

Insect remains from various sites in Southwark: Draft for consultation

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Introduction

This report is an account of insect remains from a large number of samples from several sites in Southwark. The material was provided in processed form. The majority of the assemblages were dry in plastic tubes, and the remainder in IMS in glass vials. In some cases, material in both forms was available for a sample. Almost all the groups of insects were, by comparison with the material normally used for interpretation, very small, often only one to a few fragments. In a few cases some twenty or so individuals of beetles and bugs were represented by the remains; the largest group was perhaps twice this size, still less than half the number of individuals generally taken as a reasonable working minimum for interpretation of a mixed assemblage (Kenward 1978). The dry material appeared to be biased in favour of large taxa, and presented considerable difficulty in handling because of the effect of static attraction between fossils and the plastic vials. Many fossils were damaged while attempting to remove them, and others sprang away as a result of static repulsion as soon as they were taken from the tubes. It was not practical to use IMS to flush out remains and re-store them in spirit since the storage tubes were of a material which rapidly crazes then splits if exposed to alcohol.

In view of the nature of the material, and the very limited funding and time scale, no attempt has been made to identify every fossil. Instead, the remains from each tube were tipped into a Petri dish and quickly examined under the binocular microscope. Where there were few fragments they were often identified through the wall of the tube. For each assemblage a list of taxa seen during this process was made, together with a very crude estimate of numbers, sometimes using a semi-quantitative scale (1, 2 or 3 individuals; 'several' (probably 4-9); 'many' (ten or more), Kenward *et al.* 1986). Identifications were not pressed unless it was plain that important information would be obtained.

No lists of taxa are presented in view of the way the material was recorded; taxa of value in interpretation (or which were particularly numerous) are mentioned in the discussion of each assemblage.

Results and interpretation site-by-site

Sylvester Buildings

Dry and spirit material from each of two samples was examined.

Two dry subsamples from sample V 16, organic clay in a shallow cut dated AD 40-70, gave small assemblages including earthworm egg capsules and a probable caddis fly larval case. There were also some fly puparia and mites. The beetles comprised aquatic and terrestrial forms, but the former were not sufficiently numerous to indicate aquatic deposition. Overall, this appeared to be fauna from natural or semi-natural habitats, and there were no synanthropic taxa to indicate nearby human occupation. Two spirit samples from sample 16 were submitted. One included only scraps of insect cuticle, the other some identifiable remains including clearly contaminant (modern) fragments of a ptnid and a rhyncholine weevil. Fossils included a range of taxa indicating natural or semi-natural habitats. A colymbetine water beetle, *Hydraena* sp. and *Hydrobius fuscipes* (Linnaeus) bore testament to aquatic habitats, *Geotrupes* sp. and *Onthophagus* sp. to dung.

Subsamples from sample III 8 (dry material) were among the richest from this group of sites; nevertheless, under forty individuals of Coleoptera were represented. The material was collected from the silty fill of the construction cut for a wood-lined pit dated to the 11th to 12th centuries. A single resting egg of the aquatic bryozoan *Lophopus crystallinus* (Pallas) was noted. There were a few aquatic beetles, but the great majority were terrestrial, representing a variety of habitat types. None of the identified taxa were particularly synanthropic, and there was no evidence for large quantities of decaying matter. Interpretation of these small groups must remain uncertain, but subjectively it appears that they indicate herbaceous vegetation (including perhaps crucifers, on which *Phyllotreta nemorum* (Linnaeus) group are found and clovers, *Trifolium* sp., one of the hosts of *Hypera punctata* (Fabricius)). There were two ground-living weevils, *Barypeithes ?pellucidus* (Boheman) and *Barynotus ?squamosus* Germar, species of both these genera usually being found amongst low vegetation. There also seems to have been herbivore dung; there were specimens of at least three *Aphodius* spp., *Onthophagus* sp., *Geotrupes* sp., and probably *Sphaeridium bipustulatum* Fabricius. There were two specimens of the powder-post beetle *Lyctus linearis* (Goeze) and a single *Trixagus* sp. The former is found in fairly dry decaying timber, which it reduces to dust; the latter is generally associated with wood bearing bark, generally in woodland situations.

Overall, then, the material from sample III 8 was not at all typical of medieval occupation sites, with the common synanthropes conspicuously absent. (It may be that the sampled material was redeposited, perhaps originating in Roman layers.)

Chaucer House

This site was represented by both dry and spirit material. Two tubes of dry material from samples from a prehistoric peat, III 40 and VIII 32, gave between them only a few insect fragments of no interpretative value.

