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**Evaluation of biological remains from excavations at Bootham Engineering Works, Lawrence Street, York (site code: YBE00)**

by

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**Summary**

*Two sediment samples from deposits revealed by excavations at Bootham Engineering Works, Lawrence Street, York, were submitted for an evaluation of their bioarchaeological potential.*

*The well preserved plant and invertebrate remains recovered from Context 1070 are deserving of a full and detailed record to test whether the deposit contained stable manure or whether it only contained cut vegetation, such as might have been cleared from the ditch margins.*

*All of the current material should be retained for the present.*

*Further excavation at this site should employ a full programme of sampling of deposits where waterlogged preservation of plant and animal remains is certain or suspected so that a proper investigation of this material, dating to a period and area of York about which very little is known, may be undertaken.*

**KEYWORDS:** BOOTHAM ENGINEERING WORKS; LAWRENCE STREET; YORK; EVALUATION; ?LATE 15<sup>TH</sup> CENTURY; PLANT REMAINS; CHARRED PLANT REMAINS; INVERTEBRATES

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# Evaluation of biological remains from excavations at Bootham Engineering Works, Lawrence Street, York (site code: YBE00)

## Introduction

An archaeological evaluation excavation was carried out by Field Archaeology Specialists at Bootham Engineering Works, Lawrence Street, York (NGR: SE 6171 5235), in 2000.

Two sediment samples ('GBA'/'BS' *sensu* Dobney *et al.* 1992) from separate contexts, were recovered from the deposits. Preliminary evidence suggested that the ditch feature F3, of which Context 1070 is the lowest fill, may be of late 15<sup>th</sup> Century date. No dateable artefacts were recovered from Context 1048.

Both of the samples were submitted to the EAU for evaluation of their bioarchaeological potential.

## Methods

The sediment samples were inspected in the laboratory and their lithologies recorded using a standard *pro forma* prior to processing, following the procedures of Kenward *et al.* (1980; 1986), for recovery of plant and invertebrate macrofossils. The flot, washover and residues were examined for plant remains. The flot was also examined for invertebrate remains, and the residues were examined for other biological and artefactual remains.

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

## Results

The results are presented in context number order. Sample numbers were allocated in the laboratory, for internal record keeping purposes, and are derived from the Context numbers.

Archaeological information, provided by the excavator, is presented in square brackets.

**Context 1048** [Fill of flat bottomed pit F, thought to be a large kiln or oven]  
Sample 104801/T (6 kg)

Moist, mid orange-brown, crumbly to unconsolidated, slightly silty sand with some modern rootlets present.

There was a moderate-sized residue of about 650 cm<sup>3</sup> of sand and heat-reddened soil and a little gravel; the very small washover consisted of a few cm<sup>3</sup> of modern woody roots and burnt soil with traces of fine (<2 mm) charcoal.

**Context 1070** [Lowest fill of ditch F3, ?late 15<sup>th</sup> Century]  
Sample 107001/T (2 kg)

Moist, mid to dark grey-brown (greyer internally), stiff and locally slightly layered (working soft), humic slightly clay sandy silt with fine and coarse (woody, including twigs) herbaceous detritus present.

The moderate-sized residue of about 250 cm<sup>3</sup> included <100 cm<sup>3</sup> of sand and a little gravel, the rest consisting almost wholly of very well preserved twig fragments (including willow, *Salix*) up to 55 x 5 mm and some unidentifiable herbaceous stem fragments. Amongst these were fragments of frond of bracken (*Pteridium aquilinum*), shoot fragments of gorse (*Ulex*), fragments of leaves of trees, both deciduous and those of holly (*Ilex*, of which there were some leaf spines), as well as bud-scales (mostly willow), and a variety of other plants which probably mostly represent litter of one kind or another. The most likely reason for an accumulation of such material is the stabling of livestock, presumably horses. Plants which may have served as food (some perhaps more likely for humans than animals) were apple (*Malus sylvestris*), fennel (*Foeniculum vulgare*) and ?dill (cf. *Anethum graveolens*). Overall, preservation of both vegetative material and fruits and seeds was good, one hemlock (*Conium maculatum*) fruit unusually still bearing some of its ribs.

Excellently-preserved invertebrate remains were abundant in the flot, *Daphnia* ephippia (water flea resting eggs) being particularly numerous, with ostracods also common. A substantial proportion of the beetles and bugs were aquatics, and included at least two *Helophorus* species, *Colymbetes fuscus*, *Limnebius* sp., *Ochthebius* sp. and ?*Hydrochus* sp. These suggest open water, but not necessarily with very much in the way of submerged or emergent vegetation. Clearly this cut held water for long enough to allow a range of aquatics to invade and for at least some to breed. There was little evidence of waterside vegetation either, and the only mud-dweller was *Platystethus degener*, common in urban and rural archaeological deposits.

Terrestrial insects were present in modest numbers. A few probably originated in weed vegetation (they included *Ceutorhynchus ?contractus*, probably from crucifers, and a characteristic mirid bug, not yet named). Among the terrestrial forms was a range of taxa which when found together are regarded as typical of settlements: *Lathridius minutus* group, *Enicmus* sp., *Atomaria* sp., *Xylodromus concinnus*, *Cryptophagus* sp., *Corticaria* sp., *Anobium punctatum*, and *Ptinus ?fur*. These indicate the presence of buildings nearby, or dumping of rubbish from in and around them. There were remains of the stored products pest *Oryzaephilus* sp., most typically associated with grain.

The invertebrates from a larger subsample of this sample (and from any others from the feature) deserve detailed study providing dating is reasonably sound, and will provide information about the cut itself and concerning its surroundings.

## **Discussion and statement of potential**

The very few biological remains recovered from Context 1048 were of no interpretative value.

The material from Context 1070 is deserving of a full and detailed record, so that the data can be set beside those from the invertebrate remains to test whether the deposit contained stable manure or whether it only contained cut vegetation, such as might have been cleared from the ditch margins.

## **Recommendations**

Further excavation at this site should employ a full programme of sampling of deposits where waterlogged preservation of plant and animal remains is certain or suspected so that a proper investigation of this material, dating to a period and area of York about which very little is known, may be undertaken.

## **Retention and disposal**

All of the current material 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.

## Acknowledgements

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*Table 1. List of sediment samples from excavations at Bootham Engineering Works, Lawrence Street, York, with notes on their treatment.*

Context	Sample	Notes
1048	104801	6 kg sieved to 300 microns, with washover
1070	107001	2 kg sieved to 300 microns, with paraffin flotation