Report on biological analyses of deposits from excavations in Jewbury, York

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Summary

Analyses of a series of samples associated with the medieval cemetery at Jewbury, York, are reported. The largest proportion of the samples were of coffin timbers and of these, where preservation of timber had occurred, tentative or firm identifications of Scots pine (*Pinus sylvestris* L.) were made. The remaining samples were effectively barren of interpretatively useful biological remains.

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Introduction

A small series of samples from excavations associated with the late C12–13th cemetery at Jewbury, York, undertaken in 1982–3 by York Archaeological Trust, was submitted for examination. The greatest number were taken for the identification of coffin timbers.

In most cases, 'test' subsamples of 1kg were taken, disaggregated in water and sieved to 300µm. A 'washover' (in which material of low density was decanted from the sediment) was generally extracted and the residue dried and examined along with the washover.

In this report, the order of the samples follows the groups designated by the compiler of the excavation report, Jane Lilley. For each sample, the brief context type and reason for sampling are followed by a description of the sediment as observed in the laboratory in 1990/91, brief details of analyses undertaken and a summary of the results.

I. Pre-cemetery features

Context 3192: pre-cemetery pit fill; to determine use of pit.

Sample 35: mid grey-brown, plastic to crumbly, slightly sandy silty clay or clay silt with moderately common mottles at the mm scale and rare mottles at the cm scale, traces of stones 2–6mm and 20–60mm, and moderate amounts of charcoal. There were also some paler flecks of sand at the mm scale and some white flecks.

Washover and residue from a 1kg subsample examined; the former contained a very little (<5cm^3) fine charcoal, the latter being mostly composed of sand, with a few stones to 30mm, a trace of brick/tile, and a little mammal bone. There was also a considerable amount of concreted casts from worm burrows/root channels. No clue as to the use of the pit is forthcoming.

II. Cemetery period features

Context 2036: cemetery deposit; for identification of coffin wood.

Sample 15: dark brown, crumbly, somewhat heterogeneous, slightly sandy silty clay, with traces of stones 6–20mm and of charcoal.

The whole sample of 0.5kg was disaggregated; no washover was taken. The very small residue included a little fine charcoal (about 5% by volume) with sand, small angular stones to 20mm, a little brick/tile, coal, bone (including fish) and a single nutlet of gipsywort (*Lycopus europaeus*) preserved by waterlogging. The charcoal was not identifiable with certainty but it was certainly 'hardwood', and a few fragments were tentatively assigned to oak (*Quercus* sp.). Also present were numerous fragments (estimated as 'tens' per kg of raw sediment) of charred segmented invertebrate larvae, the largest about 5 x 1mm. They could not be identified more closely (they may be larvae of a fly or perhaps of a beetle; diagnostic parts were lacking).

Context 2209: cemetery deposit; for identification of coffin wood.

Sample 32: light-mid pinkish-grey, crumbly to brittle, slightly sandy silty clay, with traces of stones 2–20mm, and charcoal and wood fragments.

The whole sample of only 36.5g was disaggregated; the tiny residue was mostly sand and gravel, with traces of mineralised wood, and a little fine charcoal but no waterlogged wood. The wood was not identifiable, even that adhering to an iron nail (passed to York Archaeological Trust). There were also a few tiny scraps of bone.

Context 1451: cemetery deposit; for identification of coffin wood.

Sample 33: mid grey-brown, plastic to crumbly to sticky, rather heterogeneous, slightly sandy silty clay, with moderate amounts of mottling at mm and cm scales (light grey and light yellowish-brown/dark grey), traces of stones 2–6mm, of charcoal, small bone fragments, ?cinder and brick/tile, and abundant wood fragments.

The whole sample of 0.93kg was disaggregated. There was about 90% by volume of wood fragments in the residue, the largest no more than 2 x 1 x 0.2cm. Fragments large enough to handle were identified as Scots pine (*Pinus sylvestris*). The rest of the residue comprised sand and gravel with a fragment of long-bone, perhaps non-human.

Context 1292: cemetery deposit; for identification of coffin wood.

