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**Biological evidence from excavations at  
26-28 Marygate, York  
(YAT/Yorkshire Museum site code 1992.11)**

by

**John Carrott, Keith Dobney, Allan Hall,  
Harry Kenward and Annie Milles**

**Summary**

A series of samples of sediment and an assemblage of bones, including some human remains, all from Roman contexts, were examined. There was virtually no preservation of animal or plant remains other than bone, the latter being well preserved and quite abundant. The quality of the bone, coming as it does from well-dated contexts of late Roman date in a very poorly known area of York, means that future excavation must take account of the need for adequate sampling and post-excavation work.

Authors' address:

Environmental Archaeology Unit  
University of York  
Heslington  
York YO1 5DD

Tel: 0904 433843-51

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A series of ten 'general biological analysis' samples of sediment of 3rd century date from 26-82 Marygate were examined in various ways for their content of biological remains; in addition, a corpus of hand-collected bone, including some animal and human burials, was available.

The samples of sediment were treated as follows (samples presented in context number order with archaeological information in brackets):

**Context 2020 [grave fill]**

Sample 5: mid grey-brown, moist, crumbly to brittle (with many fine voids), silty clay with modern roots/rootlets frequent, traces of stones 2-20 mm, bone fragments >20 mm, oyster shell fragments, mortar, brick/tile and pot.

A 7 kg sample was 'bulk-sieved' (Kenward *et al.* 1980) to 1 mm. The dried residue consisted largely of gravel and stones to 80 mm (including micaceous flaggy sandstone), mortar (to 25 mm), some ?daub, charcoal (to 10 mm), oyster and mussel shell fragments (10 mm), some mammal bone and modern roots and a woodlouse as contaminants.

Sample 6: lithology as for sample 5 but texture soft rather than brittle.

The whole sample of 9 kg was bulk-sieved to 1 mm. The residue consisted of gravel and stones to 60 mm, with a little oyster to 20 mm, glass and brick/tile to 30 mm and pot to 25 mm. A single shell of the snail *Discus rotundatus* was recorded; this species favours shady habitats.

**Context 2021 [horizontal spread of soil]**

Sample 8: mid grey-brown, dry to moist, crumbly to brittle, sandy silty clay with modern roots/rootlets, traces of stones (including flaggy sandstone) 60-200 mm, bone fragments >20 mm, mortar and a tessera (in fine-grained micaceous sandstone).

An 8 kg subsample was bulk-sieved to 1 mm. The residue, largely of gravel and stones included micaceous flaggy sandstone to 100 mm, oolitic limestone to 60 mm, pot to 40 mm, brick/tile and mammal bone to 50 mm and oyster shell to 20 mm. Two snails were recorded as single shells, both of them terrestrial and typical of a wide range of habitats: *Cochlicopa lubrica* and *Trichia striolata*.

**Context 2024 [grave fill]**

Sample 1: mid/dark greyish-brown, moist, plastic (but somewhat crumbly until worked)

sandy silty clay with traces of stones 60-200 mm, charcoal, bone fragments larger and small than 20 mm, oyster shell fragments, mortar and brick/tile.

A 1 kg subsample was washed to 300 microns (a 'test' subsample, cf. Kenward *et al.* 1986) and the disaggregated sediment subjected to paraffin flotation (Kenward *et al.* 1980). The flot included a few scraps of ?modern root/rootlet, a little charcoal <1 mm and a piece of charred organic matter to 5 mm. The dry residue consisted of sand and gravel, with a fragment of stone to 120 mm, decorated glass to 15 mm, pot to 30 mm, charcoal to 5 mm, bone and mortar to 20 mm, worn oyster shell to 15 mm, and brick/tile to 10 mm.

In addition, an 8 kg subsample was bulk-sieved to 1 mm. The residue of gravel with stones (including flaggy micaceous sandstone) to 110 mm, also contained mammal bone to 100 mm, pot to 40 mm, and an iron object and some daub to 30 mm, a little brick/tile to 20 mm and charcoal to 10 mm. There was also a fragment of gold foil to 10 mm.

