

Environmental evidence from 41-49 Walmgate/George St. (Y.A.T/Yorkshire Museum sitecode: 90.26)

by

J. B. Carrott, A. R. Hall and H. K. Kenward

Summary

Thirteen samples from excavations and boreholes were examined for invertebrate and plant macrofossil remains. Some contained no recognizable fossil remains and are thought likely, as suspected by the excavators, to be 'natural' drift. Others gave evidence of human activity, with insect and plant macrofossil assemblages similar to others of Anglo-Scandinavian and medieval date in York but they cannot be interpreted in isolation.

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Introduction

This report discusses the results of analyses of invertebrate animal and plant remains from deposits excavated from the 41-49 Walmgate/George St. (Y.A.T/Yorkshire Museum sitecode: 90.26) site.

Methods

Subsamples of raw sediment were examined in the laboratory for plant and invertebrate animal remains.

A 'rapid assessment' was carried out on thirteen of the samples. 'Test' subsamples of 1 kg were taken and processed by paraffin flotation (Kenward *et al.* 1980) to extract insect remains. Plant remains were recorded from the flots from paraffin flotation and from the residues.

The samples and results of the analyses

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

Context 1002 [Very organic - method of deposition?]

Sample 2: Very dark grey, moist, crumbly, sandy, clay, silt. Very small, small and medium-sized stones, rotted mortar, lumps with internal layering of light grey silt or clay with dark grey humic silt and some local concentrations of compressed plant detritus were present and wood fragments were common in the sample.

A 1 kg 'test' subsample (/T) was processed by paraffin flotation to extract insect remains. The small flot was mostly plant tissue fragments with a modest range of identifiable fruits and seeds, mostly of weed taxa, and a moderate number of rather well-preserved insect remains including *Athous haemorrhoidalis* and *Athous* sp. (nearest *subfuscus*) larval apices, *Ptinus ?fur*, *Acidota crenata* and abundant *Aglenus brunneus*. These beetles form a very typical urban decomposer group. There were also an indeterminate flea and a large number of very well-preserved mites.

The modest residue consisted mostly of woody detritus and was therefore examined wet. The identifiable plant component was composed of *Ranunculus* Section *Ranunculus*, *Sambucus nigra*, *Polygonum persicaria*, *Scorpidium scorpioides*, *?Calluna vulgaris*, *Linum usitatissimum*, *?Brassica* sp(p)., *Viola* sp(p)., *Lapsana communis*, *Plantago major*, *Potentilla ?erecta*, *Thlaspi arvense*, *Anthemis cotula*, *Raphanus raphanistrum*, *Valerianella* sp(p)., *Eleocharis palustris*, *Daucus carota*, *Galeopsis* Subgenus *Galeopsis* and *Corylus avellana* (hazelnut shell). The residue also contained wood, charcoal, large and small bone (including some burnt small bone), eggshell, fly puparia, earthworm egg capsules, fragments of brick/tile and some ?daub. Some pot found in the residue was removed to be returned to the excavator.

This deposit is probably a general accumulation of occupation debris.

Context 1006

Sample 3: Dark grey-brown, moist, crumbly to brittle, heterogeneous, humic, sandy, clay, silt. Shellfish, some grey clay, patches of lighter grey-brown sand and layers rich in compressed wood fragments (which were abundant) were present in the sample.

A 1 kg 'test' subsample (/T) was processed by paraffin flotation to extract insect remains. The small flot was approximately half insect and half plant remains. Fly puparia were abundant and the beetles *Lesteva ?longoelytrata* and *Aglenus brunneus* were represented, the latter being the most abundant insect species present. The preservation of the insect remains was very good.

The modest residue consisted mostly of woody detritus with some bark (including birch (*Betula* sp(p).)), moss (mostly *Scorpidium scorpioides* with some *Campylium stellatum* and *Cratoneuron commutatum*), brick/tile, small bone (burnt), shellfish (oyster) and fly puparia. Other plant species represented were; *Galeopsis* Subgenus *Galeopsis*, *Rumex* sp(p)., *Anthemis cotula*, *Carex* sp(p)., *Cladium mariscus*, *Stellaria media*, *Eleocharis palustris*, *Bilderdykia convolvulus*, *Cannabis sativa*, *Lapsana communis*, *Chenopodium album*, *Prunella vulgaris*, *Coronopus squamatus*, ?*Agrostis* sp(p). and *Ranunculus* Section *Ranunculus*.

Many of the plant remains perhaps suggest the presence of a marsh/fen habitat nearby, or of importation of materials from such places, but with weeds of waste ground and cultivated places, too.

Context 4003 [Sample taken to determine whether this is a natural deposit - is there any trace of human activity]

Sample 1: Mid brown to gingery-brown moist, crumbly, brittle, slightly silty fine sand. Small stones and occasional patches of light brown or light grey silt or clay were present in the sample.

A 1 kg 'test' subsample (/T) was processed by paraffin flotation to extract insect remains. The flot contained only charcoal and a few unidentifiable organic fragments.

The minute residue (dry weight 5 g) was all sand. There is no evidence that this was other than an undisturbed 'natural' deposit.

