

**Assessment of insect remains from a sample from the
Flodden Hill Rectilinear Enclosure**

by Harry Kenward

Summary

*One sample from the lowest fill, dated c. AD 200, of a ditch terminal at the Flodden Hill Rectilinear Enclosure site has been assessed for its content of insect and other macro-invertebrate remains. Numerous fragments were present, and their preservation excellent. Species indicating open ground and dung suggested that grazing land predominated in the surroundings. There were weak hints of occupation-site synanthropes. A specimen of the nettlebug *Heterogaster urticae* is of particular significance as a strong indicator of temperatures well above those of the present day. Detailed analysis is recommended.*

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Introduction

A single sample of sediment, 19 (2 of 2) from a fill (Context 005) of a cut feature identified as a ditch terminal at the Flodden Hill Rectilinear Enclosure site (also referred to in records as Milfield, MILF99.4) was submitted for assessment by Clive Waddington, Newcastle University.

The following is condensed from a draft of the archaeological report. The Flodden Hill rectilinear enclosure survives as a crop mark site visible on aerial photographs. It is centred at NT92003610 on an east-facing slope. The area investigated was on the east side of the enclosure, located at the downslope end of the site. The trench included the entrance, associated ditch terminals, and part of the interior of the enclosure.

The ditch fills had been truncated by ploughing. The south terminal was sectioned by machine; it was considered unsafe to excavate by hand. The cut revealed a section which showed that the ditch had a single original cut [006] with no later recuts evident. The ditch had a single continuous concave profile on the outer edge and a stepped convex profile on the inner. It measured 5.15m in width and 2.07m deep below the base of the modern topsoil.

The basal ditch deposit (005), examined here, was a waterlogged black silty clay. It was the primary deposit and appeared as one block of homogeneous dark sloppy silt with high organic content including waterlogged wood. Occasional small stones up to 0.1m across were encountered. It was not horizontally

bedded but sloped upwards at its sides, suggesting that it had formed naturally and was not a dump. It had a maximum depth of 0.37m. The excavated silt contained charred barley seeds, waterlogged branch wood and herbs plants typical of disturbed ground with nearby cultivation.

Above 005 was a lower clay fill (004) consisting of a horizontally bedded loose grit and clay with large stones. It had a maximum depth of 0.75m, and was overlain by a 0.65m deep horizontally bedded clay silt (003) consisting of a stiff fine clay, light grey in colour with a blue tint indicating that it had gleyed. The upper fill of the terminal (Context 002) consisted of a boulder fill set in a loose and gritty silty clay matrix brown in colour. This was probably deliberate backfilling.

Enclosures of this kind are common in northern England, and considered to be Romano-British in date. Radiocarbon dates for the context analysed for insect remains will be forthcoming in the next phase of the project but a date around c.200AD is anticipated, relating to the time at which the enclosure was occupied. The manner of subsequent infilling of the ditch suggests that the site was finally abandoned and the ditch deliberately levelled.

Methods

After brief description following a standard *pro forma*, a subsample of 2.0 kg was submitted to sieving and full paraffin flotation following the methods described by Kenward *et al.* (1980).

Results

The sample was described as moist, dark brown slightly sandy silty amorphous and detrital organic material, with some stones to 50 mm. About 5 ml of organic matter was recovered in the flot, and most of this was fragments of insects. Preservation was superb (modes E1.5, F 2.0, following the scheme of Kenward and Large 1992), and there were many entire or nearly entire sclerites of even large species such as dung beetles, chafers and silphids, as well as nymphs of bugs.

Because this is a primary fill it is very likely that it accumulated while the site was in use, and not in abandonment. This is supported by the strong indications of an open environment (see below). That the deposit formed in water was confirmed by the presence of various aquatics, including cladocerans (water fleas), principally *Daphnia* sp., and a range of beetles and bugs. The latter were all species which would be at home in shallow, reasonably clean, water with a little vegetation. There was a single elmid beetle, indicative of flowing water. There were a few waterside taxa, and several others likely to be found on ditch edges, including some plant-feeders and ground beetles.

Species indicating short herbaceous vegetation, including grassland, were conspicuous and included the chafer *Phyllopertha horticola* (L.), elaterids (click beetles), and *Dascillus cervinus* (L.). Dung beetles were well represented, *Aphodius prodromus* (Brahm) and *A. contaminatus* (Herbst) being rather common. No species associated with trees or shrubs were found despite the presence of 'branch wood' in the sediment (see above).

Beetles particularly associated with artificial accumulations of decomposing matter were

quite well represented. Most, such as *Tachinus* spp. *Megarathrus* sp., *Cryptopleurum minutum* (F.), and *Megasternum obscurum* (Marsh.), may have fallen in this category or exploited dung, but *Ptenidium* sp., and *Gyrohypnus* sp. are perhaps more likely to have come from litter-like material. Of special interest is a specimen of a spider beetle which is probably *Tipnus unicolor* (P+M.), particularly associated with Roman towns and with later- to post-medieval occupation and (with the notable exception of the Deer Park Farms site in Co. Antrim, Kenward and Allison 1994) very unusual at early rural sites. Apart from this there were no species especially strongly tied to artificial habitats, suggesting an isolated settlement (Kenward 1997), although some, such as the ground beetle *Pterostichus melanarius*, are particularly typical of human occupation.

The most remarkable find in this superb assemblage is of great significance: a specimen of the nettlebug *Heterogaster urticae* (F.). This species is principally associated with nettle, *Urtica dioica* L. During the 20th century the bug was confined primarily to the south-east of England, with sporadic occurrences in Norfolk and Cheshire, and what seems to have been a stray from Yorkshire (Masse 1955; Southwood and Leston 1959). However, there are numerous fossil records from Roman, Anglo-Scandinavian, and sometimes post-Conquest York, and elsewhere outside the current range (Hall and Kenward 2000; Kenward and Hall 1995), and the species is regarded as indicating that higher temperatures obtained in these periods. If it was established in Northumberland substantially higher temperatures are indicated.

Recommendations

This is very significant material on several counts. It can be used to provide evidence of conditions in the settlement, and vegetation and land-use in its surroundings. Investigation of the synanthropic component (including confirmation of the identification of *Tipnus unicolor*) will be significant in terms of duration of settlement and external contact. The presence of at least one beetle from flowing water leads one to wonder whether the ditch was fed by a stream. The climatic implications of the assemblage as a whole may prove particularly important.

It is strongly recommended that the material already extracted be investigated in full, and that the remaining sediment (apart from a small voucher) be processed to supplement it. Remains of beetles and bugs (at least) should be identified as closely as practicable.

The recommended course of action will require the following time allocation (HK):

1 day to process further subsample
 5 days basic identification of existing and supplementary subsamples
 5 days making critical identifications
 5 days reading literature and writing technical report
 4 days writing contribution to site report.

Total 20 days.

Should there be significant climatic data (e.g. if further *H. urticae* are recovered) it will be desirable to publish an account in an appropriate journal, for which a further five days should be allowed.

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