Reports from the Environmental Archaeology Unit, York **97/9**, *4 pp.*

Insects associated with Roman scale armour from Carpow, Perthshire

By Harry Kenward

Summary

A small quantity of sediment taken from Roman scale armour from the Legionary fortress at Carpow, Perthshire, Scotland, was examined for its content of invertebrate remains, particularly insects. Although well-preserved remains of grain pests and some other invertebrates were found, no parasites of humans could be detected.

Keywords: CARPOW, PERTHSHIRE, SCOTLAND; LEGIONARY FORTRESS; SCALE ARMOUR; LORICA SQUAMATA; INSECTS; GRAIN PESTS

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24 February 1997

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Introduction and methods

Two tubes of sediment associated with the Roman scale armour from the Legionary fortress at Carpow, Perthshire, Scotland, were submitted for investigation of insect remains, and particularly to determine whether any parasites of humans were present. The armour and its discovery are briefly described by Wild (1981), and further information concerning the both the site and the artefact is given by Coulston (1994). An early third century date is ascribed to the feature from which the armour was recovered, and the location of the site made it an important communications centre. The pit was located within an area of timber buildings which probably functioned as barracks.

The material was treated with hot water and sieved using a 250 micron aperture mesh, a 'washover' (sensu Kenward *et al.* 1980) being taken. This extract was examined in industrial methylated spirit under a binocular microscope at x 15 and invertebrate remains were picked out for identification. Representative aliquots of the washovers were studied at higher power (up to about x 45) to ensure that no important insect remains were overlooked.

Results

Small numbers of insect remains and some other invertebrates, particularly mites, were present in each of the samples. The material is listed in Table 1. In addition, two flat spirally coiled objects somewhat resembling rather thick but very decayed mammalian hair were recovered, but could not be identified further.

Discussion

Insect cuticle had preserved excellently in the pit from which the scale armour was recovered, and it is unfortunate that (it is assumed) a series of samples was not collected from its fills. This is hardly surprising bearing in mind the early date of excavation (1979), at a time when 'environmental' sampling had yet to become established as routine procedure in many parts of the British Isles. The survival of these remains in a cut feature is perhaps not surprising, although the somewhat unusual appearance of the remains may indicate that they had survived because they were protected from decay by metal salts from the armour rather than by anoxic waterlogging. Alternatively, the rather odd colouration of the fossils may have resulted from prolonged museum storage.

No remains of human parasites could be found despite very careful examination. Some structures resembling 'nits', the eggs of the human louse, at first sight proved on closer inspection to be small grass caryopses. After some confusion it was established that an insect with the strong superficial appearance of a biting louse was in fact a wingless booklouse, apparently a *Liposcelis* sp. It retained one hind femur (so unusual in form that it was initially considered to be an adhering fragment of plant tissue) showing the very characteristic extreme broadening of this group (see for example the illustration of New 1974, p. 38). No attempt was made to identify this specimen to species in view of the possibility that it was of modern origin. *Liposcelis* are predominantly found in association with humans, and include the familiar booklice *sensu stricto*, insects which are often encountered in museum stores and the like.

The insect remains recovered from the sediment samples supplied give the impression of a random subsample from a typical Roman assemblage as seen at various sites in England. The presence of three grain pest taxa (*Cryptolestes*

?ferrugineus (Stephens), *Palorus ratzeburgi* (Wismann) and *?Sitophilus granarius* (Linnaeus) in such a tiny assemblage suggests that, like a great many other Roman sites, Carpow carried a large population of these insects. They are more likely to have come from equine stable manure or dung than to represent strays from a store of grain intended for human consumption (see Kenward and Hall in press). That these species were present at the furthest fringes of substantial Roman influence in Britain is not surprising since they appeared to have been carried everywhere by the first wave of troops (eg. to York in the first century, Kenward and Williams 1979, and to Ribchester in its earliest phases, Large *et al.* 1994).

Acknowledgments

I am grateful to Sue Rees and Tim Holden for bringing the material to my attention and for assistance and information, and to the Ancient Monuments Laboratory of English Heritage for allowing my involvement in the project.

References

Coulston, J. C. N. (1994). *Roman scale armour from Carpow, Tayside.* Unpublished report.

Kenward, H. and Hall, A. (in press). Enhancing bioarchaeological interpretation using indicator groups: stable manure as a paradigm. *Journal of Archaeological Science.*

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. and Williams, D. (1979). Biological evidence from the Roman warehouses in Coney Street. *The Archaeology of York* **14** (2), 45-100. London: Council for British Archaeology.

Large, F., Kenward, H., Carrott, J., Nicholson, C. and Kent, P. (1994). Insect and other invertebrate remains from the Roman fort at Ribchester, Lancashire (site code RB89): Technical report. *Reports from the Environmental Archaeology Unit, York* **94/11**, 171 pp.

New, T. R. (1974). Psocoptera. *Handbooks for the identification of British insects* **1** (7). London: Royal Entomological Society.

Wild, J. P. (1981). A find of Roman scale armour from Carpow. *Britannia* **12**, 305-6.

Table 1. Insect and other invertebrate remains from two small samples of sediment associated with Roman scale armour from Carpow, Perthshire.

Taxon	**MNI**		**Notes**
	Sample 1	**Sample 2**	
?*Liposcelis* sp.		1	a 'booklouse': entire apart from loss of most appendages
Diptera sp.	1		fly larval head capsule
Helophorus sp.	1	?1	a common and freely-flying water beetle: elytral fragments
Oxytelinae sp.	1		a small rove beetle: joined meso- and metasterna; probably *Anotylus* or *Oxytelus*
Cryptolestes ?ferrugineus	4 at least	2 at least	'rust-red grain beetle': heads, prothoraces, elytra and abdomens; almost certainly this species
?*Cryptophagus* sp.	1		badly distorted head
Palorus ratzeburgi	1		Head
Apion sp.		1	a weevil: elytron
?*Sitophilus granarius*	1	1	grain weevil: joined femora and tibiae; almost certainly this species
Parasitica sp.		1	small parasitic wasp: head
Pseudoscorpiones sp	1		false scorpion: damaged chelicerae
Acarina spp.	many	several	mites: several kinds