

Palaeoecology Research Services

**Assessment of biological remains and sediments from  
excavations at Monks Cross, York  
(site code: YORYM2000.574)**

by

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*PRS 2002/23*

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**Summary**

*Six sediment samples (selected from eighteen) and two monolith samples recovered from excavations at Monks Cross, York, were submitted for an assessment of their bioarchaeological potential. All of the samples were from features associated with what was thought to be a Roman camp (based on the general layout of the site and comparison with similar sites nearby).*

*No ancient invertebrate remains were recovered from the samples and ancient plant remains were restricted to small quantities of charcoal (most of which were rather rounded—perhaps reworked?—and impregnated with iron salts), traces of charred ?heather root/twig, and some unidentified rhizome fragments. These latter remains, and perhaps the Cenococcum sclerotia also noted, are consistent with an origin in burnt turves, perhaps deposited in ash, but the amounts present are too small to provide secure interpretation in the absence of other taxa. The monolith samples indicated the probable cutting of blocks of turf and their deposition/dumping, one on top of another, within Ditch 12081.*

*There does not seem to be much future in processing larger quantities of material to secure charred remains other than charcoal for dating. Dating of the charcoal would be possible, but the observation that the material may be reworked means that dating may well not be profitable (moreover, most appeared to come from large stems or trunks and might provide a date much older than the date the wood was charred). The various soil horizons noted in the monolith samples are very strongly indicated but could be confirmed by micromorphology (via the preparation of thin-sections) if required.*

*All of the remaining unprocessed sediment samples may be discarded unless they are to be processed to recover additional charred material for dating, or for the recovery of remains other than those of plants and invertebrates. The monolith samples may be discarded unless further work to confirm the results reported here is deemed necessary.*

**KEYWORDS:** MONKS CROSS; YORK; ASSESSMENT; ROMAN; SOIL HORIZONS; CHARRED PLANT REMAINS; ?BURNT TURVES

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3 September 2002

## Assessment of biological remains and sediments from excavations at Monks Cross, York (site code: YORYM2000.574)

### Introduction

An archaeological excavation was carried out by York Archaeological Trust at Monks Cross, York (NGR SE 624 547), between 13 May and 24 June 2002.

Eighteen sediment samples and two monolith samples were recovered from the deposits, all of which were from features thought to be associated with the site of a Roman camp. No dateable artefacts were recovered from the site and the working hypothesis that it was a Roman camp was based on the general layout and comparison with similar sites nearby.

Six of the sediment samples and both of the monoliths were submitted for an assessment of their bioarchaeological potential.

### Methods

Six sediment samples ('GBA'/'BS' *sensu* Dobney *et al.* 1992), selected by the excavator, were inspected in the laboratory and their lithologies were recorded, using a standard *pro forma*. Subsamples from five of the samples and all of the sixth were processed, following the procedures of Kenward *et al.* (1980; 1986), for recovery of plant and invertebrate macrofossils. Two monolith samples were also recovered and examined.

The washovers resulting from processing of the sediment samples were examined for plant and invertebrate macrofossils. The residues were scanned for larger plant macrofossils and other biological and artefactual remains.

For the monolith samples, the site was visited and the sample locations observed in the field. Monoliths 19 and 20 were collected by the excavator and examined in the laboratory. The

thicknesses of units described were those visible within the monoliths. Thus, the actual thicknesses of the units could be equal to, or greater than, those described.

### Results

#### *Sediment samples*

All the samples yielded small residues and washovers, the former of clean quartz sand, sometimes with a little gravel (to 10 mm) and brick/tile (never larger than 3 mm), modern rootlets and woody root bark, and a varying content of wood charcoal, usually in small fragments. Where examined more closely, this appeared to be of oak (*Quercus*). Details of the observations made, together with a brief summary of the processing method and an estimate of the remaining volume of unprocessed sediment, are given in Table 1.