Context 6004 [Borehole sample. Any trace of human activity - or is this a natural deposit?]

Sample 4: Mid brown to gingery-brown moist, plastic to crumbly, brittle, heterogeneous, silty, sand with bands of greyish clay. There were no inclusions in this sample which is clearly a river deposit.

A 1 kg 'test' subsample (/T) was processed by paraffin flotation to extract insect remains. The flot contained only charcoal and a few very rotted scraps of organic material.

The minute residue (dry weight 20 g) was composed of sand, gravel and fine coal and the deposit is thus likely to be 'natural'.

Context 9004 [Borehole sample. Is this natural or is there some trace of human activity?]

Sample 5: Dark grey-brown, moist, plastic to slightly crumbly, sandy, silty, clay. Very small, small and medium-sized stones, rotted mortar and pieces of brick/tile were present in the sample.

A 1 kg 'test' subsample (/T) was processed by paraffin flotation to extract insect remains. The flot contained only four elderberry seeds (*Sambucus nigra*) and sand grains.

The very small residue (dry weight 166 g) was composed of chalk, limestone and sandstone (all to 20 mm), gravel, sand, mortar, tile and numerous small fragments of very rotted bone.

The presence of elder and mortar and tile suggests that some human activity took place at the time this deposit formed, unless these components are merely contaminants introduced through augering.

Context 19001 [Borehole sample]

Sample 6: Vari-coloured, light pinkish brown to light grey brown to dark grey moist, plastic to sticky heterogeneous sandy, silty, clay. Mortar and streaks of fine sand and silt were present in the sample.

A 1 kg 'test' subsample (/T) was processed by paraffin flotation to extract insect remains. The small flot contained a few, fragmentary and poorly preserved insects representative of a typical urban, Anglo-Scandinavian group and there were three annual weed plant taxa.

The very small residue was examined wet and was composed of sand, tile, mortar with a little woody detritus (wood and twigs). The identifiable plant component was composed of *Sambucus nigra*, *Oenanthe* sp(p)., *Brassica* sp(p)., *Stellaria media*, *Sonchus asper*, *Carex* sp(p)., *Anthemis cotula*, *Urtica dioica*, *U. urens*, some charred *Avena* sp(p). and *Scorpidium scorpioides*. These are essentially weeds of waste ground and cultivated places with some indicators of wetland habitats.

The components of the residue were coated with a sticky, viscous substance (?oil).

Context 19002 [Borehole sample]

Sample 7: Very dark grey, moist to wet plastic, to sticky heterogeneous slightly sandy, clay, silt. Charcoal, lumps of light brown sandy clay and white flecks were present, whereas very small stones were common in the sample.

A 1 kg 'test' subsample (/T) was processed by paraffin flotation to extract insect remains. The flot was mostly plant fragments with a few fruits or seeds of three weed taxa. There were a few moderately well-preserved insect remains representing typical urban taxa, however, a larger subsample would have to be processed to produce an interpretable assemblage.

The small residue was mostly fine charcoal and some woody detritus with small bone (burnt), fragments of tile and shellfish. The identifiable plant component was composed of large numbers of *Anthemis cotula*, *Chenopodium album* and *Atriplex* sp(p). with some *Sambucus nigra*, *Polygonum persicaria*, *Brassica rapa*, *Rubus fruticosus*, *Urtica dioica*, *Hyoscyamus niger* and *Avena* sp(p). (charred and part-charred). This is essentially an assemblage of weeds and offers little interpretative information. A piece of charcoal (?worked) was removed to be returned to the excavator.

Context 19003 [Borehole sample]

Sample 8: Dark grey, moist to wet, sticky, heterogeneous, sandy, clay, silt. Large and small bone fragments and very small stones were present in the sample.

A 1 kg 'test' subsample (/T) was processed by paraffin flotation to extract insect remains. The flot contained a very small number of moderately well-preserved insect remains representing typical urban taxa. A larger subsample would need to be processed to produce an interpretable insect assemblage. The bulk of the very small flot was composed of plant fragments including seeds and fruits of several weed taxa and one or two indicators of wetland.

The very small residue (dry weight 96 g) was mostly sand, a little charcoal and some unidentifiable plant detritus with small bone fragments, tile, shellfish, wood and coal.

Context 20001 [Borehole sample]

Sample 11: Mid to dark grey-brown, moist to wet, sticky, heterogeneous silty, clay, mixed fine and coarse sand. Some lighter and darker patches of matrix and mortar were present and very small, small and medium-sized stones and pieces of brick/tile were common in the sample.

A 1 kg 'test' subsample (/T) was processed by paraffin flotation to extract insect remains. The very small flot contained some charcoal, plant detritus (including a few seeds and fruits of no interpretative significance - all were taxa recorded regularly from these and most other urban archaeological deposits) and ?modern moss gametophytes. There were also a large number of pink ?plastic fibres.

The small residue (dry weight 195 g) was mostly angular brick/tile and stones (to 15 mm) with some sand ,gravel, large bone, small bone (including fish bone), mortar, shellfish, charcoal and coal. Some pot found in the residue was removed to be returned to the excavator.

