

Palaeoecology Research Services

**Evaluation of biological remains from further excavations on land adjacent to Paragon BMW, Citadel Way, Kingston upon Hull (site code: BMW2001)**

by

Allan Hall, Harry Kenward, Deborah Jaques and John Carrott

*PRS* 2001/03

*Palaeoecology Research Services  
Unit 8, Dabble Duck Industrial Estate  
Shildon, County Durham DL4 2RA*

**Evaluation of biological remains from further excavations on land adjacent to  
Paragon BMW, Citadel Way, Kingston upon Hull  
(site code: BMW2001)**

by

Allan Hall, Harry Kenward, Deborah Jaques and John Carrott

**Summary**

*Four sediment samples from deposits of medieval to post-medieval date, revealed by further excavations on land adjacent to Paragon BMW, Citadel Way, Kingston upon Hull, were submitted for an evaluation of their bioarchaeological potential.*

*Ancient plant and invertebrate remains were recovered from all four samples and showed potential for the investigation of local ecology and the extent of the dumping of occupation debris.*

*A systematic programme of sampling should accompany further intervention in the area and provision should be made for the full post-excavation analysis and publication of material recovered.*

**KEYWORDS:** CITADEL WAY; KINGSTON UPON HULL; EVALUATION; MEDIEVAL; POST-MEDIEVAL; 16<sup>TH</sup> CENTURY (OR EARLIER) TO LATE 17<sup>TH</sup> CENTURY; PLANT REMAINS; CHARRED PLANT REMAINS; INVERTEBRATE REMAINS; VERTEBRATE REMAINS

Authors' address:

Palaeoecology Research Services  
Unit 8  
Dabble Duck Industrial Estate  
Shildon  
County Durham DL4 2RA

Prepared for:

Humber Field Archaeology  
The Old School  
Northumberland Avenue  
Hull HU2 0LN

16 November 2001

## Evaluation of biological remains from further excavations on land adjacent to Paragon BMW, Citadel Way, Kingston upon Hull (site code: BMW2001)

### Introduction

An archaeological evaluation excavation was carried out by Humber Field Archaeology on land adjacent to Paragon BMW, Citadel Way, Kingston upon Hull (NGR TA 1051 2872), in September 2001. These works were additional to those undertaken in late Spring 2001, the biological remains from which were evaluated in Hall *et al.* 2001.

Four sediment samples ('GBA'/'BS' *sensu* Dobney *et al.* 1992) were recovered from the deposits. Preliminary evidence gave medieval and post-medieval (early 15<sup>th</sup> century or earlier to late 17<sup>th</sup> century) dates for the deposits.

All of the material was submitted to the EAU for an evaluation of its bioarchaeological potential.

### Methods

The sediment samples were inspected in the laboratory and their lithologies were recorded, using a standard *pro forma*, prior to processing, following the procedures of Kenward *et al.* (1980; 1986), for recovery of plant and invertebrate macrofossils.

The flots and residues resulting from processing were examined for plant and invertebrate macrofossils and the residues were sorted for bone, and other biological and artefactual remains.

Insect preservation was recorded using the scale of Kenward and Large (1998).

### Results

The results are presented in context number order. Archaeological information, provided by the excavator, is given in square brackets.

**Context 3030** [late 17<sup>th</sup> century buried turfline pre-dating raising of Citadel ramparts]

Sample 20/T (1 kg): mid-dark grey-brown (locally black and lighter grey-brown), brittle to crumbly (working soft) clay silt to silty clay with fine herbaceous detritus (and a smell of hydrogen sulphide), and with rotted ?mortar/plaster and snail shell fragments present.

This subsample yielded a small to moderate-sized residue of about 250 cm<sup>3</sup> of which about half by volume was herbaceous plant detritus and the rest brick/tile (to 20 mm in maximum dimension) and mortar (to 20 mm) and a little sand. There were modest numbers of rather eroded uncharred fruits and seeds of which the more abundant were orache (*Atriplex* sp(p).), ground elder/hemlock (*Aegopodium podagraria* L./*Conium maculatum* L.), bur chervil (*Anthriscus caucalis* Bieb.), thistles (*Carduus/Cirsium* sp(p).) and grasses (Gramineae). There were some hints of aquatic deposition, but for the most part the plant remains indicate weedy vegetation, perhaps neglected ground where human disturbance has ceased.

The flot was small but had a rather high concentration of insect remains. Their preservational condition ranged from poor, very pale, to quite good; such a range is typical of soils. The fossils were rather fragmented. The deposit appears to have formed at the edge of water, perhaps in a marshy area, for there were modest numbers of a range of water beetles and bugs, some waterside taxa, and relatively few fully terrestrial forms. The last included only a trace of species strongly associated with human occupation. There were also a few unidentified fragments of snail shell. Although the material was fragmented, a subsample of 3-5 kg would provide an interpretable assemblage, with clearer indications of local terrestrial conditions or of the deposition of detritus from human occupation.

**Context 3045** [natural silting of moat or moat backfill of late 17<sup>th</sup> century]

Sample 21/T (4.6 kg): light grey-brown (slightly more grey internally), stiff to brittle (working plastic and soft) clay silt.

The minute residue consisted of no more than a couple of cm<sup>3</sup> of sediment, from which no flot or washover was taken. It contained a few rather poorly preserved uncharred seeds, of which most frequent were rush (*Juncus*), which had the cell characters of *J. gerardi* Loisel. (the salt-marsh mud rush) or *J. compressus* Jacq. (round-fruited rush, a plant of mown or grazed marshes, including coastal ones). The few other remains offered no further useful interpretative information; invertebrates were extremely rare and very badly decayed.

