

P<sub>alaeoecology</sub> R<sub>esearch</sub> S<sub>ervices</sub>

**Assessment of biological remains from a 13<sup>th</sup>  
century deposit at Springfield, Scarborough,  
North Yorkshire (site code: SP04)**

*PRS* **2004/48**

## Assessment of biological remains from a 13<sup>th</sup> century deposit at Springfield, Scarborough, North Yorkshire (site code: SP04)

by

Allan Hall, Harry Kenward, Deborah Jaques, John Carrott and Stewart Gardner

### Summary

*A single sediment sample recovered from a 13<sup>th</sup> century waterlogged infill layer during excavations at Springfield, Scarborough, North Yorkshire, was submitted for an assessment of its bioarchaeological potential.*

*The identifiable plant remains included a number of peatland taxa, but also two heaths, perhaps from cut vegetation or turves, and a small group of mosses consistent with this. Also noted were some remains which seem likely to have arrived in the peat itself. The bracken, of which there were many frond fragments as well as stalk debris, is also likely to have been an imported resource from moorland areas inland from Scarborough. Overall, a 'mixed litter' character was predominant, with most of the other fruits and seeds recorded being likely to have arrived as cornfield weeds with straw. There was in addition, however, a very small component of taxa that probably originated in food, and this included wheat/rye 'bran', suggesting that there may have been some faecal material finding its way into the deposit (supported by the presence of a single *Trichuris* egg seen in the 'squash' subsample). The other food taxa were hazel nut, apple and linseed. One possible origin for this mixture of remains is in material such as stable manure. Preservation of non-marine invertebrates was mostly good, sometimes very good. The fauna was predominantly of forms typical of medieval (post-Conquest) intensive occupation sites where there was plenty of waste organic matter. Overall, conditions seem not to have been too foul, with a large proportion of beetles favoured by fairly dry litter, probably moister and a little foul in places—and thus in close accord with the archaeobotanical evidence.*

*The small quantity of shell remains recovered were mostly of heavily fragmented marine shellfish and the sample also produced a small, but well preserved, fish assemblage. The amounts were too small to be of any interpretative value but did show that greater concentrations of identifiable remains may well be recovered by further excavation at this site. Few well dated and systematically recovered fish assemblages have been published from sites in the North East of England outside of the major urban assemblages, which highlights the importance of the material from this site.*

*Any further excavation at this site should certainly be accompanied by comprehensive and systematic sampling for the recovery of both floral and faunal assemblages.*

**KEYWORDS:** SPRINGFIELD; SCARBOROUGH; NORTH YORKSHIRE; ASSESSMENT; MEDIEVAL; 13<sup>TH</sup> CENTURY; PLANT REMAINS; CHARRED PLANT REMAINS; INVERTEBRATE REMAINS; INTESTINAL PARASITE EGGS; *TRICHURIS*; MARINE SHELL; VERTEBRATE REMAINS; FISH BONE

Contact address for authors:

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

Prepared for:

Scarborough Archaeological and  
Historical Society  
c/o Chris Hall (Secretary)  
10 Westbourne Park  
Scarborough  
North Yorkshire YO12 4AT

6 August 2004

## Assessment of biological remains from a 13<sup>th</sup> century deposit at Springfield, Scarborough, North Yorkshire (site code: SP04)

### Introduction

An archaeological excavation was carried out by Scarborough Archaeological and Historical Society at Springfield, Scarborough, North Yorkshire (NGR TA 0463 8886).

The site was first investigated by the society in 1997. Analysis of two samples undertaken at that time (Hall *et al.* 1997) indicated that further study of that from Context 412 would be desirable. The current sample (Context 1630) is from this same layer but taken some three metres to the north. The layer appears to be the top of waterlogged infill deposits (which the 1997 investigation established are at least 2 metres deep) and dates to the 13<sup>th</sup> century (based on included pottery). The deposit formed within the bottom of a shallow valley formed by a stream called the Damyet. It is suspected that the infilling was deliberately engineered to raise and consolidate the ground level prior to building—overlying structures probably belong to the Franciscan friary and it may be that the friars were responsible for the preceding dumping.

