

Palaeoecology Research Services

**Assessment of invertebrate remains from excavation of
a timber structure at Staithes, North Yorkshire
(site code: SCL02)**

by

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Summary

Four sediment samples (two from each of two contexts) recovered from deposits associated with an Early Bronze Age timber structure at Staithes, North Yorkshire, were submitted by Archaeological Services, University of Durham (ASUD) for an assessment of their content of invertebrate macrofossils.

All of the samples gave at least some invertebrate remains whose preservation ranged from poor to good. As a whole, the fauna of the samples indicated swampy conditions, one sample giving evidence of flowing fresh water. Although there were clear traces of modern contamination, the bulk of the fauna was undoubtedly ancient, including a trace of species favoured by human occupation; there was, however, no clear component from artificial habitats such as occurs in and around dwellings and farm buildings. The preservational condition of some of the remains gave the subjective impression of recent decay.

Given the tight Early Bronze Age date of the material it will be of substantial value for ecological reconstruction and as a source of records in time and space.

Some of the samples are borderline in size for recovery of assemblages of insects adequate for detailed analysis. Nevertheless, the fauna of these samples would add to the data set in a useful way. The remaining samples deserve full analysis of larger subsamples. All of the current material should be retained for the present.

KEYWORDS: TIMBER STRUCTURE; STAITHES; NORTH YORKSHIRE; ASSESSMENT; EARLY BRONZE AGE; INVERTEBRATE REMAINS

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Assessment of invertebrate remains from excavation of a timber structure at Staithes, North Yorkshire (site code: SCL02)

Introduction

An archaeological excavation of a timber structure was carried out by Tees Archaeology at Staithes, North Yorkshire (NGR NZ 8192 1893), during February and March 2002.

Four sediment samples (two from each of two contexts) recovered from the deposits ('GBA'/'BS' *sensu* Dobney *et al.* 1992) were submitted by Archaeological Services University of Durham (ASUD) for an assessment of their content of invertebrate macrofossils.

A series of radiocarbon dates from timbers at different levels of the structure gave consistent Early Bronze Age results; most being tightly grouped at around 1600 BC +/- 90 years.

Methods

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

The flots resulting from processing were examined for invertebrate macrofossils. Assessment for plant macrofossils was undertaken separately and so these remains were not recorded. The residues were also not recorded.

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

Results

The results of the investigations are presented in context and sample number order. Context descriptions were not available at the time of writing of this report.

Context 53

Sample 2 (tub 2 of 2)/T (2 kg sieved to 300 microns with paraffin flotation; approximately 12 litres of unprocessed sediment remain)

Wet to waterlogged light to mid grey-brown, brittle to crumbly (working soft), slightly silty clay sand (more clay in places) and fine and coarse herbaceous detritus, with some stones (2 to 6 mm) and wood (to >100 mm).

The flot was small, consisting principally of woody and herbaceous plant detritus. There were quite large numbers of invertebrates, mainly mites, immature insects, and beetles. Preservation varied from good to poor (E 1.5-4.0, mode 2.0 distinct; F 1.5-3.5, mode 2.5 weak), and about a tenth of the beetles were darkened (trend to black 0.4, mode 0 distinct). Some of the darkened fossils showed subtle changes to their surfaces. Aquatic beetles were well-represented, and included two forms indicative of running water, *Esolus parollelepipedus* (Müller) and *Hydraena gracilis* Germar. There were species associated with marshy conditions, and with plant litter. A single elytron of the Australasian *Aridius nodifer* (Westwood) was clearly modern, and remains of the burrowing *Anommatus duodecimstriatus* (Müller) may have been intrusive, but there seemed to be no reason to suspect the presence of other contaminants.

The assemblage from a large subsample (up to 10 kg) of this material would be very informative concerning local ecology, and might give climatic information.

Sample 13/T (2 kg sieved to 300 microns with paraffin flotation; approximately 6 litres of unprocessed sediment remain – though this includes large wood fragments and stones)

Wet to waterlogged, mid to dark grey-brown (slightly orange in places), sticky to soft, stony clay silt. Stones (2 to 60 mm) were present and wood fragments rather abundant.

