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**Technical Report: Environment and industry at Layerthorpe Bridge,
York (site code YORYM 1996.345)**

by

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Summary

The results are reported of analyses of plant and animal remains from a series of samples of often highly organic sediment, and of a modest corpus of hand-collected bone, from deposits of Roman to 19th century date from excavations in two areas at Layerthorpe Bridge and in Peasholme Green.

Deposits close to the line of the bridge included Anglo-Scandinavian and medieval deposits rich in bark, perhaps from tanning, and some late Anglo-Scandinavian/early medieval sands containing abundant remains of flax stems (which may indicate retting). One early medieval deposit seems to have contained evidence for flax scutching (fibre extraction). Many deposits appeared to contain charred and uncharred peatland materials and biological remains, likely to represent imported turves, and there may even have been some evidence for debris from thatching. Later deposits (dating to the 19th century) were essentially clean river silts.

KEYWORDS: LAYERTHORPE BRIDGE; PEASHOLME GREEN; YORK; ROMAN; ANGLO-SCANDINAVIAN; MEDIEVAL; 19TH CENTURY; PLANT REMAINS; BARK; FLAX; INSECTS; MOLLUSCS; BONES; TANNING; RETTING; TURVES; RIVER DEPOSITS

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List of tables

Table 1. Layerthorpe Bridge, York: contexts from which GBA subsamples and SPOT samples were examined for plant and invertebrate macrofossils.

Table 2. Layerthorpe Bridge, York: numbers of contexts for which bone was recorded or scanned, by trench and date.

Table 3. Layerthorpe Bridge, York: details of radiocarbon dates for samples of bark, Trox beetles, flax stems and bone.

Table 4. Layerthorpe Bridge, York: complete list of plant and animal remains recovered from deposits of Roman to 19th century date.

Table 5. Layerthorpe Bridge, York: lists of plants remains and other components of the samples, in context, sample and subsample order.

Table 6. Layerthorpe Bridge, York: 'abundance-indicator' values (AIVs) greater than 50 for the plant remains from GBA subsamples. See Table 7 for an explanation of the codes for groups.

Table 7. Explanation of AIV group codes used in Table 6.

Table 8. Layerthorpe Bridge, York: main statistics by subsample for assemblages of adult Coleoptera and Hemiptera (excluding Aphidoidea and Coccidoidea).

Table 9. Abbreviations for ecological codes and statistics used for interpretation of insect remains in text and tables

Table 10. Layerthorpe Bridge, York: species lists by subsample for insects and other macro-invertebrates.

Table 11. Layerthorpe Bridge, York: records of Trox scaber and bark/bark sclereids.

Table 12. Layerthorpe Bridge, York: Spearman's rank-order correlation coefficients (and probability estimates) for semi-quantitative scores for bark fragments, bark sclereids and Trox remains.

Table 13. Layerthorpe Bridge, York: hand-collected vertebrate remains from Trench 1, Area 1.

Table 14. Layerthorpe Bridge, York: hand-collected vertebrate remains from Trench 1, Area 2.

Table 15. Layerthorpe Bridge, York: hand-collected vertebrate remains from Trench 2.

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Introduction

Excavations in the Layerthorpe Bridge/Peasholme Green area of York were undertaken by MAP Archaeological Consultancy Ltd. in 1996-7 during works to replace the existing bridge and remodel the approach roads to it. Samples for biological analysis and hand-collected bones were recovered, sometimes under extremely difficult field conditions, during three stages of the archaeological work: (i) in an initial watching brief on the excavation of a coffer dam in the area to the north of the bridge (along the bank of the River Foss in Jewbury); (ii) in Trench 1, opened behind the dam; and (iii) in Trench 2, opened in Peasholme Green. It was hoped that these excavations would shed light on the development and exploitation of the Foss, and on the line of the medieval street frontage and the nature of Roman activity in Peasholme Green. No samples were taken during other phases of the work; sampling was precluded because of limited access to deposits or the difficulty of working conditions.

An assessment of the biological samples and bones was undertaken by Palaeoecology Research Services in 1997 (Carrott *et al.* 1997b) with funding from City of York Council. It was followed by a programme of radiocarbon dating. On the basis of recommendations for further work and following discussion with the excavators and City Archaeologist, and with additional funding from City of York Council, a second group of samples was examined for plant and invertebrate macrofossils. These comprised larger subsamples from contexts examined during the assessment, or subsamples from contexts not previously examined but for which it was felt an investigation would be rewarding. This main phase of analysis was tightly focused on two questions in particular: the nature of industrial activity in the vicinity in the Anglo-Scandinavian to early medieval period and the history of environmental change in the River Foss.

Assessment and associated radiocarbon dating had shown that some of the deposits included residual or intrusive material, and this has constrained further work on bone and limited the temporal resolution of environmental reconstruction. The deposits yielding evidence relevant to industrial activity included many which were sufficiently closely dated, however, for further analysis to be of value.

This report presents all bioarchaeological data collected during assessment and subsequent detailed analysis of various samples and the corpus of hand-collected bone. Radiocarbon dates are also presented here.

Methods

Samples for investigation of plant and animal macrofossils were examined using methods given by Kenward *et al.* (1980; 1986) following routine description of the sediment in the laboratory.

The bulk-sieved (BS, *sensu* Dobney *et al.* 1992) samples were processed on site using 1 mm aperture mesh and a 500 µm aperture washover sieve, and the site-riddled (SR) samples were processed through 9 mm aperture mesh. The wet residues were examined in the laboratory and notes on the principal components made.

For plant remains from the general biological analysis (GBA) samples, parts of all the residues and flots were 'scanned', with a more thorough examination of the material being undertaken for the 'main phase' work than for the assessment. As well as plant remains, other components of the residues and flots were recorded at the same time, using a 4-point scale of abundance from 1 (1-5 individuals or a few fragments) to 4 (many hundreds of individuals or an abundant component in the sample), the higher scores being related to the original size of the sample, *not* the amount of residue or flot remaining after processing.

Data relating to plants and other components recorded with them were entered directly to a computer database, together with notes about the material. Only specimens required for future reference or further work were retained; these are stored in an appropriate medium in the Environmental Archaeology Unit, University of York.

Interpretation has been facilitated by the use of 'abundance-indicator values' (AIVs), calculated from the abundance scores and a score for the indicator value of each taxon within a series of ecological, use, and other groups (for details, see Hall and Kenward 1990, but note that the abundance scores have here been translated as 1 = 1, 2 = 5 and 3 or 4 = 25 in order to provide a more realistic statistic).

Several of the beetle and bug assemblages were nominally 'scan' recorded (*sensu* Kenward 1992), but a particularly careful record was made and the lists approximate to 'detailed' recording (*ibid.*). Other assemblages were rapid scan recorded (*ibid.*) by HK. Assessment was carried out by Frances Large, who made rough semi-quantitative lists for some assemblages (at a less accurate level than rapid scanning), and more general descriptions for others. Invertebrates were recorded onto data sheets and the records subsequently entered to a *Paradox*-based computer system for data storage and processing.

A record of the preservational condition was made for most of the assemblages recorded during the main phase, following Kenward and Large (1998). In this system, the range of decay or other change shown by individual fossils, and both the modal amount of change and the strength of the mode, are estimated. Three parameters are used: 'erosion' (in broad terms, chemical change, detected as changes in texture and colour, thinning and surface etching), 'fragmentation' (amount of breakage), and the degree and direction of colour change.

Hand-collected vertebrate remains from 72 of the 157 bone-bearing contexts at this site were recorded in detail; subjective records were made of preservation, angularity (i.e. the nature of the

broken surfaces) and colour, whilst quantities and identifications were noted where appropriate. All fragments not identified to species or species group were recorded as 'unidentified'. These included skull, vertebra, rib and shaft fragments and various other elements. Material from the remaining 85 contexts was scanned and brief notes were made on bones suitable for biometrical and age-at-death analysis. Bone was recorded from deposits where there were more than five identifiable recovered fragments, or where interesting additional species were present. Examination of the residues from the BS and SR samples provided little additional information, as there were very low concentrations of vertebrate remains. Fish and bird bones were only noted in a few instances, whilst no small mammal remains were observed.

Results

A list of contexts and samples for which plant and invertebrate remains were examined is given in Table 1 and contexts examined for vertebrate remains are listed in Table 2. The results of radiocarbon dating are presented in Table 3. Complete lists of plant and animal taxa recorded from these excavations are given in Table 4 and lists of taxa by context and sample in Tables 5 (plant remains and other components), and 10 (insects and other invertebrates). Selected statistics for the assemblages of plant remains appear in Table 6, and for the insects in Table 8. The range of identified vertebrate species recovered is shown in Tables 13-15, together with the total numbers of fragments, numbers of measurable bones and numbers of mandibles with teeth *in situ*.

In the text, authorities for Latin names are not given; they may be found in Table 4.

Radiocarbon dating

A total of 20 samples were submitted for radiocarbon dating and all gave a result (Table 3). The central calibrated date for most fell in the Anglo-Scandinavian period, but a few samples

may have been earlier, and two (both of bone) were of post-Conquest date.

Of the three samples dated archaeologically as post-Roman/pre-Anglo-Scandinavian, two (bark and bone from Context 2189) were clearly Anglo-Scandinavian, while the third (bone from 2191) may have been of Anglian date, although the upper limit of the 2-Sigma range overlapped the early Anglo-Scandinavian period.

Of the samples dated archaeologically as Anglo-Scandinavian, most gave dates firmly within this period, but two (both bone, from Contexts 2018 and 2037) appeared to be rather later. The most likely explanation for this is that the bone had sunk into soft unconsolidated sediment. The samples dated archaeologically to the medieval period—two of bone and two of flax (*Linum usitatissimum*) stems—were probably earlier, though the 2-Sigma ranges of three of them overlapped with the early post-Conquest period.

In the following account, the material is dealt with in the following order:

- (i) Trench 1 (contexts in 1000s and 2000s)
- (ii) Watching Brief for Trench 1 (contexts less than 100)
- (iii) Trench 2 (contexts in 3000s)

Contexts for which no samples were examined or for which no hand-collected bone was available are not included.

Vertebrate remains

N.B. Vertebrate remains are considered for the two areas of Trench 1 separately.

Trench 1

Area 1 (Table 13)

In total, 13 bone-bearing contexts from this trench were recorded, most being dated stratigraphically broadly to the medieval period (though

radiocarbon dating of selected material suggested a broader date range). Vertebrate remains were well preserved and mostly dark brown or brown in colour. A small number of fragments from Contexts 1024 and 1026 showed rounded edges, whilst a few of those from Context 1047 were rather 'battered' in appearance. Cattle and caprovid remains predominated, with a few pig, dog, chicken and goose fragments also present. Evidence for very small cattle was provided by a single mandible (Context 1026) and a cranial fragment with horncore attached (Context 1038). Both bones represented adult individuals, but of a size smaller than that of the Dexter cattle in the EAU modern comparative collection. Goat remains were identified from three contexts (1027, 1038 and 1039) and included two horncores, a cranial fragment (with horncore removed) and a metacarpal.

The remains showed heavy and systematic butchery, particularly noticeable being the longitudinal splitting of cattle long bones. Cattle mandibles were also heavily chopped, both across the diastema and through the ascending ramus, the latter cut almost certainly intended to facilitate the removal of the tongue. Context 1039 (medieval) contained a number of scorched and/or burnt teeth and mandible fragments. Another common phenomenon, seen throughout the material from this area, was evidence for the deliberate removal of the occipital and parietal portion of many of the caprovid skulls, presumably for access to the brain. In addition, there were a small number of sheep and goat horncores sawn through their bases, and most of the caprovid crania showed evidence of horn removal (horncores had also been removed from some of the few cattle crania recovered). The unidentifiable fraction was mainly composed of cattle cranial and mandible fragments, although a few vertebra, rib and shaft fragments were also present.

Area 2 (Table 14)

Bones from 32 contexts were recorded and a further 11 groups were scanned. Although most were of Anglo-Scandinavian and broadly medieval date, a small assemblage which was apparently of

Roman date was also recovered. Most of the material was well preserved, and very similar in character to that from Area 1. Most fragments were 'spiky' (i.e. showing sharp broken edges) but almost all the deposits for which material was recovered yielded a small number of fragments which were rather rounded, whilst a few produced some battered and eroded bones (always less than 10%). Over half of the context assemblages included dark brown fragments, and many other bones were mainly or partly dark brown in colour. Deposits from Contexts 2037 and 2038 produced bone which appeared slightly more battered and eroded than that from other contexts in this area. Additionally, bones from Context 2003 were of rather mixed appearance, showing marked variability of colour and preservation. The four contexts dated archaeologically as Roman yielded bone which was similar in appearance to that from later deposits, showing no marked variability in preservation, colour or 'angularity'. Context 2191 (Roman), however, yielded two human bones, which may have been redeposited material.

Cattle and caprovids were again the best represented species throughout all periods in the deposits from this area. Although a range of elements was present in the assemblages, it was clear that horncores, mandible fragments, teeth and distal limb elements predominated, particularly in the later periods. Other species present included horse, pig, dog, and cat, with limited numbers of chicken and goose fragments (mainly from deposits of medieval date). Small numbers of goat remains were recovered, including three metacarpals and a single metatarsal (from Contexts 2002, 2189, 2190 and 2191) and four horncores (from Contexts 2002, 2011 and 2131). In addition, several very large ram horncores were also recovered (most, once again, having been chopped through the base). Fragments of red deer antler were identified from Contexts 2004 and 2006, one showing traces of scorching at the base of the tine.

Heavy and systematic butchery was noted throughout the material from Area 2 and, on the whole, similar butchery practices to those inferred from the material from Area 1 are implied; cattle long bones and cattle and caprovid crania had

been split longitudinally. Additionally, a single cow scapula was recorded which showed damage consistent with having been hung from a butcher's hook.

Trench 2 (Table 15)

Vertebrate remains from 25 contexts were recorded, whilst those from 74 further contexts were scanned. Most of the bone recovered from Trench 2 was Roman in date. The recorded material was mostly fawn in colour (in 17 of 25 contexts), and preservation was recorded as 'fair' to 'good'. Most deposits (with few exceptions) contained only small numbers of bones—less than 35 fragments per context. Dog gnawing was noted, as was butchery, but the latter appeared to be less extensive than for the material from Trench 1. However, split metapodials were noted in some of the Roman contexts (3006, 3082 and 3142). Although goose and chicken fragments were not numerous, they were apparently more frequent than for Trench 1. A single goat metacarpal was identified from Context 3004, whilst Context 3174 produced a cranial fragment from a polled variety of sheep. Of some interest are the remains of rabbit (from Context 3022) and fallow deer (Context 3033), identified from what were apparently deposits of Roman date, although the presence of fragmented and disarticulated human remains from Contexts 3174 and 3183 may suggest the presence of some intrusive material. Although it was difficult to gain an overall view of the material from Trench 2, a result of the small number of fragments from each context, the combined assemblage did not appear to be very similar to that from Trench 1.

Watching brief

A small quantity of material was recovered during the period of the watching brief. Context 41 (?Anglo-Scandinavian), not surprisingly, contained material similar to that from other deposits of Anglo-Scandinavian and medieval date from Trench 1. Cattle and caprovids were again represented by mandibles, metapodials and phalanges, whilst the effects of butchery

(including evidence of the removal of the back of the skulls and the presence of horncores chopped from the skull) were also evident. Material from Context 6 represented part of a skeleton of a cow of extremely modern appearance (the remains were mostly ribs and vertebrae).

Samples analysed for plant and invertebrate macrofossils

Trench 1

Period 1 (Roman)

No samples of deposits dated to this period were examined.

Period 2

(Post-Roman/Pre-Anglo-Scandinavian)

Context 2191 (?dumping into river)

Sample 311 (GBA) (from 'Column E'; 1 kg): Moist, mid-dark grey (with a yellowish cast), just consolidated (working unconsolidated), humic sand. Variations in humic and sand content on cm and mm scale. Inclusions present: stones (2-60 mm), brick/tile, vivianite, wood, twigs, horncore, oyster.

The moderately large residue examined during the assessment was about 70% by volume organic matter, with very decayed bark and a little wood forming the bulk of this fraction. Seeds were generally sparse but quite well preserved; only annual nettle (*Urtica urens*) achenes were abundant, though some other weed taxa were present in modest concentrations. Many of the taxa—rather over one third—were the same as in the sample from **2189** (see below)

Invertebrates were assessment-recorded, but a rough semi-quantitative list was made. Among the adult beetles and bugs there were over 60 individuals of more than 50 taxa, together with numerous mites, some fly puparia, and a trace of other remains. A large proportion of the remains were of 'outdoor' taxa (perhaps 40% of the

individuals), including appreciable numbers of aquatic and waterside forms. Among the decomposers only *Anotylus nitidulus* and an aleocharine were at all abundant (several of each). Taxa typical of urban deposits were poorly represented, and may have had a background origin or have arrived in miscellaneous dumps.

A single *Valvata piscinalis* was recorded; this is a catholic freshwater snail.

A radiocarbon date of 1260±60 BP (Beta-129587) = cal. AD 655 to 895 was achieved for a sample of bone from this context. This is consistent with a pre-Anglo-Scandinavian date on archaeological grounds, as is the nature of the biota.

Context 2189 (?waterlain deposit, sealed by earliest wattle structure)

Sample 296 (GBA) (1 kg): Moist, mid grey-brown, crumbly and fissile, slightly humic, silty sand. Local patches of almost pure, light brown sand and ?rotted organic matter. Vivianite present.

Bark (not discernible in the unprocessed sediment) formed the largest single component of the moderate-sized residue examined during the assessment, with some sand and gravel and a fairly rich assemblage of identifiable plant remains. Heather was represented by trace amounts of a number of parts (buds, capsules, flowers, seeds, and shoot fragments, all uncharred), and there were several mosses which may well have originated on bark or from woodland floor habitats. Seeds represented weed taxa of various kinds, and there were a few taxa likely to have come from grassland or to have grown close to water or in a damp ditch, for example. Flax seeds and capsule fragments were recorded and there were traces of stem fragments of the clubmoss *Diphazium complanatum*.

Although invertebrates were assessment-recorded, an approximate semi-quantitative record was created, around 80 individuals of 40 taxa of adult beetles and bugs being present. Over a quarter were 'outdoor' forms, a substantial proportion of these being aquatics (seven species were noted).

Fly larvae and mites were numerous, with a few other remains. Most abundant among the beetles was an aleocharine staphylinid (recorded as 'many' on the semi-quantitative scale); these cannot be placed ecologically as either urban or from riverside habitats. There was a clear component which probably came from occupation deposits, however, notably several *Lathridius minutus* group, two *Anobium punctatum* and *Cryptophagus* sp., and single individuals of several other taxa. This part of the fauna almost certainly originated in dumps from occupation.

A single *Valvata piscinalis* was again recorded.

The biological evidence suggests that this deposit is probably Anglo-Scandinavian in date, or at least contains material from this period.

Two radiocarbon dates were obtained for material from this context: 1020±60 BP (Beta-129585) = cal. AD 895 to 1160 from a sample of bark and 960±60 BP (Beta-129586) = cal. AD 980 to 1210 for a sample of bone. Both are consistent with the biological evidence for a date in the Anglo-Scandinavian period and suggest either that the archaeological dating is incorrect or, very much less likely, that some or all of the biological material was intrusive.

Period 3 (Anglo-Scandinavian Phase 1)

Context 2178 (organic fill of timber-lined sluice/overflow to W of wattle 2168)

Sample 292 (GBA) (3 kg): Moist, dark grey-brown (locally light-mid grey-brown), crumbly and layered internally in places (working plastic), very humic, sandy silt, with fine herbaceous detritus locally. Charcoal (to 15 mm) and 6-60 mm stones present. A 1 kg subsample was examined during the assessment; the remains in it were essentially similar to those from the large subsample.

The 3 kg subsample produced a very large residue of about 1400 cm³ of granular bark (at least two types present, the fragments up to 35 mm) and charcoal (to 20 mm) with a little wood and some

wood chips (both to 15 mm), with quite a lot of sand and some gravel; all fractions were large, especially the <2 mm, which included abundant sclereids (in the sample as a whole these were up to 4 mm in maximum dimension). The nature and significance of the sclereids are discussed below.

Prominent amongst the very large range of plant taxa recorded (a total of 91, the fourth largest assemblage for the corpus of samples examined for this site as a whole) were a variety of mosses of diverse habitats, including peatland, woodland, fen and marshland. Taxa which achieved moderate abundance scores were *Aulacomnium palustre*, *Dicranum scoparium*, *Hypnum* cf. *cupressiforme*, *Leucobryum glaucum*, and *Pleurozium schreberi*, which together suggest an origin in peatland, perhaps via imported turves. There was also a variety of remains of heather, traces of unidentified charred root/rhizome fragments, traces of charred moss (in the subsample examined during the assessment) and perhaps also some fragments of mor humus, all consistent with an origin in turves. Other mosses, such as *Antitrichia curtipendula*, were more typical of tree bark and may well have arrived attached to the bark which was so abundant in the deposit. A possible roof or litter component may be represented by charred and uncharred saw-sedge (*Cladium*) leaf fragments, and some very well preserved cereal chaff and spikelets, and charred and uncharred grass/cereal culm (stem) fragments.

Some food waste may well also have formed part of this deposit, for there was 'bran' of both oats and wheat/rye and some apple endocarp ('core') fragments and hazel nutshell. Two other 'useful' plants were indicative of dyeing: traces of pod fragments of woad (*Isatis tinctoria*) and stems fragments of a clubmoss, probably *Diphysium complanatum*. These—and especially the clubmoss, which was also recorded from the subsample examined during the assessment—are highly characteristic of Anglo-Scandinavian deposits in York (Kenward and Hall 1995; Hall 1998). Seeds and capsule fragments of flax were also present and the assessment sample produced a trace of fruits of the salt-marsh plant sea arrow-grass (*Triglochin maritima*), whose presence in Roman and early medieval deposits in York has

been noted before. It is discussed by Hall *et al.* (1983), Hall and Kenward (1990) and Kenward and Hall (1995) and it seems most likely to have arrived in herbivore dung.

Recording of adult beetles and bugs from the 3 kg subsample was at the 'detailed scan' level (see above), although the high degree of fragmentation of a substantial proportion of the remains (up to F 5.0 on the scale of Kenward and Large 1998) limited identification. There were 240 individuals of 121 taxa of adult beetles and bugs, together with numerous other remains. The latter included large numbers of fly puparia and mites, numerous fly adults and pupae, a wide range of other insects, and some Cladocera (water fleas). Diversity of the beetle and bug assemblage was high ($\alpha = 97$, $SE = 11$), indicating diverse origins.