Sample 2: lithology similar to sample 1, but more crumbly in texture, more yellowish in colour (?more sandy), with a large fragment of flaggy sandstone, pottery, snails and modern roots.

A 1 kg subsample was washed to extract snails but in the event none were observed. The dry residue of sand and gravel included stones to 40 mm, quite a lot of brick/tile to 40 mm, mammal bone to 50 mm, plaster to 40 mm, pot, mortar, glassy slag, mussel and oyster shell to 10 mm, a trace of charcoal to 5 mm and a small fragment of barnacle shell.

Sample 3: lithology as for sample 1, but with large fragment of oolitic limestone, and oyster shell fragments; texture more like that of sample 2.

A subsample of 10 kg was bulk-sieved to 1 mm. The dry residue comprised gravel and stones, with blocks of flaggy micaceous sandstone to 220 mm. There was some decorated pot, a little glass and an iron nail, together with modest amounts of mammal and bird bone, a little brick/tile (to 10 mm), oyster (to 60 mm) and mussel (to 20 mm), mortar to 20 mm and a little charcoal to 10 mm.

#### **Context 2028 [pit fill]**

Sample 4: mid grey-brown, moist, brittle to crumbly (working plastic), slightly sandy silty clay with traces of stones 60-200 mm, oyster shell fragments and mortar.

A 9 kg subsample was bulk-sieved to 1 mm. The resultant residue consisted of gravel and stones (including oolitic limestone to 110 mm and a cobble to 80 mm), a large fragment of cow mandible (to 160 mm), pot to 60 mm, oyster to 80 mm, glass to 10 mm and brick/tile to 30 mm. There were also three snails, all *Trichia hispida*, of no particular interpretative value.

### Context 2034 [layer representing remains of building burnt *in situ*]

Sample 7: mid/dark grey-brown, waterlogged, plastic to sticky sandy clay with traces of charcoal and very small brick/tile fragments.

A 2 kg 'test' subsample was examined. The flot contained modern roots/rootlets and a small amount of charcoal <2 mm. The residue of sand and gravel included stones to 55 mm, brick/tile to 20 mm, bone and charcoal to 15 mm (there was quite a lot of charcoal and it included at least one fragment of oak, *Quercus*), pot to 25 mm, ?daub to 25 mm and mussel and oyster shell to 5 mm.

### Context 2041 [possible buried soil]

Sample 9: mid/dark grey-brown, moist, soft, crumbly, sandy silty clay with modern roots/rootlets and a live millipede, traces of stones 2-20 mm, charcoal, snail shell (*Cepea* sp.), shellfish and mortar.

A 1 kg subsample was taken as a 'test'; there were root/rootlet fragments and scraps of charcoal <2 mm. The tiny residue of sand and gravel included stones to 60 mm, a flake of ?pot to 20 mm, glassy slag to 10 mm and coal to 5 mm, with a few indeterminate bone fragments to 10 mm.

In addition, a 7 kg subsample was bulk-sieved to 1 mm. The rather small residue included gravel and a few stones to 30 mm, brick/tile to 40 mm, pot to 15 mm, glass to 10 mm, ?daub to 20 mm, charcoal to 5 mm, and oyster shell and mammal bone to 60 mm. There was also an apical fragment of a shell of the Roman snail, *Helix pomatia*.

Sample 10: mid/dark grey-brown, moist, soft, crumbly (to just brittle), sandy silty clay with traces of stones 2-20 mm, charcoal, bone fragments >20 mm and brick/tile.

A 7 kg subsample was bulk-sieved to 1 mm; there were stones to 100 mm in the residue, along with modest amounts of charcoal to 10 mm, brick/tile to 10 mm, pot to 30 mm and a few lumps of hardened peat to 40 mm.

