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**Assessment of plant and invertebrate remains from deposits associated
with a Roman road at Adel, near Leeds, West Yorkshire (site code
ARR/02)**

by

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Summary

A series of deposits associated with a Roman road at Adel, near Leeds, were assessed for their content of plant and invertebrate (mainly insect) remains. All the samples yielded at least a few plant and insect macrofossils preserved by anoxic waterlogging, with perhaps two or three plant assemblage suggesting the presence of turves from heathland or acid grassland. One deposit, a 'peat' onto which the road appeared to have been laid, yielded plant and insect remains indicative of formation in an aquatic environment, perhaps a marsh or fen (and presumably the reason for the building of a timber structure across it). Further analysis of material from this deposit is desirable to enhance our understanding of the nature of the environment in this place.

KEYWORDS: PLANT REMAINS; INSECT REMAINS; ROMAN; ROAD; ADEL; WEST YORKSHIRE; WATERLOGGED DEPOSITS

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Assessment of plant and invertebrate remains from deposit associated with a Roman road at Adel near Leeds West Yorkshire (site code ARR/02)

Material and methods

Plant and invertebrate (mainly insect) remains were examined from a series of subsamples previously processed on behalf of Archaeological Services WYAS. These consisted of separate 'washovers' (labelled 'flot') and residues (labelled 'retent') from subsamples of 500 ml. from samples from five contexts. Processing had not completely broken down the sediments—fortuitously since it gave an opportunity to examine partly disaggregated material—and the washovers and residues for each subsample were recombined and resieved, with fresh washovers being extracted and examined under the binocular microscope. Insect and other invertebrate remains were sorted from the coarse fractions, then where required the <2mm material was subjected to paraffin flotation (Kenward *et al.* 1980) to concentrate insect remains.

Results

Comments on the material examined are given in Table 1. Plant and invertebrate remains preserved by anoxic 'waterlogging' were mostly rather rare in the deposits, though the two uppermost horizons gave what seemed to be evidence for turves, presumably part of the material forming the deposits laid over and around the timbers of the road and the subsequent layer of dumped material.

Recommendations for further work

Only Context 1027 yielded enough insect remains to warrant further investigation, assuming that dating and archaeological relationships are established. Further work on plant remains from this context is only justified to provide complementary information to that obtained from the invertebrates. For the rest, the results obtained so far regarding plant remains are probably an adequate record which could be revised for publication if required.

References

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.

Kenward, H. and Large, F. (1998). Recording the preservational condition of archaeological insect fossils. *Environmental Archaeology* **2**, 49-60.

Table 1. Comments on plant and invertebrate remains from samples from Adel, W. Yorkshire.

Context	Context type	Sample	Comments on plant and invertebrate remains
1022	dumps overlying waterlogged deposits	17	<p>After resieving, a residue of about 150 cm³, of which the washover formed about 50 cm³, as obtained; there was still some undisaggregated peaty clay including some material which appeared to be peat, though rather oxidised (showing orange patches), and with some sand in it. The appearance of material originating in peaty turf was perhaps confirmed by the presence of uncharred caryopses of heath grass, <i>Danthonia decumbens</i> (L.) DC. in Lam. & DC., including a pair of caryopses lying together with some ?spikelet material around them. All the plant remains—which otherwise comprised traces of sedge (<i>Carex</i>) and ?tormentil (<i>Potentilla</i> cf. <i>erecta</i> (L.) Räuschel) nutlet and rush (<i>Juncus inflexus</i> L./<i>J. effusus</i> L./<i>J. conglomeratus</i> L.) seeds, were rather strongly decayed.</p> <p>Invertebrates: a few aquatic, waterside and terrestrial beetles remains were sorted during inspection of the sample for plant remains; preservation was rather poor and it is unlikely that a further subsample would yield a useful assemblage.</p>
1023	deposit surrounding and covering timbers	20	<p>There was a residue of about 250 cm³ of sand and organics and a 20 cm³ washover of roots and further organics; the coarsest material in the original residue consisted of undisaggregated peaty sediment with some small flaky wood fragments (rather orange-coloured, decayed, with perhaps some iron salt deposition—there was certainly some orange iron salt deposition in other places on clasts of undisaggregated peaty sediment. Identifiable plant remains were again sparse but suggested the presence of turves, or at any rate imported/ <i>in situ</i> heathland vegetation: in addition to heath grass and sedge fruits and rush seeds there were traces of charred heather (<i>Calluna vulgaris</i> (L.) Hull) flowers and perhaps also basal twig/root fragments of this plant. Some fragments of peaty sediment were reminiscent of the ‘mor humus’ which forms on acid substrates on heathland and moorland, typically under stands of heather.</p> <p>Invertebrates: a few beetle remains were sorted during inspection of the sample for plant fossil; it is unlikely that sufficient remains could be recovered for interpretation.</p>
1027	peat	18	<p>Dark brown, well humified detritus peat, somewhat woody and perhaps silty.</p> <p>After resieving, there was still a large residue of undisaggregated peaty sediment that was subsequently treated by soaking in dilute sodium pyrophosphate solution for a few days in an attempt to assist breakdown</p>

			<p>of the sediment. Much of what was left appeared to be slightly silty detritus peat rich in fine rootlets and typical of peat accumulating in a fen or marsh. There was also a little bark, but almost all the rest of the residue still consisted of undisaggregated silty amorphous organic sediment or even humic silt with fine rootlets. Identifiable plant remains were restricted to moderate numbers of sedge nutlets and toad rush (<i>Juncus bufonius</i> L.) seeds, but with traces of male catkin fragments of alder (<i>Alnus glutinosa</i> (L.) Gaertner) and fruits of pondweed (<i>Potamogeton</i> sp(p)). No very clear interpretation of this material can be gained from such a small assemblage except to suggest an area of impeded drainage consistent with the nature of the sediment and presumably formed <i>in situ</i> rather than representing imported material. The presence of traces of fine (<2 mm) charcoal and a single charred rush seed capsule perhaps point to human activity in the vicinity.</p> <p>Invertebrates: smallish flot, preservation somewhat poor (E 3.0-4.0, mode 3.5 weak; F 2.5-4.5, mode 3.5 weak); aquatic deposition, with species from marginal swampy vegetation, mud and damp litter; would need to examine much larger subsample (preferably 5 kg) to investigate terrestrial component.</p>
1028	peat	12	<p>The residue consisted of about 75 cm³ of peaty silt/silty peat with only the merest traces of propagules (sedge and bugle, <i>Ajuga reptans</i> L.)—perhaps ‘turfy’ not peat <i>sensu stricto</i>.</p> <p>Invertebrates: a modest number of beetle remains were sorted during inspection of the sample for plant remains; conceivably a large subsample would yield an interpretable assemblage.</p>
1029	clay ?natural	13	<p>The final volume of sediment after resieving was about 75 cm³, consisting, as before, of organic debris and a little sand. There were scraps of woody and herb detritus amongst which there were the merest traces of identifiable plants: fruits of birch (<i>Betula</i>) and a fragment of an achene of hemp agrimony (<i>Eupatorium cannabinum</i> L.). Sclerotia (resting bodies) of the soil-dwelling fungus <i>Cenococcum</i> were also present.</p> <p>Invertebrates: a modest number of beetle remains were sorted during inspection of the sample for plant remains; conceivably a large subsample would yield an interpretable assemblage.</p>