A single bulk sediment sample ('GBA'/'BS' *sensu* Dobney *et al.* 1992) was submitted to Palaeoecology Research Services Limited (PRS), County Durham, for an assessment of its bioarchaeological potential.

### Methods

The lithology of the sample was recorded, using a standard *pro forma*, and a subsample processed, broadly following the procedures of Kenward *et al.* (1980), for the recovery of biological remains.

Plant remains and the general nature of the flot and washover were recorded briefly by

'scanning', identifiable taxa and other components being listed directly to a PC using *Paradox* software.

Insects in the flot were recorded using 'assessment recording' *sensu* Kenward (1992), creating a list of the taxa observed during rapid inspection of the flot, with a semi-quantitative estimate of abundance, and a subjective record of the main ecological (e.g. aquatics, grain pests) or indicator/activity (e.g. for stable manure, Kenward and Hall 1997) groups present. A record of the preservational condition of the remains was made using scales given by Kenward and Large (1998). This scheme provides scales for chemical erosion and fragmentation (0.5-5.5, the higher figure representing the greatest degree of damage), and colour change (0-4), in each case giving a range and a value for the position and strength of the mode (Kenward and Large 1998, tables 2, 3 and 5-7).

A subsample was also examined for the eggs of intestinal parasitic nematodes using the 'squash' technique of Dainton (1992). The assessment slide was scanned at 150x magnification.

Bone fragments recovered from the residues were identified to species or species group, using the reference collection at Palaeoecology Research Services Limited, County Durham. Fragments not identifiable to species were described as the 'unidentified' fraction. Within this fraction fragments were grouped into a number of categories: large mammal (assumed to be cattle, horse or large cervid), medium-sized mammal (assumed to be caprovid, pig or small cervid), unidentified fish, and totally unidentifiable.

Other biological remains were sorted from the residue and identified where possible within

the constraints of the project. Artefacts were separated to be returned to the excavator.

## Results and discussion

Archaeological information, provided by the excavator, is given in square brackets. A brief summary of the processing method and an estimate of the remaining volume of unprocessed sediment follows (in round brackets) after the sample number. The sample number was derived from the context number for PRS internal recording keeping purposes.

**Context 1630** [waterlogged infill deposit containing 13<sup>th</sup> century pottery]  
Sample 163001/T (5 kg sieved to 300 microns with paraffin flotation and washover; approximately 14 litres of unprocessed sediment remain)

Waterlogged, dark grey-brown to black (internally), sticky (working soft and sticky), humic, slightly sandy clay silt, with a fairly strong sulphide smell. Wood and large mammal bone were present.

The moderately large washover of about 475 ml appeared to consist entirely of organic material, mostly very dark in colour. On closer inspection, the dark colouration was found to be a result largely of preservation in a highly reducing environment in which sulphides had been deposited. Indeed, the greater part of the material was preserved by anoxic ‘waterlogging’, with only a rather small component of charcoal and other charred debris. The coarser material had a distinctly ‘twiggy/strawy’ appearance and this proved to be a mixture of small twigs, bracken (*Pteridium aquilinum* (L.) Kuhn) stalk fragments and some herbaceous material probably originating in cereal straw. Not surprisingly, given the nature of the burial environment indicated by the sulphide blackening, preservation was excellent, with wood fragments (including small chips to 10 mm) firm and very fresh in appearance (often pale in colour with some sulphide staining). Amongst the coarser plant remains were fragments (to 10 mm) of more or less indurated peat, some of it charred. There were also a few fragments of very decayed (‘split’) leather (other fragments of knotted leather and ?hair were noted during processing and stored separately).