Inspection of the species list suggested that three main habitat groups were present. The first was a component associated with intensive occupation, probably from within buildings (*Lathridius minutus* group, with 13 individuals the most abundant species, *Carpelimus fuliginosus* (7), *Anobium punctatum* (6), *Acritus nigricornis*, *Xylodromus concinnus* and *Trox scaber* (all 4), and small numbers of numerous other taxa). To these may be added a single sheep ked (*Melophagus ovinus*), presumably from wool cleaning and perhaps brought with the dyeplant remains. These were presumably all imported in dumped material, together with a range of other remains including *Ulopa reticulata* and *Olophrum ?piceum*, which presumably originated with the peatland mosses listed above. The second component was of species associated with weed vegetation (six *Phyllotreta nemorum* group, indicating crucifers, three *Chaetocnema concinna*, from docks or knotgrasses, and single individuals of various others). The third ecological group was of aquatic and waterside species (together 15% of the assemblage and including *Helophorus* sp. (11), *Ochthebius minimus* (4), *Helophorus aquaticus* or *grandis*, and two *Limnebius* species (2 of each), and single individuals of a few others).

Notable among the less well-represented components were the longhorn *Pogonocherus hispidulus*, the larva of which bores in slender,

dead twigs of various trees and woody shrubs, including elder, *Sambucus* (Duffy 1953), and the bark beetle *Hylesinus oleiperda*, primarily associated with ash, *Fraxinus* (Balachowsky 1949). Much the most likely origin for these in the present deposit would be as corpses in woodland mosses.

There were four *Trox scaber* to accompany the abundant bark fragments (see discussion below). Traces of taxa which may have originated in hay or redeposited dung were present, and there were seven *Aphodius prodromus*, associated with dung and perhaps either brought with dumped material or from dung on surfaces near the river.

Overall, this deposit appears to be primarily occupation material, perhaps largely bark from tanning (there were traces of very decayed leather fragments up to 35 mm, though this is not in itself necessarily good evidence for the tanning process, cf. Hall and Kenward, in press) but also with a range of other materials including perhaps turves and litter (both from thatching?) and some food waste, or even faecal material. That the deposit included components originating in a structure of this kind might indicate its use as a drain, though it may simply represent material discarded at or after abandonment.

Three small fragments of bone were present including a caprovid third phalanx.

Context 2160 (first waterlain deposit, after construction of wattle revetment; silting in channel west of bank)

Samples 287 and 291 (GBA), **288 and 290** (BS)

Material from both GBA samples was examined because the sediments were found, on inspection in the laboratory, to be rather different. This difference was borne out when the disaggregated residues were examined.

Sample 287 (3 kg): Dark grey (mottled mid brown on mm scale), crumbly and soft humic sand with stones 2-20 mm and traces of brick/tile and charcoal and inclusions of light grey-brown silt.

The very large residue of about 1100 cm³ was largely (about 900 cm³) organic material, and this in turn was mainly bark and charcoal fragments (both to 20 mm) with very abundant bark sclereids (up to 5 mm) and abundant well-preserved charred *Cladium* leaf fragments (the characteristically coarsely-toothed margin was visible on one or both edges of the fragments; there may also have been some leaf tips). A range of other charred material, perhaps more particularly in the subsample examined during assessment, is suggestive of the presence of debris from burnt turves (as in the material from Context 2178, discussed above).

Also notable in this sample were moderate amounts of what appeared to be fragments of flax stems of the kind resulting from breaking of retted stems during fibre extraction (the waste known as 'shives'), as well as traces of very decayed clubmoss stem, and one tentatively identified stem fragment of dyer's greenweed (*Genista tinctoria*), these two taxa representing plants likely to have been used in dyeing. Two other plants may have served as dyeplants but are equally likely to have arrived for other reason—agrimony (*Agrimonia eupatoria*) and hop (*Humulus lupulus*)—and these, together with a wide range of other plants, contributed to the high overall AIV score for the 'useful' groups of plants (Table 6)—at 677 by far the largest value for this parameter for these deposits.

The total of 83 identifiable plant taxa makes this one of the larger assemblages for the site as a whole, the most frequent remains being mosses (especially from peatland and bark or other woodland habitats) or plants representing disturbed habitats, especially trampled places and cornfields. The presence of a number of plants broadly indicative of damp grassland accounts for the high AIVs for PHRA (reedswamp and fen) and MOAR (mesotrophic grassland) groups (the latter high for this group for the site as a whole, but too small to be included in Table 6); these are plants which seem as likely to have grown near the river as to have arrived in, for example cut vegetation. There was no component of truly aquatic plants, however, suggesting that if the deposit formed in water it formed quickly by the dumping of

terrestrial material without inclusion of remains from the river water itself, or that it formed by sedimentation of debris in suspension in water originating on land, for example as effluent from a pit.

Invertebrate remains were rather numerous in the flot; there were 163 individuals of 95 adult beetle and bug taxa, numerous fly puparia and mites, and traces of other remains. Outdoor forms were abundant, forming 34% of the assemblage, and diversity was high (alpha = 95, SE = 13), these observations together indicating deposition in the open and mixed origins. Aquatics were quite abundant (18 individuals, %NW = 11) and there were appreciable numbers of waterside taxa. Modest numbers of numerous taxa typical of urban occupation deposits suggested dumping, and this was supported by a component from heath/moor (two *Macrodema micropterum*, and a single *Bradycellus ruficollis*), and from wool preparation (*Melophagus ovinus*). *Trox scaber* was moderately abundant (four individuals).

Invertebrates in the 1 kg subsample were recorded as assessment level, although a rough semi-quantitative list was made. Allowing for the difference in numbers, the list was essentially similar to that for the larger subsample.

Sample 291 (3 kg): Dark brown, slightly brittle and very weakly laminated (working crumbly), fine woody and herbaceous detritus and amorphous organic sediment.

Though of the same initial weight as the subsample from 287, this subsample yielded an extremely large residue of about 2300 cm³ mostly of granular bark (to 35 mm) and bark sclereids (to 5 mm), with only traces of charcoal but with a large component of fine wood fragments up to no more than about 1-2 mm, perhaps sawdust. The total number of identifiable taxa (54) was quite high but only a wetland moss (*Scorpidium scorpioides*) and stinging nettle (*Urtica dioica*) were present in more than trace amounts—perhaps a result of dilution by the large bark and ?sawdust components. The only high AIVs were for mosses in four groups representing bogs, fens, marshland

and bark habitats. *Diphysium* was present, as in the subsample from 287, together with seeds and capsule fragments of flax and perhaps also stem fragments (shives?) of this plant.

The invertebrates were abundant (for adult beetles and bugs, N = 213, S = 92, with various representatives of 'other orders'), and showed a broad similarity to those in the material from Sample 287, but there was a much clearer component which seems most likely to have originated in dumped urban waste, including very foul material. There were indications of 'house fauna' from *Lathridius minutus* group (19 individuals, at rank 1), *Anobium punctatum* (5), and small numbers of some others, but these were accompanied by foul decomposers such as *Platystethus arenarius* (12) and *Cercyon haemorrhoidalis* (5). The abundant (14) *Cercyon analis* probably lived with this latter component. The presence of these well-represented ecological groups was reflected in rather lower diversity than seen in some other deposits at this site: alpha = 61, SE = 7. The assemblage was ecologically mixed, however, with appreciable numbers of aquatics (%NW = 5) and plant feeders. The phytophages included some taxa which are believed often to have been imported in cut hay or to have entered via dung, and it is possible that the very foul matter indicated by a substantial part of the fauna was indeed dung, either waste or (perhaps more probably) an ingredient in tanning. There were four *Trox scaber*.

Context 2139

A sample of bone from this context was submitted for radiocarbon dating; it gave a date of 950±60 BP (Beta-129584) = cal. AD 990 to 1220, rather late for the early part of the Anglo-Scandinavian period.

Period 4 (Anglo-Scandinavian Phase 2)

Context 2131 (peaty material, ?river deposit—substantial layer covering whole of timber structure and area of earlier channel and area to E)

Samples 280 (GBA), 281-284 (BS)

Sample 280 (1 kg): Moist, dark grey (locally more grey and more brown), crumbly, soft, moderately humic, slightly silty sand with traces of stones 6-60 mm, moss and large mammal bone.

The large residue examined during the assessment was mainly very decayed bark, especially in the >4 mm and <1 mm fractions (the latter being also very rich in sclereids derived from bark); there was about 20% by volume of sand. The wood fragments were often very fresh-looking and pale in colour, unlike the very dark and decayed bark, suggesting a different origin. There were also moderate numbers of very decayed stem fragments of club moss and a range of plants from a diversity of habitats (mostly in trace amounts): weeds of various kinds, heathland plants (perhaps from turves), mosses likely to have grown on bark, a few possible food plants, and seed fragments and capsule fragments of flax.

Invertebrate remains from this sample were recorded during assessment, a rough semi-quantitative list being made. There were quite large numbers of adult beetles and bugs, and other invertebrates were present in moderate quantities. The more abundant taxa formed a group reminiscent of those in some cesspit fills in Anglo-Scandinavian deposits at 16-22 Coppergate, York (Kenward and Hall 1995). Most notably, there were 'several' individuals of *Platystethus arenarius*, *P. cornutus* group, and *Anotylus nitidulus*. If they lived together, these species suggest foul, richly organic mud. The remaining fauna was rather mixed, with a weak component indicating urban occupation, possibly of background origin or from washed out dumps (aquatics were rare, however, so there is no clear evidence that this deposit was waterlain).

Sample 281 (3 kg taken from unprocessed BS sample): Moist, mid to dark grey-brown, slightly brittle (?slightly concreted), working crumbly and just plastic, silty sand with a varying sand and humic content, with stones 2-60 mm, brick/tile, ?bark, twigs and mammal bone.

This subsample yielded a large residue of about 1400 cm³, the washover of organic material accounting for about 1200 cm³, the rest being bone, sand and gravel. The large organic fraction consisted mainly of granular bark (to 40 mm) and bark sclereids (to 5 mm) with a large assemblage of identifiable taxa (64). The range of mosses was much as before: a mixture of corticole (bark-living) and wetland types. There was also a variety of weeds and some wetland herbs, and two plants from the characteristic Anglo-Scandinavian dyeplant group discussed above: clubmoss (*Diphasium complanatum*) and madder (*Rubia tinctorum*), the former in more than merely trace amounts, though very decayed. Wood fragments, including chips, were present in very small amounts.

Invertebrate remains were quite abundant in the flot, semi-quantitative rapid scanning yielding a list of well over 100 individuals of around 70 beetle and bug taxa and various other remains. Aquatics were better represented than in Sample 280, and gave rather more support to a waterlain origin for the deposit. There was more evidence for a house fauna component, too, for there were several *Lathridius minutus* group, three *Anobium punctatum*, two human fleas (*Pulex irritans*), and a sheep ked (*Melophagus ovinus*). Otherwise the fauna showed no special character, although 'many' *Anotylus nitidulus* and several each of *Carpelimus bilineatus* and *Cercyon analis*, and various rarer taxa, are indicative of rather foul matter.

A single *Teretrius fabricii* was recorded: this histereid beetle preys on the immature stages of wood- (and presumably bark-) boring beetles (Halstead 1963). The click beetle *Melanotus erythropus* was also noted. Its larvae bore in decaying wood. Both adults and larvae were fairly common at 16-22 Coppergate, so it may have been able to colonise decaying timber, perhaps in the ground, on occupation sites.

Two samples from this context were submitted for radiocarbon dating: a sample of bark gave a date of 870±60 BP (Beta-129582) = cal. AD 1025 to 1275 and a sample of bone 1060±70 BP (Beta-129583) = cal. AD 815 to 840 and 855 to 1055

and 1085 to 1150, consistent with a late Anglo-Scandinavian/early post-Conquest date.

Period 5 (Anglo-Scandinavian Phase 3)

Context 2087 (top part of clay bank W of N-S wattle)

Samples 264 (GBA), **265-8** (BS) and **263** (SRS)

Samples 265-8 (total 44 kg) and **263** (117 kg): The small residues from 265-8 were mostly rounded pebbles with traces of rather abraded brick/tile and pottery, shellfish and a trace of burnt bone; the tiny washovers were of herbaceous detritus (not examined further). The residue from 263 was mostly large cobbles and pebbles with some bone.

Context 1038 (reddish grey clay filling cut into 2131)

Sample 89 (GBA) (3 kg): Mid brown, plastic and soft clayey sandy silt with traces of stones 2-6 mm.

There was only a small residue of about 150 cm³ of which about 10-15% formed a washover of organic material, the rest being rather clean sand and gravel. The organic fraction included some decayed wood and bark but mostly consisted of very decayed small uncharred twiggy fragments which were tentatively identified as heather, supported by a secure determination for uncharred shoot fragments of this plant. For the rest, there was a small assemblage of rather worn seeds of weeds of various kinds (with no particular group predominating), and a trace of dill (*Anethum graveolens*) 'seed', the single cultivated plant represented. Only stinging nettle (*Urtica dioica*) was recorded at more than trace levels.

Invertebrates were rare, rapid scanning producing simply a list of eleven beetles. Although too small for reliable interpretation, this group was dominated by outdoor forms.

Context 2030 (reddish grey clay filling cut into 2131)

Sample 286 (GBA) (3 kg): Moist, mid brownish-grey, crumbly (working plastic locally), slightly silty sand, with patches of fine black twigs and locally silty clay sand. Twigs abundant, leather present, stones (6-20mm) present.

This deposit was quite unlike any other seen during these analyses (and the laboratory description of the lithology as a sand may be contrasted with the field description of it as a clay). The large residue of about 750 cm³ consisted of about 70% by volume of heather twigs, from the basal parts right up to finest, mainly leafless, tips, the rest being sand-grade mineral (the 1-2 mm fraction mainly comprising fragments of calcareous concretions) and some gravel. The concreted material consisted of vesicular fragments apparently forming as the cast of a structure like a root or small twig, with other material being thin, more thallus-like, with organic detritus embedded in it (which proved on closer inspection to be *Calluna* leaves and shoot fragments); there were also some small twigs encased in concretion. This material gives the impression of a residue from some industrial process in which quantities of heather were steeped in, for example, lime. The presence of traces of small (to 10 mm) leather fragments perhaps argues for this being leather tanning or dyeing (or both: a trace of very decayed clubmoss stem was noted during the assessment of material from this context).

For the rest, there was a mixture of plants, mainly weeds of waste places, including (not surprisingly) disturbed wet habitats like ditches and river margins in the vicinity of occupation, with traces of possible food plants and capsule fragments of flax.

Invertebrates from the 3 kg subsample were rapidly assessed. Beetles were fairly abundant, with 'many' *Cercyon analis* and traces of *Trox scaber*. There were some aquatics and an abundant fauna of intensive occupation.

Recording of the original 1 kg assessment subsample included the production of a rough semi-quantitative list of a small group of invertebrates. Only about 50 individuals of less than 40 beetle and bug taxa were noted, outdoor taxa being the predominant ecological group. The assemblage probably had mixed origins, with components from water, water margins and occupation deposits; it thus matches the recorded miscellaneous plants of waste places and waterside.

Overall, invertebrates from Context 2030 showed no exceptional features to parallel the unusual lithology and botanical character.

Context 2038 (silts over clay bank)

Samples 252 (GBA), **253-6** (BS)

Samples 253-6 (total 40.5 kg): The small residues mainly consisted of small (<10 mm) wood fragments and gravel with some burnt bone; one of the moderately large washovers (from 253) consisted mainly of wood fragments <4 mm and a mixture of weeds of disturbed places and cultivated land (and especially land with impeded drainage, ditches, and the like). Traces of heathland plant remains were also present.

Context 1039 (organic deposit, ?dump [overlying later wattle revetments])

Samples 90 (GBA), **91-4** (BS)

Sample 90 (3 kg): Waterlogged, dark brown, crumbly (working soft to slightly plastic), very humic silt to silty amorphous organic sediment with woody herbaceous detritus locally.

There was a very large residue of about 1200 cm³ with a distinctly granular appearance, of which less than 100 cm³ consisted of mineral material left after removing the washover. The bulk of the organic fraction of the residue was bark (up to 35 mm in maximum dimension) with small (mostly <1 mm) sclereids also extremely common. The residue also contained quite a lot of small bone

fragments (up to 80 mm, some of them burnt to some degree), with a characteristically mottled and flaky appearance.

The more abundant of the identifiable plant taxa included seeds or fruits of a number which are common in occupation deposits and whose interpretative significance—beyond indicating disturbance or neglected waste ground—is rather limited. Among these were oraches (*Atriplex*), fathen (*Chenopodium album*, elder (*Sambucus nigra*) and nettles (*Urtica dioica* and *U. urens*). Two taxa in this group (elder and blackberry, *Rubus fruticosus* agg.) partly account for the rather high abundance-indicator value for the foodplants group (FOOS, Table 6), as well as that for woodland (QUFA), and are perhaps more likely to represent scrub than food waste or faecal material in this context. The presence of seed or fruits fragments of the cornfield weeds corncockle (*Agrostemma githago*) and black bindweed (*Bilderdykia convolvulus*), and perhaps also the pod segment fragments of wild radish, *Raphanus raphanistrum*, are consistent with an origin in straw used for thatching or litter, for example. One other ‘useful’ plant was flax (*Linum usitatissimum*), of which traces of seeds and capsule fragments were recorded.

Charred shoot fragments of heather and charred twig fragments possibly also of this plant, together with unidentified charred herbaceous root or rhizome fragments, may represent material originating in burnt turves. Material tentatively identified as ‘charred bread’ (at least one fragment up to 10 mm) needs further research.

This subsample produced a remarkable insect assemblage, both in composition and in preservational characteristics. Recorded in detail, there were 196 individuals of 51 adult beetle and bug taxa. Aquatics were rare (a single individual of the highly migratory *Helophorus*), suggesting terrestrial deposition or bulk dumping into water without mixing. Diversity was low ($\alpha = 23$, $SE = 3$), and one ecological group, species associated with foul, mouldering, open-textured organic matter, predominated. In this group there were 56 *Oxytelus sculptus* and 33 *Cercyon analis*, together with *Ptenidium* sp. and *Neobisnius* sp. (4

each), *Cercyon atricapillus*, *Anotylus rugosus* and *Leptacinus pusillus* (3 each), and smaller numbers of a considerable range of taxa likely to have bred in the same environment, notable among them being *Gauropterus fulgidus* and *Gyrohypnus fracticornis* (2 each). This might normally be interpreted as the fauna of stable manure or of some other waste (e.g. dyebath refuse) very similar to it.

A further species was very abundant: *Trox scaber*. Its remains were highly comminuted and fell apart when touched even with a fine paintbrush, suggesting that they had undergone decay of an unusual kind not experienced by the remaining fauna. It is suggested that this decay was brought about by substances used in a bark-based tanning mixture, indicated by the bark and sclereids mentioned above. The fauna of foul mouldering matter may have invaded after the tan pit waste was dumped and the corrosive component had leached somewhat; although many of the remains were fragmentary (making identification difficult) there was no sign that more than a few other insects had passed through the tanning process with the *Trox*.

A 1 kg subsample examined during the assessment was ‘assessment recorded’, but a rough semi-quantitative list made: its implications were as for the 3 kg subsample.

Samples 91-4 (total 32.5 kg): The small residues were mostly of very decayed bark with a little wood, similarly very rotted; also present were traces of pebbles and large bone.

Context 1052 (clay/clay silt E of wattle forming N-ward extension of bank)

Samples 117 (GBA), **Samples 118-121** (BS)

Sample 117 (1 kg): Moist, dark grey-brown, locally dark brown, crumbly (working soft), humic, sandy silt to silty amorphous organic sediment. Part of the sample consisted of light grey sandy silt with vivianite flecks. Wood was also present.

Bark-derived sclereids were frequent in the very small flot and not surprisingly very decayed bark formed the bulk of the very small residue. There were a few rather worn identifiable plant remains of various kinds, including charred shoot fragments and uncharred capsules and shoot tips of heather, ?burnt peat fragments, and charred root or rhizome material—perhaps together indicating burnt and unburnt turves; also present were traces of charred and uncharred hazel nutshell.

The invertebrate assemblage, which was assessment recorded, was dominated by large numbers of *Trox scaber*.

The bone present included 2 herring vertebrae and 6 unidentifiable fragments.

Two samples from this context were submitted for radiocarbon dating. The results were: 1000±50 BP (Beta-129571) = cal. AD 980 to 1175 for a selection or remains of *Trox scaber* and 1170±50 BP (Beta-129572) = cal. AD 720 to 745 and AD 760 to 990 for a sample of bark. This discrepancy can be explained by the presence in the outer layers of the bark of older radiocarbon, perhaps almost as old as the tree from which it was taken, if it was oak.

Samples 118-121 (total 36.5 kg): The small residues were mainly of very decayed bark with some bone and gravel; the washovers were rich in small decayed bark fragments.

Context 1047 (clay/clay silt E of wattle forming N-ward extension of bank; above 1052)

Samples 95 (GBA) and **96-9** (BS)

Sample 95 (3 kg): Moist, mid grey-brown, crumbly to slightly sticky (working just plastic), sandy clay to clay sand. Other colours ranged from bright red/orange to light blue-grey (mm-cm scale). Bone was present.

Both the residue and washover from this subsample were small and sand was the only component present in more than very small

amounts. A modest range of weed taxa was present amongst the identifiable remains (which were often rather eroded) and they represented fairly diverse origins with no one group predominant. The presence of fragments of seeds of corncockle, black bindweed and knapweed/cornflower might be consistent with material derived from milled grain (these are common grain contaminants) but none was abundant.

Invertebrates were assessment recorded. They were not very abundant and had no special character in the context of the present site, other than that *T. scaber* was not noted.

A single pig maxillary molar was recorded.

Samples 96-99 (total 58.5 kg): The small residues were mainly pebbles, cobbles and other gravel, with a little large bone and brick/tile.

Context 2065 (river deposit)

Samples 258 (GBA), **259-62** (BS)

Sample 258 (3 kg): Mid to dark grey-brown, soft (working just plastic) silty sand with traces of stones 2-20 mm, brick/tile, bark and yellow mm-scale flecks.