### Implications of the 'biological' samples

The rather free-draining deposits at this site have preserved little in the nature of invertebrate and plant remains, and charred material other than charcoal was limited to a few unidentifiable fragments. There is little scope for further analysis of these kinds of remains.

### The animal bone assemblage

A relatively large assemblage of animal bones was recovered from the site, amounting to six standard (30 cm cube) boxfuls, representing bone from 18 major context groups. All material

studied comprised hand-collected fragments from deposits thought to date from the 3rd century, with very limited numbers deriving from GBA samples.

Preservation was on the whole fair to good with only a single context (2021) classified as excellent. What was unusual, however, was the lack of serious fragmentation affecting the majority of the assemblage. There was little evidence of fresh breakage and even the remains of larger species, such as cattle and horse, remained relatively undamaged. It would appear that trampling of all deposits did not occur to any degree and that burial of material happened relatively quickly after deposition. Only a limited number of fragments showed any evidence of gnawing, which tends to support this view. Much of the assemblage showed quite extensive evidence of butchery on many of the identifiable fragments as well as on the numerous ribs, vertebrae, and shaft fragments.

Cattle remains were the most commonly represented domestic animal, in terms of total fragment number, followed closely by pig and sheep. Goat remains were definitely identified from contexts 2047, 2020 2001, and 1011 and comprised three metacarpals and a juvenile metatarsal fragment. Horse was represented by only three fragments (from separate contexts), two metacarpals (from 2047 and 1012) and a molar (from 1010). However, with such small numbers of bones any estimation of relative frequencies of species is fraught with problems.

The remains of two incomplete terrier-sized dogs were recovered from context 2047 in addition to a single larger humerus from a third individual. Further canid remains were scattered throughout the site; these included a small skull from 2021 which showed what had every appearance of skinning marks along the crests of the frontal bone.

Fowl and goose remains were relatively common from the site appearing in all major context groups. A number of bones from both species showed evidence of butchery in the form of knife marks towards the distal ends of elements. Also present from separate contexts were three skeletal elements from duck. On the basis of morphology and size they probably derive from mallard (*Anas platyrhynchos*) and are perhaps too small to be from improved domestic species.

Wild mammals were uncommon in the assemblage, being represented only by two red deer (*Cervus elaphus*) distal tibia fragments, three roe deer (*Capreolus capreolus*) fragments (mandible, scapula and distal humerus fragments) and three fragments of hare (*Lepus cf. europaeus*). One of the red deer distal tibiae fragments had been heavily chopped at one end. A fragment of a large pig radius from context 2020, although heavily butchered, was as large as the modern improved comparative specimen. This large size may indicate the presence of wild boar in the assemblage since the majority of pig remains derived from smaller animals.

A single salmonid vertebra was recovered from the hand collected assemblage; this represented a large fish (of perhaps 60-80 cm standard length).

A large proportion of whole bones or fragments from all major species in the assemblage would provide useful measurements, reflecting the good preservation. Most (72) were identified as cattle, with pig (13) and sheep and goat (7) less well represented, because of the high proportion of immature bones from these groups. A number of mandibles with teeth

were recovered from the site, with pig being most commonly represented (13), followed by sheep (10) and cattle (7).

A complete pig skeleton was recovered from context 1002. This represented the remains of a large but immature individual since almost all epiphyses were unfused. The date of this context was uncertain, but the pig was probably an improved specimen, likely to be of modern date.

General biological analysis samples contained some additional species, particularly small mammals, amphibians and fish. Herring (*Clupea harengus*) and salmonid vertebrae were recovered from contexts 2021, 2024 and 2028. In addition several scales from grayling (*Thymallus thymallus*) or perch (*Perca fluviatilis*) survived in 2021. The remains of frog (*Rana temporaria*) appeared in 2028. A mandible and maxilla of the field vole (*Microtus agrestis*) was also present in several samples from 2024.

