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An evaluation of biological remains from excavations at Blue Bridge Lane, York (site code: 94.2288)

by

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Summary

Nine samples of sediment from excavated deposits and boreholes at a site in Blue Bridge Lane, York, were submitted for bioarchaeological analysis. Seven of the samples were examined for their content of plant and invertebrate remains. None of these samples yielded more than a very small amount of fossil material, most of it of no interpretative value. A small group of human and non-human bone was also examined. The human remains included some bones with interesting evidence of pathology.

No further analysis of the material already recovered is recommended. It is suggested that, in the event of further excavation, a programme of bulk-sieving should be designed, primarily for the recovery of bone and charred plant remains.

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Introduction and methods

Nine samples of sediment ('GBAs' *sensu* Dobney *et al*. 1992) from excavated deposits and boreholes at Blue Bridge Lane, York were supplied by York Archaeological Trust for an evaluation of their content of biological remains.

All of the GBA samples submitted were described (using a *pro forma*) and processed for biological remains following techniques of Kenward *et al*. (1980; 1986); 1 kg subsamples were taken from four of the samples but variable weights were processed from three others (these are indicated in the results section). As the organic content of the samples appeared to be low, washovers were carried out rather than the standard paraffin flotation. Two of the borehole samples were not worthy of further analysis.

Results

The samples are presented in context number order.

The sediment samples

Context 3003
Sample 2: Moist, mid brown, grey-tinged crumbly (working plastic), slightly sandy silty clay with stones >60 mm present. Modern rootlets were also present.

1 kg processed. The modest washover consisted mostly of plant detritus, including rootlets and some very small fragments of charcoal (to 2 mm).

The small residue was mostly sand and stones (to 50 mm) with a few fragments of charcoal.

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Context 6007
Sample 1: Moist, mid brown, crumbly and soft, working plastic to sticky (when wet), slightly sandy silty clay. Stones in the size ranges 20-60 mm and >60 mm were present, together with some brick/tile, charcoal and mammal bone.

1 kg processed. The moderately large washover was mostly small fragments of charcoal (up to 10 mm) with a few earthworm egg capsules and fragments of ?fly puparia.

The small residue was mostly sand with a few stones (to 40 mm), fragments of animal bone and charcoal.

Context 7004
Sample 3: Moist, mid to dark orange-ish brown/grey, crumbly to slightly stiff (working plastic), slightly gritty (from rotted mortar), silty clay. Stones between 2 mm and 60 mm were present. Mortar/plaster, brick/tile were present. There was a trace of charcoal.

1 kg processed. The medium-sized washover consisted mainly of charcoal (to 5 mm) with some coal (to 5 mm) and a fragment of slag/cinder (to 15 mm). Also present were many seeds, some other plant detritus, several mites, many earthworm egg capsules (of different kinds) and a fragment of carabid cuticle. The seeds were mostly of weed taxa, notably *Euphorbia peplus*, a small spurge of cultivated and waste ground (common today but with a very limited fossil record).

The small residue consisted mostly of sand, charcoal and limestone. Other components were: small quantities of slag, fragments of mammal bone (including a piece of canid tooth), brick/tile, coal and glass.

Context 7012 (borehole)
Sample 9: Just moist, mid orange/brown (more brown in patches), unconsolidated sand with stones present in the size range 2-6 mm.

No further action was taken.

Context 8011 (borehole)
Sample 8: Just moist, mid orange brown to mid orange grey/brown, brittle (working crumbly), sandy clay with 2-20 mm stones and ?modern twig fragments present. Modern roots, rootlets and mould were also present.

2 kg processed. The large washover was composed mostly of modern ?alder roots and root nodules (up to about 1 mm). Some root fragments still had nodules attached. A small quantity of sand and charcoal and a modern ?thrips were present.

The small residue was mostly sand, gravel and stone with a few rootlets (some woody), some charcoal and a few fragments of small mammal bone

Context 9001
Sample 4: Moist, mid grey/brown, crumbly (working crumbly), and slightly plastic, very stony, slightly silty clay sand. Large stones (20-60 mm and >60 mm), including some honey-coloured sandstone, were present and 2-20 mm stones were common. Brick/tile was common and a small quantity of very rotten bone was present. Some ?tarmac was present.

1.61 kg. A substance resembling oil or tar floated during processing (detergent was used to disperse it).