The moderate-sized to large residue of about 800 cm³ included a single piece of worked ?oak wood (perhaps a stake end) of about 180 cm³ and about 60 cm³ of sawn horncore fragments. The remainder consisted of organic detritus (mainly bark, wood and charcoal) with a range of weeds and woody plants but with the largest group being potential foodplants. There was also about 250 cm³ of sand and gravel. Closer inspection showed the foodplants to include modest amounts of wheat/rye bran, perhaps originating in faecal material (though by no means certainly from this source—the presence of some grassland plants may suggest an alternative origin in litter or stable manure). Much of the plant material was well rotted, suggesting some decay had occurred prior to deposition or that this was largely reworked from another place.

A fairly substantial assemblage of insects was recovered in the flot, including 105 individuals of 70 adult beetle and bug taxa, numerous fly puparia and mites, some water flea resting eggs, and assorted others. Although recording was nominally at the scan level, a detailed record of the beetles and bugs was made. Preservation was often very good. None of the beetles were particularly abundant, and this is reflected in the estimate of diversity ($\alpha = 91$, $SE = 18$), suggesting mixed origins for the fauna. There were only a few water beetles (5% of the assemblage) but, together with the records of Cladocera ephippia ('several' *Daphnia* sp. and a total of three of two other kinds) and a statoblast of the bryozoan *Lophopus crystallinus*, they offer reasonable evidence for aquatic deposition. However, it is clear either that the water was too polluted to support a rich aquatic fauna, or that dumping proceeded very rapidly. The excellent preservation of the cuticular surface of many of the remains suggests rapid burial rather than reworking, too. Species which may have lived on river banks or on wet mud or litter were present in modest numbers. The decomposer beetles included a large proportion of individuals of species likely to have occurred together in fairly to very foul matter, lending some support to the suggestion that a faecal component was present, though not necessarily human.

Samples 259-62 (total 42 kg): The small residues were mostly charcoal and angular gravel; the small washovers were of uncharred plant detritus, probably fine woody material. Large bone (including a chopped cattle skull), traces of brick/tile, shellfish, wood/twigs, and a trace of bird bone were also present in the residues.

Context 2037 (sandy ?river deposit)

Samples 251 (GBA), **247-50** (BS) and **246** (SR)

Samples 247-250 (total 45.5 kg): The small residues were of cobbles and gravel with some bone, brick/tile and charcoal; the small washovers of plant detritus were not examined further.

Sample 246 (134 kg): This sample produced a large residue of cobbles, some brick/tile, large bone (few burnt) and traces of pottery.

A sample of bone from Context 2037 gave a radiocarbon date of 780 ± 60 BP (Beta-129580) = cal. AD 1160 to 1300. That this is clearly a post-Conquest date suggests that the bone was intrusive, assuming that the archaeological date is sound.

Period 6 (Anglo-Scandinavian Phase 4)

Context 2025 (erosion deposit at foot of clay bank deposit)

Sample 221 (SRS) (127 kg): This sample produced a small residue, mostly composed of cobbles, with traces of charcoal, brick/tile and pottery. Large bone was present, including the remains of cattle, caprovid and pig. Some burnt fragments were noted.

Context 2023 (waterlain silt)

Sample 206 (GBA) (1 kg): Moist, dark brown, crumbly, very humic, silty sand. Locally mid grey/brown. Patches of pure mid grey/brown sand. 20-60 mm stones present.

The rather large residue was mostly very decayed bark (to 20 mm) with some wood and charcoal, as well as grit and sand. Identifiable remains were rather sparse but preservation was mostly quite good. Heather was certainly present, as was cross-leaved heath, both being charred and perhaps from burnt turves. There were also uncharred seeds and capsule fragments of flax and traces of very decayed stems of the clubmoss *Diphasium complanatum* (typical of deposits of Anglo-Scandinavian date in York).

Invertebrates in the flot were assessment-recorded, though a rough semi-quantitative list was made. Beetles were not very common, but there were modest numbers of fly puparia and mites; they constituted a dilute urban group.

Context 2022 (silt laid down within channel 2033)

Samples 205 (GBA/SPOT), 220 (SR)

Sample 205 (0.5 kg): grey-brown silty sand with patches of crisp, fine-grained, black (charred?) plant material, rather like turves.

The small subsample was soaked and more gently disaggregated than was usual for this group of samples. Sieving produced a residue consisting of sand and some lumps of what appear to be charred (plus a little uncharred) sandy *Callunetum* mor humus (the humic surface layer forming on heather-dominated moorland and heathland), with many loose charred fragments of root/basal twig of heather, and also some uncharred roots which might be supposed to have come from unburnt parts of turves, although they might also represent growth of roots from above into the layer after it formed.

There seems little doubt that this deposit contained a considerable quantity of material from partly-burnt turves, presumably dumped into the channel.

Sample 220 (27 kg): The small residue was mostly charcoal and small wood fragments, with traces of brick/tile and large bone.

Context 2020 (silt laid down within channel 2033)

Sample 218 (SR) (145 kg): This moderate-sized residue was mainly cobbles, with traces of brick/tile, pottery and charcoal. The few bone fragments were rather rounded, some being burnt and/or scorched.

A sample of bone from this context was radiocarbon dated and gave a date of 1250±40 BP (Beta-129579) = cal. AD 700 to 900. Such an early date suggests the bone may have been redeposited.

Context 2019 (silt laid down within channel 2033)

Sample 216 (SR) (93 kg): The small residue was mostly cobbles, with traces of charcoal and brick/tile and large bone (some burnt).

Context 2018 (silt laid down within channel 2033)

Sample 217 (SR) (96 kg) The residue from this sample was composed mainly of cobbles, with traces of wood, brick/tile, pottery, oyster shell and charcoal. A ?dog coprolite was also noted. Moderate quantities of large bone were present, including cattle and caprovid skull and metapodial fragments.

A sample of bone from this context gave a radiocarbon date of 760±70 BP (Beta-129578) = cal. AD 1160 to 1310 and 1360 to 1385, clearly post-Conquest and presumably a result of intrusion from above (unless the archaeological dating is not sound).

Context 1033 (silt laid down within channel 2033)

Samples 68 (GBA) and **69-72** (BS): These residues were only examined during the assessment.

Sample 68 (2 kg): Wet, light to mid grey with an almost pinkish to yellowish cast, just plastic, sandy silt. Variations in sand content gave heterogeneity on a mm/cm scale. Various inclusions were present: stones (6-20 mm), ?burnt soil, ?ash, charcoal, and bone.

About two-thirds of the residue comprised sand and gravel, the remainder very decayed wood and bark (more bark than wood); there were few identifiable plant remains and preservation was often rather poor—some specimens being eroded and more or less decayed. They added little to the interpretation of the deposit.

Assessment of the flot revealed small quantities of invertebrate remains of no special character, although there were two *Trox scaber* to accompany the bark.

Only two unidentifiable bone fragments were recovered.

Samples 69-72 (total 51 kg): The small residues from these samples were mostly very decayed bark with some bone and traces of shell and brick/tile. Bone included a goat horncore chopped at the base, and a cow phalanx and teeth.

The radiocarbon date for a sample of bone from this context was 960 ± 70 BP (Beta-129570) = cal AD 970 to 1225, compatible with a late Anglo-Scandinavian date but perhaps another example of intrusive material.

Context 1032/1033

Sample 85 (GBA) (1 kg): Moist, mid greyish-brown just consolidated, soft (working crumbly), humic, silty sand, with some ash and charcoal. The moderate-sized residue was mostly of very decayed bark, the finest fraction being rich in 'frass'-like material probably derived from this (probably sclereids, to judge from evidence from other samples). There were very few identifiable plant remains—no seeds were noted from the residue at all. A few invertebrates were noted in the flot during assessment.

Context 1031 (?river silt)

Samples 62 and 84 (GBA) and **63-67** (BS).

Sample 84 (2 kg): Moist, dark brown, crumbly, humic, silty sand to sandy silt with abundant patches of light brown fine sand. Much of the small residue was very decayed bark with some sand and a little gravel. Though low in concentration, identifiable plant remains were mostly well preserved. There were some charred (and uncharred) remains of heather and also charred leaves of cross-leaved heath. Most of the other remains were weeds or plants with little interpretative value.

The flot contained only a few invertebrates, but among them were parts of three *Trox scaber*.

Most of the bone (28 fragments) was unidentifiable, those identified including amphibian and herring remains. All the fragments were small (<20 mm); two were burnt.

Samples 63, 65 and 66 (total 32 kg): There were small residues and moderate-sized washovers from these samples; the latter were mainly very decayed bark with charcoal. Bone included a few bird and fish fragments, traces of burnt bone were also present.

Two samples from Context 1031 were submitted for radiocarbon dating. A sample of bark gave a date of 970 ± 50 BP (Beta-129568) = cal. AD 980 to 1175, whilst a sample of bone was dated 1170 ± 60 BP (Beta-129569) = cal AD 700 to 1000, suggesting that the latter may have been residual.

Content 1029 (?river silt)

Samples 77-81 (GBA)

Sample 80 (3 kg): Dark grey-brown (locally paler) crumbly and soft humic, slightly sandy silt, perhaps ashy, with large fragments of large mammal bone (the last also seen in other samples from this context).

The moderately large residue of about 450 cm^3 consisted mainly of granular (and very decayed) organic material, much of it charcoal (to 20 mm) and other charred plant material. There was barely 100 cm^3 of sand and angular bone.

The identifiable charred plant remains consisted especially of ?heather root/basal twig fragments with burnt ?peat or mor humus (presumably from burnt peat or turves), with a little uncharred wood and bark (the latter represented also by moderate amounts of sclereids). Small fragments of unburnt peat or mor humus were also present, as were traces of charred and uncharred remains of aerial parts of heather—flowers, shoot fragments and capsules. Other records which lend some support to the suggestion that turves were present are those for charred moss and a seed of heath rush, *Juncus squarrosus*; although not identified further,

charred moss (which appears to be rarely recorded in archaeological deposits, not least because it is very fragile) has been linked with a group of plants thought to be indicative of material derived from turves in medieval occupation deposits at North Bridge, Low Fisher Gate, Doncaster (Carrott *et al.* 1997a). In this connection, the record for Sample 80 of a single fragment of charred monocotyledonous leaf tentatively identified as saw-sedge, *Cladium mariscus*, may be significant; if this is the plant concerned the fragment may have originated in sedge used for roofing or for fuel, as might the turves.

Some of the wood fragments present were pale in colour and looked as though they had either recently decayed or perhaps decayed and become dried before incorporation into the deposit. Decay in the tub during storage cannot, of course, be ruled out and this may be supported by the presence in the flot of wood fragments with channels filled with arthropod 'frass' which appeared rather fresh.

Other occupation material clearly found its way into this deposit as it formed, for there were some well preserved but sometimes distorted charred cereals (including barley, *Hordeum* sp., bread/club wheat, *Triticum aestivo-compactum*, and ?rye, cf. *Secale cereale*); the distortion is likely to have been a result of charring whilst the grains were still somewhat moist, and the fact that at least one barley grain showed evidence for sprouting is consistent with this. A further specimen indicative of a probable food component in this deposit was a single large, but very slender, charred *Allium* bulb, presumably a clove of garlic, *A. sativum*, and a single fragment thought to be 'tunic' (papery outer tissue) of the same plant.

Though not especially important in the subsample from Sample 80, the prominent component of trampled ground plants in the subsample of Sample 79 from the same context, examined during the assessment, indicates heavy disturbance in the area at the time the deposit formed; the taxa concerned are shepherd's purse (*Capsella bursa-pastoris*), swine-cress (*Coronopus squamatus*), greater plantain (*Plantago major*), knotgrass (*Polygonum aviculare* agg.) and

silverweed (*Potentilla anserina*). Some of these plants are also scored with comfield weeds (group SECA, Table 6), and account for the large AIV for this group, too.

The invertebrates in the flot were rapid-scan recorded. Numbers were fairly small, but *Trox scaber* was represented by seven individuals and there was a (tentatively, but probably correctly) identified specimen of *Dryocoetinus villosus*, a species found under bark, very frequently of oak (Balachowsky 1949). There was no component among the few invertebrates to match the botanical evidence for turf, perhaps because of the burning it appears to have undergone.

Context 2013 (?river deposit)

Samples 192, 203 (GBA), **193-6** (BS) and **197** (SRS)

Samples 193-6 (total 40 kg): These samples yielded small residues with some oyster and freshwater mussel shell and wood fragments. Stone, brick/tile, pottery, oyster shell and charcoal, were all present. Large bone included two split cattle metatarsals.

Sample 197 (SR) (104 kg): The residue was largely cobbles, charcoal and oyster shell. A moderate quantity of large bone (some burnt) was present, which included cattle, caprovid and pig fragments.

A sample of bone from Context 2013 gave a radiocarbon date of 1000±70 BP (Beta-129577) = cal. AD 895 to 1195, consistent with the archaeological dating as late Anglo-Scandinavian.

Period 7 (Medieval)

Context 2007 (dump of stony sandy silt into river (?consolidation of bank))

Sample 213 (GBA) (3 kg): Mid grey-brown, slightly brittle and slightly 'cheesy' to crumbly (working slightly plastic) sandy silt with traces of

stones 20–60 mm and of freshwater molluscs (both bivalves and snails).

There was a moderate-sized to large residue of about 800 cm³, of which less than 100 cm³ comprised sand and gravel, the rest being flaky to granular bark fragments (to 50 mm), small herbaceous stem fragments (probably mostly flax) and woody and herbaceous detritus, including charcoal. There was a very large assemblage of well-preserved remains (100 taxa, the third largest group from the site) of which aquatics and waterside plants were well represented, especially pondweeds (*Potamogeton* spp., of which at least three species were determined), water milfoil (*Myriophyllum* spp.), and both white and yellow water-lilies (*Nymphaea alba* and *Nuphar lutea*).

There was also a wide range of plants which might have been used for some purpose: as well as flax capsule and stem fragments and seeds, there were remains of leaf fragments of bog myrtle (*Myrica gale*), a peatland plant with many uses, and seeds or fruits of cat-mint (*Nepeta cataria*), deadly nightshade (*Atropa bella-donna*) and agrimony, all potentially with herbal uses, and the last also a possible dyeplant. Small numbers of charred cereals were recorded: oats and rye, and perhaps also barley and wheat. It was noted that many of the flax seeds were small and rather rounded in shape, perhaps indicating a crop grown for fibre rather than for linseed.

One plant which may well have been a weed of flax fields was gold-of-pleasure, *Camelina sativa*, of which seed pod fragments were present in very small numbers. Though its seeds may have been used as a source of oil in C Europe as far back as the neolithic (Körber-Grohne 1988 and references therein, p. 392), its early history in England has probably been as weed of flax fields rather than as a crop in its own right. Besides the evidence for fibre extraction suggested by the quantities of flax remains, the presence of traces of hemp (*Cannabis sativa*) seed and keds of the sheep ectoparasite *Melophagus ovinus* should be mentioned as further probable indications of activities related to textile-working in the vicinity.

The rest of the assemblage comprised a variety of weeds, with nitrophile biennial and perennial plants in the 'ARTE' group especially prominent (and see Table 6); these seem most likely to have been growing on the river bank, perhaps at some distance from the site (though the excellent state of preservation of most of the propagules suggests they did not travel far before being incorporated into the sediment).

Invertebrates were assessment recorded. Aquatics were well represented, the most numerous beetles and bugs being *Helophorus* sp. and Corixidae, respectively. There were also three kinds of Cladocera ephippia, an ostracod, some statoblasts of the bryozoan *Cristatella mucedo*, and a caddis larva case. Deposition was thus clearly aquatic, probably into water which locally, or not far upstream, was able to support a rich invertebrate fauna. This corresponds well with the botanical evidence. There was no clear evidence from the invertebrates for dumping.

The overall impression gained from this sample, then, was of an aquatic deposit with flax stem debris (from retting?) and bark (from tanning?) but incorporating a wide range of plants representing natural and semi-natural habitats although with areas of human occupation nearby.

Context 2006 (sandy river deposit)

Samples 208 and 214 (GBA), **209-212** (BS)

Sample 214 (5 kg): This large subsample yielded a moderate-sized to large residue of about 1000 cm³ of sand, gravel, stone and organic debris, the washover of plant material being about 600 cm³ in volume. Amongst the mineral material was a large lump of red-fired daub (with imprints of wattle) and some pottery, the largest fragment of which bore an organic crust on the inside surface. This crust was up to about 1 mm thick, charred towards the pot surface, uncharred on outer surface, with rather regular small vesicles (bubbles) in a matrix of brown (charred black) organic material; no identification of the material was possible using simple light microscopy on tiny subsamples mounted in dilute acid on glass slides.

The washover consisted of granular bark (to 25 mm) with many short (up to 10 mm) plant stem fragments, perhaps mostly flax. As a result, the coarser fractions had an especially unusual appearance, with dark-coloured granular bark and charcoal mixed with pale and twiggy flax fragments. As well as the stem material, there were abundant flax seeds and capsule fragments. The latter were often broken 'equatorially' rather than along normal lines of dehiscence which is perhaps consistent with damage to capsules which were not fully ripe (i.e. from plants being used for fibre rather than seed). As in the subsample from 2007, *Camelina* pods were recorded, this time in moderate numbers, though no seeds were recovered (these were probably shed very quickly from the gaping pods at maturity and the stems bearing empty pods were simply collected incidentally with the flax crop).

The presence of modest amounts of the moss *Leucobryum glaucum* with heather remains perhaps points to the continued deposition of material from turves at this period.

Two plants recorded in trace amounts as seeds from this sample have known uses in the past as cathartics: white bryony (*Bryonia cretica* ssp. *dioica*) and caper spurge (*Euphorbia lathyris*), though both are as likely to have been part of the local flora which, to judge from the wide range of weed taxa present, included plants from more and less highly disturbed places, including many typical of stands of vegetation along river banks and roadsides. Notable amongst this 'wayside and riverside' group were hedge-parsley (*Anthriscus caucalis*), cow parsley (*A. sylvestris*), burdocks (*Arctium* spp., of which there were both fruits and 'hooks' from the involucre bracts), hemlock (*Conium maculatum*), wild carrot (*Daucus carota*), hemp agrimony (*Eupatorium cannabinum*), henbane (*Hyoscyamus niger*), white horehound (*Marrubium vulgare*), cat-mint, scotch thistle (*Onopordum acanthium*), and weld (*Reseda luteola*). Some of these may have found some use as herbs or dyeplants, but they seem to form a rather coherent group that is more likely to represent local herbaceous vegetation.

Lastly, the small component of charred cereals (oats, bread/club wheat and perhaps also barley and rye) and uncharred wheat/rye 'bran' should be mentioned as material clearly derived from occupation, though whether as food or (in the case of the charred material) from fuel or thatch, cannot easily be determined.

Despite all the evidence for terrestrial plants, that the deposit was formed in water is beyond doubt: apart from freshwater molluscs, caddis larval cases and *Cristatella* statoblasts, the presence of moderate numbers of pondweed fruits (at least four *Potamogeton* species were identified) and remains of two types of water milfoil, as well as plants such as arrow-head (*Sagittaria*) and various water-dropworts (*Oenanthe* spp.), gives a clear picture of a river with clean water and a well-developed aquatic vegetation.

Unusually, the plant remains included three burred fruits: agrimony, bur-marigold (*Bidens*) and burdock. It may be no coincidence that one of rather few sheep keds from the site was also recorded in this subsample, both this and the burrs perhaps having been cleaned from wool.

The very high tally of plant taxa from this sample (107, the highest for the site as a whole) must partly reflect the subsample size, which was rather larger than the others examined.

Assessment of the flot showed that invertebrate remains were fairly abundant but fragmentary. Deposition was probably aquatic (there were caddis cases), and there was a weak fauna of human occupation, though no evidence of dumps *per se*. A broad similarity to the fauna from Sample 138 (Context 2005) was noted.

Samples 209-12 (total 55 kg): The small residues from these samples were mostly gravel (including cobbles) with some small wood fragments and a little large bone, bird bone, fish bone, pottery, charcoal and shell. The washover from one sample (209, weight originally processed 14 kg) was examined in more detail and yielded a rich diversity of remains in very small amounts: weeds of waste ground, cultivated land, mosses from a variety of terrestrial habitats, plants likely to have

been growing on river banks and by tracks, perhaps some heathland plants, aquatics and some probable foodplants, including apple 'core' and wheat/rye 'bran'. The only taxa present in more than trace amounts were flax seeds and capsule fragments and stinging nettle achenes. Some freshwater and marine invertebrate remains were noted: *Cristatella* statoblasts, *Daphnia* ephippia, bivalve periostracum, oyster shell and snails.

Taken together, the biological evidence seems to point to aquatic deposition of terrestrial material from occupation, but perhaps not primary dumps

Context 2005 (sandy river deposit)

Samples 136 and 137 (SPOT) and 138 and 139 (GBA)

Sample 138 (13 kg): The sediment was not described before processing. A very large subsample was used to concentrate plant material for an AMS date.

The residue was of moderate size, about 2000 cm³ of which about 1400 cm³ was sand and gravel with some pottery (to 30 mm) and brick/tile (to 50 mm) and the rest a washover of organic debris, including chunks of wood (chips and other worked fragments up to 40 mm), and charcoal (to 20 mm), but with only traces of bark (to 25 mm) and sclereids. Remains of flax (both seeds and capsule fragments) were sparse in this sample, though there were fragments of teasel (*Dipsacus* sp.) which—were it to have been identifiable as fuller's teasel, *D. sativus* (L.) Honckeney—could have been added to the list of plants associated with textile-working (there were sheep ked remains, too). As it was, potential dyeplants were as well represented here as in any of the samples, with moderate numbers of weld seeds and traces of madder root and sweet gale leaf fragments; the trace of tentatively identified clubmoss may, if it really is this plant, support an Anglo-Scandinavian date (cf. the radiocarbon date, discussed below), though this was a shoot tip rather than a stem fragment and may therefore be another species.

As in the subsamples from Context 2006 there was a small peatland component (particularly heather and the mosses *Aulacomnium palustre* and *Leucobryum glaucum*), perhaps from turves. There was again a prominent group of plants representing relatively undisturbed river bank or wayside habitats: burdock, hemlock, carrot, henbane, white horehound, cat-mint, scotch thistle (of which there were several extremely well preserved specimens), hedge parsley and weld, and with these probably also the remains of two milk thistle (*Silybum marianum*) achenes. *Camelina* pods were again recorded and there was a modest aquatic plant component, including water milfoil, pondweeds and both white and yellow water-lilies.

As an aside, milk thistle, which has been assumed to be an introduction to Britain from S.W. Europe and the Mediterranean region, was not, until recently, known as a fossil in the British archaeological record. Together with the present, there are now unpublished records (made by ARH) for the plant from medieval York (58-9 Skeldergate) and Hull (Blanket Row and Magistrates' Court sites). Though probably initially imported as a plant with herbal properties, *S. marianum* no doubt quickly established itself in weedy vegetation of the kind represented by a large proportion of the plants in the sample under discussion.

