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**Evaluation of biological remains from South Becksid, Beverley,
East Riding of Yorkshire (site code: SBS2000)**

by

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Summary

Seven samples of sediment from deposits excavated at South Becksid, Beverley, East Riding of Yorkshire, were submitted for an evaluation of their bioarchaeological potential.

Preservation of plant remains was generally good, and of bone excellent. The invertebrate remains were less well preserved. The biological remains gave clear evidence of human activity (dumping) from at least some of the examined deposits. The invertebrate remains showed a strong aquatic/aquatic marginal influence (including flooding).

Unless further excavation occurs (in which case a carefully targeted programme of sampling and analysis should be undertaken to amplify and elaborate the results obtained in this evaluation), detailed analyses and a complete record should be made of the plant and invertebrate remains from further subsamples of Samples 2 and 13 and perhaps also 10, as representative of three types of deposit. In the event that no further sampling takes place, it seems prudent to examine any other samples from the evaluation excavation to see if any will add to the information already obtained. No further work is recommended on the vertebrate remains considered in this report.

KEYWORDS: SOUTH BECKSIDE; BEVERLEY; EAST RIDING OF YORKSHIRE; PLANT REMAINS; CHARRED PLANT REMAINS; PEAT; INSECT REMAINS; ANIMAL BONE; FISH BONE; FOOD WASTE; FAECAL MATERIAL

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Evaluation of biological remains from South Becksde, Beverley, East Riding of Yorkshire (site code: SBS2000)

Introduction

An archaeological excavation was carried out by Humber Field Archaeology at South Becksde, Beverley, East Riding of Yorkshire, in early 2000. Thirteen sediment samples ('GBA' *sensu* Dobney *et al.* 1992) from nine contexts were recovered from the deposits. The samples were assigned to six phases dated and interpreted as follows:

- Phase 1: pre-12th century pre-occupation activity
- Phase 2: 12th-13th century clay extraction pits and primary boundaries
- Phase 3: 14th-17th century primary building/ground raising dumps
- Phase 4: 18th century brick boundaries/dumps
- Phase 5: 19th century levelling dumps/industrial activity
- Phase 6: 20th century modern levelling/mills

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

Methods

The sediment samples were inspected in the laboratory and descriptions of their lithologies were recorded using a standard *pro forma*. Six of the samples were processed, following the procedures of Kenward *et al.* (1980; 1986), for recovery of plant and invertebrate macrofossils. One sample and a discrete inclusion from one of the six processed samples were examined as 'SPOT' (*sensu* Dobney *et al.* 1992.) samples.

Plant macrofossils were examined from the residues and flots resulting from processing, and the flots were examined for invertebrate remains. The residues were also examined for other biological and artefactual remains.

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

Results

Phase 1 (Pre-12th century)

Context 7061 [organic material]

Sample 13/T (1 kg paraffin flotation)

Wet, black (oxidising to mid grey-brown, and locally gingery-brown where previously oxidised), soft (working plastic and somewhat thixotropic) slightly sandy silt with traces of twig fragments.

The very large residue of about 450 cm³ contained only a few cm³ of sand and gravel, the rest being organic debris. Of this, by far the bulk was wheat/rye 'bran', largely in the <1 mm fraction, but with some fragments as large as 2 mm and some whole or incomplete uncharred caryopses present, too. There is no doubt that this deposit consisted largely of faecal material for the largest number of taxa were foodplants, notably a range of *Prunus* species—sloe (*P. spinosa* L.), 'cherry' (*P. Section Cerasus*) and 'bullace' (*P. insititia* ssp. *insititia* (L.) C. K. Schneider) with blackberry (*Rubus fruticosus* agg.), dewberry (*R. caesius* L.), apple (*Malus sylvestris* Miller, both seeds and 'core') and hawthorn (*Crataegus monogyna* Jacq.) all in immaculate condition. Indeed, there were some small (to 5 mm) fragments of apparently unmineralised mesocarp (flesh) of *Prunus* which retained a purplish colour—overall, this was a quality of preservation not usually encountered in material from Beverley,

though occasionally met with in York at, for example, 16-22 Coppergate (Kenward and Hall 1995) and, more recently, at 4-7 Parliament St. (Hall and Kenward, in prep.). Otherwise, most of the plant taxa were either food remains (including leaf epidermis of *Allium*, probably leek, *A. porrum* L., a hilum (scar) of pea, *Pisum sativum* L. and seeds of flax, *Linum usitatissimum* L.) or seeds likely to have been ground with the cereal—the abundant corncockle (*Agrostemma githago* L.) fragments, and those of corn marigold, and black bindweed (*Bilderdykia convolvulus* (L.) Dumort.) as well as fragments of the achenes of *Centaurea* (probably cornflower, *C. cyanus* L.).

