Environmental evidence from Rawcliffe Manor, Manor Lane, Rawcliffe, York (Y.A.T/Yorkshire Museum sitecode: 1992.5007)

by

M. Dainton, J. Frost, A. R. Hall and H. K. Kenward

Summary

Thirteen samples, mostly from the fills of ditches and other cuts, were examined for their content of fossil plant and animal remains. With the exception of a few, poorly preserved remains in a few samples, and a rather larger assemblage in another, the deposits proved to be barren of ancient biological material. The nature of the environment of deposition of these sediments therefore relies largely on the nature of the lithology. It is emphasised that there may be better preservation locally and that care should be taken during further disturbance of the site not to overlook such material.

Authors' address:

Environmental Archaeology Unit
University of York
Heslington
York YO1 5DD

Tel: 0904 433843-51

May 1, 1992

Environmental evidence from Rawcliffe Manor, Manor Lane, Rawcliffe, York (Y.A.T/Yorkshire Museum sitecode: 1992.5007)

by

M. Dainton, J. Frost, A.R. Hall and H.K. Kenward

Introduction

This report presents the results of analyses of invertebrate animal and plant remains from thirteen samples from deposits excavated from Rawcliffe Manor Site. The investigation was carried out in order to identify the potential of the deposits for further work on local environmental history and land use and to offer evidence for the mode of formation of the deposits.

Methods

The sedimentary characteristics of all thirteen samples were described but further analysis was undertaken on only twelve selected in the laboratory (sample 003 being a 'spot' sample). On these twelve samples, a 'rapid assessment' was carried out in which subsamples of 1 kg were disaggregated and sieved to 300 μm (following methods outlined by Kenward *et al.* 1980). A washover, also to 300 μm, was then performed on each subsample to separate the lighter organic material. Plant and insect remains were recorded from the washovers and residues were dried and also examined briefly for plant remains and other components.

The samples and results of the analyses

The analyses carried out on each sample, and the remains recovered, are described below. A brief archaeological description and/or interpretation of the context is given in brackets where available. The samples are presented in context order.

Context 1009 [fill of shallow, ?late medieval ditch; is there evidence for its function/environment?]

Sample 001: Light grey with brown surface suffusion, moist, stiff, plastic, sandy clay. Small patches of iron rich red-brown material were present in the sample.

The small washover contained only a few root/rootlet fragments and the small residue comprised sand and a few sand/clay concretions and charcoal fragments, all <5 mm.

Context 1010 [from cut 3009]

Sample 004: Light to mid grey with slight 'glowing' brown cast, moist, just crumbly

working to plastic, sandy clay with considerable variation in degree of sandiness (?gleyed). Roots and burrows or root traces were present in the sample.

There were modest numbers of rather poorly preserved rush (*Juncus*) seeds in the very small washover, together with root/rootlet material; all of the ten or so seeds scrutinised more closely proved to be toad-rush, *J. bufonius*, a species of seasonally wet tracks and paths, pond margins and cart ruts. There were also a few unidentifiable insect fragments. The very small residue consisted of fine sand and concreted sand/clay up to 10 mm, with a trace of charcoal to 5 mm.

Context 1012 [from cut 1017]

Sample 005: Light to mid grey to mid brown, moist, stiff, plastic, slightly sandy clay, with slightly crumbly localised patches; gleyed. Burrows or root traces were present in the sample.

The very small washover comprised roots/rootlets with numerous rotten scraps of insect cuticle and a moderate number of toad-rush seeds; there were also three fragments of rather well preserved (?modern) elderberry (*Sambucus nigra*) seed. The insects included some water beetles and a variety of terrestrial forms; subjectively, conditions not unlike those obtanining at the time the site was excavated are indicated. The small residue was of fine sand and sand/clay concretions up to 10 mm.

Context 1016 [primary fill of ?medieval ditch; evidence for depositional environment?]

Sample 006: Pale grey and pale orange, locally olive, moist, heterogeneous sand and clay and grades between (?gleyed), clearly formed by running and pooling water. No obvious inclusions.

There were only fragments of root/rootlet and some ?root 'bark' (outermost cortical layer) in the very small washover, and the small residue consisted of fine sand and a little iron-rich concreted sand in clasts < 10 mm.

Context 1019 [from cut 1022 (pit of unknown date)]

Sample 007: Light to mid grey to mid brown overall with brown cast, crumbly to brittle when worked, clay fine and coarse sand with local areas of pure sand.

The very small washover contained root/rootlet fragments and a trace of wood < 5 mm in size; fine sand and concreted sand/clay made up the small residue, with a trace of charcoal < 5 mm.

Context 1020 [from cut 1022 (pit of unknown date)]

Sample 008: Mid grey with brown 'tinge' (brown more oxidised grey more reduced),

stiff, works (with difficulty) to plastic, clay, locally more sandy . Roots and abundant root/worm traces were also present in the sample.

There was a small washover of root/rootlets with a few tiny fragments of charcoal <1 mm. The very small residue was of fine sand and concreted sand/clay, with a trace of charcoal <10 mm (perhaps a little more than in other samples from this site).