Samples from Roman channel fills (IX 26, 33, IV 144, all spirit material) gave almost no remains, most of these being scraps of cuticle; only 144 gave identifiable invertebrate material, a single resting egg of the aquatic *Lophopus crystallinus*.

Two of three subsamples of sample III 271, from the fill of a Roman ditch, gave modest assemblages, although the material was dry. A third tube contained only a few badly rotted fragments. Cases of caddis fly (Trichoptera) larvae were abundant, there was a single *Lophopus crystallinus*, and there was a variety of aquatic and waterside beetles: *Helophorus* sp., *Hydrobius fuscipes*, Hydrophilinae sp. (several), *Ochthebius* sp., *Hydraena* sp., *Dryops* sp., Donaciinae sp. and *?Notaris acridulus* (Linnaeus). Terrestrial habitats were not indicated in detail, but the recorded taxa could have originated in an area with some herbaceous vegetation and dung. There was no indication of large amounts of decaying matter such as typically accumulated by human activity, and no synanthropes were recorded.

A post-Roman 'dark earth', represented by sample VI 99, gave only mineralised remains of fly puparia and two kinds of millipede, together with various structures which resembled internal casts of unidentified arthropods.

A sequence of samples from 16-17th century Pit F was represented, albeit incompletely. The lowest in the sequence, III 156, gave an assemblage which included many *Trox scaber* (Linnaeus), an *Aphodius* dung beetle and a Rhyncholine weevil. Rhyncholines are wood borers. *T. scaber* is typically found in birds' nests, especially in hollow trees in nests containing bones, and in other similar animal detritus, but probably can also live in compost-like material (Jessop, 1986; Palm, 1959; Hall *et al.*, 1983, 183). It is regularly found in small numbers in archaeological deposits. The assemblage from sample 223, from the overlying layer, included several tens of *T. scaber*, by far the largest numbers in which, so far as the writer is aware, the species has ever been recorded from archaeological deposits. There were a few other insects, including *Pterostichus madidus* (Fabricius), a fairly strongly synanthropic ground beetle. Sample III 154, the highest in the sequence, gave a few *T. scaber*, three *P. madidus*, and a few other remains. Each of these groups also included some woodlice (probably all or most being the common *Porcellio scaber* Latreille, *P. dilatatus* Brandt and *Armadillidium vulgare* (Latreille)); these woodlouse remains were slightly to heavily mineralised. There appeared to have been strong selection for larger remains in this group of samples, so further interpretation would be unwise.

Sample III 88 came from fills of a post-medieval pit, Pit A. There were abundant sphaerocerid flies, all mineralised, two *Trox scaber* and a single *Pterostichus ?melanarius* (Illiger) (one of the commonest ground beetles, like *P. madidus* often found around, and even straying into, human dwellings).

175 Borough High Street

Roman material

Many samples from this material had been processed for insect remains and it appears that large assemblages could have been recovered using conventional techniques. Several of the samples were represented by both 'dry' and 'wet' material.

Channel 1 was represented by two samples, T13 25 and T19 25A; the latter gave a single ground beetle (*?Harpalus* sp.) and a water beetle (*Helophorus* sp.), but the former only some scraps of cuticle.

Dry samples II 85, II 88, T9 25, 27 and 28, T16 30, 32 and 33, from Channel 2 and interpreted as representing waterlain deposits, gave only a few insects of little interpretative significance. Sample T15 68 included a fly puparium and a single grain weevil *Sitophilus granarius* (Linnaeus). Spirit samples from these deposits gave more remains. T9 28 included aquatics (*Ochthebius* sp. and an elminthid, the latter indicating clean flowing water), decomposers (for example *Lathridius minutus* (Linnaeus) group, *Cordalia obscura* (Gravenhorst) and *Gyrohypnus* sp.) and synanthropes including *Sitophilus granarius*. T11 88 and T16 60 between them included the common stored products (typically grain) pests *Oryzaephilus ?surinamensis* (Linnaeus) and *Cryptolestes ?ferrugineus* (Stephens), a few generalised decomposers and some species indicating natural or seminatural habitats. T9 27 gave a modest and ecologically mixed group, again with some grain beetles, but with some aquatic and damp ground taxa (*Helophorus* sp., *Platystethus cornutus* (Gravenhorst) group, *Cyphon* sp.), decomposers and phytophages. T9 25 included, in addition to a range of remains reminiscent of those from other samples from Channel 2, a single *Aglenus brunneus* (Gyllenhal), a rare species today but very common in archaeological deposits (Kenward 1975, 1976). The influence of human occupation was thus quite significant while the waterlain deposits in Channel 2 formed.