Invertebrate taxa were present in ones or twos. There were hints of foul matter from the modest-sized beetle assemblage, *Cercyon haemorrhoidalis* (Fabricius), *C. terminatus* (Marsham), *Platystethus arenarius* (Fourcroy), *Oxytelus sculptus* Gravenhorst and *Gyrophypnus fracticornis* (Müller) being notable in this respect. Dryer decaying matter was poorly represented. There were a few aquatic and waterside species, sufficient to indicate some direct input from such habitats, perhaps in the form of flooding or in waste water.

Most of the well-preserved vertebrate remains recovered from this sample were identified as fish and included eel (*Anguilla anguilla* (L.)), herring (*Clupea harengus* L.) and ?haddock (*Melanogrammus aeglefinus* (L.)). A single unidentified fish vertebra had a characteristic ‘squashed’ appearance suggesting that it had been consumed. This supports the implication of the plant assemblage (and to a lesser degree the beetles) that much of the material was faecal in origin.

Phase 2 (12th-13th century)

Context 2041 [organic layer]

Sample 8/T (1 kg paraffin flotation)

Moist, dark brown to black, brittle (working crumbly), sandy, silty amorphous organic sediment, like a silty detritus peat, with some white flecks (perhaps recent efflorescence).

The very small residue of about 100 cm³ was mostly organic material which proved to be a well-humified detritus peat (invested with fine rootlets) in fragments up to 10 mm in maximum dimension. Most of the seeds are likely to have originated in the peat: the more abundant were sedge (*Carex* spp.), spike-rush (*Eleocharis palustris* s.l.) and bogbean (*Menyanthes trifoliata* L.), and of the remainder only a few were from weeds rather than aquatic or waterside plants. There was a single well preserved fig (*Ficus carica* L.) seed. The mineral component comprised a little sand with traces of brick/tile, pottery and bone indicating that occupation material was deposited along with the peat.

Preservation of invertebrates was rather poor, and the remains were often fragmentary. Statoblasts of *Lophopus crystallinus* (Pallas) indicated an aquatic component in the deposit, although water beetles were rare. There were hints of occupation-site fauna (e.g. *Xylodromus concinnus* (Marsham), *Gyrophypnus angustatus* Stephens, *Ptinus* sp., and ?*Blaps* sp.). Other taxa probably exploited water margins (either locally or at the source of the peat) and waste ground vegetation. The concentration and quality of invertebrate remains was such that a 5 kg subsample might not provide a clearly interpretable assemblage, assuming that there were no localised pockets of better-preserved fossils in the sample.

Context 2051 [gully fill]

Sample 11/T (1 kg paraffin flotation)

Moist, very dark grey-brown, firm to brittle (working crumbly), very humic sandy silty coarse herbaceous detritus with inclusions (to 80 mm) of plastic grey- and brown-mottled slightly sandy clay, perhaps making up 25-30% of the volume.

The large residue of about 500 cm³ was almost wholly of granular peat (to 10 mm) whose matrix included fibrous material or was invested with rootlets. For the rest there was some unidentified

herbaceous detritus and very decayed wood (to 20 mm) and a little sand. The few seeds present included two likely to have originated in the peat (bogbean, and saw-sedge, *Cladium mariscus* (L.) Pohl), and a few weed taxa presumably from the environs of the gully into which the peat was discarded, together with a trace of hazel (*Corylus avellana* L.) nutshell.

There were moderate numbers of invertebrates, mainly beetles and mites. The former were well-decayed in many cases, but identifiable, and a 3-5 kg subsample would provide a interpretatively useful group. The main ecological components were aquatics and species associated with human habitation—the latter were not sufficiently common in this subsample to stand as evidence of dumping, however. The water and waterside beetles included two *Hydraena* sp., *Lesteva* sp., *Tanysphyrus lemnae* (Paykull), *Georissus crenulatus* (Rossi), a saldid bug and *Cyphon* sp. There were also some *Lophopus crystallinus* statoblasts and ephippia (resting eggs) of a cladoceran (water flea). This component may have originated *in situ*, or have been imported in peat.

Context 3046 [organic layer]

Sample 6/T (2 kg paraffin flotation)

Moist to wet, mid/dark grey-brown, crumbly (working slightly sticky and plastic, also somewhat thixotropic), slightly sandy clay silt with traces of stones (20-60 mm); the deposit was moderately heterogeneous, with local concentrations of fine herbaceous detritus and amorphous organic sediment, and inclusions of somewhat indurated blue- and brown-streaked silty clay.