#### *Monolith samples*

The notation used below to describe the horizons is as follows:

*O horizon*: top (of an *in situ* soil), organic horizon

*E horizon*: bleached horizon from which fine material has been removed leaving coarser material like sand or silt

*Eg horizon*: like the E horizon but with a specific mottle pattern suggesting seasonal waterlogging

*B horizon*: mineral-rich horizon

#### **Trench 12, Sample 19 (NW-facing section through Ditch 12081).**

The monolith includes (from the lower to the upper part):

- *Basal layer*: Natural *in situ* subsoil. Greyish brown clay, with abundant reddish mottled features indicating periodical (non-permanent) waterlogging. Only parts of this basal layer contained features indicating permanent waterlogging

- *Laminated water-lain sediment*: 3.5 to 7 cm thick greyish (Gley colours: Gley 1, 4/N), clay-rich sediment. Permanent waterlogging indicated

- *Sandy lens*: Light grey (2.5Y 5/2) sand
- *?Eg horizon of turf*: 6-8 cm thick greyish (2.5Y 5/2) sand. Dumped from the rampart bank? Gradual smooth upper boundary to:
- *?O horizon of turf*: dark grey (5Y 3/1) sandy loam
- *Successive accumulation*: A more than 27 cm thick dark (10 YR 3/1 to 2/1) layer, non laminated, possibly formed after abandonment, overlying all other contexts within the monolith

### **Trench 12, Sample 20 (SE-facing section through Ditch 12081).**

The monolith includes (from the lower to the upper part):

- *Basal layer*: 6-10 cm thick clay subsoil including a dark greyish brown component and a Gley coloured (Gley Chart N 1 - 7/N to 6/N) component, indicating permanent waterlogging
- *Lenses of O horizon of Turf 1*: Dark (10YR 2/1) 1-2 cm thick sandy, organic-rich lenses (possibly derived from a single O horizon)
- *?E Horizon of Turf 1*: 4 cm thick, greyish (2.5Y 5/2) sand
- *?B Horizon of Turf 1*: 4 cm thick dark grey sandy loam
- *?O horizon Turf 2*: dark (10YR 2/1) organic-rich material, possibly from a former soil O horizon
- *Sand lens*: Light (2.5Y 5/2, with mottles) sand, possibly representing a residue of a soil E horizon
- *?B horizon of Turf 2*: dark grey sandy loam (approximately 10 cm thick)
- *?O horizon of Turf 3*: Dark (10YR 2/1) 4-5 cm thick sandy, organic-rich horizon
- *?B Horizon of Turf 3*: Dark grey sandy loam, approximately 5 cm thick or more

## **Discussion and statement of potential**

### *Sediment samples*

Apart from charcoal, most of which was rather rounded (perhaps reworked?) and impregnated with iron salts, ancient plant remains were

limited to traces of charred ?heather root/twig and some unidentified rhizome fragments. These latter remains, and perhaps the *Cenococcum* sclerotia (resting bodies from a common soil-dwelling fungus) are consistent with an origin in burnt turves, perhaps deposited in ash, but the amounts present are too small to provide secure interpretation in the absence of other taxa.

Dating of the charcoal would be possible (at least for an AMS date), in terms of quantities in most samples, but the observation that the material may be reworked means that dating may well not be profitable (moreover, most appeared to come from large stems or trunks and might provide a date much older than the date the wood was charred). There does not seem to be much future in processing larger quantities of material to secure charred remains other than charcoal for dating.

No ancient invertebrate remains were recovered from the samples.

### *Monolith samples*

Interpretations are tentative as they are based on the contents of Monoliths 19 and 20 and do not always refer to the whole site evidence.

Both Monoliths 19 and 20 contained a clay-rich basal layer, likely to represent the natural material existing before rampart/ditch construction.