The flots were rapidly scanned for invertebrates, which were generally rather well preserved. Beetles were moderately abundant and there were a few bugs (N about 111; S about 79). Diversity was estimated to be high (alpha = 122, SE = 24), and the implication that this was a mixed assemblage was supported by the ecological diversity of the recorded taxa. Outdoor forms were very abundant (%NOB = 43). Thirteen individuals of eleven aquatic beetle and bug taxa were noted, and aquatic deposition appears likely. This component was neither so rich or so large as to indicate a well-developed clean water ecosystem *in situ*, so it may have been carried from upstream. There was a group of species from disturbed ground vegetation, including nettles (there were two *Cidnorhinus quadrimaculatus*, for example), which seems likely to have grown at the riverside.

Species probably associated with clovers and their relatives were well represented: two *Sitona* and several *Apion* species, one of the latter with 'several' individuals.

Insects which were probably imported with peatland turf included *Ulopa reticulata* and *Dyschirius ?globosus*. There was a group of species which were probably introduced in dumped refuse or redeposited urban build-up, and these included a clearly recognisable (though quite small) house fauna component, particularly strongly signalled by seven human fleas (*Pulex irritans*). There were two *Trox scaber*, as likely to be part of the house fauna as to be associated with tanning in this case, and the sheep ked puparium presumably arrived by the same route.

The record of *Pterostichus madidus* is notable: this large black ground beetle is very common today, but rare as a fossil (there were no records from Anglo-Scandinavian 16-22 Coppergate, for example), suggesting a recent and substantial change in abundance.

Samples 136 and 137

During the assessment the two spot samples were found to consist of the same material—plant (probably flax) stems in a sand matrix—as in Contexts 2003 and 2004 (see below). Spot sample 136 also contained flax capsule fragments.

A sample of flax stems from Context 2005 was radiocarbon dated, giving a result of 920±60 BP (Beta-129576) = cal. AD 900 to 1170.

Context 2004 (sandy river deposit)

Samples 132 and 133 (SPOT): Sample 132 consisted of bundle of stems (which were probably flax) in a matrix of sand, as in the spot samples from Contexts 2003 and 2005. Sample 133 comprised three fragments of wood, all identified as oak (*Quercus*).

A sample of bone from this context gave a radiocarbon date of 1220±60 BP (Beta-129575) =

cal. AD 670 to 970, suggesting that it was residual (though the date range overlaps with that for flax stems from Context 2005).

Context 2003 (sandy river deposit)

Sample 147 (SPOT) (0.1 kg): Light-mid grey-brown, slightly silty, coarse sand with fibrous plant stem fragments visible on broken surfaces.

The small residue consisted of sand and plant stem fragments; the latter were mainly devoid of their outer layers, some were branched. With them were flax seeds and capsule fragments and it seems very likely that the stems were of flax, too (some epidermis fragments were examined and strongly resembled illustrations of this plant published by Körber-Grohne, 1967). Also present in the sample were identifiable remains of a modest range of plants from various likely sources; they included wheat/rye 'bran' and charred ?heather root/basal twig fragments.

Two samples from Context 2003 were submitted for radiocarbon dating: a sample of flax stems gave 950±50 BP (Beta-129573) = cal. AD 900 to 1050 and 1095 to 1140 and a sample of bone 1030±60 BP (Beta-129574) = cal. AD 890 to 1155. Both are compatible with the archaeological dating as medieval, though they are early in this period. The former is also very close to the date obtained from flax stems from Context 2005.

Context 1014 (?river deposit)

Sample 59 (GBA) (3 kg): Mid to dark slightly yellowish grey-brown, soft (working somewhat plastic and thixotropic) sandy silt with traces of charcoal.

The small residue consisted of about 200 cm³ of which a little under half was sand and a single large (to 55 mm) piece of daub (bearing the casts of wattle rods); the rest was mainly charcoal and bark fragments (both only moderately common) with some charred and uncharred ?heather root/basal twig (and securely identified heather shoot fragments and flowers). All the components

looked a little worn or rounded—perhaps abraded by river action before deposition. ‘Useful’ plants were very sparse in the sample: there were traces of charred oat (*Avena*) spikelets and of charred oat chaff. Although presumably waterlain, there was nothing to indicate an aquatic environment amongst the plant remains and it appears to be material dumped into water if not actually a semi-terrestrial or terrestrial deposit

There were few invertebrates in the flot, and rapid scan recording produced a nondescript list of only eleven taxa and twelve individual adult beetles and bugs; even so there was a single *Trox scaber*.

Context 1012 (?river deposit)

Sample 56 (GBA) (3 kg): Dark grey, soft (working just plastic), slightly humic, ashy sandy silt, with traces of charcoal and bone.

The moderate-sized residue was about 700 cm³ in volume, of which about 150 cm³ was mineral material, mainly gravel (up to 30 mm), grit and sand. The rest consisted of granular, very decayed bark (to 20 mm, with large amounts of bark sclereids up to 2 mm in size) and charcoal (to 15 mm), and other charred plant material. The last of these included moderate amounts of heather root/basal twig fragments (there were also traces of charred heather capsules and shoot fragments, and of uncharred shoot tips) and there were some fragments (to 5 mm) of burnt mor humus (fine grained, undense, amorphous material); all of these might have originated in burnt turves. Other charred remains included traces of oat chaff, cultivated oat (*Avena sativa*) spikelets, rye and bread/club wheat grains, grass/cereal culm-nodes (‘knees’) and tentatively identified saw-sedge leaf fragments. It is tempting to see these as material originating in thatch, though other possibilities (such as that they were from litter for floors or byres or even from ash which had been used for some industrial process such as tanning) are perfectly possible.

Identifiable plant remains were rather limited in number and diversity, most of them being weeds of waste ground and trampled places. Again, there

were no aquatic or marsh plants to indicate deposition in or near the river.

A small group of invertebrates was recovered (N = 47; S = 14), but it was dominated by exceptionally large numbers of remains of *Trox scaber* (27 individuals), many of which were very badly rotted, patchily decayed, and sometimes holed. The only other species present in appreciable numbers was *Trechus micros* (7), perhaps a post-depositional invader but, as a subterranean species, a likely candidate to accidentally meet its death in a feature such as a tan pit. Two *Pterostichus melanarius* and a *Clivina fossor* perhaps hint at a ‘pitfall’ effect somewhere along the taphonomic chain. A fragment of wood or bark with insect bores was noted.

Context 1027 (?river deposit)

Sample 75 (GBA) (2 kg): Moist, light to mid yellowish-grey, sandy clay silt with mm-scale yellow flecks and variation in the organic content on a cm scale. Bone, molluscs, and brick/tile were present, as were stones (6-20 mm and 20-60 mm).

A large number of plant taxa were noted during examination of the small residue; they appeared to consist of a mixture primarily of aquatics (whose seeds were rather worn) and weeds (in a much better state of preservation); the implication of this might be that the deposit was a dump of terrestrial material containing aquatics previously abstracted from the river and redeposited into it secondarily. Apart from some seeds of plants quite likely to have grown on moist (and perhaps disturbed) soils near the river, all the taxa were present in very small amounts. The biennial/perennial nitrophile weed community (Group ARTE in Table 6) was quite well represented and there were a few plants which might have originated in grassland, or even in cut vegetation from such a habitat. The coarser organic fraction of the residue was mostly very decayed bark and wood, both as fragments no larger than 10 mm.

There were appreciable numbers of aquatic and waterside molluscs (including *Bithynia*

tentaculata, *Valvata piscinalis*, *Succinea ?oblonga*, small freshwater bivalves and fragments of shell of freshwater mussels), ostracods and aquatic and waterside beetles, some house fauna and some terrestrial outdoor species. Numerous insect immatures were present and were probably of aquatic species.

Period 8 (19th century)

Context 1024 (river silt/sand)

Sample 73 (GBA) (1 kg, plus a separate 1 kg processed for molluscs): moist, mid slightly greyish-brown (internally black), plastic, soft, and sticky, clay silt to silty clay. Large stones (>60 mm) were present and freshwater molluscs were common.

There was a rather low concentration of identifiable plant remains in the small residue (which consisted largely of gravel and undisaggregated fine sediment). But the predominance of aquatic and waterside taxa was clear—both amongst the plants and the invertebrates. The former included seeds of hornwort (*Ceratophyllum*), duckweed (*Lemna*), yellow water-lily, and pondweed (*Potamogeton*). The invertebrates included abundant opercula of the freshwater gastropod *Bithynia tentaculata*, as well as shells which may have been of the gastropod *Potamopyrgus jenkinsi*, a 19th century introduction to Britain. There were also bivalves (*Pisidium* and a freshwater mussel), other freshwater molluscs, caddis larva cases, and the bryozoan *Lophopus crystallinus*. Terrestrial material included flax seeds and capsule fragments, a small range of weeds and waste ground taxa, and a single fig seed. Identifiable plant remains were sparse but well preserved.

Invertebrates in the flot were assessment-recorded, but a rough semi-quantitative list was made. Outdoor forms predominated among the adult beetles and bugs (over half of the individuals as recorded), with aquatics numerous. The latter were complemented by large numbers of *Daphnia* ephippia and ostracods. There were a few terrestrial decomposers, but no distinctive

community was present. This was clearly a waterlain deposit with no evidence of dumps.

Three unidentifiable fragments of bone were present, one of which was burnt.

Context 1003 (river silt/sand)

Samples 34-5 (GBA), 32-3, 36 (BS)

Samples 32-3, 36 (total 23 kg): The very small residues were mostly herbaceous plant detritus with freshwater and waterside gastropod and freshwater mussel shell fragments and a few brick/tile fragments and cobbles. The washovers contained herbaceous detritus likely to have originated largely in aquatic and waterside plants, since the identifiable plant remains included a variety of taxa from such habitats. Terrestrial material was also present, represented by a few probable arable or waste ground weeds but also capsule fragments of flax. Amongst the mollusc material, the following freshwater taxa were noted: *Succinea putris*, *Bithynia tentaculata*, *Valvata* sp. and planorbids. Fly puparia and fish bone and scales were also found.

A few invertebrates picked from the washover from Sample 36 during botanical recording were identified: the three beetles included two aquatics and a third species which was probably from waterside vegetation.

Not currently located (sample from unlabelled context from Column D, 3.98-3.81 m)

Context 9271

Although the position of the column from which this sample was taken is known, it was not possible to relate it archaeologically to the recorded contexts. A subsample was examined during the assessment before this lack of archaeological information was apparent, but when it emerged that the deposit seemed to contain some unusual material (see below), a further subsample was processed, despite the unclear provenance.

Sample 271 (GBA) (3 kg): Moist, black, crumbly, fine and woody herbaceous detritus with lenses (to 20 mm) of light-mid grey sand. A few twigs were noted.

There was a large residue of about 2200 cm³ consisted almost wholly of granular decayed bark (to 40 mm) in all fractions with abundant sclereids up to 2 mm, and with a trace (probably <1% by volume) of sand and gravel. The coarser fractions (>2 mm) consisted of almost nothing but bark and a trace of charcoal with only a few small fragments of wood. The presence of root fragments and earthworm egg capsules perhaps points to the presence of inwashed soil or of material from turves unless they signify that this deposit was colonised by plants at some stage and that a living soil developed. A potsherd (to 30 mm) from this sample was found to have a black organic (?charred) crust but was not investigated further.

It may be worth noting an observation made during the assessment of another subsample of Sample 271: it yielded a very large residue which, on standing for some days between initial processing and examination for plant remains 'bled' a reddish leachate. The residue was again found to consist largely of bark fragments up to 60 mm (some may have been 'chips'), with much bast (from the layer immediately beneath the bark) and a trace of wood. The few identifiable plant remains included three mosses which may have been corticolous (bark-growing) types but otherwise such remains were sparse (though well preserved) and of little interpretative value.

The invertebrates in the flot from the 3 kg subsample were rapid scan recorded. They appeared to be from intensive occupation, and in all probability were introduced in dumps of Anglo-Scandinavian date. Aquatics were not very abundant, so the material probably did not disperse, but rather entered the water as a mass or was dumped at the water's edge.

Recording of the 1 kg assessment subsample indicated the presence of moderately large numbers of invertebrate remains in the flot. A rough semi-quantitative record was made.

Components from water and from intensive human occupation (including two *Pulex irritans*) were present, together with a few plant feeders.

Watching Brief, Trench 1

?Anglo-Scandinavian

Context 38 (?dump into river)

Samples 10 and 17 (GBA) and **11-16, 18** (BS)

Sample 17 (1 kg): Moist, dark brown, crumbly, very humic, sandy silt with occasional patches (<10 mm) of grey sand. Small stones (2-6 mm) were present.

Most of the small residue comprised very decayed bark fragments (up to 10 mm in maximum dimension) with some sand and a trace of gravel; sclereids, no doubt from the bark, were frequent in the flot. The identifiable plant remains (which were dilute and often rather fragmentary) were rather mixed in their origins and no one group emerged as especially well represented.

The flot was very small and contained only a few traces of invertebrates, noted during assessment. Even so, *Trox scaber* was present.

Samples 11-16 and 18 (total 59.5 kg): The residues from these samples were small and consisted mainly of wood (?also bark) mostly no larger than 10 mm. There were traces of oyster shell, charred grain, nutshell, brick/tile and a few pebbles. Large bone fragments were quite numerous, many showing evidence of butchery.

Context 40 (river deposit/dump)

Samples 19 (GBA) and **20 and 22** (BS)

Sample 19 (1 kg): Moist, mid to dark grey, crumbly (working just plastic), humic, slightly sandy silt. There were also patches of light grey-brown sand and almost pure, grey silt. Small stones (2-6 mm) and bone were present.

Much of the residue comprised charcoal and very decayed bark (up to 10 mm); seeds were sparse but their preservation moderately good. A variety of habitats was indicated by the identifiable remains: waste ground and cultivated land, aquatic environments, and perhaps also grassland, heathland and woodland (though plants representing almost any of these may simply have originated in materials discarded into the river). Traces of wheat/rye 'bran' perhaps point to food waste or even faecal material being amongst this rubbish. Once again, flax seeds and capsule fragments were present.

Invertebrates from the flot were roughly semi-quantitatively listed during assessment. Aquatics were numerous, and there were traces of fauna from intensive occupation, including a single *Trox scaber*.

For the bone, a single herring vertebra was recorded. Twelve more fragments were unidentifiable, four of them being burnt.

Samples 20 and 22 (total 18.5 kg): The residues were mainly grit and gravel with some bone, whilst the washovers were largely very decayed bark. Large bone, brick/tile, shellfish, wood/twigs, nutshell and burnt bone were all present in small quantities. Mollusc remains were present in the washover.

Context 41 (river deposit/dump)

Samples 24 and 27-8 (GBA) and **23 and 25-6** (BS)

Sample 27 (1 kg): Moist, dark grey-brown, very crumbly, very humic, sandy silt. Locally more brown and more grey. Charcoal, very decayed wood, and mammal and fish bone were all present.

Very decayed bark formed the major component of the rather small residue (along with some wood) and the flot appeared to consist largely of fine 'frass' from wood or bark (this, with hindsight, was probably an abundance of bark sclereids. The moderately frequent sclereids in the

finer fractions of the residue were no doubt from bark. The rather few identifiable plant remains present included traces of charred flowers and uncharred flowers and shoot fragments of heather, and of some kind of charred root or rhizome; these might all be from burnt turves, for example. There was also a trace of charred wheat grains, not identifiable beyond the appellation 'hexaploid' (i.e. probably spelt or bread wheat).

Assessment showed that the minute flot contained very few invertebrates, but *Trox scaber* numbered among them.

Bone was represented by thirteen unidentifiable fragments, a few of which were burnt.

Samples 23, 25 and 26 (25 kg): The small residues contained modest amounts of large bone and very decayed bark and wood, with a trace of oyster shell.

Medieval

Context 16 (?river silt)

Sample 52 (GBA) (3 kg): Moist, very dark brown, crumbly and slightly brittle, very humic, silty sand with burnt mammal bone and 6-20 mm sized stones present, and abundant wood fragments (these were actually probably largely bark).

There was an extremely large residue of about 1800 cm³ of granular bark which included a large fragment in the form of a strip approximately 150 x 30 mm, and abundant sclereids. There were also some wood fragments and sand, perhaps about 30% of the residue being mineral material. There were also fragments of horncore and a little rounded brick/tile (to 30 mm) in the coarsest fraction. The count of identifiable remains was quite low (23), mainly weeds of various kinds, with a few possible foodplants and a trace of clubmoss, *Diphysium complanatum*, probably indicative of reworking of Anglo-Scandinavian material, if this deposit is not in fact of this earlier date.

An assemblage of adult beetles and bugs of modest size was recovered (N = 123; S = 72). Although there were numerous *Daphnia* ephippia, aquatic insects were rare (single individuals of two common taxa). Much the most abundant beetle was *Trox scaber* (19 individuals), whose preservation was, like some of the other remains, very poor. The second most abundant beetle was *Acritus nigricornis* (9) which, although very common in archaeological occupation deposits, rarely occurs in such numbers. According to Kryzhanovskii and Reichardt (1976), *A. nigricornis* has sometimes been recorded in quantity under tan bark. It is also found in various kinds of decaying matter, and may have been attracted to skins, in the way postulated for *T. scaber* (see discussion). The same may be true of the maggot-predator *Creophilus maxillosus*. A further species which may have connections with tanning is the histerid *Teretrius fabricii*, perhaps imported with bark.

The remaining beetles were a mixed group, with small quantities of house fauna, various decomposers associated with moderately to very foul conditions (perhaps attracted, like the species discussed above), and some from heath or moor habitats, presumably imported. Fly puparia were conspicuously rare.

The assemblage from the 1 kg subsample examined during the assessment was 'assessment-recorded'; it was broadly similar to that from the 3 kg subsample.

Context 15 (?river silt)

Sample 49 (GBA) (1 kg): Moist, varicoloured sediment: light brown, to light yellow-brown, to light to mid grey. The texture also varied, from stiff (working plastic) clay, through thixotropic silty sand, to crumbly sand. Coal was present, and large stones were abundant.

Very little material from the subsample examined failed to pass the 300 μ m sieve. The residue was of sand and gravel, whilst the flots contained some bark sclereids, rootlets and a few seeds of little interpretative value.

Assessment showed that invertebrates were rare and also of no real interpretative value.

Context 14 (?river silt)

Sample 48 (GBA) (5 kg): Moist, light grey to very dark brown to black, crumbly, very humic, sandy silt with patches of sand and patches of yellow mineral deposition and abundant 20-60 mm-sized stones.

The very large residue of about 1600 cm³ was mainly sand and gravel (to 65 mm) with a very characteristic appearance of a river deposit, the washover consisting of about 700 cm³ of granular decayed bark (to 30 mm) with abundant sclereids, mostly <1 mm, the plant material mostly being somewhat rounded and abraded—clearly waterworn. The tally of identifiable plant remains was modest (20), but amongst them there were abundance scores of '2' for *Atriplex*, *Chenopodium album*, *Sambucus nigra* and *Urtica dioica*, all probably from weed and scrub vegetation nearby or at some distance upstream of the site. There may have been a small component derived from burnt turves, given the presence of traces of charred cross-leaved heath leaves, uncharred heather shoot fragments, and charred and uncharred heather root/basal twig fragments. One small potsherd (maximum dimension 20 mm) was found; it had a patch of blue pigment on it.

The beetle and bug remains were recorded in detail: numbers were fairly small (N = 34 S = 21), but included 10 *Trox scaber*. Preservation was generally poor, especially of the *Trox*, and many remains showed a colour change towards 'pale'; the fossils broke easily on handling. The remaining fauna was rather mixed ecologically, with hints of water from two beetles and two caddis cases.

The 1 kg subsample examined during the assessment revealed small numbers of invertebrates, including 'several' *Trox scaber*.

?Medieval

Context 6 (sample from animal (?horse) carcass) [N.B. appears in table 1 of Carrott *et al.* 1997b as Context 4, Sample 6]

Sample 4 (SPOT) (0.05 kg): Dark grey humic sandy silt with patches of fresh-looking yellowish herbaceous plant detritus.

A very small subsample was disaggregated and the residue examined briefly. The small residue consisted largely of the very fresh-looking plant detritus; it had the appearance of recently deposited dead plant material but with the seeds a mixture of very well preserved and rather thin-walled types. There was no clear indication from the identifiable remains for the nature and origin of the plant remains, which were a mixture of weeds and waste ground plants, some grassland taxa, and a single fig seed.

Early Modern

Context 19 (?river silt)

Samples 45 and 46 (GBA)

Sample 45 (2 kg): Moist, black, oxidising to mid grey-brown, slightly crumbly (working plastic), sulphide-rich, humic silt. Rootlets (?ancient) were common and molluscs were present.

Preservation of plant remains in the small residue and flot was good, though much of the material was unidentifiable herbaceous detritus; notable were fibrous remains which might have been from decayed flax stems (flax seed fragments were present and capsule fragments moderately common). All the other more frequent identifiable remains are likely to have originated in weeds of waste ground and cultivated land, in plants from disturbed river banks, or in waterside or aquatic vegetation (there was a distinctive component of taxa from biennial and perennial nitrophile weed communities typically found on river banks, by paths and hedges, and in other unshaded and somewhat disturbed habitats, especially wild and white horehound, but also hemlock, burdock and

mallow (*Malva*). Also present were a few remains likely to have come from heathland habitats: heather, cross-leaved heath and perhaps the moss *Leucobryum glaucum* (although it grows in woodland as well as on heaths and bogs).

The assessment record of the flot showed that invertebrates, including beetles, were abundant, with a substantial aquatic component and little evidence of human occupation. An exception was a single *Oryzaephilus surinamensis*, the only grain beetle from any of the deposits of whatever date at the site. The overall implications were as for the subsample of Sample 41 (Context 18), described below.

There were some freshwater and waterside snails including *Bithynia tentaculata*, a single *Succinea putris*, and a few fragments of planorbids.

Four fish bones were recovered, but none could be identified to species.

Context 18 (?river silt)

Samples 41-3 (GBA)

Sample 41 (2 kg, plus a further 1 kg subsample for molluscs)

Moist, mid to dark brown, brittle (working plastic), humic clay silt. Freshwater molluscs were present.