Of the moderately large residue of about 400 cm³, some 250 cm³ was sand and gravel, the rest mainly peat fragments (to 10 mm) with some charred culm (stem) fragments of grass/cereal plants and fish bone. The minor components included charcoal and coal, and there were a few plant taxa represented by seeds, mostly rather worn and likely to originated in the peat or from occupation debris, though the tally was small.

Invertebrate remains were rare apart from numerous statoblasts (dispersive resting bodies) of the bryozoan *Lophopus crystallinus*, indicative of fairly clean water (this statoblast is illustrated together with those of the other British Bryozoa by Mundy 1980). Insect remains were present as very decayed scraps, and even a very large subsample could not be relied upon to give an interpretatively useful group.

The fish remains included, eel, herring, small gadid vertebrae and a three spined stickleback (*Gasterosteus aculeatus* L.) spine. Whilst the stickleback may represent a component of a natural death assemblage, the remaining species are more likely to represent food debris.

Phase 3 (14th-17th century)

Context 3042 [pit lining]

Sample 3/SPT (SPOT sample)

This sample was a mixture of white, highly calcareous material (presumably lime) with some red-brown silty clay, and seemed locally to be indurated (?through being burnt). There were stones (6-20 mm, including angular flints) and a fine (<1 mm) charcoal component (e.g. from ash).

Context 3050 [organic layer]

Sample 10/SPT (SPOT sample)

This sample consisted of lumps of vesicular, highly humified, and apparently somewhat indurated silty peat/silt amorphous organic material, which were examined separately from the main test subsample to check on their nature. They proved on disaggregation (of a few tens of grammes) to be highly humified fen peat with fine rootlets throughout and occasional coarser (perhaps woody) rootlets; the seeds present were mostly likely to have originated in the peat (they were rather decayed, as might be expected).

Sample 10/T (1 kg paraffin flotation)

Dark brown, crumbly amorphous organic sediment (with obvious voids/root channels) and some large pieces of wood, and inclusions of stiff blue-grey/light brown mottled sandy, slightly stony clay.

The small residue of a little over 100 cm³ consisted of less than a third by volume of sand and fragments of greyish non-calcareous concreted sediment (sometimes with internal spaces lined with iron-rich material). The rest was very decayed wood (to 10 mm) with some bark and peat fragments, amongst which was a fairly large number of plant taxa represented by somewhat abraded seeds. Most were probably from the peat (the more abundant were spike-rush, bog-bean and common meadow-rue, *Thalictrum flavum* L.) or from waterside vegetation if not.

Beetle remains were moderately abundant, and although many were damaged and some so decayed as to make identification difficult, a larger subsample would give an interpretable group. The range of taxa was similar to that from the subsample from Context 5003 (Phase 5, see below), although with a more substantial component from drier decaying matter. There was a small range of aquatics (including *Donacia* sp. from waterside or emergent vegetation, perhaps from fen peat) and various species associated with herbaceous vegetation and the ground beneath it. The number of species typical of occupation sites, and their abundance, suggested that the deposit may have included dumped organic waste from in or around a building.

Phase 5 (19th century)

Context 5003 [ditch fill]

Sample 2/T (2 kg paraffin flotation)

Moist, mid grey-brown, crumbly (working plastic), moderately humic clay silt, locally more humic with visible herbaceous detritus, elsewhere with inclusions of light grey-brown clay (which were black, internally).

There was a moderately large residue of about 450 cm³ of which about 100 cm³ was sand and gravel with traces of pottery, mortar and bone, the rest small (to 10 mm) fragments of peat and other organic detritus. There was a piece of worked ash wood and also some thin, flaky wood fragments which were probably from oak. As before, the peat was invested with fine rootlets and probably formed in a fen. There were a few seeds of taxa likely to have been brought in the peat, and by far the bulk of the taxa and individuals were probably introduced with straw or hay (or other cut grassland vegetation). They included many fragments of crucifer pods (some wild radish, *Raphanus raphanistrum* L., but most likely a brassica or charlock, *Sinapis arvensis* L.). Other moderately frequent taxa included the cornfield weed corn marigold (*Chrysanthemum segetum* L.), the grassland taxa self-heal (*Prunella vulgaris* L.) and hawkbit (*Leontodon* sp.), and the common weeds fat hen (*Chenopodium album* L.), chickweed (*Stellaria media* (L.) Vill.) and stinging nettle (*Urtica dioica* L.). Also present in modest amounts were fragments of 'bran' of wheat/rye (*Triticum/Secale*) and the overall impression is of a deposit which may well have included litter, perhaps from stable manure (the 'litter' index of Hall, unpublished, was 38, the highest for the group of samples considered here). The black 'cores' of some of the lumps of raw sediment are consonant with a deposit of this kind, though not necessarily diagnostic.

