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**An assessment of environmental samples
from excavations in Crankleys Lane, on the Easingwold by-pass
(Y.A.T./Yorkshire Museum sitecode 1993.5000)**

by

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Summary

A survey was carried out on most of the 111 GBA samples and almost half the 43 BS samples from Iron Age and medieval deposits from excavations at Crankleys Lane, on the line of the Easingwold by-pass. With the exception of three contexts from a medieval ditch, the deposits were almost barren of ancient animal and plant remains (although modern seeds were rather frequently recorded in small concentrations). A single context represented by a sample taken during the watching brief gave evidence for very decayed bog peat. Charcoal was frequently observed and abundant in a few contexts, but charred seeds were noticeably absent.

The medieval ditch fills, if they can be more accurately dated, deserve fuller biological examination (a) to establish water quality, and (b) to provide a description of land-use in the surroundings.

Bone was always very sparse and usually poorly preserved. Only small numbers of identifiable fragments were present.

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An assessment of environmental samples from excavations in Crankleys Lane, on the Easingwold by-pass (Y.A.T/Yorkshire Museum sitecode 1993.5000)

Introduction

A series of 177 samples from 128 contexts from excavations at Crankleys Lane, along the line of the Easingwold by-pass, were taken for analysis of animal and plant remains; a very small amount of hand-collected animal bone was also available for examination. There were 111 'general biological analysis' (GBA) samples, mostly of about 10 l., 43 'bulk-sieving' (BS) samples (of about 20-30 l.), nine 'spot' samples, nine for possible ¹⁴C dating and a further five taken as 'context samples' (which can be treated as 'spot samples'). Of the samples taken, 11 had been 'bulk-sieved' (to 1 mm) on site. Most of the material was of Iron Age date, though there were also samples from a large ditch dated to the medieval period.

For the purposes of assessment, a survey was made of almost all the GBA samples, together with the residues from samples bulk-sieved on site and from a further four samples bulk-sieved in the laboratory. The spot finds were examined cursorily but were either obviously charcoal (not identified at this stage) or appeared to have been taken without a stated reason and to consist of sediment without much potential for biological analysis.

Methods

GBA samples were examined in the laboratory for plant and invertebrate animal remains. Of these, nine had been marked by the excavator for possible future metallurgical analysis. It was decided that no bioarchaeological analysis of these samples would be undertaken at this stage. The remaining samples were described and their sedimentary characteristics recorded prior to processing.

A 'rapid assessment' was carried out on 94 of the samples. Only two of these were deemed promising for bioarchaeological analysis and from these a 'test' subsample (Kenward *et al.* 1986) of 1 kg was taken and processed by paraffin flotation (Kenward *et al.* 1980) to extract insect remains. A washover (to 300 μ m) was carried out on the remaining GBA samples. Plant remains were recorded from the flots from paraffin flotation, the washovers and from the subsample residues. Although the nature of the residues was recorded after drying, the results have not been included here since, almost always, they consisted entirely of small amounts of sand with sometimes a few stones.

Four of the 32 bulk samples submitted, representing contexts from which no other material was processed, were sieved to 1 mm in the laboratory and the residues examined for plant and animal remains. The residues from the 11 bulk samples that had been sieved on site were similarly examined.

Results

The results of the analyses performed are given in a sample-by-sample account in the Appendix.

For the most part, the deposits yielded only very small numbers of animal and plant remains, many of the latter probably modern contaminants (not unexpected in such shallow deposits under ploughsoil).

In particular, it is noticeable that, although there were a few contexts yielding quite large concentrations of charcoal, charred cereals were effectively absent.

The animal bone assemblage recovered from these excavations at Easingwold was very small indeed. It comprised a single standard-sized box of hand-collected material from 38 contexts, with each context yielding no more than a handful of fragments. Preservation was almost universally very poor with most of the bone appearing to be considerably fragmented and to have suffered from both chemical and physical abrasion. A large proportion appeared burnt and/or iron stained and the vast proportion of the fragments were wholly unidentifiable. There were therefore almost no bones and teeth which could be measured and used to assess age at death.

Implications for further work

The most abundant biological material from these deposits was charcoal and at least a modest proportion of the samples could be checked to provide identifications of the kinds of wood used. There is probably no need for further processing to provide this charcoal.

The sample containing very decayed bog peat from a context observed during the watching brief would probably be worthy of further analysis if the deposit from which it came can be defined archaeologically.

The fills of the medieval ditch have considerable potential for further investigation, both in terms of defining conditions within the ditch and of determining the nature of the surroundings. Such an investigation would, however, be contingent on some refinement of dating; if this cannot be achieved from the archaeological record, then radiocarbon dating is recommended. If this work is to proceed, it is suggested that 1 kg subsamples should be fully recorded for insects and that larger quantities of sediment should be processed to recover useful assemblages of terrestrial insects only. Plant and mollusc remains should also be investigated in more detail.

With regard to the bone from this site, its scarcity must be a consequence of the chemistry of the deposits. The hand-collected material is too limited for any useful work to be undertaken, while sieving appears unlikely to provide more. In view of this it would appear that the priority of the work on the bone from Easingwold is very low. It certainly warrants no further practical work apart, perhaps, from providing limited information regarding site formation processes, evident on the basis of observations of preservation, fragmentation, and colour changes of the material from different contexts. This would

involve little additional time since most of the information needed has already been recorded during the assessment.

Apart from the investigations suggested here, there appears to be no justification for further processing of material unless to recover small finds, and no need to retain raw sediment other than samples for radiocarbon dating or metallurgical or other non-biological analysis except (a) as representative of the deposits or (b) in the case of the ditch deposits with waterlogged preservation, as vouchers.

Archive

Material from this site currently exists as raw sediment samples (mostly in 10 l. or 30 l. plastic tubs), or as dried residues and 120 ml jars of washovers and flots in IMS. The archive for the environmental assessment is located in the Environmental Archaeology Unit.

Costing for further work

Processing additional material from the three ditchfill contexts for waterlogged plant and insect remains	16 hours Tech.
Sorting insect remains	16 hours Tech.
Recording insect remains	22 hours RF1
Recording plant remains	15 hours RF1/ 2
Recording mollusc remains	7.5 hours RF3
Writing report	22 hours RF1 + 2 3 hours RF3
— Reporting on site formation processes based on bone preservation, etc.	7.5 hours RF 4
Charcoal identification and report writing	15 hours RF1/ 2
Consumables (nominal)	£10.00
Current staff costs:	
RF1 (Research Fellow)	£22.87/hour
RF2 (Research Fellow)	£19.31/hour
RF3 (Research Fellow)	£17.77/hour
Tech. (Technician)	£11.18/hour

References

- Kenward, H. K., Engleman, C., Robertson, A., and Large, F. (1986). Rapid scanning of urban archaeological deposits for insect remains. *Circaea* 3, 163-72.
- Kenward, H. K., Hall, A. R. and Jones, A. K. G. (1980). A tested set of techniques for the extraction of plant and animal macrofossils from waterlogged archaeological deposits. *Science and Archaeology* 22, 3-15.

Appendix

Copies of the appendix to this report, which contain a sample by sample descriptions of the material and results of any analyses, are lodged in the site archive and Unit reprint collections at the E.A.U.