The small flot contained very few insect remains, and the only other invertebrates noted were an earthworm egg capsule and a mite. The fossils were often well-decayed (E 2.0-4.0, mode 3.0 weak; F 2.5-4.0, mode 3.0 weak). Two species suggested that the deposit had at some stage been de-watered—*Trechus micros* (Herbst) and *Coprophilus striatulus* (Fabricius) were present, both members of a subterranean/post-depositional invader community frequently recognised in archaeological deposits (discussed, for example, by Kenward and Allison 1994; Carrott and Kenward 1998). Marshy conditions were suggested by *Anacaena* sp. and *Cyphon* sp., and a few species probably exploited plant litter. A battered fragment of what appeared to be a dermestid beetle was noted and, like the spider beetle from Context 53, appears out of place in the present assemblage.

Combining the remains from the assessment subsample with those presumed to be present in the remaining sediment would probably give an assemblage just large enough for at least tentative interpretation, and would certainly be worthwhile given the close dating.

Context 56

Sample 21/T (2 kg sieved to 300 microns with paraffin flotation; approximately 3 litres of unprocessed sediment remain – though this includes large wood fragments and stones)

Moist to wet, varicoloured (pale yellow through shades of yellow-brown and grey-brown to mid grey-brown), crumbly to unconsolidated (working more or less soft) stony, slightly silty clay sand, with some fine herbaceous detritus. Stones (2 to 60+ mm), ?charcoal, twigs, and moderate amounts of roundwood fragments were present.

The flot was small, and predominantly scraps of cuticle of immature insects (flies and others). There were moderate numbers of fragments of beetles and bugs, and some mites. Preservation varied, and some fossils were extremely decayed (E 2.0-5.0, mode 3.0 weak; F 2.0-4.0, mode 2.5). The sediment was waterlain, for aquatics were present in moderate numbers (*Daphnia* ephippia, at least three *Limnebius* sp., *Helophorus* sp. and *Hydraena* sp.). There were taxa associated with marginal or damp conditions, such as *Pterostichus niger* (Schaller), *Lesteva longoelytrata* (Goeze), and a donaciine ('reed beetle'), and most of the fauna could have lived with these in a damp area with moss and plant litter. Trees were suggested by a scrap of cuticle which was probably from a scolytid (bark beetle), and there were two larval apices of a click beetle (Elateridae), probably one of those found in decaying wood. An elytral fragment of a spider beetle was notable in an assemblage of this kind, though it may prove not to be reliably identifiable.

A large subsample of this deposit would give a useful assemblage of remains, and their analysis to reconstruct local ecology (and perhaps climate) would be valuable; the volume of remaining sediment may prove insufficient, however.

Sample 26/T (1 kg sieved to 300 microns with paraffin flotation; approximately 2-3 litres of unprocessed sediment remain – though this is mostly large wood fragments and stones)

Wet, varicoloured (pale yellow through shades of grey-brown, grey and yellow-brown, to mid grey-brown) crumbly to unconsolidated (working more or less soft), stony, silty clay sand (to sandy clay), with some fine herbaceous detritus. Stones (2 to 60 mm) were present and wood fragments common.

The small flot contained numerous scraps of cuticle from immature insects, a few mites, and a small group of beetles and bugs. Preservation was variable. Aquatics were proportionally well-represented, and the remaining fauna might all have occupied swampy woodland.

Further investigation of this material would probably be informative, but the small amount of sediment remaining would be insufficient for the recovery of an assemblage of suitable size. Recording of even a small group of remains may be worthwhile if other samples from the site are being analysed in detail, however.

Discussion and statement of potential

As a whole, the fauna of these samples indicates swampy conditions, one sample giving evidence of flowing fresh water. Few species associated with trees were noted, despite the abundance of wood at the site. Although there are clearly traces of modern contamination, the bulk of the fauna is undoubtedly ancient, including a trace of species favoured by human occupation; there was, however, no clear component from artificial habitats such as occurs in and around dwellings and farm buildings.

Given the tight Early Bronze Age date of the material it will be of substantial value for ecological reconstruction and as a source of records in time and space. Examining large assemblages would expand the range of natural habitats insects recovered, but more

significantly would improve the chance of recovering evidence of human activity, and perhaps even synanthropic insects associated with structures.

Recommendations

Some of the samples are borderline in size for recovery of assemblages of insects adequate for detailed analysis. Nevertheless, the fauna of these samples would add to the data set in a useful way. The remaining samples deserve full analysis of larger subsamples.

The preservational condition of some of the remains gives the subjective impression of recent decay. While this cannot be proved, it should perhaps be kept in mind in deciding a strategy for dealing with any remaining deposits associated with the site and its surroundings.

Retention and disposal

All of the current material should be retained for the present.

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.

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