

# **Insect Remains from the Annetwell Street Site, Carlisle\***

## **REPORT 6**

### **Samples from Period 3 Roads**

By F. D. Large and H. K. Kenward

Environmental Archaeology Unit,  
University of York

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\*Carlisle Excavation Unit site code: CAR80-84ANN

#### **Summary**

Eighteen assemblages from external deposits of Period 3, mostly directly associated with roads, have been examined. Most were small and almost all appear to have consisted largely of background fauna.

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## Introduction

This is the sixth report on insect material from the Annetwell Street site, Carlisle, presenting species lists, summary statistics and interpretations.

*Table 1. Annetwell Street, Carlisle. Descriptions of the sample material in sample number order. Water state was moist unless otherwise indicated.*

Sample number	Context number	Description
292	3981	Dark brown organic clay silt, with some yellow flecks. Very uniform and very sticky.
298	4142	A mid grey, plastic slightly sandy clay with mm mottles common and some pink clay silt. Very small stones and wood fragments present.
313	4265	Mid grey/brown, crumbly, slightly sandy clay silt, Small stones present.
328	3948.2	Dark grey/brown plastic, humic, slightly sandy clay silt. Some yellow/brown sandy clay patches and herbaceous detritus greater than 2mm. Moist-wet.
336	4512	Mid-dark grey/brown plastic, slightly sandy clay silt. Medium stones and wood fragments present.

352	4670	Mid-dark grey crumbly sandy silt. Patches of yellow/grey silt and pink clay. Small and very small stones present.
354	4807	Mid-dark purplish brown, crumbly, sandy clay silt. Patches of pink sandy silt. Small stones abundant.
356	4859.1	Mid-dark grey/brown, plastic-crumbly, sandy silt. Small and large stones present, charcoal, wood fragments and pale silt patches present.
362	4859.2	Mid brown externally, black and reduced internally. A sandy silt with obvious plant fragments.
421	5660.1	No soil description documented.
434	5660.2	Mottled mid-light brown silt with some small stones and wood fragments.
435	5660.3	A sandy silty clay with gravel, ranging from pink brown to dark brown. Probably boulder clay. Moist-wet.
448	5802.1	Mid brown crumbly, slightly sandy clay silt. Patches of orange clay, pinkish clay and pinkish silt. Twig fragments abundant.
449	5802.2	Mid brown-black sandy silt with pale flecks. Plant and wood fragments present.
450	5312	No soil description documented.
451	5835	Dark brown, very humic silt with some paler flecks. Mostly fine organic matter. Some wood present.
456	6056	Mid brown and black clay silt.

*Table 2. Annetwell Street, Carlisle. Descriptions of dry-sorted sample residues in sample number order.*

Sample number	Context number	Description
292	3981	Mostly organic with wood, charcoal and mammal bone fragments.
298	4142	Large amounts of charcoal, some wood, sandstone and some shellfish fragments.
313	4265	Mainly sand and stones with some wood, charcoal, a nutshell fragment and small pieces of mammal bone.

328	3948.2	Organic and sandy, lots of wood, some charcoal, seeds and a few pieces of mammal bone (some burnt).
336	4512	Small amounts of wood, charcoal, nutshell, sandstone, and three pieces of small mammal bone.
352	4670	Some wood, charcoal and nutshell fragments. Pieces of mammal bone and a part of a cattle scapula.
354	4807	Moderate amounts of wood and some nutshell fragments.
356	4859.1	Mostly mineral - sand and stones with small amounts of wood, charcoal, mammal bone fragments and lots of nutshell pieces.
362	4859.2	Quite a lot of wood, some charcoal, a few seeds and scraps of burnt mammal bone.
421	5660.1	Small quantity of wood.
434	5660.2	Mostly mineral with some wood and charcoal.
435	5660.2	Stones and sand with fragments of wood.
448	5802.1	Small quantity of charred wood, some charcoal and nutshell fragments.
449	5802.2	Mainly organic with some wood, charcoal, nutshell and a piece of eggshell.
450	5812	Wood and sand with some charcoal.
451	5835	Organic residue with wood, charcoal, seeds, nutshell fragments and a skeleton of <i>Arvicola terrestris</i> .
456	6056	Lots of wood, some charcoal, seeds, nutshell fragments and some mammal bone.

## 2. Practical Methods

For a detailed description of the methodology employed refer to Report 2 in this series.

## 3. Interpretative Methods

Interpretation is discussed by Kenward (1978), Kenward (1982) and Hall *et al.* (1983). The methods are based on (a) species composition, (b) main statistics such as concentration, 'diversity' and the proportions of certain ecological groups, and (c) population structure, as revealed by rank order and cumulative frequency plots.

