken prior to further work on the vertebrate remains.

*The post-medieval assemblage:* deposits from this period mostly produced insufficient fragments for detailed interpretation and no further work is warranted.

*The medieval assemblage:* although hints of redeposited material have been noted, it is clear that general medieval characteristics are present. However, the dating framework is as yet very broad, which renders any interpretation of limited value. Elements of 'high-status' occupation were presented; this is not surprising given the proximity of the deposits to the medieval Bishop's Palace. If more detailed stratigraphic and finds analysis refine the dating framework, further work would most certainly be warranted. Zoological information, including biometrical and age-at-death information, should be recorded for all well-dated material. These data will provide limited evidence of economic, craft and provisioning activities, probably associated with the palace, and providing comparison with data from sites such as Aldwark and the Bedern (Bond and O'Connor 1999).

*The Roman assemblage:* in light of the current dating information, the greater part of this material is too broadly dated to warrant detailed zooarchaeological interpretation. The small late 4th century

assemblage is too limited in size to be of useful interpretative value. However, as with the medieval material, if detailed stratigraphic and finds analysis refined the dating framework, further work would be warranted. If most of the Roman material should prove to be of 4th century date, then this small assemblage would be of both regional and national importance. Few well-dated late Roman assemblages have been recovered from York (or any other part of England) and it would thus be extremely important to record detailed zooarchaeological information (species, elements, biometry, age at death, butchery and pathology) from this group. These data could be compared with published material from Tanner Row, York (O'Connor 1988), Carr Naze, Filey (Dobney *et al.* 1996b) and the Waterfront at Lincoln (Dobney *et al.* 1996a).

On the basis of the hand-collected vertebrate assemblage and the information provided by the excavators, it would appear that deposits likely to have produced useful small vertebrate remains, i.e. fish and birds, have not been sampled (Contexts 1038, 1039, 1041, 1079 and 1080). Unfortunately those samples which were examined produced poorly preserved bone assemblages, with little identifiable material upon which no further work is recommended.

## **Retention and disposal**

The sediment samples may be discarded unless they are to be sieved for artefact recovery.

The bone assemblage should be retained for the present.

## 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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