Sample 52: mid grey, crumbly, slightly sandy silty clay, with traces of stones 2–6mm and of charcoal, and with modest amounts of glassy slag.

The whole sample of 53g was disaggregated and the tiny residue included to fragments of vesicular glassy slag to 2.5cm max. dimension. There was a little fine charcoal, perhaps 5% by volume, of which one fragment (7mm max. dim.) was oak, a slug 'granule', one herring (*Clupea harengus*) vertebra and a few fragments of charred 'maggot' (see description of **sample 15**).

Context 4031: cemetery deposit; for identification of coffin wood.

Sample 53: light yellow-brown, crumbly to brittle, slightly sandy silty clay with modest amounts of grey mottling at mm scale, traces of stones 2–6mm and charcoal, and moderate amounts of wood fragments.

There were 54g of sediment. The tiny residue from this sample mostly comprised waterlogged wood which was identified from the largest fragment (approx. 3 x 1 x 0.25cm) as *Pinus sylvestris*.

Context 4085: cemetery deposit; for identification of coffin wood.

Sample 54: mid grey-brown, crumbly, sandy silty clay, with traces of stones 2–6mm, charcoal, and abundant wood fragments (the bulk of the sample).

All 66g of sediment were disaggregated. Most of the residue was waterlogged wood fragments, in long narrow strips, the largest being about 4 x 0.75 x 0.3cm; it was identified as *Pinus*, probably *P. sylvestris*.

Context 4100: cemetery deposit; for identification of coffin wood.

Sample 55: mid-dark grey-brown, crumbly, sandy silty clay with lighter mottles at mm scale, traces of charcoal and abundant wood fragments.

Most (90% by volume) of the small residue left after disaggregation of the 262g sample was wood; it was strongly decayed and fragmented but the largest fragments (up to about 2 x 0.5 x 0.3cm) could be identified as *Pinus*.

Context 2296: cemetery deposit; for identification of coffin wood.

Sample 56: mid-dark grey-brown, crumbly, slightly sandy silty clay with traces of stones 2–20mm, of charcoal, and moderate amounts of wood.

About 50% by volume of the small residue remaining from treatment of the 365g sample comprised very soft and buttery waterlogged wood fragments, some perhaps showing signs of mineralisation, a few apparently charred. Some of these fragments were identified as ?conifer. There was also a little

coal, bone and brick/tile and a single tentatively identified charred cereal grain.

Context 2330: cemetery deposit; contents of a cremation pot.

Sample 57: this sample, of 130g, was sieved to 300μm in 1983; the only record available is of small amounts of charcoal and charred bone.

Sample 58: this sample, of 760g, was sieved to 300μm in 1983; the only record available is of modest amounts of charcoal, four fish bone fragments (including vertebrae), and charred bone (the bulk of the residue).

Context 2311: cemetery deposit; for identification of coffin wood.

Sample 59: mid grey, crumbly, slightly sandy clay silt with yellow-grey mottles at mm scale, traces of stones 2–6mm, of charcoal and of wood and large bone fragments. The minute residue left from disaggregating the sample of only 63g contained traces of bone, brick/tile, coal and fine charcoal; no wood was observed. One of the charcoal fragments, with a maximum dimension of 15mm was identified as oak (*Quercus*).

Context 2332: cemetery deposit; for identification of coffin wood.

Sample 60: mid grey-brown, crumbly, slightly sandy silty clay, with traces of orange and lighter brown mottles at mm scale, modest amounts of charcoal and traces of wood and large bone fragments. The sample of 308g gave a very small residue of which about 10% by volume comprised fine charcoal. There were also modest numbers of charred 'maggot' fragments (cf. **sample 15**, above) and one or two tiny fragments of ?mineralised wood which were not identified.

Context 4097: cemetery deposit; for identification of coffin wood.

Sample 63: mid grey-brown, plastic, slightly sandy silty clay with traces of charcoal, rotted wood, white flecks and more reddish patches at mm scale. The 2kg sample was disaggregated and gave a residue of which about 50% was waterlogged wood, mostly less than 2cm in maximum dimension. Some of this was identified as *Pinus* (*?sylvestris*). There was also a little fine charcoal, a few bone fragments and a pot sherd (returned to YAT).

