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**Evaluation of biological remains from borehole samples from Conesby
Quarry Sidings, North Lincolnshire (site code: CQS2000)**

by

Allan Hall and Harry Kenward

Summary

Five borehole samples from deposits at Conesby, North Lincolnshire, were submitted for an evaluation of their bioarchaeological potential. Examination revealed very low concentrations of plant and insect remains, probably indicative a natural marsh environment, perhaps forming in a cold climate. Some charred plant material from two samples may represent a different facies of the same deposit in which evidence for human activity should be sought if the deposits are exposed during development.

KEYWORDS: CONESBY QUARRY SIDINGS; NORTH LINCOLNSHIRE; EVALUATION; BOREHOLE SAMPLES; PLANT REMAINS; CHARRED PLANT REMAINS; INVERTEBRATE REMAINS

Authors' address:

Palaeoecology Research Services
Environmental Archaeology Unit
Department of Biology
P. O. Box 373
University of York
York YO10 5YW

Telephone: (01904) 433846/434475/434487
Fax: (01904) 433850

Prepared for:

Humber Field Archaeology
The Old School
Northumberland Avenue
Hull HU2 0LN

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Introduction

An archaeological borehole survey was carried out by Humber Field Archaeology (HFA) at Conesby Quarry Sidings, North Lincolnshire (centred on NGR SE 900 145), between 6 November and 24 November 2000.

In total 60 cores were taken from across the site following an approximate 20 metre grid pattern. Samples were collected from a thin (approximately 5-25 cm thick) horizon revealed at the same stratigraphic level over much of the site.

Methods

Five samples of organic sediment from the boreholes were submitted by HFA for assessment of their biological content. The material examined and investigations undertaken are listed in Table 1 below.

Results

Identifiable biological remains in these samples were very sparse, though where present usually moderately well preserved. In addition to a few plant taxa, there were traces of insect cuticle, mostly non-diagnostic. These remains do not give clear evidence for the environment at the time the deposits formed unless their sparseness of remains can be taken as an indicator of intense cold. The presence of caddis remains in Sample 4 points to aquatic deposition and if, as seems likely, the *Homalothecium* is *H. nitens* (the absence of tomentum on the stems precludes specific identification), a mire, perhaps occasionally flushed by a spring or stream (bringing the silt component of the sediment) may be

suggested. There is clearly some difference between the peat forming Samples 3-5 and the humic sand of Samples 1 and 2, the latter containing some charred herbaceous material (perhaps stems of grasses or rushes) of a kind recorded from Anglian occupation deposits at Flixborough, a few km to the west (Hall 2000). It is possible that they represent different facies of the same unit of sediment, with stronger humification towards the south (on slightly higher, and therefore better drained, ground?). No date for the organic horizon can be deduced from the remains observed and radiometric dating of the peat should be seen as a priority—at least one of the samples (Sample 4, Borehole 49) contained sufficient organic material for radiocarbon dating of the deposit to be attempted. Given the mobility of the aeolian sands in this area, it cannot necessarily be assumed that the organic horizon is early Holocene.

Discussion and statement of potential

The deposits at this site have some potential to study the environment at the time they formed but at the moment they lack a dating framework and an archaeological component, though the presence of small amounts of characteristic charred herbaceous material in the two southernmost samples leads us to suspect that there may be evidence for human activity at least at this end of the area under consideration.

It should not be assumed that preservation will be uniformly poor—deposits of this kind may show local patches of better preservation and higher concentrations of remains.

Recommendations

Given that the only investigation of these deposits has so far been via borehole logs, it is suggested that, when the deposits are exposed, removal of overburden is undertaken such that the organic horizon(s) can be examined for the presence of artefacts through field observation and a programme of on-site sieving (to, say, 4 mm), backed up with sampling of raw sediment for analysis of plant and insect remains (which, given their rarity, may necessitate the use of large, e.g. 5-10 kg, samples).

On the current evidence, no further analysis of the pollen is recommended—given the rarity of the remains, that dating of the deposits may be attempted by radiocarbon assay, and that it seems unlikely that further analysis would provide additional information on deposit formation and the local environment beyond that more readily obtainable from the plant and insect macrofossils. Should further excavation reveal a greater depth of organic deposits, or deposits which show some clear change of organic sediment, then a pollen sequence may be of interpretative value, however.

It is essential that environmental archaeologists with appropriate expertise in study of plant and invertebrate macrofossils from natural and semi-natural organic deposits are present when sections are revealed to direct or undertake sampling and recording.

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.

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References

Hall, A. (2000). Technical report: Plant remains from excavations at Flixborough, N. Lincolnshire (site code: FLX89). *Reports from the Environmental Archaeology Unit, York 2000/56*, 107 pp.

Table 1 (overleaf). Summary of the material, analyses and results obtained from the samples examined in this evaluation.

Borehole	Depth below surface m)	Sample	Sediment	Analysis	Results
12	4.97-5.07	1	soft, black (?sulphide-rich) humic sand with small clasts (<5 mm) of fine woody and herbaceous detritus of the kind seen in samples 4 and 5	about 50 g sediment sieved to 300 microns	most of residue consisted of the kind of unidentified woody and herbaceous detritus seen in Samples 4 and 5 (apparently present in small but discrete clasts) as well as some charred herbaceous material
29	4.05-4.09	2	soft, black (?somewhat sulphide-rich) organic sandy silt	about 50 g sediment sieved to 300 microns; pollen smear	no pollen observed; a sandy silt with traces of ?humic matter; the residue almost all passed sieve: what was left was mainly sand with a few charred and uncharred herbaceous plant fragments, also some pyritised material (the latter ?mainly roots)
47	3.59-3.80	3	slightly silty black amorphous organic sediment	about 10 g sediment sieved to 300 microns; pollen smear	no pollen observed; residue as for Samples 4 and 5, with a trace of beetle remains
49	3.45-3.70	4	dark brown (oxidising black), compressed, somewhat brittle (working crumbly, then soft), slightly sandy, silty detritus peat with a small (<10 mm) sandy lens (containing moss - <i>Homalothecium</i> sp.); somewhat fissile at micro-scale	200 g of sediment sieved to 300 microns; pollen smear	only a trace of pollen (pine, ?birch); ?some micro-charcoal; residue of fine plant detritus including a few woody fragments to 10 mm in maximum length (at least some probably willow, <i>Salix</i>) but mainly herbaceous material including fine rootlets; a few sedge (<i>Carex</i>) nutlets and a very few beetle and other insect remains (including fly puparia and caddis larvae); also a trace of wood charcoal to 2 mm
58	2.68-2.75	5	dark brown to black, very humified amorphous organic sediment	about 10 g sediment sieved to 300 microns; pollen smear	no pollen observed; residue of slightly silty fine plant detritus, as in Sample 4; trace of beetle remains