Context 1021 [from cut 1022 (pit of unknown date)]

Sample 010: Light to mid grey with brownish patches (almost yellow in places), moist, stiff, crumbly, brittle, plastic when worked, clay fine and coarse sand. No obvious inclusions were present.

A very small washover was obtained, the bulk of it consisting of root/rootlet detritus, including a nitrogen-fixing root nodule, probably from clover (*Trifolium*). There were a few rush seeds, all very degraded, but at least one of them was toad-rush. The tiny residue was mostly white quartz sand with a few iron-rich sandy concretions and a trace of charcoal, all <5 mm.

Context 1024 [from cut 1022 (pit of unknown date)]

Sample 011: Mid blue grey to mid orange brown (gleyed), moist, plastic, stiff, sticky, clay with silty partings (millimetre scale layering), some sand, clearly water lain. A modern bud-scale was present in the sample along with evidence of root penetration.

The root fragments in the small washover were rather more 'woody' than in other samples investigated; there was also a fragment of a dicotyledonous leaf with a stiff, brittle texture and well preserved epidermis — perhaps most likely from an evergreen, but not identifiable further. From its excellent state of preservation it is tempting to conclude that it was not very old. A single beetle elytron (wing case) was recorded.

The tiny residue from this subsample consisted of white quartz sand with a few concretions of iron-rich sand <5 mm, a trace of charcoal <5 mm, and a 20 mm long fragment of what appeared to be a herbaceous rootstock or rhizome with fibrous remains of leaf bases or leaf sheaths, though this specimen could not be identified further.

Context 2007 [from cut 2008 (medieval ditch)]

Sample 009: Light mottled grey and brown, moist, plastic, stiff, clay.

The tiny washover of root/rootlet fragments included modest numbers of very rotted insect fragments and at least two very degraded toad-rush seeds. The insects probably represented a group like that from sample 005, context 1012, but it was not possible to be certain.

Context 2009 [from cut 2011]

Sample 012: Brownish grey with abundant yellowish and orange patches, moist, stiff, sandy clay. Rootlets and fine channels (?rootlets/invertebrate) were present in the sample.

The small washover comprised root/rootlet fragments with a single beetle elytron, possibly a modern contaminant.

Context 2010 [from cut 2011]

Sample 013: Light/mid grey with golden brown cast, locally light orange, millimetre to 1 cm mottles, gleying, moist, plastic, stiff, sandy clay. Modern rootlets and channels were present in the sample.

Only root/rootlet debris were recorded from the small washover, whilst the very small residue consisted of pale yellow quartz sand with a few clasts of concreted sand/clay <5 mm and a trace of charcoal of the same size.

Context 3007 [from cut 3009]

Sample 002: Mid grey to grey brown (rubs brown), gleyed, moist, stiff, clay. Fine rootlets were present in the sample.

The washover from this subsample was, like the others for this group of samples, dominated by root/rootlet fragments, and there were (unusually) a few small (<10 mm) fragments of wood, but by contrast there was an abundance (many hundreds) of seeds of water-plantain (*Alisma* sp.), modest numbers of rush seeds (*Juncus inflexus/effusus/conglomeratus* and *J. bufonius* in a ratio of about 3:2 and two seeds of duckweed, *Lemna* sp. Single, poorly preserved specimens of a sloe (*Prunus spinosa*) fruitstone and a pale persicaria (*Polygonum lapathifolium*) nutlet were accompanied by several pale coloured (and therefore ?modern) knotgrass (*P. aviculare* agg.) nutlets, and another which, although dark coloured, had begun to germinate and was presumably of no great antiquity. One of the rush seeds, likewise, had an emergent root! The small number of insect fragments present were very poorly preserved.

The tiny residue was fine sand and small (<10 mm) sand/clay concretions with a trace of charcoal and ?clinker/cinder <5 mm.

The interpretation of these plant remains is not straightforward; it is unusual to record the presence of moderate or large numbers of only a few taxa, even though preservation was not especially good. The most abundant taxon — water-plantain — points to the presence of standing water, as do the *Lemna* seeds, whilst the rushes may merely indicate impeded drainage or seasonal wetness. Under such depositional conditions it might be expected that a wider range of taxa was preserved and, in particular, invertebrate remains such as water-flea resting eggs or ostracod shells, not to mention molluscs and insects.

Context 3008 [from cut 3009; 'what is the white stone?']

Sample 003: Mid grey-brown, moist, brittle, works to plastic, clay. Sample contained tiny wood fragments and pale cream, fine textured, highly calcareous ?stone fragments (probably lime). This sample was not subjected to further analysis.

General comments

A notable characteristic of some of the samples was the presence of well-decayed remains of large weevils with robust cuticles, regarded as a good indicator of deposits from which the majority of insect remains have been lost through decay.

Implications

Although generally poor in preserved remains of invertebrates and plants, there is sufficient material in the samples to indicate the necessity for vigilance during further disturbance of the site to ensure that any localised deposits with better preservation are not overlooked.

Reference

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.