Context 2359: cemetery deposit; for identification of coffin wood.

Sample 74: mid grey-brown, crumbly, slightly sandy silty clay, with traces of lighter mottles at mm scale, abundant charcoal and traces of large bone fragments. The small residue resulting from treatment of the 206g sample contained about 50% by volume of charcoal and there were also some very small ?waterlogged wood fragments. The charcoal was too small for identification. There were also some charred segmented 'maggots' (as in **sample 15**, *q.v.*). A single charred fragment of hazelnut shell (*Corylus avellana* L.) was also identified, and the residue yielded small brick/tile fragments, a little coal, slug 'granules' and some bone.

Context 2366: cemetery deposit; for identification of coffin wood.

Sample 75: light-mid grey, crumbly, sandy silty clay, with traces of stones 2-20mm, charcoal and wood fragments. The tiny reside resulting from disaggregation of the sample of 115g comprised sand and gravel with about 10% by volume of fine charcoal. No wood fragments were observed.

Context 4028: cemetery deposit; for identification of coffin wood.

Sample 76: mid grey-brown, plastic to sticky, somewhat heterogeneous, slightly sandy clay, with lighter grey mottles common at mm and cm scales, traces of stones 6–20mm, and ?charcoal. A total of 1.257kg was processed, the small residue containing about 5% by volume of charcoal (the largest fragments of about 0.5cm were not identifiable further than 'probably not conifer'). There were also quite large amounts of iron-rich, reddish material rather like 'pan'. For the rest though, the residue

comprised sand and gravel, with a little coal, bone and worn brick/tile fragments.

Context 2433: cemetery period pit: for information on function of pit.

Sample 77: mid grey-brown, plastic to crumbly, sandy clay silt with traces of mortar and many very tiny pores. A sample of 12kg was bulk-sieved to 1mm. It gave a very small residue (dry weight 0.7kg) of sand and gravel with stones up to 7cm in maximum dimension. There was some burnt and unburnt mammal bone, brick/tile, coal (some partly-burnt), clinker/cinder, a rim sherd and a little daub (both returned to YAT), and a little roundwood and other charcoal, the largest fragment being about 3cm in maximum dimension (but not identified). There was more coal than charcoal in this residue, but less than 5% by volume of either.

Context 4226: cemetery deposit; for identification of coffin wood.

Sample 78: mid-dark brown, crumbly, slightly sandy silty clay with common lighter brown mottles at mm and cm scales and traces of charcoal. The sample of 327g gave a small residue with about 10% by volume of fine charcoal, together with brick/tile, sand and gravel, bone and a few fragments of charred 'maggot' (cf. **sample 15**).

Context 4229: cemetery deposit; for identification of coffin wood.

Sample 80: mid-dark grey-brown, plastic to crumbly, silty clay with traces of lighter yellow-brown mottles at mm scale and abundant wood fragments. From the 588g sample, a residue consisting mostly (90% by volume) of waterlogged wood was obtained. The largest fragments (up to about 2 x 0.5 x 0.2cm) were identified as *Pinus*, probably *P. sylvestris*.

Context 2686: cemetery boundary ditch: for any environmental information.

Sample 100: mid brown, plastic to crumbly (but sticky when wet), slightly sandy silty clay, with traces of stones 2–6mm, of large bone fragments and snails. A 1kg subsample was processed. The minute washover comprised fine charcoal with some ?invertebrate eggs, mollusc shell fragments and a single, very degraded hemlock (*Conium maculatum* L.) mericarp. The residue was small and consisted to sand and gravel with a little bone, brick /tile and charcoal.

Sample 101: mid brown (though somewhat darker when wet), indurated (crumbly when moist), slightly sandy silty clay with moderate numbers of stones 2–6mm and traces of stones 6–20mm. A 1kg subsample gave a tiny washover of fine charcoal, some ?invertebrate eggs (as in **sample 100**) and mollusc shell fragments. The residue consisted mainly of sand and gravel, with traces of bone and very small brick/tile fragments.