Above the basal layers, both Monoliths 19 and 20 included a repetition (at different depth levels) of a succession of the following type: a dark organic layer (entire or in pieces), overlain by a light sandy layer (entire or in lenses, not always present), overlain by a dark grey sandy loam. This succession is repeated three times in Monolith 20 and only once in Monolith 19. It is likely that these successions represent cut turves, and that the three main components could therefore be interpreted as a succession of O horizon - E horizon - B

horizon, of the upper parts (turves) of truncated soil profiles.

The water-lain basal material of Monolith 19 could have been deposited before the ?turves. Thus it is possible that a time interval separated the construction of the ditch/rampart, and the deposition/dumping of turves within the ditch.

## Recommendations

No further work from an archaeobotanical or archaeoentomological point of view is warranted.

The various soil horizons noted in the monolith samples are very strongly indicated but could be confirmed by micromorphology if required.

## Retention and disposal

All of the remaining unprocessed sediment samples may be discarded unless they are to be processed to recover additional charred material for dating, or for the recovery of remains other than those of plants and invertebrates.

The monolith samples may be discarded unless further work to confirm the results reported here is deemed necessary.

## Archive

All material is currently stored by Palaeoecology Research Services (Unit 8, Dabble Duck Industrial Estate, Shildon, County Durham), along with paper and electronic records pertaining to the work described here.

## Acknowledgements

The authors are grateful to Patrick Ottaway of York Archaeological Trust for providing the material and the archaeological information, and to English Heritage for allowing AH and RU to contribute to this report.

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Table 1. Results of assessment of samples for plant and other biological remains. For charcoal, a score on a semi-quantitative four-point scale of abundance is given, the figure in brackets being the largest dimension of the largest fragment (in mm). **Key:** Cont. = Context number; S. = Sample number; Type = Context type/description (provided by the excavator); Rem. = approximate volume of unprocessed sediment remaining (litres); Res. = residue volume (cm<sup>3</sup>); W/o = washover volume (cm<sup>3</sup>).

Cont.	S.	Type	Sediment description	Processing notes	Rem.	Res.	W/o	Charcoal	Other remains
11010	5	Ditch fill	Just moist, light grey-brown (orange-brown in places—?oxidation), stiff and slightly sticky to brittle and crumbly (working plastic), slightly sandy clay	3 kg sieved to 300 microns with washover	5	30	20	+ (5)	traces of charred ?heather ( <i>Calluna vulgaris</i> (L.) Hull root/basal twig fragments (5 mm); moderate numbers of <i>Cenococcum sclerotia</i>
11013	13	Ditch fill	Moist, light and mid grey to light grey-brown, crumbly to unconsolidated, slightly silty sand, with patches of mid grey and light brown clay silt	2 kg sieved to 300 microns with washover	1.5	30	5	+ (5)	
12082	8	Ditch fill	Moist, light to mid grey, stiff and brittle to crumbly (working plastic), slightly sandy silty clay, with some light to mid orange-brown patches (?oxidation)	3 kg sieved to 300 microns with washover	7	30	5	+ (15)	traces of charred rhizome to 3 mm; moderate numbers of <i>Cenococcum sclerotia</i>
12084	10	Ditch fill	Just moist, ?humic, mix of mid to dark grey, crumbly (working soft) slightly clay silty sand and pale buff, crumbly (working soft) clay silt, with a little charcoal	2.75 kg sieved to 300 microns with washover	0	25	50	++ (10)	traces of charred ?heather root/basal twig fragments (10 mm); some small (<5 mm) fragments of material which might be desiccated peat or mor humus (a 'squash' of some of this material failed to detect any pollen)
	12	Ditch fill	Just moist, very light buff to light grey to mid to dark grey-brown, stiff to crumbly (working more or less plastic), slightly sandy silty clay, with much wood charcoal	1 kg sieved to 300 microns with washover	1.5	5	25	++ (15)	
16008	16	Ditch fill	Just moist, mottled, light grey brown and orange-brown (?oxidation), stiff and slightly sticky to brittle and crumbly (working plastic), sandy clay	3 kg sieved to 300 microns with washover	4	30	5	+ (5)	