The identifiable plant remains in the washover and the flot included a number of peatland taxa (notably heather, *Calluna vulgaris* (L.) Hull, but also the heaths, *Erica tetralix* L. and *E. cinerea* L.), perhaps from cut

vegetation or turves, and there was a small but ecologically tightly-defined group of mosses consistent with this. Also noted were some remains (such as bog bean, *Menyanthes trifoliata* L.) which seem likely to have arrived in the peat itself. The bracken, of which there were many pinnule (frond) fragments as well as stalk debris, is also likely to have been an imported resource from moorland areas inland from Scarborough. Overall, a ‘mixed litter’ character was predominant, with most of the other fruits and seeds recorded being likely to have arrived as cornfield weeds with straw (e.g. corncockle, *Agrostemma githago* L. and shepherd’s needle, *Scandix pecten-veneris* L.). There was in addition, however, a very small component of taxa that probably originated in food, and this included wheat/rye (*Triticum/Secale*) ‘bran’, suggesting that there may have been some faecal material finding its way into the deposit—both the presence of faecal material and its relatively low concentration in the deposit as a whole was supported by the presence of a single, very well preserved, *Trichuris* egg in the ‘squash’ subsample. The other food taxa were hazel nut (*Corylus avellana* L.), apple (*Malus sylvestris* Miller) and linseed (*Linum usitatissimum* L.). One possible origin for this mixture of remains is in material such as stable manure.

The flot was fairly small, with a substantial proportion of insect fragments. Preservation of invertebrates was mostly good, sometimes very good (E 1.0-2.5, mode 2.0 weak; F 1.5-3.0, mode 2.0 weak). The fauna was predominantly of forms typical of medieval (post-Conquest) intensive occupation sites where there was plenty of waste organic matter. Overall, conditions seem not to have been too foul, with a large proportion of beetles favoured by fairly dry litter, probably moister and a little foul in places—and thus in close accord with the archaeobotanical evidence. Notable records were of a human flea (*Pulex irritans* Linnaeus), a sheep ked (*Melophagus ovinus* (Linnaeus), probably from wool cleaning), and a bee, probably a honey bee (*Apis mellifera* Linnaeus). There were also some grain pests, *Sitophilus granarius* (Linnaeus) and *Oryzaephilus surinamensis* (Linnaeus), and an unusual record of *Ahasversus advena* (Waltl), typical of storage environments. These, with species *perhaps* imported with hay (*Apion* and *Sitona* spp.), and some others, hint at the presence of stable manure—corroborating one possible interpretation of the evidence from plant remains. (Human fleas are very typical of stable manure deposits, too.) There were at least two individuals of the spider beetle *Tipnus unicolor* (Piller and Mitterpacher), like the grain pests very typical of post-Conquest occupation deposits.

There was a small insect component indicative of heathland or moorland vegetation (*Micrelus ericae* (Gyllenhal) and a strongly-sculptured *Altica* sp.). Lastly, there was a single elytron of one of the species

of *Cercyon* found in stranded seaweed, perhaps just a stray rather than indicative of the importation of wrack (e.g. for animal feed or bedding).

There was a small residue (dry weight ~700 g) mostly of sand, with a few small stones (to 20 mm). Other components included further hazel nut shell (4 g) and uncharred 'woody' plant fragments (2 g), a little coal and charcoal (3 g, to 15 mm), a few fragments of eggshell (<1 g), pieces of pot (28 g, to 25 mm) and marine shell (11 g). The last largely consisting of small fragments of limpet (?common limpet, cf. *Patella vulgata* L.), winkle (*Littorina littorea* (L.)) and mussel (*Mytilus edulis* L.).