The moderate-sized washover consisted mostly of charcoal (to 5 mm), with some sand, a trace of cinder and rootlets. A fragment of ?elder seed, a single mite and a mollusc (plus a few fragments of the same species) were present.

The moderate-sized residue contained mainly sand and stone. Some brick/tile, ?mortar, fragments of mammal bone, charcoal, tar and glass were also present.

Context 9002
Sample 5: Moist, mid orange/pink brown to mid grey/brown, soft (working plastic), to soft, sandy clay with 6-20 mm stones present. Brick/tile and charcoal were also present.

1.14 kg processed. The small-medium sized washover was mostly sand and charcoal (only a few pieces >5 mm). Some fragments of plant detritus, a few earthworm capsule fragments and pieces of unidentifiable mollusc remains were present. The membranous wing of a modern insect and fragments of cinder (to 1 mm) were also observed.

A small residue containing mostly sand with some stone, brick/tile, bone fragments, tar and coal.

Context 9003
Sample 6: Moist, light to mid orange grey/brown and mid grey/brown internally, soft and slightly stiff (working soft and slightly sticky), clay sand with stones present in the size range 6-60 mm. Charcoal was also present.

1 kg processed. Sand was the major component of the small- to medium-sized washover. Some charcoal (a few lumps >5 mm), a charred grain of wheat/barley and a few pieces of earthworm egg capsule were present.

The small residue consisted mostly of sand and stone with some slag, tar and small fragments of mammal bone.

Context 9004 (borehole)
Sample 7: Moist, mid orange brown to mid brown, stiff (working plastic), very stony clay, with stones in the size range 20-60 mm and >60 mm, with 1 mm-scale orange mottles. Charcoal was present on the outer part of the sample; this may be contamination from an adjacent context. There was no positive evidence that this sample had been redeposited. Appears to be a glacial till which could have been modified *in situ*. Some evidence of bioturbation and worm activity.

No further action was taken

The sediment samples: discussion

These analyses indicate that the condition of ancient biological remains was poor, especially for material preserved by anoxic waterlogging. Small amounts of charcoal

were present in most samples but the fragments were usually very small and inappropriate for routine identification.

Bone

The animal and human bones recovered from these excavations represent a very small hand-collected assemblage.

Twenty-one of the excavated contexts gave bone assemblages. Of these, only nine were recorded in any detail, as most comprised too few fragments. Most of the material was fairly well preserved, ranging from fawn to brown in colour, with the exception of the human bone which was ginger. Evidence of butchery and dog gnawing was present on the animal remains in most of the recorded contexts but was not extensive. Fresh breakage was evident on many of the bones.

The identifiable non-human bone included cattle (32 fragments), sheep/goat (18 fragments), pig (8 fragments), horse (1 fragment) and fowl (6 fragments). Of these, bones only 12 proved to be measurable and there were four mandibles with associated teeth.

The human bones recovered (from contexts 8003, 8004, 2001 and 2002) consisted largely of mixed and re-deposited material. A range of skeletal elements were represented, all being very fragmented. Contexts 8003 and 8004 contained the lower limb elements of a single individual which showed severe joint destruction to the right first metatarsal and associated phalanx. In addition, the right second metatarsal showed evidence of an old inflammatory reaction. The first metatarsal from the other foot had eburnation and lipping at its distal joint surface whilst the tibia had evidence of periostitis, and its mid-shaft exhibited abnormal density and profile.

The damage to the right foot may be a result of trauma, whilst the arthropathy affecting the opposite big toe joint, coupled with the exaggerated ligament insertions, may have been the result of a consequent change in gait/posture. However, evidence from the left tibia may indicate a similar traumatic origin to that suggested for the right leg.

Statement of potential: implications for further work

The sediment samples suggest that the deposits so far exposed have only very limited potential for bioarchaeological investigation.

The mixed and reworked nature of both the animal and human remains, as well as their fragmentary nature and limited numbers, render them of little archaeological significance. However, it is apparent from this limited excavation that some intact inhumations within a larger cemetery probably exist. Should further excavation occur the possibility of recovering numerous and well-dated undisturbed human remains should be considered.

Recommendations

No further analysis of the material already recovered is recommended. In the event of further excavation, a programme of bulk-sieving should be designed in consultation with qualified environmental archaeologists, primarily for the recovery of bone and charred plant remains.

Retention and disposal

The samples recovered during this exercise do not merit retention. It is recommended that the pathological human material should be retained but the remainder of the bone can be discarded.

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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