Both flot and residue consisted mainly of herbaceous plant detritus and the identifiable taxa were primarily aquatic and waterside or wet ditch plants: those present in more than trace amounts were fool's watercress (*Apium nodiflorum*), yellow water-lily, fine-leaved water-dropwort (*Oenanthe aquatica*), celery-leaved crowfoot (*Ranunculus sceleratus*) and great yellow-cress (*Rorippa amphibia*). Other taxa must have originated in vegetation on land near the river; they included seeds and capsule fragments of flax.

Invertebrates from the very large flot were recorded during assessment: a rough semi-quantitative list was made. Aquatics dominated

(there were, for example, ‘many’ *Ochthebius* sp. and *Daphnia* ehippia), and some other taxa would have lived at the water’s edge. Outdoor forms were dominant, and there was only a limited component suggesting human occupation. Most of the decomposers may have lived in natural waterside litter or in dung in fields adjacent to the river upstream. Unless all the aquatics were carried downstream (not impossible), it appears that the river was by this stage reasonably clean, without dumping.

The very small assemblage of freshwater and waterside molluscs included *Succinea* sp. and several opercula of *Bithynia*.

Context 20 (?river silt)

Samples 2, 37-40 (GBA)

Sample 38 (GBA) (2 kg): Moist, mid grey brown, crumbly (working sticky and plastic when wet), clay silt. Flecks of yellow and orange mineral deposits, which may be oxidised organic material, were also noted.

A very small amount of material failed to pass the sieve and most of what was retained comprised undisaggregated sediment. The rather few seeds recorded (mainly from the flot) were from plants likely to have grown in or near a wet ditch or the banks of the river but are not of much interpretative value in isolation.

Only recorded during assessment, the rather small group of invertebrates included aquatics and decomposers which may have included some from human occupation: they offered no evidence of dumping, however.

Context 10 (dump behind revetment)

Samples 6-7 (BS)

Samples 6 and 7 (total 18.5 kg): There were two moderate-sized residues from these samples. They were rich in oyster valves (mostly whole and unabraded); with them was some brick/tile (to 140

mm maximum dimension) and a little glass, pottery, bone, mussel shell and clay pipe fragments.

Trench 2, Peasholme Green

Roman: 2nd/early 3rd century

Context 3082 (dump deposit)

Samples 171 (GBA) and **172-6** (BS)

Samples 172-6 (total 56.5 kg): The small residues consisted mainly of brick/tile with some pottery and bone; the tiny washovers were of fine charcoal and were not examined more closely.

Context 3100 (dump deposit)

Samples 177 (GBA) and **178-81** (BS)

Samples 178-81 (total 43 kg): The small residues were mostly brick/tile with a little pottery, large bone (some burnt), shellfish, pottery and gravel; the washovers were very small and comprised charcoal.

Context 3178 (dump with charcoal and bone)

Samples 185 (GBA) and **186-8** (BS)

Sample 185 (2 kg): Just moist, light to mid grey-brown, crumbly, locally plastic (working plastic), slightly sandy, silty clay. Internally light to mid brown to light orange-brown layers. Locally more clayey. Some clay inclusions mottled grey-brown. Charcoal and brick/tile were abundant.

The small residue was of sand and gravel with abundant brick/tile; the small washover was of charcoal. At least one uncharred duckweed thallus was recorded, along with water-plantain (*Alisma*) ‘embryos’ (cf. Sample 160 from Context 3069, below).

Bone was represented by single fragments of bird and amphibian.

Samples 186-8 (total 36.5 kg): The small residues were mostly of pottery and brick/tile, with some large bone (some burnt), small bone, bird bone, and ?burnt peat; the small washovers consisted mainly of charcoal. Both burnt bone and burnt oyster shell fragments were also recorded from the residues.

Roman: late 2nd-early 3rd century

Context 3078 (pit lining in cut 3081)

Samples 153 (GBA) and **154-5** (BS)

Samples 154-5 (total 22 kg): The small residues were mostly brick/tile and gravel with a little amphibian, fish and mammal bone and pottery; the tiny washovers were of fine charcoal with traces of fish vertebrae.

Context 3077 (basal pit fill in cut 3081)

Samples 156 (GBA) and **157-9** (BS)

Sample 156 (1 kg): Moist, mid, slightly greyish brown, crumbly (working crumbly and locally plastic), angular concretions (to 40 mm) in a silty matrix.

Most of the rather large residue comprised very decayed, flaky, highly calcareous concretions. There was no doubt that these were faecal in origin—although no parasite eggs were noted in a ‘squash’, *sensu* Dainton (1992), from a subsample of concretion—and with them were mineralised casts or moulds of corncockle seed fragments (likely to have been a grain, and therefore flour, contaminant) and mineralised seeds and fruitstone material of *Prunus* and mineralised seeds of apple. The moderately large numbers of mineralised fragments of rat-tailed maggots (*Eristalis tenax*) also point to the foul nature of the pit fill during its formation. The only other invertebrates were earthworm egg capsules.

The small number of bone fragments recovered from this sample were rather battered and eroded. A few of the fragments showed acid etching, and

three of the herring vertebrae had a ‘squashed’ appearance, characteristic damage consistent with passage through the gut.

Samples 157-9 (total 27.5 kg): The residues mostly consisted of faecal concretions with some stone, brick/tile, fishbone, and amphibian bone present. Much of the bone was very fragmented, with some specimens showing acid etching, consistent with passage through the gut.

Context 3007 (pit fill in cut 3081)

Samples 168 (GBA) and **169-70** (BS)

Samples 169-170 (21 kg): The small residues consisted of brick/tile to 80 mm, with some bone to 100 mm (mostly chopped cattle fragments) and a little charcoal and pottery; the tiny washovers contained a little more charcoal.

Context 3006 (pit fill in cut 3081)

Samples 148 (GBA) and **149-52** (BS)

Samples 149-152 (total 37 kg): Four very small residues mostly of gravel with a little brick/tile; one of the small washovers was examined in more detail; it was found to contain small ?heather root/basal twig charcoal and elder seeds. Traces of bone (mostly burnt, including part of the shaft of a long bone of chicken), charred ?heather basal twigs/roots, and ?leather were all noted from the residues.

Context 3005 (pit fill (cut 3081))

Samples 142 (GBA) and **143-6** (BS)

Samples 143-6 (total 39 kg): The small residues were mostly brick/tile (to 70 mm) with a little bone, charcoal, and pottery.

Medieval

Context 3069 (pit fill in [?barrel-lined] cut 3072)

Samples 160 (GBA) and **161-4** (BS)

Sample 160 (2 kg): Moist, light to mid grey-brown, sticky (working plastic and sticky), slightly sandy, slightly silty clay, with inclusions of varicoloured (buff to mid brown to fawn) material and patches of very plastic, light brown (mottled grey) clay. Brick/tile common, charcoal present.

The residue was small and consisted of angular brick/tile and sand; there were traces of three plant taxa, all likely to have originated in aquatic or waterside habitats (water-plantain ‘embryos’, rush seeds and duckweed, the last represented by at least one thallus; the duckweed would have lived on the surface of a pond, lake or river, and all these remains may have arrived with wet mud or water from the nearby river). There were no invertebrate remains.

Sample 161-4 (total 48.5 kg): The residues were mainly of brick/tile (with a little large bone, fish otolith, oyster shell, pottery, charcoal, coal, cinder and gravel); the tiny washovers were of fine charcoal.

Context 3067 (pit fill in [?barrel-lined] cut 3072)

Samples 165 (GBA) and **166-7** (BS)

Samples 166-7 (total 19 kg): The small residues were mostly brick/tile (to 70 mm) with a little charcoal, large bone (some burnt), small bone and pottery (including green-glazed sherds), coal and cinder; the tiny washovers appeared to be of charcoal.

Context 3169 (pit fill in cut 3085)

Samples 184 (GBA) and **183** (BS)

Sample 184 (2 kg): Moist, mid grey-brown, stiff, locally crumbly (working plastic), slightly sandy, slightly silty, clay. Varicoloured buff to light

orange-brown. Local patches of very plastic light grey-brown mottled clay. Stones (2-20 mm) present, brick/tile present, charcoal common.

The small residue of sand, gravel, charcoal and brick/tile contained one identifiable plant macrofossil taxon: elderberry seeds.

The only invertebrate represented was a single earthworm egg capsule.

Sample 183 (9 kg): There was a very small residue of brick/tile with a little pottery, gravel and bird and fish bone (gadid); the small washover was of charcoal.

Discussion

Dating

The 20 radiocarbon dates obtained for various samples from this site (Table 3) are not wholly consistent, either with each other or with the archaeological phasing. Some of the bone samples, for example, were clearly residual (e.g. those from Contexts 2004 and 2020), while others (such as those from Contexts 2018 and 2189) gave dates later than expected and may therefore have been intrusive. This is understandable in the case of soft river deposits. In view of this, it was felt that detailed analysis of the bone assemblages from these excavations was unjustified.

The results of the programme of radiocarbon dating suggest that the bulk of the macrofossil remains analysed from what were defined archaeologically as ‘post-Roman/pre-Anglo-Scandinavian’ to ‘medieval’ periods were in fact of broadly Anglo-Scandinavian date. This dating is very much in accord with the biological evidence. On the one hand, there was an almost complete lack of grain pests, which were very rare or absent in the Anglo-Scandinavian period in York but soon became common after the Norman Conquest. On the other, there were records for dyeplants, particularly the clubmoss *Diphysium complanatum*, a very characteristic Anglo-Scandinavian ‘marker fossil’. The rarity of *Tipnus unicolor*, normally the dominant spider beetle in

medieval assemblages, is also explained if these 'medieval' deposits are in fact of earlier date.

General nature of the biota

Plant and invertebrate macrofossils preserved by anoxic waterlogging were abundant in some samples from Trench 1, and present in most. Some samples also yielded modest amounts of charred plant material, including saw-sedge (*Cladium*) and heather (*Calluna*) and sometimes material interpreted as burnt and unburnt peat or mor humus (see below). Preservation of plant remains and insects was often excellent, but in some samples was much poorer, the remains of *Trox scaber* (among the insects) often being conspicuously more highly decayed. The presence in many samples of sclereids from bark indicates how far this material had sometimes decayed, too. Macrofossils were generally sparse in the deposits of Roman date from Trench 2. Bone was widely present in both trenches but usually in low concentrations. Snail and freshwater bivalve shells were sometimes noted.

Although there were rather few biological remains from the Roman deposits, one context from Trench 2 (3077, basal fill of a pit) offered evidence for very decayed human faecal material. Some deposits from Trench 1 assigned to the late Roman period seem to be of Anglo-Scandinavian date to judge from the radiocarbon date and the presence of fragments of clubmoss (see below).

The Anglo-Scandinavian deposits were notable for having in many cases a high proportion of tree bark fragments, and in several cases numerous *Trox scaber* (see below) and assemblages of fruits and seeds with a large number of weed taxa and few aquatics, suggesting they formed on land (probably by dumping) rather than in water. Peatland taxa were often quite frequent; they perhaps originated largely with turves, though in some cases the records of the upper parts of heather and some other peatland plants may indicate the use of brushwood.

The assemblages of plants and invertebrates from deposits dated archaeologically as medieval

(though probably largely of Anglo-Scandinavian date) suggested the continuation of dumping. In a number of cases there were abundant bark fragments, and *Trox scaber* was sometimes numerous. Some deposits had a much clearer component of remains from aquatic organisms and acid peatland was again represented (in a few cases some charred material which was probably peat or mor humus, presumably from turves, was noted). Remains of seeds and capsule fragments of flax were frequently recorded and one group of samples from related waterlain contexts yielded stem fragments of this plant, probably indicating retting in the river.

In the deposits dated to the Early Modern (19th century) period, aquatic organisms were much more abundant and terrestrial plants and invertebrates mostly sparse; these deposits therefore represent river silts, as suggested by the excavator. This phase of deposition presumably reflects the raised river level of the Foss brought about by the installation of a lock downstream, near the confluence with the Ouse.

Evidence for tanning

Numerous deposits at this site produced concentrations of very decayed bark with the characteristic sclereids (stone cell clusters) which seem to be present in the bark of many trees. Accompanying these were unusually large numbers of the unmistakable scarabaeid beetle *Trox scaber* (it was present in 30 of the samples from this site, at a mean frequency of 3.6 per sample when present, and at concentrations of 10 or more per kilogramme of sediment in some cases). The records of bark, sclereids and *Trox* (Table 11) were strongly positively correlated (Table 12), in contrast with records from the largest data-set available for a single site, that for 16-22 Coppergate, York. There, although *T. scaber* was present in a large proportion of the samples, there were only three cases where three individuals were noted and five where four were found, the rest being ones or twos and the mean number of individuals per sample where the beetle was present being 1.2. At Coppergate, there was no significant correlation between records of bark

and *Trox*, though it should be borne in mind that records for bark from those samples are not so complete as for the Layerthorpe material (and sclereids were not recognised when the Coppergate material was examined).

Trox scaber is a scavenger generally found in dry animal remains or in wood mould, but perhaps most typically associated with birds' nests (Leatherdale 1955; Britton 1956, 6; Palm 1959; Jessop 1986). It is sometimes found in habitats created by human activity, and occurs very frequently in archaeological deposits, Hall *et al.* (1983, 183) suggesting that it exploited a wide range of habitats. On the basis of records from a very large number of occupation sites, we can say that *T. scaber* usually occurs in small numbers, typically only one per kilogramme of sediment, as at Coppergate, so that when it is more abundant it is reasonable to look for some characteristic cause. We suggest that at the Layerthorpe Bridge site it was attracted either to skins awaiting tanning or to the tanning pits themselves, and that the archaeological deposits contained material discarded from tanning carried out in the immediate vicinity.

Most of the remains of *Trox scaber* from Layerthorpe Bridge were in a poor preservational condition, and many were so decayed as to break up when manipulated with a fine paintbrush. In some cases the remains could be seen to have decayed substantially, having a characteristic surface texture and local patches of erosion. It is suggested that these remains had passed through the tan bath, and that the decay was the result of substances added to produce the active liquor, ash or lime perhaps being likely candidates.

It may be no coincidence that Fellows-Jensen (in prep.) has established that 'the street name Barker Hill (now St Maurice's Road [which runs south-east from Monkgate, becoming Jewbury before Layerthorpe Bridge]) is first recorded in its Scandinavian form, Barkergate, c. AD1230. It was originally a compound of the Scandinavian occupational term *barkari* or tanner (from the verb, *barka* 'to tan with an infusion of bark', Middle English *barkere*), and the Scandinavian word *gata*, 'town street'; 'barker' later became the

name for workers who secured tan bark from woodland as suppliers of a vital raw material for the tanning industry.

As an aside, it may be mentioned that a very large proportion of the remains of *Trox scaber* were recovered during botanical analysis from the residues from paraffin flotation, perhaps having failed to float because hydrophobic layers in the cuticle (to which paraffin normally attaches) had been modified or destroyed during the unusual decay experienced in the tan pit.

Evidence for fibre processing

Some Anglo-Scandinavian/medieval deposits at this site yielded concentrations of flax stem fragments together with seeds and capsule fragments of this plant and also remains of pods of a weed formerly characteristic of flax fields, gold-of-pleasure. Bearing in mind the riverine location, the nature of the sedimentary matrix (well-sorted sand) and the size of the stem fragments (up to a few centimetres in length), there seems little doubt that such material represents debris from retting, in which bundles of the mature crop were steeped in the river to release the fibres from the stems. As such, this is the first record for material of this kind from York, though flax seeds and capsule fragments are often frequent in archaeological deposits of Roman, Anglo-Scandinavian and medieval date from the city (see, for example, Kenward and Hall 1995). Examples of scutching waste (debris from breaking the stems during fibre extraction) are recorded from 16-22 Coppergate (see Walton 1989; Walton Rogers 1997) and may have been present in Context 2160.

Pollution

Both tanning and retting are processes which cause pollution and are especially malodorous. Both involve the decay of plant material and, in the case of tanning, also of flesh—at least in the earlier stages of hide preparation. The Layerthorpe Bridge area might well have been far enough away from centres of (politically powerful) population to be an acceptable location for such vile-smelling

activities. Tanneries in this part of the city would certainly have been downwind of most of York's medieval inhabitants on most days of the year, and though the effluent they caused would have polluted a river (the Foss), the large area of marsh into which it subsequently flowed may have acted as a filter. Although a substantial number of the aquatic invertebrates suggested at least moderately clean water, they are likely to have been washed downstream from less polluted reaches and they do not in themselves argue against heavy pollution at Layerthorpe Bridge.

Climate

This site produced four definite and one probable record of the nettle bug *Heterogaster urticae* from Anglo-Scandinavian and medieval deposits. It has been argued elsewhere that this species, which is abundant in Anglo-Scandinavian deposits in York, indicates at least summer temperatures significantly above those of the present day (summarised by Hall and Kenward 2000).

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Table 1. Layerthorpe Bridge, York: contexts from which GBA subsamples and SPOT samples were examined for plant and invertebrate macrofossils.

Key: C—Context; S—Sample number; ST—sample type; Sub.—subsample; Wt—Weight (kg); RMI—recording method for insects (A: assessment; D: detail; R: rapid scan; RS: semi-quantitative rapid scan; S: scan, all sensu Kenward 1992). For the sample marked 'BS', a subsample of unprocessed sediment was examined, the original material not having been sieved as a BS sample.

C	Date	Context type	S	ST	Sub.	Wt	RMI
14	Medieval	?river silt	48	GBA	/T	2	A
					/T1	5	D
15	Medieval	?river silt	49	GBA	/T	1	A
16	Medieval	?river silt	52	GBA	/T	1	A
					/T1	3	D
18	Early Modern	?river silt	41	GBA	/T	2	A
19	Early Modern	?river silt	45	GBA	/T	2	A
20	Early Modern	?river silt	38	GBA	/T	2	A
38	?Anglo-Scandinavian	?dump into river	17	GBA	/T	1	A
40	?Anglo-Scandinavian	river deposit/dump	19	GBA	/T	1	A
41	?Anglo-Scandinavian	river deposit/dump	27	GBA	/T	1	A
1012	Medieval	?river deposit	56	GBA	/T1	3	D
1014	Medieval	?river deposit	59	GBA	/T1	3	R
1024	Early Modern (C19th)	river silt/sand	73	GBA	/T	1	A
1027	Medieval	?river deposit	75	GBA	/T	2	A
1029	Anglo-Scandinavian (4)	waterlain silt	79	GBA	/T	2	A
			80	GBA	/T1	3	R
1031	Anglo-Scandinavian (4)	waterlain silt	84	GBA	/T	2	A
1033	Anglo-Scandinavian (4)	silt laid down within channel 2033	68	GBA	/T	2	A
1038	Anglo-Scandinavian (3)	reddish grey clay filling cut into 2131	89	GBA	/T1	3	R
1039	Anglo-Scandinavian (3)	organic deposit, ?dump [overlying later wattle revetments]	90	GBA	/T	1	A
					/T1	3	D

C	Date	Context type	S	ST	Sub.	Wt	RMI
1047	Anglo-Scandinavian (3)	clay/clay silt E of wattle forming N-ward extension of bank	95	GBA	/T	3	A
1052	Anglo-Scandinavian (3)	clay/clay silt E of wattle forming N-ward extension of bank	117	GBA	/T	1	A
2003	Medieval	sandy river deposit	147	SPOT	/T	1	S
2004	Medieval	sandy river deposit	132	SPOT	/T	1	S
2005	Medieval	sandy river deposit	136	SPOT	/T	1	S
			137	SPOT	/T	1	S
			138	GBA	/T1	13	RS
2006	Medieval	sandy river deposit	214	GBA	/T1	5	A
2007	Medieval	dump of stony sandy silt into river (?consolidation of bank)	213	GBA	/T1	3	A
2022	Anglo-Scandinavian (4)	silt laid down within channel 2033	205	GBA	/T	1	S
2023	Anglo-Scandinavian (4)	waterlain silt	206	GBA	/T	1	A
2030	Anglo-Scandinavian (3)	reddish grey clay filling cut into 2131	286	GBA	/T	1	A
					/T1	3	A
2065	Anglo-Scandinavian (3)	river deposit	258	GBA	/T1	3	D
2131	Anglo-Scandinavian (2)	peaty material, ?river deposit - substantial layer covering whole of timber structure and area of earlier channel and area to E	280	GBA	/T	1	A
			281	BS*	/T1	3	RS
2160	Anglo-Scandinavian (1)	first waterlain deposit, after construction of wattle revetment: silt in channel west of bank	287	GBA	/T	1	A
			287	GBA	/T1	3	D
			291	GBA	/T1	3	S
2178	Anglo-Scandinavian (1)	organic fill of timber-lined ?sluice/overflow	292	GBA	/T	1	A
			292	GBA	/T1	3	D

C	Date	Context type	S	ST	Sub.	Wt	RMI
2189	Post-Roman/ Pre-Anglo- Scandinavian	?waterlain deposit, sealed by earliest wattle structure	296	GBA	/T	2	A
2191	Post-Roman/ Pre-Anglo- Scandinavian	?dumping into river	311	GBA	/T	1	A
3067	Medieval	pit fill ([?barrel-lined] cut 3072)	3067		/T	1	S
3069	Medieval	pit fill ([?barrel-lined] cut 3072)	160	GBA	/T	2	A
3077	Roman/ Romano-British (LC2/EC3)	basal pit fill (cut 3081)	156	GBA	/T	1	A
3169	Medieval	pit fill (cut 3085)	184	?GBA	/T	2	A
3178	Roman/ Romano-British (LC2/EC3)	dump with charcoal and bone	185	GBA	/T	1	S
9271	[not dated archaeologically]	bark-rich organic deposit	271	GBA	/T	1	A
					/T1	3	RS

Table 2. Layerthorpe Bridge, York: numbers of contexts for which bone was recorded (recd.) or scanned, by trench and date.

Area/trench	Trench 1 (watching brief)		Trench 1, Area 1		Trench 1, Area 2		Trench 2	
	No. recd	No. scanned	No. recd	No. scanned	No. recd	No. scanned	No. recd	No. scanned
?		1						
?Roman						2	2	
Roman					4		18	54
?Anglo-Scandinavian	1				2			
Anglo-Scandinavian					5	2		
?medieval			2		3	1	4	10
medieval		1	10		18	6		8
?post-medieval							1	1
post-medieval								1
early modern			1					
modern	1							
Total	2	2	13	0	32	11	25	74

Table 3. Layerthorpe Bridge, York: details of radiocarbon dates for samples of bark, Trox beetles, and bone. Samples are listed in context order. Key: CN—context number; DM—dating method (A—dating by AMS; S—dating by standard radiocarbon assay); LN—laboratory number.