This sample also produced 93 fragments of bone, 79 of which were fish. Although the remains were somewhat fragmented (most being less than 40 mm in maximum dimension), they were very well preserved. Mammal and bird bone amounted to 14 fragments and included part of a cow metatarsal, a ?rat (?*Rattus* sp. indet.) tibia shaft fragment and a chicken radius. In addition, the assemblage included the remains of flatfish (Pleuronectidae), gadids, including cod (*Gadus morhua* L.), ling (*Molva molva* (L.)) and ?whiting (cf. *Merlangius merlangus* (L.)), together with a range of skeletal elements representing herring (*Clupea harengus* L.). Single fragments were also identified as salmonid, ?perch (cf. *Perca fluviatilis* L.) and ?horse mackerel (cf. *Trachurus trachurus* (L.)). Fish with an overall length of more than a metre were indicated by the presence of a cod precaudal vertebra.

The biological remains from this sample are rather like those seen in one of the deposits from an excavation at the site of the Former Pentecostal Church, St Sepulchre Street (Carrott *et al.* 2004) and from at a site at 24-6 The Bolts (Hall and Kenward 1990), and to some extent also like material seen at the Newcastle Packet site, 13 Sandside (Hall *et al.* 2000), all perhaps part of the same general build-up of richly organic material along the Damyet, running through medieval Scarborough.

## Recommendations

The plant remains and insect fauna in this deposit have substantial interest from the point of view of archaeological interpretation, and thus clearly deserve full study, preferably using a larger (or additional) subsample.

The small quantity of shell remains recovered were, in general, heavily fragmented but showed little surface erosion. The amount was too small to be of any interpretative value but

does show that greater concentrations of identifiable remains may well be recovered by further excavation at this site.

The sample also produced a small, but well preserved fish assemblage which demonstrates the potential of certain deposits at this site for the recovery of bone, fish in particular. Few well dated and systematically recovered fish assemblages have been published from sites in the North East of England outside of the major urban assemblages, which highlights the importance of the material from this site. The supply of fish between coastal fisheries and urban settlements is not well understood and the study of more assemblages from coastal fisheries would be of considerable value.

Any further excavation at this site should certainly be accompanied by comprehensive and systematic sampling for the recovery of floral and faunal assemblages.

## Retention and disposal

All of the remaining sediment samples should be retained for the present, together with the biological remains recovered from the processed subsamples.

## 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 Trevor Pearson of Scarborough Archaeological and Historical Society for providing the material and the archaeological information.

## References

- Carrott, J., Jaques, D., Hall, A., Kenward, H. and Johnson, K. (2004). Evaluation of biological remains from two pit fill samples recovered during excavations at the site of the former Pentecostal Church, St Sepulchre Street, Scarborough, North Yorkshire (site code: PC03 – 2003.516). *PRS* 2004/35.
- Dainton, M. (1992). A quick, semi-quantitative method for recording nematode gut parasite eggs from archaeological deposits. *Circaea, the Journal of the Association for Environmental Archaeology* 9, 58-63.
- 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. R. and Kenward, H. K. (1990). Report on the analysis of richly organic medieval occupation sediment from excavations at 24-6, The Bolts, Scarborough, N. Yorkshire. Unpublished report prepared for T. Pearson, York Archaeological Trust.
- Hall, A., Issitt, M., Kenward, H. and Large, F. (1997). Assessment of biological remains from excavations at St Sepulchre Street, Scarborough (site code: SP96). *Reports from the Environmental Archaeology Unit, York* 1997/26, 4 pp + 2 pp. Appendix.
- Hall, A., Kenward, H., Rowland, S., Jaques, D. and Carrott, J. (2000). Evaluation of biological remains from excavations at Newcastle Packet, 13 Sandside, Scarborough (site code: NP00). *Reports from the Environmental Archaeology Unit, York* 2000/38, 3 pp.
- Kenward, H. K. (1992). Rapid recording of archaeological insect remains - a reconsideration. *Circaea, the Journal of the Association for Environmental Archaeology* 9 (for 1991), 81-8.
- Kenward, H. and Hall, A. (1997). Enhancing bioarchaeological interpretation using indicator groups: stable manure as a paradigm. *Journal of Archaeological Science* 24, 663-73.
- 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.