Most of the dry samples from mixed dumps in Channel 2 (T9 18, 20 and 21, T19 20) included at most only a few non-diagnostic scraps of insect cuticle. However, T11 52, represented by two tubes of dry material and one of spirit-preserved specimens, gave a modest collection of remains, mostly decomposers but including *Paederus* and *Sitona* species. Sample II 51 included only one fly puparium, and T9 18 a few *Lathridius minutus* group (decomposers found in a wide range of material which is not too wet), *Cryptolestes* sp., and some scraps of cuticle.

Samples II 56, T6 56, and T8 43, dry material representing waterlain fills of Channel 3, were rather depauperate, with 6 56 giving a few remains perhaps indicative of human disturbance in the surroundings. Sample II 82 (dry material), also from Channel 3 waterlain deposits, gave a modest fauna. This included representatives of various habitats; there were two woodworm beetles (*Anobium punctatum* (Degeer)), some dung beetles (two *Aphodius granarius* (Linnaeus) and an unidentified individual of a second *Aphodius* species), and some species from less well defined semi-natural or man-made habitats. Spirit and dry groups from a further sample, 6 60, included *Sitophilus granarius*, several fly puparia and remains of a variety of other beetle taxa of various origins.

A considerable number of dry samples from mixed fills of channel 3 were examined. Sample II 81, 6 41 and 44, 8 32, 33, 35, 38, 40, and 42 were almost barren, although there were specimens of *Ptinus ?fur* (Linnaeus), generally synanthropic but also found in birds' nests etc., *Tenebrio obscurus* Fabricius and *Blaps* sp., typically found about human habitations, and *Sitophilus granarius*, an obligate synanthrope, as well as an assortment of other taxa from various habitats. Samples II 76 and II 79 both included a small number of insects. The former gave 'several' fly puparia and some foul decomposers, while the latter assemblage included two *Anobium punctatum*, a single dung beetle and a donaciine chrysomelid (this last from aquatic-emergent vegetation).

Sample 8 18 was from a dump in Channel 3; it gave a 'many' large fly puparia and a single beetle.

Sample II 51, a mixed dump channel fill, gave only a single fly puparium and II 52, a mixed dump, perhaps in a channel, produced a small but well-preserved assemblage which included *Oryzaephilus* sp. (probably the typical stored products species *O. surinamensis*) several fly puparia, *Aphodius granarius*, and some other taxa typically found in urban archaeological assemblages. Although by no means large enough for reliable interpretation, this group may have originated in dumped organic debris, or be background fauna from nearby occupation.

(175 BHS sample experiment from subs 1-6, approx 1.5 kg. Not on list. This material, taken as a whole, included a considerable number of beetles. The fauna closely resembled material from Roman urban deposits at, for example, Tanner Row, York (Hall and Kenward, 1990). The great majority of the species were decomposers, with some species indicative of dung or other foul conditions, some, like *Anthicus formicarius* (Goeze), perhaps indicating moist but open-textured remains, and others more typical of fairly dry accumulations of plant debris. There was a single *Oryzaephilus* sp. and some grain weevils, *Sitophilus granarius*.)

A sample from Quarry 2 - T22 27, dry material - gave a modest list of taxa, all likely to have originated in natural/seminatural habitats. There was only a single aquatic (*Helophorus* sp., usually the most abundant aquatic taxon in 'background fauna'). Plant feeders included two *Apion* species, ?*Chaetocnema concinna* (Marsham) and a pentatomid bug (one of the 'shield bugs', unfortunately crumpled and not identifiable). There was a bark beetle (Scolytidae), four species of ground beetle, and the chafer *Phyllopertha horticola* (Linnaeus), and a number of other taxa.

From Quarry 3, sample T22 39 was represented by dry material (*Sitophilus granarius* and two other beetles only) and a tube of spirit material which included a small number of species of mixed origins. T22 40 gave only a specimen of a dung beetle (*Onthophagus*) sp., and T22 38 several puparia and a *Clivina* ?*fossor* (Linnaeus).