CN	Archaeo-logical phase	Material dated	DM	LN	Conventional radiocarbon age	Calibrated date (2 Sigma, 95% probability)
1031	Anglo-Scandinavian Ph 4	bark	A	Beta-129568	970±50 BP	cal. AD 980 to 1175
		bone	S	Beta-129569	1170±60 BP	cal. AD 700 to 1000
1033	Anglo-Scandinavian Ph 4	bone	S	Beta-129570	960±70 BP	cal AD 970 to 1225
1052	Anglo-Scandinavian Ph 3	bark	S	Beta-129572	1170±50 BP	cal. AD 720 to 745 and AD 760 to 990
		<i>Trox</i>	A	Beta-129571	1000±50 BP	cal. AD 980 to 1175
2003	medieval	flax stems	A	Beta-129573	950±50 BP	cal. AD 900 to 1050 and 1095 to 1140
		bone	S	Beta-129574	1030±60 BP	cal. AD 890 to 1155
2004	medieval	bone	S	Beta-129575	1220±60 BP	cal. AD 670 to 970
2005	medieval	flax stems	A	Beta-129576	920±60 BP	cal. AD 900 to 1170
2013	Anglo-Scandinavian Ph 4	bone	S	Beta-129577	1000±70 BP	cal. AD 895 to 1195
2018	Anglo-Scandinavian Ph 4	bone	S	Beta-129578	760±70 BP	cal. AD 1160 to 1310 and 1360 to 1385
2020	Anglo-Scandinavian Ph 4	bone	A	Beta-129579	1250±40 BP	cal. AD 700 to 900
2037	Anglo-Scandinavian Ph 3	bone	S	Beta-129580	780±60 BP	cal. AD 1160 to 1300

CN	Archaeo-logical phase	Material dated	DM	LN	Conventional radiocarbon age	Calibrated date (2 Sigma, 95% probability)
2118	Anglo-Scandinavian Ph 3	bone	S	Beta-129581	960±70 BP	cal. AD 970 to 1225
2131	Anglo-Scandinavian Ph 2	bark	S	Beta-129582	870±60 BP	cal. AD 1025 to 1275
		bone	S	Beta-129583	1060±70 BP	cal. AD 815 to 840 and 855 to 1055 and 1085 to 1150
2139	Anglo-Scandinavian Ph 1	bone	S	Beta-129584	950±60 BP	cal. AD 990 to 1220
2189	Post-Roman/Pre-Anglo-Scandinavian	bark	S	Beta-129585	1020±60 BP	cal. AD 895 to 1160
		bone	S	Beta-129586	960±60 BP	cal. AD 980 to 1210
2191	Post-Roman/Pre-Anglo-Scandinavian	bone	S	Beta-129587	1260±60 BP	cal. AD 655 to 895

Table 4. Layerthorpe Bridge, York: complete list of plant and animal remains recovered from deposits of Roman to 19th century date.

For records by period, consult the individual sample lists (Tables 5 and 10). Plant material was uncharred unless specifically stated otherwise; tentative records are not included if secure ones were also made. Order and nomenclature follow Tutin et al. (1964-90) for vascular plants, Smith (1976) for mosses, and Kloet and Hincks (1964-77) for insects. Plant material not specifically noted as being preserved by charring or mineral replacement can be taken to be uncharred and unmineralised (i.e. 'waterlogged', but sometimes denoted simply as 'uncharred'). Where both secure and tentative identifications for a given taxon were recorded, only the former are listed here. For invertebrates, * = not used in calculating assemblage statistics (Table 8); ecode—ecological code used in generating main statistics (Table 8); sp(p).—species not previously listed; sp(p). indet.—may be a species already listed.

N.B. Some of the high-level identifications for insects originate from the assessment records, no attempt having been made to make full identifications of all remains at that stage, and others are the result of the presence of highly fragmented remains. Some dubious records from assessment have been omitted from this list.

Musci (parts were uncharred leaf/leaves and/or shoot fragment(s) throughout)

Sphagnum papillosum Lindb.
Sphagnum sp(p).
P. commune Hedw.
Polytrichum sp(p).
Dicranum scoparium Hedw.
Dicranum sp(p).
Campylopus sp(p).
Leucobryum glaucum (Hedw.) Ångstr.
 cf. *Pohlia nutans* (Hedw.) Lindb.
Bryum sp(p).
Plagiomnium sp(p).
Aulacomnium palustre (Hedw.) Schwaegr.
Ulota sp(p).
Leucodon sciuroides (Hedw.) Schwaegr.
Antitrichia curtispindula (Hedw.) Brid.
Neckera crispa Hedw.
N. complanata (Hedw.) Hüb.
Thuidium tamariscinum (Hedw.) Br. Eur.
Cratoneuron filicinum (Hedw.) Spruce
 cf. *Campylium* sp(p).
Campylium stellatum (Hedw.) Lange & Jens.
Drepanocladus sp(p).
Scorpidium scorpioides (Hedw.) Limpr.
Calliergon cf. *giganteum* (Schimp.) Kindb.
C. cuspidatum (Hedw.) Kindb.
Isoetecium myurum Brid.
I. myosuroides Brid.
Homalothecium sericeum (Hedw.) Brid./*H. lutescens* (Hedw.) Robins.
Pseudoscleropodium purum (Hedw.) Fleisch.
Eurhynchium sp(p).
Eurhynchium striatum (Hedw.) Schimp.
Eurhynchium praelongum (Hedw.) Br. Eur.

Hypnum cf. *cupressiforme* Hedw.
Rhytidiadelphus sp(p).
Pleurozium schreberi (Brid.) Mitt.
Hylocomium cf. *brevirostre* (Brid.) Br. Eur.
H. splendens (Hedw.) Br. Eur.
Hylocomium sp(p).

Pteridophyta

cf. *Diphasium* sp(p). (?clubmoss: shoot fragment(s))
Diphasium complanatum (L.) Rothm. (complanate clubmoss: shoot fragment(s))
Pteridium aquilinum (L.) Kuhn (bracken: pinnule fragment(s))
 cf. *P. aquilinum* (stalk fragment(s))
 Coniferae (conifer: charcoal fragment(s))

Angiospermae

Salix sp(p). (willows: bud(s), fruit(s), twig epidermis fragment(s), and twig fragment(s))
 cf. *Salix* sp(p). (leafy shoot fragment(s))
Salix/Populus sp(p). (willow/poplar/aspens: charcoal fragment(s))
Populus sp(p). (poplar/aspens: bud(s) and/or bud-scale(s))
Myrica gale L. (bog myrtle/sweet gale: leaf fragment(s))
Betula sp(p). (birch: bud(s) and/or bud-scale(s), female catkin scale(s), fruit(s), and male catkin fragment(s))

Alnus glutinosa (L.) Gaertner (alder: bud(s) and/or bud-scale(s), and twig fragment(s))

- Corylus avellana* L. (hazel: charred and uncharred wattle/wicker element(s), charred and uncharred nut(s) and/or nutshell fragment(s))
- Quercus* sp(p). (oak: bud(s) and/or bud-scale(s), charcoal fragment(s), uncharred wood chip(s) and wood fragment(s))
- cf. *Quercus* sp(p). (acorn fragment(s))
- Ficus carica* L. (fig: seed(s))
- Humulus lupulus* L. (hop: achene(s))
- Cannabis sativa* L. (hemp: achene(s))
- cf. *C. sativa* L. (?hemp: mineralised achene(s))
- Urtica dioica* L. (stinging nettle: achene(s))
- U. urens* L. (annual nettle: achene(s))
- Polygonum aviculare* agg. (knotgrass: fruit(s))
- P. hydropiper* L. (water-pepper: fruit(s))
- P. persicaria* L. (persicaria/red shank: fruit(s))
- P. lapathifolium* L. (pale persicaria: fruit(s))
- P. amphibium* L. (amphibious bistort: fruit(s))
- Bilderdykia convolvulus* (L.) Dumort. (black bindweed: charred, mineralised and uncharred fruit(s) and uncharred fruit fragment(s))
- Rumex acetosella* agg. (sheep's sorrel: fruit(s))
- R. maritimus* L. (golden dock: fruit(s))
- Rumex* sp(p). (docks: charred and uncharred fruit(s) and perianth segment(s))
- Chenopodium* Section *Pseudoblitum* (red goosefoot, etc.: seed(s))
- C. polyspermum* L. (all-seed: seed(s))
- C. murale* L. (nettle-leaved goosefoot: seed(s))
- C. album* L. (fat-hen: seed(s))
- Atriplex* sp(p). (oraches: charred and uncharred seed(s))
- Chenopodiaceae (goosefoot family: seed(s))
- Stellaria media* (L.) Vill. (chickweed: seed(s))
- Cerastium* sp(p). (mouse-ear chickweeds: seed(s))
- Scleranthus annuus* L. (annual knawel: fruit(s))
- Spergula arvensis* L. (corn spurree: seed(s))
- Agrostemmagithago* L. (corncockle: uncharred seed(s), charred and uncharred seed fragment(s) and mineralised casts/moulds of seed fragment(s))
- Silene vulgaris* (Moench) Garcke (bladder campion: charred and uncharred seed(s))
- Silene* sp(p). (campions, etc.: seed(s))
- Nymphaea alba* L. (white water-lily: seed(s))
- Nuphar lutea* (L.) Sibth. & Sm. (yellow water-lily: seed(s))
- Ceratophyllum demersum* L. (rigid hornwort: fruit(s))
- Ceratophyllum* sp(p). (hornwort: fruit(s))
- Ranunculus* Section *Ranunculus* (meadow/creeping/bulbous buttercup achene(s))
- R. sardous* Crantz (hairy buttercup achene(s))
- R. cf. sardous* Crantz (charred achene(s))
- R. sceleratus* L. (celery-leaved crowfoot: achene(s))
- R. flammula* L. (lesser spearwort: achene(s))
- R.* Subgenus *Batrachium* (water crowfoots: achene(s))
- Thalictrum flavum* L. (common meadow rue: achene(s))
- Fumaria* sp(p). (fumitories: seed(s))
- Cruciferae (cabbage family: pedicel(s))
- Descurainia sophia* (L.) Webb ex Prantl (flixweed: seed(s))
- Isatis tinctoria* L. (woad: pod fragment(s))
- cf. *Rorippa* sp(p). (?yellow-cresses: seed(s))
- Rorippa amphibia* (L.) Besser (great yellow-cress: seed(s))
- R. palustris* (L.) Besser (marsh yellow-cress: seed(s))
- Camelina sativa* (L.) Crantz (gold-of-pleasure: pod(s))
- Capsella bursa-pastoris* (L.) Medicus (shepherd's purse: seed(s))
- Thlaspi arvense* L. (field penny-cress: seed(s))
- Coronopus squamatus* (Forskål) Ascherson (swine-cress: charred and uncharred fruit(s) and uncharred seeds)
- Brassica* sp(p). cabbages, etc. seed(s))
- Brassica rapa* L. (turnip: seeds and seed fragment(s))
- Brassica* sp./*Sinapis arvensis* (brassica/charlock: charred seed(s), mineralised cotyledon(s), uncharred seed(s) and seed fragment(s))
- Raphanus raphanistrum* L. (wild radish: pod segments and/or fragment(s) and seed(s))
- Reseda luteola* L. (weld/dyer's rocket: seed(s))
- Filipendula ulmaria* (L.) Maxim. (meadowsweet: achene(s))
- Rubus idaeus* L. (raspberry: seed(s))
- R. fruticosus* agg. (blackberry/bramble: seed(s))
- R. caesius* L. (dewberry: seed(s))
- Rubus* sp(p). blackberries, etc. seed(s))
- Rubus/Rosa* sp(p). (blackberry, etc./rose: prickle(s))
- Rosa* sp(p). (roses: achene(s))
- Agrimonia eupatoria* L. (agrimony: charred and uncharred fruit(s))
- Potentilla palustris* (L.) Scop. (marsh cinquefoil: achene(s))
- P. anserina* L. (silverweed: charred and uncharred achene(s))
- P. cf. erecta* (L.) Rauschel (?tormentil: charred and uncharred achene(s))
- P. cf. reptans* L. (?creeping cinquefoil: charred and uncharred achene(s))
- Potentilla* sp(p). (cinquefoils, etc.: achene(s))
- Malus sylvestris* Miller (crab apple: endocarp, mineralised seed(s)/embryo(s) and unmineralised, uncharred seed(s))
- Crataegus* sp(p). (hawthorns: thorn(s) and twig fragment(s) with thorn(s))
- Crataegus* sp./*Prunus spinosa* (hawthorn/sloe: thorn(s))
- Prunus spinosa* L. (sloe: charred and uncharred fruitstone(s) and uncharred thorn(s))

- P. domestica* ssp. *insititia* (L.) C. K. Schneider (plums, etc.: fruitstone(s))
- P.* Section *Cerasus* (cherries: fruitstone(s))
- Prunus* sp(p). (sloe/plum/cherry, etc.: mineralised mesocarp and endocarp)
- cf. *Prunus* sp(p). (mineralised seed(s)) Leguminosae pea family flower(s) and/or petal(s)
- Leguminosae (pea family: pod(s) and/or pod fragment(s), tracheid bar(s) underneath hilum)
- cf. *Genista tinctoria* L. (?dyer's greenweed: stem fragment(s))
- Vicia* sp(p). (vetches, etc.: charred seed(s))
- Linum usitatissimum* L. (cultivated flax: capsule fragment(s), capsule septum fragment(s), seed fragment(s), seed(s) and stem fragment(s) with epidermis)
- cf. *L. usitatissimum* L. (scutching waste (stem debris), stem fragment(s))
- cf. *Mercurialis perennis* L. (?dog's mercury: seed fragment(s))
- Euphorbia helioscopia* L. (sun spurge: seed(s))
- E. lathyris* L. (caper spurge: seed(s))
- cf. *Acer campestre* L. (?field maple: fruit(s) (samara(e)))
- Ilex aquifolium* L. (holly leaf: epidermis fragment(s) and prickles(s))
- Malva* cf. *sylvestris* L. (?common mallow: nutlet(s))
- Malva* sp(p). (mallows, etc.: nutlet(s))
- Viola* sp(p). (violets/pansies, etc.: capsule segment(s), seed(s))
- Bryonia cretica* ssp. *dioica* (Jacq.) Tutin (white bryony: seed(s))
- Myriophyllum verticillatum* L./*M. spicatum* L. (whorled/spiked water-milfoil: nutlet(s))
- M. alterniflorum* DC. in Lam. & DC. (alternate-flowered water-milfoil: nutlet(s))
- Hydrocotyle vulgaris* L. (marsh pennywort: mericarp(s))
- Anthriscus sylvestris* (L.) Hoffm. (cow parsley: mericarp(s))
- A. caucalis* Bieb. (bur chervil: mericarp(s))
- Scandix pecten-veneris* L. (shepherd's needle: mericarp(s))
- cf. *Aegopodium podagraria* L. (?ground elder mericarp(s))
- Oenanthe lachenalii* C. G. Gmelin (parsley water-dropwort: mericarp(s))
- Oe. fluviatilis* (Bab.) Coleman (water-dropwort: mericarp(s))
- Oe. aquatica* (L.) Poiret in Lam. (fine-leaved water-dropwort: mericarp(s))
- Aethusa cynapium* L. (fool's parsley: mericarp(s))
- Anethum graveolens* L. (dill: mericarp(s))
- Conium maculatum* L. (hemlock: mericarp(s) and fragment(s))
- Bupleurum rotundifolium* L. (hare's-ear/thorow-wax: mericarp(s))
- Apium nodiflorum* (L.) Lag. (fool's watercress: mericarp(s))
- Pastinaca sativa* L. (wild parsnip: mericarp(s))
- Heracleum sphondylium* L. (hogweed: mericarp(s))
- Torilis japonica* (Houtt.) DC. (upright hedge-parsley: mericarp(s))
- Daucus carota* L. (wild carrot: mericarp(s))
- Umbelliferae (carrot family: mericarp(s))
- Erica tetralix* L. (cross-leaved heath: charred and uncharred leaf/leaves)
- E. cinerea* L. (bell heather: leaf/leaves)
- Calluna vulgaris* (L.) Hull (heather, ling: bud(s), charred and uncharred capsule(s), charred and uncharred flower(s), charred and uncharred shoot fragment(s), charred and uncharred shoot tip(s), leaf/leaves, charred and uncharred root and/or twig fragment(s), uncharred seed(s), charred twig fragment(s))
- Vaccinium* sp(p). (bilberries: seed(s))
- Primula* cf. *veris* L. (?cowslip: seed(s))
- Anagallis arvensis* L. (scarlet pimpernel:) seed(s)
- Fraxinus* sp(p). (ash: charcoal fragment(s))
- Menyanthes trifoliata* L. (bogbean charred and uncharred seed(s))
- Rubia tinctorum* L. (dyer's madder: root fragment(s))
- Myosotis* sp(p). (forget-me-nots: nutlet(s))
- Marrubium vulgare* L. (white horehound: nutlet(s))
- Galeopsis* Subgenus *Galeopsis* (hemp-nettles: charred and uncharred nutlet(s))
- Lamium* Section *Lamiopsis* (annual dead-nettles: nutlet(s))
- Stachys* sp(p). (woundworts: nutlet(s))
- Nepeta cataria* L. (cat-mint: nutlet(s))
- Prunella vulgaris* L. (selfheal: nutlet(s))
- Mentha* sp(p). (mints: nutlet(s))
- Atropa bella-donna* L. (deadly nightshade: seed(s))
- Hyoscyamus niger* L. (henbane: charred and uncharred seed(s))
- Solanum nigrum* L. (black nightshade: seed(s))
- Solanum* sp(p). (nightshades, etc.: seed(s))
- Veronica beccabunga*-type (brooklime/water/marsh speedwells: seed(s))
- Odontites verna* (Bellardi) Dumort. (red bartsia: seed(s))
- Pedicularis palustris* L. (marsh lousewort: seed(s))
- Plantago major* L. (greater plantain: seed(s))
- Sambucus* cf. *ebulus* L. (?danewort: seed(s))
- S. nigra* L. (elder: charred and uncharred seed(s) and uncharred seed fragment(s))

- Valerianella dentata* (L.) Pollich (narrow-fruited cornsalad: fruit(s))
- Dipsacus sativus* (L.) Honcken/D. *fullonum* L. (fuller's/wild teasel: fruit(s) and fruit fragment(s))
- Knautia arvensis* (L.) Coulter (field scabious: fruit(s) and fruit fragment(s))
- Eupatorium cannabinum* L. (hemp agrimony: achene(s))
- Bidens* sp(p). (bur-marigolds: achene(s))
- Anthemis cotula* L. (stinking mayweed: charred and uncharred achene(s))
- Achillea millefolium* L. (yarrow: achene(s))
- Chrysanthemum segetum* L. (corn marigold: charred and uncharred achene(s) and uncharred achene fragment(s))
- Senecio* sp(p). (ground sels/ragworts, etc.: achene(s))
- Arctium* sp(p). (burdocks: achene(s) and involucre bract(s)/hook(s))
- Carduus/Cirsium* sp(p). (thistles: achene(s))
- Onopordum acanthium* L. (scotch thistle: achene(s))
- cf. *Silybum marianum* (L.) Gaertner (?milk-thistle: achene(s))
- Centaurea* cf. *nigra* L. (?lesser knapweed: involucre(s)/fragment(s))
- Centaurea* cf. *nigra* L. (?lesser knapweed: involucre bract(s), achene(s), achene fragment(s) and involucre(s)/fragment(s))
- Hypochoeris* sp(p). (cat's ears: achene(s))
- Leontodon* sp(p). (hawkbits: achene(s))
- Sonchus asper* (L.) Hill (prickly sow-thistle: achene(s))
- S. oleraceus* L. (sow-thistle: achene(s))
- S. palustris/arvensis* (marsh/corn sow-thistle: achene(s))
- Sonchus* sp(p). (sow-thistles: achene(s))
- Lapsana communis* L. (nipplewort: achene(s))
- Compositae (daisy family: involucre(s)/fragment(s))
- Sagittaria sagittifolia* L. (arrow-head: carpel(s))
- Alisma* sp(p). (water-plantains: carpel(s) and/or seed(s))
- Triglochin maritima* L. (sea arrowgrass: carpel(s))
- Potamogeton natans* L. (broad-leaved pondweed pyrene(s))
- P.* cf. *perfoliatus* L. (?perfoliate pondweed: pyrene(s))
- P. crispus* L. (curled pondweed: pyrene(s))
- P.* cf. *filiformis* Pers. (?slender-leaved pondweed: pyrene(s))
- P. pectinatus* L. (fennel-leaved pondweed: pyrene(s))
- Potamogeton* sp(p). (pondweeds: pyrene(s) and stem/leaf fragment(s))
- Zannichellia palustris* L. (horned pondweed: fruit(s))
- cf. *Allium sativum* L. (?garlic: charred tunic fragment(s))
- Allium* cf. *sativum* L. (?garlic: charred clove(s))
- Juncus inflexus* L./*J. effusus* L./*J. conglomeratus* L. (hard/soft/compact rush: seed(s))
- J. squarrosus* L. (heath rush: seed(s))
- J.* cf. *gerardi* Loisel. (?mud rush: seed(s))
- J. bufonius* L. (toad rush: seed(s))
- Juncus* sp(p). (rushes: charred capsule(s) and seed(s))
- cf. *Juncus* sp(p). (?rushes: capsule(s))
- Luzula* sp(p). woodrushes seed(s)
- Gramineae (grasses: charred caryopsis/es, charred spikelet(s)/spikelet fragment(s), uncharred stem/leaf epidermis fragment(s), and uncharred caryopsis/es)
- cf. Gramineae (?grasses: culm node(s))
- Gramineae/Cerealia (grasses/cereals: charred caryopsis/es, charred and uncharred culm fragment(s), charred and uncharred culm node(s))
- Cerealia (cereals: charred caryopsis/es, chaff fragment(s), and rachis fragment(s), and mineralised caryopsis/es)
- cf. *Glyceria* sp(p). (?sweet-grasses: caryopsis/es)
- Bromus* sp(p). (bromes, etc.: charred caryopsis/es)
- Triticum aestivo-compactum* (bread/club wheat: charred caryopsis/es)
- Triticum* sp(p). (wheats: charred caryopsis/es)
- Triticum/Secale* (wheat/rye: waterlogged periderm fragment(s)—'bran')
- Secale cereale* L. (rye: charred caryopsis/es)
- Hordeum vulgare* L. (six-row barley: charred caryopsis/es (some twisted grains) and rachis fragment(s))
- Hordeum* sp(p). (barley: charred caryopsis/es, including some sprouting specimens, and spikelet(s)/spikelet fragment(s))
- Avena sativa* L. (cultivated oat: charred spikelet(s)/spikelet fragment(s))
- Avena* sp(p). (oats: charred caryopsis/es, spikelet(s)/spikelet fragment(s) and uncharred periderm ('bran') fragment(s))
- cf. *Avena* sp(p). (?oats: charred chaff, including glumes)
- cf. *Alopecurus* sp(p). (?foxtails: caryopsis/es)
- Lemna* sp(p). (duckweeds: frond(s) and seed(s))
- Sparganium* sp(p). (bur-reeds fruit(s))
- Scirpus maritimus* L. (sea club-rush: nutlet(s))
- S. lacustris* s.l. (bulrush: nutlet(s))
- Eleocharis palustris* s.l. (common spike-rush: charred and uncharred nutlet(s))
- Eleocharis* sp(p). spike-rushes nutlet(s)
- Cladium mariscus* (L.) Pohl (great sedge/saw-sedge: charred and uncharred leaf fragment(s), and charred and uncharred nutlet(s))
- cf. *Schoenus nigricans* L. (?bog-rush: nutlet(s))
- Carex* sp(p). (sedges: charred and uncharred nutlet(s), charred stem fragment(s))