## 4. Results of the Analyses

[Revised 2008. Data for this project can now be viewed in:

Kenward, H. (1999). Data archive: Insect assemblages from Annetwell Street, Carlisle (revised edition). *Reports from the Environmental Archaeology Unit, York* **99/32**, 126 pp.

The original edition of these reports included a large paper data archive. This has been omitted from the present version.]

## 5. Discussion of the Sample Assemblages

The assemblages were very small and had a character typical of such groups from Roman surface deposits with waterlogged preservation. They are all dealt with briefly to avoid repetition. The samples were of 1kg, 'test' processed and 'scan' recorded unless otherwise stated.

### 5.1 Samples from Intervallum Street (West)

#### 5.1.1 Sample 313, Context 4265

This sample was taken from drain A4275, period 3A/2.

The flot contained abundant cereal bran, some seeds, mites and one *Leptocera* sp. puparium. Beetle remains accounted for an estimated 59 individuals of 39 taxa. Only 17% were grain beetles. Decomposers made up 53% of the assemblage, but there was nothing to suggest that they bred. The fairly (proportionally) abundant outdoor forms (%N OB = 22) were ecologically varied and may have been background fauna.

#### 5.1.2 Sample 328, Context. 3948.2

A gully fill from period 3A/2 was the source of this sample.

Quite a large flot contained seeds, some charred grain, many mites and two scale insects.

A small, assemblage of beetles and bugs was recovered (N = 40, S = 33), only 13% being grain pests.

#### 5.1.3 Sample 336, Context 4512

This sample came from a broad U-shaped gully of either period 3 or 3A/1 construction. Apart from beetles, the flot, yielded a scale insect, mites and many *Leptocera* sp. puparia.

Twenty-three beetle taxa were noted and the number of individuals estimated as 36. The most abundant beetle was *Carpelimus pusillus*, which exploits man-made foul matter as well as waterside habitats. *Carpelimus* species are, however, suspected to have been rather common in the urban 'background fauna', and such an origin is possible for the whole of the present assemblage.

#### 5.1.4 Sample 352, Context 4670

This sample was taken from an area north of the east gate tower, belonging to period 3B/1.

The fauna had no clear implications, although outdoor forms were unusually abundant (%N OB = 38, S OB = 41) and decomposers exceptionally few (%N RT = 29). Over half of the decomposer component was made up by forms particularly associated with foul habitats (N RF as %N RT = 54). The insects may have been mostly background fauna, but there may also have been a component associated with dung near to the point of deposition.

All of these samples gave small assemblages of insects and the majority may have had a 'background' origin. There was no evidence of any breeding community, although a few dung beetles may have been attracted to herbivore droppings, a few phytophages have lived on weeds, and some of the ground beetles may also have found habitats here and there.

## **5.2 Samples from Intervallum Street (East)**

### *5.2.1 Sample 298, Context 4142*

A period 3B/1 sample of demolition silt from the south-east area of the street.

Abundant cereal bran, some seeds, charcoal and mites were found in the flot, as well as beetles. The last were not numerous, however: N = 28; S = 24. Again, these might all have originated as background fauna.

### *5.2.2 Sample 356, Context 4859.1*

This and the following sample were taken from the woody silt fills of drain A4858, belonging to the demolition phase of period 3A/2.

The flot contained some seeds, several mites and three *Leptocera* sp. puparia. About 61 individuals of Coleoptera were present; these included representatives of 37 taxa. A quarter of the individuals were grain pests. The fauna had no special character.

### *5.2.3 Sample 362, Context 4859.2*

Taken from the area described above but perhaps not part of the demolition phase. The small flot contained quite a few mites, some charcoal and many puparia: 20 *Leptocera* sp. and 6 *Copromyza* sp. These puparia offer a hint of foul conditions, but no more.

The beetle assemblage was again small, with 25 taxa and 37 individuals. Of these, 41% were grain pests and the remaining assemblage had no special character.

### *5.2.4 Sample 421, Context 5660.1*

This and the following two samples were derived from a deep narrow gully containing silt and deliberate back-fill. It was situated south of structure A6272 and belonged to the period 3A/1 demolition phase. The flot was small with lots of heather shoot tips, but only three species of beetle, each represented by one individual.

### *5.2.5 Sample 434, Context 5660.2*

From the gully described above, this sample yielded a flot containing a mite, a scale insect and a small beetle assemblage (N = 14, S = 13) of no special character.

### *5.6.2 Sample 435, Context 5660.3*

Also from the previously described gully, the flot from this sample contained some cereal bran scraps, a mite and three beetles.