III. Post-cemetery features

Context 1317: no archaeological information (dated to L14/15th century by pottery).

Sample 23: mid-dark brown, plastic to crumbly, somewhat heterogeneous, slightly sandy silty clay, with inclusions of orange silty clay, modest amounts of stones 6–20mm, and of charcoal, with traces of shellfish and brick/tile. A 1kg subsample was processed. It have a washover of about 20 cm^3 of charcoal and coal but no other identifiable animal and plant remains. The residue included a little burnt and unburnt mammal bone, cinder, coal, charcoal, and mussel (*?Mytilus*) shell fragments, but was mostly sand and gravel.

Context 2612: no recent archaeological information (described as ditch fill when excavated; dated to L13/15th century by pottery).

Sample 92: mid brown, plastic to crumbly, slightly sandy silty clay with abundant redder mottles at mm scale, traces of stones 6mm–20cm, moderate amounts of charcoal, and traces of snails, shellfish coke/cinder and brick/tile fragments. The washover from the 1kg subsample processed comprised about 5cm^3 of charcoal with some small (?burnt) fragments of mollusc (?oyster, *Ostrea*) shell and a few

fragments of *Sambucus* seeds. The residue consisted mostly of sand and gravel, with traces of brick/tile, coal, and oyster shell.

Comments on the coffin wood identifications

Although certainly of pine (*Pinus* sp.), the very soft and rather poorly preserved wood fragments could not always be identified to species. In some cases, however, the characteristic rectangular pits and 'toothed' walls in the ray tracheids were visible, indicating that this was likely to be *Pinus sylvestris*. This species has been recorded occasionally from Roman York as fragments of small branch and even as leaves and bud-scales (e.g. Hall, Kenward and Williams, 1980; Hall and Kenward 1990) but structural timbers have been identified very rarely (Hall, unpublished data). The origin of the pine cannot be determined. Although at the period in question (late C12–13th) some consider that only imported pine would have been used for building or other purposes, there seems no reason why pine should not have been growing in places on the Devensian cover sands NE of York throughout the medieval period and have supplied small amounts of timbers for local use. The way the timber was converted for use in the coffins cannot be elucidated from the small fragments remaining but they are perhaps most likely to have been planks.

There is no large corpus of information concerning the use of timber for coffins in the past. In part this reflects ground conditions which, at many burial sites, have not led to the preservation of wood; moreover, wooden coffins have by no means been used throughout the history of inhumation. A brief survey of the available literature suggest that pine is an unusual timber for this purpose at such an early date, softwoods appearing not being generally used for coffins until the C17th (Richard Morris, pers. comm.). Thus there are identifications of early medieval oak (*Quercus*) and 'barkwood' (said to be birch, *Betula*, bark) coffin timbers from Barton-upon-Humber (Rodwell & Rodwell, 1982). From St Mary's Abbey, Winchester, Rowena Gale (in litt.) reports identifications of mineralised oak (with occasional records of other hardwood species) attached to coffin nails. Oak has also been identified from Saxon coffins at Mucking, Essex, and medieval coffins at Moel y Gaer, Wales (Rowena Gale, ibid.). The only other record of pine that we have so far been able to locate is from 'Benedictine Period' deposits at Iona Abbey (Sheldon, 1977), where coffin remains included what may have been the lower part of a log of alder (*Alnus*) and a plank coffin whose E end was oak, the N side, lid and base of coniferous wood. Sheldon reports that the base and N side may have been *P. sylvestris*, the rest another conifer.

In conclusion, we may observe that a very well preserved series of coffin planks from a C13/14th urban cemetery in Swinegate, York was excavated in 1989–90 and await identification.

Other material from Jewbury

From the bioarchaeological point of view, the series of samples most likely to provide fossil remains of interpretative value were those from the so-called 'soft'spot' at the SE (R. Foss-ward) end of the site; these have not been given a high priority to date because they are not of cemetery date but it is felt that some analyses would be worthwile to answer questions about the nature of this feature.

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