Invertebrates		*Bibionidae sp.	u
		*Eristalini sp. (larva)	w
NEMATODA		*Syrphidae sp. (larva)	u
*?Heterodera sp. (cyst)	u	*Sphaeroceoridae sp. (puparium)	rt
		*?Scatopse notata (Linnaeus) (puparium)	rt
ANNELIDA		*Sepsidae sp. (puparium)	u
*Oligochaeta sp. (egg capsule)	u	*Muscidae sp. (puparium)	u
		*Melophagus ovinus (Linnaeus) (puparium)	u
CRUSTACEA		*Melophagus ovinus (Linnaeus) (adult)	u
*Daphnia sp. (ephippium)	oa-w	*Diptera sp. (adult)	u
*Cladocera spp. (ephippium)	oa-w	*Diptera sp. (larva)	u
*Ostracoda sp.	u	*Diptera sp. (puparium)	u
		*Diptera sp. (pupa)	u
CHILOPODA		*Diptera sp. (larva and/or pupa)	u
*Chilopoda sp.	u		
		SIPHONAPTERA	
INSECTA		*Pulex irritans Linnaeus	ss
Dermaptera		*Siphonaptera sp. indet.	u
*Dermaptera sp.	u		
		COLEOPTERA	
MALLOPHAGA OR ANOPLURA		Carabus sp.	oa
*?Mallophaga or Anoplura sp.	u	Nebria sp.	oa
		Elaphrus cupreus Duftschmid	oa-d
HEMIPTERA		Elaphrus riparius (Linnaeus)	oa-d
Sehirus bicolor (Linnaeus)	oa-p	?Loricera pilicornis (Fabricius)	oa
Heterogaster urticae (Fabricius)	oa-p	Dyschirius globosus (Herbst)	oa
Macrodema micropterum (Curtis)	oa-p-m	Dyschirius sp. indet.	oa
Drymus sp.	oa-p	Clivina fossor (Linnaeus)	oa
Scolopostethus sp.	oa-p	Patrobis atrofufus (Strom)	oa
Lygaeidae sp.	oa-p	Trechus obtusus or quadristriatus	oa
Anthocoris sp.	oa-p	Trechus discus (Fabricius)	u
Cimicidae sp. indet.	oa-p	Trechus micros (Herbst)	u
?Miridae sp.	oa-p	Trechus sp. indet.	ob
Saldula sp.	oa-d	Bembidion lampros (Herbst)	oa
Saldidae sp. indet.	oa-d	Bembidion lampros or properans	oa
Gerris sp.	oa-w	Bembidion (Peryphus) sp.	oa
Corixidae sp.	oa-w	Bembidion ?doris (Panzer)	oa-d
Heteroptera sp.	u	Bembidion guttula or mannerheimi	oa
*Heteroptera sp. indet. (nymph)	u	Bembidion (Philochthus) sp. indet.	oa
Aphrophora alni (Fallen)	oa-p	Bembidion spp. and spp. indet.	oa
Ulopa reticulata (Fabricius)	oa-p-m	Pterostichus madidus (Fabricius)	ob-st
Delphacidae sp.	oa-p	Pterostichus melanarius (Illiger)	ob
Auchenorrhyncha spp. indet.	oa-p	Pterostichus sp.	ob
*Auchenorrhyncha sp. (nymph)	oa-p	Laemostenus ?terricola (Herbst)	ss
*Aphidoidea sp.	u	Agonum dorsale (Pontoppidan)	oa
*Coccoidea sp.	u	Agonum sp.	oa
		Amara spp.	oa
TRICHOPTERA		Harpalus sp.	oa
*Trichoptera sp. (case)	oa-w	Bradycellus ruficollis (Stephens)	oa-m
		?Bradycellus sp. indet.	oa
LEPIDOPTERA		Chlaenius sp.	u
*Lepidoptera sp. (pupa)	u	Metabletus sp.	oa
		Carabidae spp. indet.	ob
DIPTERA		Halipidae sp.	oa-w

Hydroporinae spp.	oa-w	<i>Omalius rivulare</i> (Paykull)	rt-sf
<i>Agabus</i> or <i>Ilybius</i> sp.	oa-w	<i>Omalius</i> sp. indet.	rt
? <i>Rhantus</i> sp.	oa-w	<i>Xylodromus concinnus</i> (Marsham)	rt-st
<i>Colymbetes fuscus</i> (Linnaeus)	oa-w	Omaliinae sp.	rt
Colymbetinae spp.	oa-w	<i>Coprophilus striatulus</i> (Fabricius)	rt-st
<i>Gyrinus</i> sp.	oa-w	<i>Carpelimus bilineatus</i> Stephens	rt-sf
? <i>Georissus crenulatus</i> (Rossi)	oa-w	<i>Carpelimus fuliginosus</i> (Gravenhorst)	st
<i>Hydrochus</i> sp.	oa-w	<i>Carpelimus pusillus</i> group	u
<i>Helophorus grandis</i> Illiger	oa-w	<i>Carpelimus rivularis</i> (Motschulsky)	ob-d
<i>Helophorus aquaticus</i> or <i>grandis</i>	oa-w	<i>Carpelimus</i> sp.	u
<i>Helophorus</i> spp.	oa-w	<i>Aploderus caelatus</i> (Gravenhorst)	rt
<i>Sphaeridium ?bipustulatum</i> Fabricius	rf	<i>Platystethus arenarius</i> (Fourcroy)	rf
<i>Sphaeridium</i> sp. indet.	rf	<i>Platystethus ?cornutus</i> (Gravenhorst)	oa-d
<i>Cercyon analis</i> (Paykull)	rt-sf	<i>Platystethus degener</i> Mulsant & Rey	oa-d
<i>Cercyon atricapillus</i> (Marsham)	rf-st	<i>Platystethus nitens</i> (Sahlberg)	oa-d
<i>Cercyon haemorrhoidalis</i> (Fabricius)	rf-sf	<i>Platystethus nodifrons</i> (Mannerheim)	oa-d
<i>Cercyon terminatus</i> (Marsham)	rf-st	<i>Anotylus complanatus</i> (Erichson)	rt-sf
<i>Cercyon convexiusculus</i> group	oa-d	<i>Anotylus nitidulus</i> (Gravenhorst)	rt
<i>Cercyon unipunctatus</i> (Linnaeus)	rf-st	<i>Anotylus rugosus</i> (Fabricius)	rt
<i>Cercyon ?ustulatus</i> (Preysler)	oa-d	<i>Anotylus sculpturatus</i> group	rt
<i>Cercyon</i> spp. indet.	u	<i>Anotylus tetracarinatus</i> (Block)	rt
<i>Megasternum obscurum</i> (Marsham)	rt	<i>Oxytelus sculptus</i> Gravenhorst	rt-st
<i>Cryptopleurum minutum</i> (Fabricius)	rf-st	<i>Stenus</i> spp.	u
<i>Hydrobius fuscipes</i> (Linnaeus)	oa-w	<i>Lathrobium</i> spp.	u
<i>Anacaena</i> sp.	oa-w	<i>Lithocharis ochracea</i> (Gravenhorst)	rt-st
? <i>Laccobius</i> sp.	oa-w	<i>Rugilus</i> sp.	rt
Hydrophilinae spp. and spp. indet.	oa-w	Paederinae sp.	u
<i>Teretrius fabricii</i> Mazur	l	<i>Leptacinus intermedius</i> Donisthorpe	rt-st
<i>Acritus nigricornis</i> (Hoffmann)	rt-st	<i>Leptacinus pusillus</i> (Stephens)	rt-st
<i>Gnathoncus</i> sp.	rt-sf	<i>Leptacinus</i> sp. indet.	rt-st
<i>Onthophilus striatus</i> (Forster)	rt-sf	<i>Gauropterus fulgidus</i> (Fabricius)	rt-st
<i>Hister ?mardarius</i> Hoffman	rt-sf	<i>Gyrohypnus angustatus</i> Stephens	rt-st
Histerinae spp. indet.	rt	<i>Gyrohypnus fracticornis</i> (Muller)	rt-st
<i>Ochthebius ?minimus</i> (Fabricius)	oa-w	<i>Gyrohypnus</i> sp. indet.	rt
<i>Ochthebius</i> sp.	oa-w	<i>Xantholinus longiventris</i> Heer	rt-sf
<i>Hydraena</i> sp.	oa-w	<i>Xantholinus linearis</i> or <i>longiventris</i>	rt-sf
<i>Limnebius</i> spp.	oa-w	<i>Xantholinus</i> sp. indet.	u
<i>Ptenidium</i> sp.	rt	<i>Neobisnius</i> sp.	u
<i>Acrotrichis</i> sp.	rt	<i>Philonthus ?politus</i> (Linnaeus)	rt-st
Ptiliidae sp.	u	<i>Philonthus</i> spp.	u
<i>Catops</i> sp.	u	<i>Gabrius</i> sp.	rt
<i>Silpha atrata</i> Linnaeus	u	<i>Creophilus maxillosus</i> (Linnaeus)	rt
Scydmaenidae sp.	u	<i>Quedius boops</i> group	u
<i>Micropeplus fulvus</i> Erichson	rt	<i>Quedius</i> sp.	u
<i>Olophrum ?piceum</i> (Gyllenhal)	oa	Staphylininae sp.	u
<i>Olophrum</i> sp.	oa	<i>Mycetoporus</i> sp.	u
<i>Acidota crenata</i> (Fabricius)	oa	? <i>Bobitobius</i> sp.	u
<i>Lesteva longoelytrata</i> (Goeze)	oa-d	<i>Tachyporus ?obtusus</i> (Linnaeus)	u
<i>Lesteva</i> sp. indet.	oa-d	<i>Tachyporus</i> spp.	u
<i>Phyllodrepa</i> sp.	rt	<i>Tachinus laticollis</i> or <i>marginellus</i>	u
<i>Dropephylla ?ioptera</i> (Stephens)	u	<i>Tachinus signatus</i> Gravenhorst	u
<i>Dropephylla</i> sp. indet.	u	<i>Tachinus</i> sp.	u
<i>Omalius ?excavatum</i> Stephens	rt-sf	<i>Cordalia obscura</i> (Gravenhorst)	rt-sf
<i>Omalius caesum</i> or <i>italicum</i>	rt-sf	<i>Falagria caesa</i> or <i>sulcatula</i>	rt-sf

<i>?Cratarea suturalis</i> (Mannerheim)	rt-st	<i>Blaps</i> sp.	rt-ss
<i>Aleochara</i> sp.	u	<i>Tenebrio obscurus</i> Fabricius	rt-ss
Aleocharinae spp.	u	<i>Rhinosimus planirostris</i> (Fabricius)	l
Pselaphidae sp.	u	<i>Anthicus formicarius</i> (Goeze)	rt-st
<i>Trox scaber</i> (Linnaeus)	rt-sf	<i>Anthicus</i> sp. indet.	rt
<i>Aphodius ater</i> (Degeer)	oa-rf	<i>Gracilia minuta</i> (Fabricius)	l
<i>Aphodius granarius</i> (Linnaeus)	ob-rf	<i>Pogonocherus hispidulus</i> (P&M.)	l
<i>Aphodius ?prodromus</i> (Brahm)	ob-rf	Cerambycidae sp.	l
<i>Aphodius</i> spp. and spp. indet.	ob-rf	Bruchinae sp.	u
<i>Oxyomus sylvestris</i> (Scopoli)	rt-sf	<i>?Macroplea</i> sp.	oa-w
<i>?Phyllopertha horticola</i> (Linnaeus)	oa-p	<i>Donacia</i> sp.	oa-d-p
<i>Clambus</i> sp.	rt-sf	Donaciinae spp. indet.	oa-d-p
<i>Cyphon</i> sp.	oa-d	<i>Gastrophysa viridula</i> (Degeer)	oa-p
<i>Dryops</i> sp.	oa-d	<i>Phaedon</i> sp.	oa-p
<i>Oulimnius</i> sp.	oa-w	<i>Phyllodecta</i> sp.	oa-p
Elmidae sp.	oa-w	Chrysomelinae spp. and spp. indet.	oa-p
<i>Melanotus ?erythropus</i> (Gmelin)	l	Phyllotreta nemorum group	oa-p
Elateridae spp.	ob	<i>Longitarsus</i> spp.	oa-p
<i>Xestobium rufovillosum</i> (Degeer)	l-st	<i>Altica</i> sp.	oa-p
<i>Anobium punctatum</i> (Degeer)	l-sf	<i>Chaetocnema arida</i> group	oa-p
<i>Ptilinus pectinicornis</i> (Linnaeus)	l-sf	<i>Chaetocnema concinna</i> (Marshall)	oa-p
<i>Tipnus unicolor</i> (Piller & Mitterpacher)	rt-ss	<i>Psylliodes</i> sp.	oa-p
<i>Ptinus fur</i> (Linnaeus)	rd-sf	Halticinae spp. indet.	oa-p
<i>Ptinus</i> sp. indet.	rd-sf	<i>Apion (Oxystoma)</i> sp.	oa-p
<i>Lyctus linearis</i> (Goeze)	l-sf	<i>Apion</i> spp.	oa-p
<i>Anthocomus fasciatus</i> (Linnaeus)	ob	<i>Strophosomus</i> sp.	oa-p
<i>Brachypterus</i> sp.	oa-p	<i>Sitona hispidulus</i> (Fabricius)	oa-p
<i>Meligethes</i> sp.	oa-p	<i>Sitona lepidus</i> Gyllenhal	oa-p
<i>Omosita discoidea</i> (Fabricius)	rt-sf	<i>Sitona</i> spp. indet.	oa-p
<i>Omosita</i> sp. indet.	rt-sf	<i>Tanysphyrus lemnae</i> (Paykull)	oa-w-p
<i>Rhizophagus</i> sp.	u	<i>Bagous</i> sp.	oa-w
<i>Monotoma longicollis</i> (Gyllenhal)	rt-st	<i>Notaris acridulus</i> (Linnaeus)	oa-d-p
<i>Monotoma picipes</i> Herbst	rt-st	<i>Notaris</i> sp. indet.	oa-d-p
<i>Monotoma</i> spp. indet.	rt-sf	<i>Micrelus ericae</i> (Gyllenhal)	oa-p-m
<i>Oryzaephilus surinamensis</i> (Linnaeus)	g-ss	<i>Cidnorhinus quadrimaculatus</i> (Linnaeus)	oa-p
<i>?Telmatophilus</i> sp.	oa-d	<i>Ceutorhynchus ?contractus</i> (Marshall)	oa-p
<i>Cryptophagus scutellatus</i> Newman	rd-st	<i>Ceutorhynchus</i> spp.	oa-p
<i>Cryptophagus</i> spp.	rd-sf	<i>Rhinoncus</i> sp.	oa-p
<i>Atomaria</i> spp.	rd	Ceuthorhynchinae sp.	oa-p
<i>Ephistemus globulus</i> (Paykull)	rd-sf	Curculionidae spp. and spp. indet.	oa
Phalacridae sp.	oa-p	<i>Hylesinus oleiperda</i> (Fabricius)	u
<i>Cerylon histeroideus</i> (Fabricius)	l	<i>?Dryocoetinus villosus</i> (Fabricius)	l
<i>Orthoperus</i> sp.	rt	Scolytidae sp.	l
Coccinellidae sp.	oa-p	Coleoptera spp. indet.	u
<i>Mycetaea hirta</i> (Marshall)	rd-ss	*Coleoptera spp. indet. (larva)	u
<i>?Stephostethus angusticollis</i> (Gyllenhal)	rt-st		
<i>Lathridius minutus</i> group	rd-st	HYMENOPTERA	
<i>Enicmus</i> sp.	rt-sf	*Proctotrupoidae sp.	u
<i>Corticaria</i> spp.	rt-sf	*Chalcidoidea sp.	u
<i>Corticarina fuscata</i> (Gyllenhal)	rt	*Hymenoptera Parasitica sp.	u
<i>Corticarina</i> sp. indet.	rt	*Formicidae sp. B	u
<i>Corticarina</i> or <i>Cortinicara</i> sp. indet.	rt	*Formicidae sp. A	u
Cisidae sp.	l	*Formicidae sp.	u
<i>Aglenus brunneus</i> (Gyllenhal)	rt-ss	*Apoidea sp.	u

*Hymenoptera sp.	u	<i>Mytilus edulis</i> Linnaeus	
		<i>Ostrea edulis</i> Linnaeus	
*Insecta sp. (larva)	u	Bivalvia (periostracum)	
*Insecta sp. (larval case)	u		
*Insecta sp. (pupa)	u	Vertebrates	
*Wood with insect bores	u	PISCES	
		<i>Clupea harengus</i> L.	herring
ARACHNIDA		<i>Anguilla anguilla</i> (L.)	eel
*Acarina sp.	u		
*Opiliones sp.	u	AMPHIBIA	
*Aranae sp.	u	Amphibia indet.	
BRYOZOA		AVES	
* <i>Lophopus crystallinus</i> (Pallas)	oa-w	<i>Anser</i> sp.	goose
* <i>Cristatella mucedo</i> (statoblast) Cuvier	w	<i>Gallus</i> f. domestic	chicken
Incertae sedis		MAMMALIA	
*Egg mass indet.	u	<i>Oryctolagus cuniculus</i> (L.)	rabbit
		<i>Canis</i> f. domestic	dog
		<i>Felis</i> f. domestic	cat
		<i>Equus</i> f. domestic	horse
		<i>Sus</i> f. domestic	pig
		<i>Cervus elaphus</i> L.	red deer
		<i>Dama dama</i> (L.)	fallow deer
		<i>Bos</i> f. domestic	cattle
		Caprovid	sheep/goat
		<i>Capra</i> f. domestic	goat
		<i>Homo sapiens</i>	human
MOLLUSCA			
<i>Valvata piscinalis</i> (Müller)			
<i>Potamopyrgus jenkinsi</i> (Smith)			
<i>Bithynia tentaculata</i> (Linnaeus)			
<i>Planorbis</i> sp. (<i>sensu lato</i>)			
<i>Succinea ?oblonga</i> Draparnaud			
<i>Succinea putris</i> (Linnaeus)			
<i>Succinea</i> sp. indet.			