**Context 3047** [mid 16<sup>th</sup> century buried turfline or windblown deposit associated with bastion]

Sample 18/T (2.05 kg): dark brown to black (rotted organics), brittle (locally layered) to crumbly, working slightly sticky, slightly clay silt with fine herbaceous detritus, inclusions of yellow-brown clay silt in mm-thick lenses, and with mortar/plaster and snails (a very fragmented *Helix aspersa* Müller) present and abundant brick/tile.

There was a very large residue of about 550 cm<sup>3</sup>, including abundant brick/tile (some large fragments to 100 mm) and some Magnesian limestone (to 120 mm); there was a small washover of about 100 cm<sup>3</sup> of uncharred herbaceous plant detritus amongst which were abundant thistle achenes, though they were mostly rather eroded. That these may have arrived in reworked or inwashed soil (or represent an *in situ* seed bank) may be confirmed by the moderate numbers of earthworm egg capsules. Most other plants present pointed to waste grassy vegetation—there were grass caryopses, including at least one tentatively identified as cocksfoot, *Dactylis glomerata* L., and some grass leaf epidermis fragments; it was perhaps wet at times. There were some characteristic triangular structures which appeared to be herbaceous buds of some kind but which could not be identified further.

Invertebrates were moderately abundant in the flot, and included a considerable range of aquatic and waterside beetles. There was an appreciable terrestrial component, which would probably provide information about local ecology providing a larger subsample was processed. There were only weak indications of human occupation or ejectamenta. Preservation was variable, with many remains fragmented (E2.0-4.5, mode 3, weak; F 2.0-4.0, mode 2.5, weak). Whether

fragmentation occurred in the ground (e.g. as a result of the passage of heavy machinery), during sampling and storage, or during extraction, is not certain. A small assemblage of snails was also recovered which were mostly small Hydrobiidae (some, if not all, being *Hydrobia ventrosa* (Montagu), a brackish water species). A single *Trichia hispida* (Linnaeus) and fragments of *Pupilla muscorum* (Linnaeus) and other unidentified land snails were also noted. A larger subsample would probably provide sufficient remains for a reconstruction of local ecology, providing there is no reason to suppose that soil has been imported and dumped.

**Context 3050** [pre-Henrician buried turfline]

Sample 19/T (0.8 kg): light-mid brown, soft, sticky very slightly clay silt with fine herbaceous detritus, including straw-like debris.

The large residue of about 200 cm<sup>3</sup> consisted for the most part (all but about 50 cm<sup>3</sup>) of flaky plant detritus, the rest being small (<15 mm) mortar and brick/tile fragments. The coarser plant detritus was perhaps largely from a reedswamp, with some vegetative remains which were probably common reed (*Phragmites australis* (Cav.) Trin. ex Steudel) and propagules which included pondweeds (*Potamogeton* and *Zannichellia* sp(p)., the latter suggesting brackish water). Another indicator of saline conditions was a single achene of the salt-marsh plant sea-aster (*Aster tripolium* L.). Other plant remains were certainly terrestrial and mainly likely to have originated in weedy vegetation. There was also a single well-preserved fig (*Ficus carica* L.) seed, presumably from human food.

Insects were abundant, but often rather fragmented (E 2.0-4.0, mode 3.0, weak; F 2.0-4.0, mode 3.0, weak). There were also very large numbers of ostracods (probably over a thousand), which would be suited to reconstruction of water quality, including salinity. They, and several of the beetles, indicate aquatic deposition, in freshwater. Other components of the fauna included waterside beetles, and a range of terrestrial forms, among them some indicative of human occupation (the spider beetle *Tipnus unicolor* (Piller & Mitterpacher) being notable). A small assemblage of snails (approximately 40 individuals), apparently all *Hydrobia ventrosa*, was also recovered, again indicating brackish water conditions. Further analysis seems desirable.

If this was a turf line the surface must have been inundated, the biota suggesting that perhaps conditions were normally no more than slightly saline (analysis of ostracods or further insects might cause this tentative conclusion to be revised).

Several fragments of bone were also recovered from the residue. Most (5) fragments were unidentified, but a rather eroded and fragile bird ulna was recorded. This fragment represented a small corvid of jackdaw/magpie size.

## Discussion and statement of potential

Useful assemblages of plant and invertebrate remains were recovered from most of the samples, with potential to investigate local ecology, including flooding and salinity, and the extent of dumping of the debris of occupation. In particular, the question of the interpretation of some of these deposits as turflines can be further explored.

## Recommendations

Consideration should be given to a planned programme of sampling of the deposits associated with this unusual monument, should further intervention take place.

## Retention and disposal

All of the material should be retained for the present.

## Archive

All of the recovered 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 Ken Steedman and Jim Fraser of Humber Field Archaeology for providing the material and the archaeological information.

## References

- Dobney, K., Hall, A. R., Kenward, H. K. and Milles, A. (1992). A working classification of sample types for environmental archaeology. *Circaea, the Journal of the Association for Environmental Archaeology* **9** (for 1991), 24-6.
- Hall, A., Rowland, S., Kenward, H. and Carrott, J. (2001). Evaluation of biological remains from excavations at Citadel Way, Kingston upon Hull (site code: BMW2001) *Reports from the Environmental Archaeology Unit, York* **2001/37**, 4 pp.
- Kenward, H. and Large, F. (1998). Recording the preservational condition of archaeological insect fossils. *Environmental Archaeology* **2**, 49-60.
- 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. K., Engleman, C., Robertson, A. and Large, F. (1986). Rapid scanning of urban archaeological deposits for insect remains. *Circaea* **3**, 163-172.