Fly puparia and pupae, and earthworm egg capsules, were rather abundant, and there were small numbers of a range of other invertebrates, including beetles. Preservation was very good and the beetles could mostly be assigned to two groups: those associated with water and waterside habitats, and those found in fairly foul decomposing matter. The first category included *Colymbetes fuscus* (L.), *Helophorus ?grandis* Illiger, *Helophorus* sp., *Hydrobius fuscipes* (L.) and *Ochthebius* sp., together suggesting still or sluggish water, which may have been clean or slightly polluted. A few other species may have lived at the margins of water. Decomposing matter, probably dung or moist plant matter, was indicated by species including *Cercyon ?haemorrhoidalis*, *C. terminatus*, *C. analis* (Paykull), *Gyrophynus angustatus* Stephens, three *Aphodius* species and *Oxyomus sylvestris* (Scopoli). This may have been stable manure, as indicated by the plant remains, but a classic stable manure fauna was not present. It may have been a fairly clean litter which became moist and foul, and was consequently invaded by foul decomposers, after dumping. An adult and a puparium of the sheep ked *Melophagus ovinus* (L.) were noted, possibly derived from wool-cleaning waste.

Discussion and statement of potential

Preservation of plant remains in these deposits was generally good, though in some cases the remains seem likely to have come largely from lumps of fen peat, which formed a major component. Indeed, the samples are notable for the prevalence of peat—it was present at an abundance score of 3 or 4 in three samples, and at 2 in the fourth—which presumably indicates some use for the material prior to its subsequent disposal in the fills. It is a type of peat less valuable for burning than, say, raised-bog (typically dominated by *Sphagnum* and *Eriophorum*) peat, its bulk being greatly diminished on drying. Given the prevalence of this kind of peat in the area—it has been observed in excavations at N. Becksides (Carrott *et al.* 1993) as well as at an impromptu excavation by a farmer for peat extraction/pond construction within a kilometre or two of the present site—we may be dealing here with material which was excavated and then simply dumped in suitable cuts as part of a refuse deposit (incorporating small amounts of other debris such as pottery and bone and, in the case of sample 10, perhaps also natural clay from the same sediment sequences as the peat).

The two test subsamples which gave only traces of peat were the earliest (Sample 13, Phase 1), which was clearly faecal material, and latest (Sample 2, Phase 5) which appeared to be largely stable manure or similar.

The invertebrate remains were rather less well preserved but clearly indicated an aquatic influence with some dumping into some of the deposits. No specialised decomposer groups were noted, however, and in particular no groups which definitively represented floor surfaces, whether in the form of sweepings from houses or of stable manure (despite the strong suggestion of stable manure from the plant remains from Context 5005).

The small number of vertebrate remains recovered from the samples, though very well preserved, were of no interpretative value beyond that discussed above.

Recommendations

Unless further excavation occurs (in which case a carefully targeted programme of sampling and analysis should be undertaken to amplify and elaborate the results obtained in this evaluation), detailed analyses and a complete record should be made of the plant and invertebrate remains from further subsamples of Samples 2 and 13 and perhaps also 10, as representative of the three types of sample. In the event that no further sampling takes place, it seems prudent to examine any other samples from the evaluation excavation to see if any will add to the information already obtained.

No further work is recommended on the vertebrate remains considered in this report.

Retention and disposal

All samples from the evaluation excavation 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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Table 1. List of sediment samples evaluated from South Becks, Beverley, East Riding of Yorkshire, with notes on their treatment.

| Phase | Context | Sample | Notes |
|--------------|----------------|---------------|---|
| 1 | 7061 | 13 | 1 kg subsample processed by paraffin flotation |
| 2 | 2041 | 8 | 1 kg subsample processed by paraffin flotation |
| 2 | 2051 | 11 | 1 kg subsample processed by paraffin flotation |
| 2 | 3046 | 6 | 2 kg subsample processed by paraffin flotation |
| 3 | 3042 | 3 | Examined as a 'SPOT' sample |
| 3 | 3050 | 10 | 1 kg subsample processed by paraffin flotation and a discrete inclusion examined as a 'SPOT' sample |
| 5 | 5003 | 2 | 2 kg subsample processed by paraffin flotation |