Context 20002 [Borehole sample]

Sample 12: Dark grey, moist, plastic, sticky, sandy, silty, clay. Small stones, wood fragments, shellfish and streaks of light grey clay were present in the sample.

A 1 kg 'test' subsample (/T) was processed by paraffin flotation to extract insect remains. The very large flot (approximately 12 ml) was mostly plant rootlet fragments, with a little moss (*Scorpidium scorpioides*). The very small number of insect remains were a few puparia and one or two other, undiagnostic fragments.

The small residue was mostly tile and charcoal with small bone, fish scale, fly puparia, wood, twigs, moss, nutshell and a charred grain. The identifiable plant remains included *Linum usitatissimum* (linseed), *Corylus avellana* (hazel nut), *Centaurea* sp(p), *Leontodon* sp(p), *Polygonum lapathifolium*, *Menyanthes trifoliata*, *Sonchus asper*, *Leucodon sciuroides*, *Calliargon* cf. *giganteum*, *Scorpidium scorpioides* and large numbers of *Anthemis cotula*. There were also some grit-sized clasts with a brown, resinous coating (?industrial waste or just dirty oil).

A possible marsh/fen component was again present, though with evidence for human activity from the hazelnut and linseed remains.

Context 20003 [Borehole sample]

Sample 13: Dark grey-brown, moist, plastic, to slightly sticky heterogeneous sandy, silty, clay. Large and small bone fragments (including one tooth), charcoal, ?rotted mortar and streaks of lighter and darker silt or clay were present in the sample.

A 1 kg 'test' subsample (/T) was processed by paraffin flotation to extract insect remains. The small flot was mostly well-rotted plant tissue, charcoal and seeds, the latter rich in weeds, especially stinging nettle (*Urtica dioica*), but with celery-seed (*Apium graveolens*) and two charred cereal grains. There were a small number of well-preserved beetles, however, there were too few to reveal a definite character for the group.

The small residue consisted of small bone (including burnt bone and tooth fragments), very small fragments of brick/tile, ?daub, fly puparia, charcoal, wood, twigs, moss and a little plant detritus. The identifiable plant component was composed of *Carex* sp(p), *Linum usitatissimum* (flax - including capsule fragments), *Anthemis cotula*, *Apium graveolens*, *Valerianella dentata*, *Atriplex* sp(p), *Chenopodium album*, *Polygonum lapathifolium*, *Lapsana communis*, *Aethusa cynapium*, *Ranunculus flammula*, *Sambucus nigra*, *Brassica* sp(p), *Urtica dioica*, *U. urens*, *Stellaria media*, *Calliargon* cf. *giganteum* and Gramineae sp(p).

This sample gave more evidence than many others for human activity; the flax capsule fragments may be waste from fibre or oil extraction, for example, the celery-seed food remains.

Context 21002 [Borehole sample]

Sample 15: Mid to dark grey-brown, moist, plastic, very sandy silty, clay. Very small, small and medium-sized stones, mortar and some patches of lighter sticky sandy clay were present, whereas pieces of brick/tile were common in the sample.

A 1 kg 'test' subsample (/T) was processed by paraffin flotation to extract insect remains. The flot was mostly moss with some charcoal, rotted plant tissue and a very small number of insect remains of no obvious character. The only identifiable plant remains appeared to be modern.

The modest residue (dry weight 361 g) was mostly gravel (including limestone and brick/tile) with sand, slag, mortar, coal and some small bone.

Context 21003 [Borehole sample]

Sample 16: Mid to dark grey-brown, moist to wet sticky, silty, sandy, clay. Very small, small and medium-sized stones, mortar and patches of lighter grey sandy clay were present, whereas fragments of brick/tile were common in the sample.

A 1 kg 'test' subsample (/T) was processed by paraffin flotation to extract insect remains. The flot contained abundant moss (*Bryum argenteum* and *Ceratodon purpureus*, the latter retaining its green colouring, both taxa probably modern), coal/charcoal, mineral grains, some undisaggregated sediment, very rotted insect remains and a few well-preserved beetles including a grain weevil (*Sitophilus granarius*).

The modest residue (dry weight 321 g) was mostly sand, tile and limestone gravel with some mortar, coal, cinder and glass (?modern). Some pot found in the residue was removed to be returned to the excavator.

Implications

To interpret this site a large number of analyses would be required, perhaps 'general biological analysis' and 'bulk-sieved' samples from half of the contexts. Comparison with other areas, and general assessment of usage, would require the study of, perhaps ten 'general biological analysis' and 'bulk-sieved' samples from each context type.

The insect assemblages from samples 2 and 3, in particular, are very similar to those from samples taken from in, and around, the Anglo-Scandinavian buildings of the 16-22 Coppergate site (1976-81.7). It is very desirable to study some samples of this period from the Walmgate area, to compare them with the small number from excavations at 118-26 Walmgate (1978-9.8).

Where preservation was good, the plant macrofossil assemblages repeatedly gave some evidence for marsh or fen habitats; further work would be desirable to investigate whether these were nearby (the Foss runs quite close today) or whether these remains arrived in imported materials. Direct evidence