Two assemblages from samples from well 2 were submitted, T17 7 and 9. The first of these included 'several' *Alphitobius* sp. (found in stored products), two woodworm beetles (*Anobium punctatum*) 'several' *Cercyon analis* (Paykull), a decomposer found in various kinds of rotting matter, *C. haemorrhoidalis* (Fabricius) (associated with fairly foul conditions, where it is often accompanied by *C. analis*), *Oxyomus sylvestris* (Scopoli) (quite possibly from the same habitats as the previous two species), and a few other taxa from assorted habitats. Sample T17 9 gave fewer remains; although only *A. punctatum* was in common with the list from sample 7 there is nothing to suggest a definite difference from the assemblage from that sample.

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All this material was in spirit.

Phase 7

Sample 196 78, grey-brown organic silt, the lowest layer within a 1st century roadside ditch, produced a small group of insects, no species being represented by more than one individual. Likely fauna of the ditch and its surroundings included *Ochthebius* and *Limnebius* sp., *Notaris* ?*acridulus*, and perhaps *Anotylus nitidulus* (Gravenhorst). Three 'dung beetles' were present, an *Onthophagus* sp. and two *Aphodius* species. The only other beetles were *Oxyomus sylvestris*, found in a range of fairly foul rotting matter, and a plant-feeding weevil, *Ceutorhynchus* sp. It must be emphasised, however, that all the remains in an assemblage such as this might be 'background fauna' or water-transported, and so not be a reliable guide to local conditions.

First century silting of the ditch was represented by Sample 189 75, which gave modest numbers of insects, although they were poorly preserved. Aquatic/waterside habitats were represented only by a single *Notaris* sp. Decomposers included the dung beetles *Aphodius* and *Onthophagus* sp., *Platystethus arenarius* (Fourcroy) (also associated with foul matter) and *Megasternum obscurum* (Marsham), a very eurytopic species found in situations ranging from litter at the base of plants to foul corpses and fungi. Plants were represented by two *Apion* species and *Notaris* sp. Only *Sitophilus granarius* stood as evidence of human presence.

Sealing the previous material was a peat layer, sampled as 188 76b. This produced only a single *Aphodius* sp. and some scraps of insect cuticle. Two samples from the top fills of the ditch were seen. Sample 187 62 only included some unidentifiable cuticular scraps, while 187 72 gave poorly preserved remains, among them several *Aphodius* sp?p. and the very eurytopic decomposer *Cercyon analis*. Sample 195 74 was from sandy silt on top of the ditch fill. Preservation was, not surprisingly in open-textured material, very poor, and the remains resembled a very small random extract of the fauna of the lower ditch fills.

Phase 8

Sample 79, context 200, was from a stake hole, regarded as prehistoric. There were perhaps three *Megasternum obscurum*, four beetle taxa from assorted habitats, and a single *Palorus* sp.; the latter is more likely to have been of Roman than of prehistoric date.

The early Roman ditch fill 116 was represented by sample 40, which gave only a single individual assigned to the *Lathridius minutus* group. There were three samples from fills of recuts of this ditch. Sample 43, from context 170, gave only unidentifiable scraps. By contrast, 58 from 190 included a moderately large number of remains, but preservation was poor. No strong synanthropes were noted, and there was some resemblance to material from Phase 7 ditch fills. The final fill of the recut of the ditch was sampled as 43 from context 170; only indeterminate scraps were recovered.

Phase 12

Two samples from fills of a late medieval pit, sample 2 from context 12 and 3 from 13, gave material which, where identifiable, was of probable modern contaminant origin.

General comments on the material

This kind of material, as already stated, is not very suitable for interpretation. There were not enough specimens in any assemblage for individual interpretation, and the groups of samples from each site were too heterogeneous and too small in number for a broad view to be obtained by amalgamation of their fauna. The groups of insect remains recovered from the present sites do, however, give some hints as to prevailing conditions. They have much in common with the fauna observed from contemporaneous deposits elsewhere. The early phases of ditches and channels at Chaucer House and Borough High Street bear comparison with the rather better sequences at Tanner Row, York (Hall and Kenward 1990) and Copthall Avenue, London (Allison and Kenward 1987). The transition from essentially 'semi-natural' to more urban habitats, presumably associated with increasing density of occupation, seen at those sites is hinted at, albeit in shadowy form, in the present material.

What is most clear from this work is that sites in Southwark at least sometimes give excellent insect preservation; investigation of insects (in combination, of course, with other remains) from future excavations in a detailed and systematic way will doubtless provide the wealth of detail obtained from large-scale work elsewhere - for example at Tanner Row, York (Hall and Kenward 1990).

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