### *5.2.7 Sample 456, Context 6056*

A sample of back-fill from drain A6056. The flot from this 3kg detail-recorded sample contained puparia (a few Sphaeroceridae sp.), one ?*Drosophila* sp. and a large assemblage of beetles (N = 315, S = 97). Almost half of these were grain pests (%N G = 48). When these were subtracted the residual assemblage was very diverse (alpha = 90, SE = 13) and quite rich in outdoor forms (%N OB = 29, %S OB = 38), half of which were phytophages (N P as %N OB = 49). The plant feeders were, where identifiable sufficiently closely, mostly likely to have originated on weedy vegetation. It is quite likely that this assemblage consists largely of background fauna, the high concentration of remains being a result of concentration by flowing water.

### ***5.3 Samples from Road between A5754 and A6272***

This and the following sample were taken from a period 3A/2 pit, which was linked to a gully on its west side and open during the demolition of period 3B structures. Many seeds and several mites were found in the flot.

A modest number of beetles and a single bug were present – 64 individuals of 42 taxa. Grain beetles were not too abundant (13%) and the assemblage as a whole was typical of those from the Roman deposits of the present site.

#### *5.3.2 Sample 449, Context 5802.2*

Taken from the area described above, this sample was processed as a 3kg detail subsample, being regarded as especially likely to provide a substantial fauna. Many puparia were found in the flot (*Leptocera* sp., and also six *Drosophila* sp.).

173 beetles and two bugs were recorded, and there were 65 taxa. Outdoor individuals were rather rare (%N OB = 8) and grain pests not especially important (%NG = 19). Decomposers were fairly numerous (%N RT = 54, 66% after removal of the grain beetles), and a large proportion of them were coded RD (N RD as %N RT = 61). Foul-matter taxa were rare (only 3% of the RT component) and the greater part of the assemblage appears to have exploited fairly dry decomposing plant remains. Whether the community developed within the pit, or perhaps within a building whose cleanings were dumped in the pit, is uncertain. The former appears to be more likely.

#### *5.3.3 Sample 540, Context 5812*

Taken from the fill of drain A5811, period 3A/2. In addition to Coleoptera the flot contained some mites, one *Leptocera* sp. and two Drosophilidae sp. puparia.

There were only 45 beetles of 31 taxa. The assemblage was generally undistinguished, apart from the presence of two scolytids, *Dryocoetinus villosus* and *Taphrorychus bicolor*, both single individuals. *D. villosus* is found mainly under oak bark, and *T. bicolor* is associated principally with beech and oak. Both have also been recorded from various other trees. There was also a single cisid, almost exclusively associated with fungi growing on wood.

#### 5.3.4 Sample 451, Context 5835

A shallow gully of period 3A/1 was the source of this sample. The flot yielded many seeds, some mites and several fly puparia, including two *Paregle radicum*, two unknown species and several Sphaeroceridae sp.

An assemblage of beetles and bugs of no special character (in the context of the present phase of this site) was recovered: there were only 41 individuals of 28 beetle taxa.

### 5.4 Samples from Main N/S Road

#### 5.4.1 Sample 292, Context 3981

This sample of grey silt came from the west road drain (A3982) of period 3B/1. Some mites and seeds were present in the flot.

The assemblage of beetles was among the largest described in this report - about 92 individuals of 38 taxa. Grain beetles accounted for only 14% of the individuals, and the low diversity of both the whole assemblage ( $\alpha = 24$ ,  $SE = 4$ ) and that remaining after removing the grain beetles ( $\alpha = 24$ ,  $SE = 5$ ) lends credence to the subjective impression that some of the abundant taxa bred, either *in situ* or very close by. Damp silt with some organic content might have provided a habitat for *Carpelimus bilineatus* and *Anotylus rugosus*, but some of the other more abundant taxa would require, for example, plant litter. These may have been background fauna of nearby origin, however, and the remainder of the assemblage may be background fauna also.

#### 5.4.2 Sample 354, Context 4807

This material was taken from a demolition deposit of dark grey silt in drain A3441. The flot was composed of much tattered plant material, many seeds, many mites and a reasonably well preserved beetle assemblage. Forty-three taxa were recorded, with 67 individuals. No ecological component was particularly well represented and this may have been largely a 'background' assemblage.

## 5. Discussion

Most of the assemblages dealt with here were small or very small, and, were probably mostly background fauna. Some of the insects may have lived at or around the points of deposition – a few weeds and some dung or other decaying matter, perhaps being indicated. The evidence is, however, surprisingly unclear. The only large assemblage was probably also primarily background fauna, in this case concentrated by flowing water.

## 6. Acknowledgements

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## 8. References

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