### **The human remains**

Three human inhumations were recovered from the site. Preservation was fair to good with numerous complete long bones available for biometrical study:

**Context 2029** contained the almost complete articulated remains of a female. Missing were the long bones of the upper limbs, two vertebrae, and some hand and foot bones.

A fragmented skull with male characteristics (sloping forehead, pronounced supra-orbital ridges, moderate-sized mastoid processes and a pronounced mental eminence) contrasted with strongly female pelvic fragments (with a wide sciatic notch, pre-auricular sulcus and possible birth scars). Tooth attrition and pubic symphyseal state indicate an age of perhaps 35-45 years.

Dental pathology included the loss of the left maxillary 3rd premolar, the right maxillary 4th, and the left mandibular first molar. In addition third molars were absent, possibly indicating a congenital cause, and the upper incisors were possibly developmentally abnormal.

Postcranial pathology included the presence of eburnation and osteophytes on first metacarpal, mild periostitis on the distal portion of the right tibia (with no evidence of further infection of the foot) and pronounced degenerative arthropathy of the cervical and lumbar vertebrae. All vertebrae showed signs of pronounced osteophytes and Schmorl's nodes and the 5th lumbar vertebra showed evidence of collapse or crushing.

**Context 2030** contained the again almost complete skeleton of a male, missing some bones of the hands and feet (particularly 2nd and 3rd phalanges) and two vertebrae.

In contrast to the individual from 2029, the fragmented skull showed several female characteristics (less pronounced supra-orbital ridges and vertical forehead). However large mastoid processes and a robust mandible, in addition to a complete pelvic girdle showing narrow sciatic notch, narrow pubic angle and the lack of a pre-auricular sulcus, all point to

the sex as male. The unfused nature of the cranial sutures suggests this individual to be young; the eruption of the third molar and the lack of dental attrition indicate an age perhaps between 18 and 20 years. This is substantiated by the state of the pubic symphysis.

Dental pathology included the presence of a maxillary peg incisor on the left and a possible missing right incisor. There was also a difference in attrition with a preference towards the right. This is explained by examination of the mandibular dentition where severe caries had affected the 1st and 2nd molars, with the result that the entire crowns had been lost, leaving only the roots. This infection had also led to the development of an apical abscess. In addition mild interproximal caries had affected the right 1st molar. Evidence of developmental stress could be found on the canines and incisors in the form of hypoplastic lesions of the enamel; at least four isolated episodes were present.

There was no evidence of post-cranial pathology from this individual apart from a single 2nd phalanx with mild osteophyte formation.

**Context 2002** contained the truncated remains of a single individual consisting of pelvis, right proximal femur fragment, five lumbar and eight thoracic vertebrae, left ulna and radius and incomplete left and right hands.

The narrow sciatic notch, small pubic angle and lack of pre-auricular sulcus suggested a male. The state of long bone fusion and pubic symphysis morphology indicated a mature individual.

Evidence of pathology was restricted to pronounced osteophytosis of the 3rd and 4th lumbar vertebrae.

### **Implications**

The animal bone assemblage from 26-28 Marygate appears well preserved, little fragmented, and potentially large. Although not from primary contexts it is clear that material derives from perhaps a single reworking event with relatively good dating evidence. Much of the butchery evidence and the representation of all elements may indicate the presence of both primary and secondary butchery waste on the site. The numerous large and intact measurable fragments and the range of both domestic and wild species indicate an important zooarchaeological assemblage. This importance is increased in terms of York since few large Roman zooarchaeological assemblages have as yet been excavated from the city.

The human remains, although few, are relatively complete and well preserved. The presence of a small Roman cemetery in the area is a distinct possibility and as such is important in terms of physical anthropological studies. The possibility of recovering numerous skeletons is again important since material from Roman York is geographically limited.

Future work in this hitherto peripheral region of York is therefore essential if the zooarchaeological and physical anthropological potential of this material is to be realised.

## References

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