Chenopodium album	1	Menyanthes trifoliata	1
Chrysanthemum segetum	1 max 10 mm	Oenanthe cf. aquatica	1
cinders	1 max 15 mm	Polygonum persicaria	1
coal	1 max 10 mm	Potentilla anserina	1
Conium maculatum (mf)	1	pottery	1 max 20 mm
Coronopus squamatus (fr)	1 fragment(s) only	Quercus sp(p). (b/bs)	1
Corylus avellana	1 max 5 mm	Ranunculus Section Ranunculus	1
Corylus avellana (ch)	1 max 10 mm	Raphanus raphanistrum (pod segs/fgts)	1
Daphnia (ephippia)	1	root bark/epidermis fgts	1
Juncus sp(p).	1	root/rhizome fgts (ch)	1 max 10 mm
Polygonum aviculare agg.	1	Sambucus cf. ebulus	1
Ranunculus Section Ranunculus	1 v dec	Scirpus lacustris sl	1
Raphanus raphanistrum (pod segs/fgts)	1	Solanum sp(p).	1 v dec
root/rootlet fgts	1	Stachys sp(p).	1
Rumex sp(p).	1	teeth	1
Urtica urens	1	Urtica urens	1
wood fgts	1 v dec, max 15 mm	Viola sp(p).	1
		wood fgts	1 v dec, max 10 mm
		Zannichellia palustris	1

Context 14, Sample 48 (T1)

bark fgts	3 v dec, max 30 mm
gravel	3 max 65 mm
sand	3
sclereids (from bark)	3 mostly <1 mm
Atriplex sp(p).	2
Chenopodium album	2
Sambucus nigra	2 inc fragments
Urtica dioica	2
Aethusa cynapium	1
Anthemis cotula	1
beetles	1
bone fgts	1 max 30 mm
Brassica rapa (sf)	1
brick/tile	1 max 40 mm
burnt bone fgts	1 max 10 mm
caddis larva cases	1 fragment(s) only
Calluna vulgaris (sht fgts)	1
Carex sp(p).	1
Cenococcum (sclerotia)	1 max 1 mm
cf. Atropa bella-donna	1 fragment(s) only
cf. Avena sp(p).	1
cf. Calluna vulgaris (ch rt-tw fgts)	1 max 10
cf. Calluna vulgaris (rt-tw fgts)	1 max 5
charcoal	1 max 10 mm
coal	1 max 10 mm
Conium maculatum (mf)	1
Coronopus squamatus (fr)	1
Corylus avellana	1 v dec
earthworm egg caps	1
Erica tetralix (ch lvs)	1
Euphorbia helioscopia	1
Fe object(s)	1
fish bone	1 max 2 mm
fish scale	1 max 2 mm
fly puparia	1
herbaceous detritus (ch)	1

Context 15, Sample 49 (T)

gravel	2 max 30 mm
sand	2
bone fgts	1 max 35 mm
brick/tile	1 max 30 mm
Juncus sp(p).	1
root/rootlet fgts	1
Rumex acetosella agg.	1
Sambucus nigra	1
sclereids (from bark)	1
Veronica beccabunga-type	1

Context 16, Sample 52 (T)

bark fgts	3 max 15 mm
wood fgts	3 max 70 mm
Carex sp(p).	2
Chenopodium album	2
sand	2
Urtica dioica	2
?arthropod frass	1
Anthemis cotula	1
Anthemis cotula (ch)	1
Atriplex sp(p).	1
Avena sp(p).	1 incomp. charred
beetles	1
bone fgts	1 max 30 mm
Brassica sp./Sinapis arvensis	1
brick/tile	1 max 5 mm
burnt bone fgts	1 max 10 mm
cf. Calluna vulgaris (ch rt-tw fgts)	1
cf. Calluna vulgaris (rt-tw fgts)	1
charcoal	1 max 10 mm
Corylus avellana	1 max 10 mm
Cratoneuron filicinum	1

Drepanodadus sp(p).	1	herbaceous detritus (ch)	1
earthworm egg caps	1	Homalothecium sericeum/lutescens	1
fish bone	1 max 15 mm	Hypnum cf. cupresiforme	1
fly puparia	1	Isothecium myurum	1
Galeopsis Subgenus Galeopsis	1	Lapsana communis	1
gravel	1 max 25 mm	leather fgts	1 v dec, max 5 mm
Hypnum cf. cupresiforme	1	mammal bone	1 max dim 140 mm
Melophagus ovinus (sheep keds)	1	Marrubium vulgare	1
Menyanthes trifoliata	1	Menyanthes trifoliata	1 fragment(s) only
moss	1	Neckera complanata	1
Polygonum persicaria	1	Polygonum aviculare agg.	1
Potentilla cf. erecta	1	Polygonum hydropiper	1
Potentilla cf. reptans	1	Polygonum lapathifolium	1
Potentilla sp(p).	1	Polygonum persicaria	1
Raphanus raphanistrum (pod segs/fgts)	1	Potentilla anserina	1
root/rootlet fgts	1	Potentilla cf. erecta	1
Sambucus nigra	1	pottery	1 max 20 mm
Sambucus nigra (ch)	1	Quercus sp(p). (b/bs)	1
sclereids (from bark)	1	Ranunculus flammula	1
Sonchus asper	1	Ranunculus sardous	1
Stellaria media	1	Ranunculus Section Ranunculus	1
Urtica urens	1	Raphanus raphanistrum (pod segs/fgts)	1
wood chips	1 max 10 mm	root/rhizome fgts (ch)	1 max 5 mm
<hr/>			
Context 16, Sample 52 (T1)			
<hr/>			
bark fgts	4 max dim 150 mm	Rumex sp(p).	1
sand	3	Rumex sp(p). (pær/segs)	1
sclereids (from bark)	3 max 2 mm	Sambucus cf. ebulus	1
Atriplex sp(p).	2	Sonchus asper	1
beetles	2	Urtica dioica	1
cf. Calluna vulgaris (ch rt-tw fgts)	2 max 10	Urtica urens	1
charcoal	2 max 20 mm	wood chips	1 max 20 mm
Chenopodium album	2	<hr/>	
earthworm egg caps	2	Context 18, Sample 41 (T1)	
gravel	2 max 35 mm	herbaceous detritus	3
grit	2	Ranunculus sceleratus	3
Sambucus nigra	2 inc fragments	Apium nodiflorum	2
wood fgts	2 max 60 mm	Daphnia (ephippia)	2
Aethusa cynapium	1	Nuphar lutea	2 inc fragments
Agrostemma githago (sf)	1	Oenanthe aquatica	2
Bilderdykia convolvulus (ch)	1	root/rootlet fgts	2
Bilderdykia convolvulus (inc per)	1 inc per segs	Rorippa amphibia	2
Brassica sp./Sinapis arvensis	1 fragment(s) only	Alisma sp(p).	1
brick/tile	1 max 30 mm	Atriplex sp(p).	1
burnt bone fgts	1 max 25 mm	Bithynia opercula	1
Calluna vulgaris (caps)	1	brick/tile	1 max 10 mm
Calluna vulgaris (sht fgts)	1	caddis larva cases	1
Carex sp(p).	1	Carduus/Cirsium sp(p).	1
cf. Calluna vulgaris (rt-tw fgts)	1 max 15	Carex sp(p).	1
cf. Cerealia indet.	1	charcoal	1 max 5 mm
Chenopodium polyspermum	1	Conium maculatum (mf)	1
Corylus avellana	1	dicot stem fgts	1
Diphysium complanatum	1 v dec	freshwater snails	1
Eleocharis palustris sl	1	Heracleum sphondylium	1
fish bone	1 max 20 mm	Linum usitatissimum	1
fly puparia	1	Linum usitatissimum (caps fgts)	1
		Lophopus crystallinus	1
		Myosotis sp(p).	1

Polygonum hydropiper	1	Lophopus crystallinus	1
Ranunculus Section Ranunculus	1	Malva sp(p).	1
Rumex acetosella agg.	1	Myriophyllum verticillatum/spicatum	1
Rumex sp(p). (inc per)	1	Nuphar lutea	1
Salix sp(p). (b)	1	Odontites verna	1
sand	1	Oenanthe lachenalii	1
Scirpus lacustris sl	1	Pastinaca sativa/Heracleum sphondylium	
Sparganium sp(p).	1		1 fragment(s) only
Sphagnum sp(p). (lvs)	1	Polygonum lapathifolium	1
Umbelliferae	1	Polygonum persicaria	1
Urtica urens	1	Potamogeton sp(p).	1
wood fgts	1 max 20 mm	Ranunculus Section Ranunculus	1
<hr/>			
Context 19, Sample 45 (T)			
<hr/>			
fibres	2	Rumex sp(p). (inc per)	1
Linum usitatissimum (caps fgts)	2	Sagittaria sagittifolia	1
Marrubium vulgare	2	Salix sp(p). (b)	1
Polygonum aviculare agg.	2	Salix sp(p). (fr)	1
Ranunculus sceleratus	2	Sambucus nigra	1
Reseda luteola	2	sand	1
Sparganium sp(p).	2	Scirpus lacustris sl	1
'coils'	1	Sonchus asper	1
?bryozoa	1	Sonchus oleraceus	1
Agrostemma githago (sf)	1	Stellaria media	1
Alisma sp(p).	1	Ulotia sp(p).	1
Anthemis cotula	1	Urtica dioica	1
Arctium sp(p).	1	Urtica urens	1
Bithynia opercula	1	wood chips	1 max 5 mm
bone fgts	1 max 10 mm	wood fgts	1 max 5 mm
Brassica cf. rapa	1	<hr/>	
Brassica sp(p).	1	Context 20, Sample 38 (T)	
Calluna vulgaris (tw fgts)	1	unwashed sediment	3
Carex sp(p).	1	cinders	2 max 15 mm
Centaurea sp(p).	1	Ranunculus sceleratus	2
Ceratophyllum sp(p).	1	Urtica dioica	2
charcoal	1 max 5 mm	Conium maculatum (mf)	1
Chrysanthemum segetum	1	Coronopus squamatus (fr)	1
Conium maculatum	1	Sambucus nigra	1
Cristatella (statoblasts)	1	sand	1
Daphnia (ephippia)	1	tile fgts	1 max 45 mm
earthworm egg caps	1	<hr/>	
Erica tetralix (lvs)	1	Context 38, Sample 17 (T)	
Ficus carica	1	bark fgts	3 v dec, max 10 mm
fish bone	1	Chenopodium album	2
fish scale	1	Potentilla cf. erecta	2
fly puparia	1	sand	2
Fumaria sp(p).	1	Aethusa cynapium	1
Galeopsis Subgenus Galeopsis	1	Agrostemma githago (ch)	1
gravel	1 max 25 mm	Atriplex sp(p).	1
grit	1	beetles	1
Hyoscyamus niger	1	bone fgts	1 max 40 mm
Hypnum cf. cupressiforme	1	brick/tile	1 max 20 mm
Lamium Section Lamiopsis	1	Calluna vulgaris (ch fls)	1
Lapsana communis	1	Carex sp(p).	1
Lemna sp(p).	1	cf. Calluna vulgaris (rt-tw fgts)	1
Leucobryum glaucum	1	charcoal	1 max 5 mm
Linum usitatissimum (sf)	1		

fish scale	1	Corylus avellana	1 max 10 mm
Gramineae	1	Corylus avellana (ch)	1 max 10 mm
gravel	1 max 20 mm	Cristatella (statoblasts)	1
grit	1	Eleocharis palustris sl	1
Knautia arvensis	1	fish bone	1
Ranunculus Section Ranunculus	1	fly puparia	1
Raphanus raphanistrum (pod segs/fgts)	1	Gramineae	1
Sambucus nigra	1	Gramineae/Cerealia (ch)	1
sclereids (from bark)	1	gravel	1 max 10 mm
Triticum sp(p).	1	Hyoscyamus niger	1
Urtica urens	1	Isothecium myosuroides	1
Viola sp(p).	1	Lamium Section Lamiopsis	1
wood fgts	1 v dec, max 10 mm	leather fgts	1 max 30 mm
<hr/>			
Context 38, Sample 3838 (BS)			
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brick/tile	1 max 35 mm	Linum usitatissimum	1
mammal bone	1 max dim 120 mm	Linum usitatissimum (caps fgts)	1
oyster shell fgts	1	Malva sp(p).	1
pebbles	1 max 60 mm	Marrubium vulgare	1
wood fgts	1 max length 120 mm by 20 mm width/diameter	Neckera complanata	1
<hr/>			
Context 40, Sample 19 (T)			
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bark fgts	2 v dec, max 10 mm	ostracods	1
charcoal	2 max 10 mm	Polygonum hydropiper	1
Chenopodium Section Pseudoblitum	2	Polygonum lapathifolium	1
Sambucus nigra	2	Potamogeton sp(p).	1
sand	2	Potentilla sp(p).	1
Urtica dioica	2	Prunella vulgaris	1
Urtica urens	2	Ranunculus Subgenus Batrachium	1
?daub	1 max 30 mm	root bark/epidermis fgts	1
Agrimonia eupatoria	1	root/rhizome fgts (ch)	1
Agrostemma githago (sf)	1	Rubus/Rosa sp(p). (prickles)	1
Antitrichia curtispindula	1	Rumex sp(p).	1
Atriplex sp(p).	1	Rumex sp(p). (per/secs)	1
beetles	1	sclereids (from bark)	1
bone fgts	1 max 20 mm	snails	1
Brassica rapa	1	Sphagnum sp(p). (lvs)	1
brick/tile	1 max 5 mm	Stellaria media	1
burnt bone fgts	1 max 15 mm	Triticum/Secale (bran' fgts)	1
Calluna vulgaris (ch fls)	1	<hr/>	
Calluna vulgaris (ch sht fgts)	1	Context 40, Sample 4040 (BS)	
Carduus/Cirsium sp(p).	1	<hr/>	
Centaurea sp(p). (af)	1	bark fgts	1 v dec, max 10 mm
cf. Calluna vulgaris (ch rt-tw fgts)	1	brick/tile	1 max 20 mm
cf. Calluna vulgaris (rt-tw fgts)	1	burnt bone fgts	1 max 15 mm
cf. Secale cereale	1	Corylus avellana	1 max 10 mm
cf. Senecio sp(p).	1	gravel	1 max 20 mm
Chenopodium album	1	mammal bone	1 max 50 mm
Chrysanthemum segetum (af)	1	oyster shell fgts	1 max 20 mm
Coronopus squamatus (fr)	1	<hr/>	
Context 41, Sample 27 (T)			
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bark fgts	3 v dec, max 25 mm		
?arthropod frass	2		
Chenopodium album	2		
sand	2		
sclereids (from bark)	2		
wood fgts	2 v dec, max 10 mm		

Atriplex sp(p).	1	Potamogeton sp(p).	1
beetles	1	Ranunculus Section Ranunculus	1
bone fgts	1 max 30 mm	Ranunculus Subgenus Batrachium	1
burnt bone fgts	1 max 15 mm	Rumex sp(p). (inc per)	1
Calluna vulgaris (ch fls)	1	Sagittaria sagittifolia	1
Calluna vulgaris (fls)	1	Scirpus maritimus/lacustris	1
Calluna vulgaris (sht fgts)	1	Scleranthus annuus	1
Carex sp(p).	1	Sonchus as per	1
cf. Calluna vulgaris (ch rt-tw fgts)	1	Stellaria media	1
cf. Secale cereale	1	twig fgts	1 max length 30 mm by 10 mm width/diameter
charcoal	1 max 20 mm		
charred herbaceous detritus	1	Urtica urens	1
charred rhizome/root fgts	1	wood chips	1 max 5 mm
Coronopus squamatus (fr)	1		
Corylus avellana	1 max 15 mm		
fish bone	1 max 5 mm		
Juncus inflexus/effusus/conglomeratus	1		
root/rootlet fgts	1		
Sambucus nigra	1		
Silene vulgaris	1		
Triticum sp(p). (hexaploid)	1		
Vicia sp(p).	1		
<hr/>			
Context 41, Sample 4141 (BS)			
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bark fgts	1 v dec, max 10 mm		
gravel	1 max 40 mm		
mammal bone	1 max dim 130 mm		
oyster shell fgts	1 max 30 mm		
wood fgts	1 v dec, max 10 mm		
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Context 1003, Sample 1003 (BS)			
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Alisma sp(p).	1 'embryos' only		
Anthemis cotula	1		
Atriplex sp(p).	1		
brick/tile	1 max 40 mm		
Ceratophyllum demersum	1		
Ceratophyllum sp(p).	1		
Chrysanthemum segetum	1		
cobbles	1 max dim 110 mm		
fish scale	1		
fly puparia	1		
freshwater mussel shell fgts	1		
freshwater snails	1		
Gramineae	1		
herbaceous detritus	1		
Linum usitatissimum (caps fgts)	1		
Nuphar lut ea	1		
Oenanthe aquatica	1		
percid scale	1		
Polygonum aviculare agg.	1		
Polygonum lapathifolium	1		
		bark fgts	3 max 20 mm
		charcoal	3 max 15 mm
		sclereids (from bark)	3 max 2 mm
		Anthemis cotula	2
		Atriplex sp(p).	2
		beetles	2
		bone fgts	2 max 50 mm
		cf. Avena sp(p). (glumes)	2
		cf. Calluna vulgaris (ch rt-tw fgts)	2 max 15
		Chenopodium album	2
		gravel	2 max 30 mm
		grit	2
		Polygonum aviculare agg.	2
		sand	2
		'pinched' stems (ch)	1
		?burnt peat/ mor humus	1 max 5 mm
		?daub	1 max 15 mm
		Avena sativa (spkls/fgts)	1
		Brassica cf. rapa	1
		brick/tile	1 max 15 mm
		burnt bone fgts	1 max 20 mm
		Calluna vulgaris (ch caps)	1
		Calluna vulgaris (ch sht fgts)	1
		Calluna vulgaris (sht tips)	1
		Carex sp(p).	1
		Cenococcum (sclerotia)	1
		cf. Avena sp(p). (spkls/fgts)	1
		cf. Calluna vulgaris (rt-tw fgts)	1 max 10
		cf. Cladium mariscus (ch lf fgts)	1
		cf. Marrubium vulgare	1
		cf. Secale cereale	1
		charred herbaceous detritus	1
		charred rhizome/root fgts	1
		cinders	1 max 10 mm
		Corylus avellana	1
		Daphnia (ephippia)	1
		fish bone	1 max 10 mm
		fly puparia	1
		Gramineae/Cereal (ch c/n)	1
		Heterodera (cysts)	1
		Hydrocotyle vulgaris	1

Leguminosae (fls/pet)	1	<hr/> Context 1024, Sample 73 (T) <hr/>	
Polygonum persicaria	1	Bithynia opercula	3
Potentilla anserina	1	freshwater mussel shell fgts	2 max 45 mm
pottery	1 max 40 mm	freshwater snails	2
Raphanus raphanistrum (pod segs/fgts)	1	Lemna sp(p).	2
root bark/epidermis fgts	1	ostracods	2
Rumex sp(p).	1	planorbid snails	2
Sambucus nigra	1 inc fragments	Rubus caesius	2
Silene sp(p).	1 v dec	unwashed clay sediment	2
Stellaria media	1	Urtica dioica	2
teeth	1	Agrostemma githago (sf)	1
Torilis japonica	1	Atriplex sp(p).	1
Triticum aestivo-compactum	1	beetles	1
Urtica dioica	1	Brassica sp(p).	1
Urtica urens	1	brick/tile	1 max 10 mm
		burnt bone fgts	1 max 5 mm
<hr/> Context 1014, Sample 59 (T1) <hr/>		caddis larva cases	1
bark fgts	2 v dec, max 15 mm	Carduus/Cirsium sp(p).	1
charcoal	2 max 15 mm	Carex sp(p).	1
sand	2	Ceratophyllum demersum	1
Urtica dioica	2	Ceratophyllum sp(p).	1
?burnt peat/ mor humus	1 max 5 mm	cf. Acer campestre	1
Atriplex sp(p).	1	cf. Glyceria sp(p).	1
Avena sp(p). (spkts/fgts)	1	coal	1 max 10 mm
beetles	1	Conium maculatum	1
bone fgts	1 max 30 mm	Coronopus squamatus (fr)	1
brick/tile	1 max 5 mm	Ficus carica	1 a single spec
Calluna vulgaris (ch fls)	1	fish scale	1 max 2 mm
Calluna vulgaris (sht fgts)	1	fly puparia	1
Carex sp(p).	1	Gramineae/Cerealialia (ch)	1
cf. Avena sp(p). (claff)	1	gravel	1 max 25 mm
cf. Calluna vulgaris (ch rt-tw fgts)	1 max 10	Linum usitatissimum	1
cf. Calluna vulgaris (rt-tw fgts)	1 max 5	Linum usitatissimum (caps fgts)	1
Chenopodium album	1	Lophopus crystallinus	1
Coronopus squamatus (fr)	1	mammal bone	1 max 40 mm
Corylus avellana (ch)	1 max 5 mm	Nuphar lutea	1
daub	1 max 55 mm	Oenanthe lachenalii	1
fly puparia	1	Pisidium sp(p). (valves)	1
gravel	1 max 20 mm	Polygonum aviculare agg.	1
Heterodera (cysts)	1	Polygonum hydropiper	1
Hyoscyamus niger	1	Potamogeton sp(p).	1
moss (lfless stems)	1	Ranunculus Section Ranunculus	1
Polygonum hydropiper	1	Reseda luteola	1
Potentilla anserina	1	Rumex sp(p). (inc per)	1
Potentilla cf. erecta	1	Sambucus nigra	1 inc fragments
Potentilla cf. reptans (ch)	1	sand	1
Raphanus raphanistrum (pod segs/fgts)	1	Scirpus lacustris sl	1
root bark/epidermis fgts	1	Sonchus asper	1
Rumex sp(p).	1	twig fgts	1 max 20 mm
Sambucus nigra	1 inc fragments	Urtica urens	1
sclereids (from bark)	1 max 2 mm	wood fgts	1 max 5 mm
Urtica urens	1		
wood fgts	1 v dec, max 15 mm	<hr/> Context 1027, Sample 75 (T) <hr/>	
		bark fgts	2 v dec, max 10 mm
		Polygonum aviculare agg.	2

Polygonum hydropiper	2	Rumex sp(p). (inc per)	1
sand	2	Sagittaria sagittifolia	1
Urtica dioica	2	Salix sp(p). (b)	1
Urtica urens	2	Sambucus nigra	1
wood fgts	2 v dec, max 10 mm	Scorpidium scorpioides	1
?wood chips	1	Solanum nigrum	1
Agrostemma githago (sf)	1	Sonchus sp(p). (non asper)	1
Anthemis cotula	1	Stellaria media	1
Antitrichia curtispindula	1		
bone fgts	1 max 20 mm	<hr/> <u>Context 1029, Sample 79 (T)</u> <hr/>	
Brassica rapa (sf)	1	Polygonum aviculare agg.	3
brick/tile	1 max 25 mm	Anthemis cotula	2
caddis larva cases	1	cf. Calluna vulgaris (ch rt-tw fgts)	2
Calluna vulgaris (fls)	1	charcoal	2 max 10 mm
Carduus/Cirsium sp(p).	1	grit	2
Carex sp(p).	1	sand	2
cf. Calluna vulgaris (rt-tw fgts)	1	Stellaria media	2
charcoal	1 max 5 mm	Urtica dioica	2
Cladium mariscus	1	wood fgts	2 v dec, max 10 mm
Coronopus squamatus (fr)	1	Atriplex sp(p).	1
Corylus avellana	1 max 5 mm	Avena sp(p).	1
Cristatella (statoblasts)	1	beetles	1
dicot lf fgts	1	bone fgts	1 max 60 mm
dicot stem fgts	1	Brassica sp./Sinapis arvensis	1
fish bone	1 max 10 mm	burnt bone fgts	1 max 10 mm
freshwater mussel shell fgts	1 max 30 mm	Calluna vulgaris (ch fls)	1
freshwater snails	1	Calluna vulgaris (ch sht fgts)	1
gravel	1 max 25 mm	Capsella bursa-pastoris	1
Homalothecium sericeum/lutescens	1	Carex sp(p).	1
Hyoscyamus niger	1	Carex sp(p). (ch)	1
Hypochoeris sp(p).	1	Cerealia indet. (chaff)	1
Juncus bufonius	1	charred moss	1
Lapsana communis	1	Chenopodium album	1
Leguminosae (fls/pet)	1	Chenopodium polyspermum	1
Linum usitatissimum	1 inc fragments	Coronopus squamatus (fr)	1
Linum usitatissimum (caps fgts)	1	Corylus avellana	1 max 10 mm
Malus sylvestris	1	fish bone	1 max 5 mm
Malva cf. sylvestris	1	Gramineae	1
Marrubium vulgare	1	gravel	1 max 10 mm
Menyanthes trifoliata	1	Hydrocotyle vulgaris	1
Myriophyllum verticillatum/spicatum	1	Lamium Section Lamiopsis	1
Nepeta cataria	1	oyster shell fgts	1 max 60 mm
Nuphar lutea	1	Plantago major	1
ostracods	1	Polygonum persicaria	1
Pisidium sp(p). (valves)	1	Potentilla anserina	1
Plantago major	1	Potentilla sp(p).	1
Polygonum amphibium	1	Raphanus raphanistrum (pod segs/fgts)	1
Polygonum lapathifolium	1	Rubus fruticosus agg.	1
Potamogeton sp(p).	1	Rumex sp(p). (inc per)	1
Potentilla cf. erecta	1	Sambucus nigra	1
pottery	1 max 10 mm	sclereids (from bark)	1
Prunella vulgaris	1	Silene cf. vulgaris	1
Ranunculus flammula	1	Solanum nigrum	1
Ranunculus sardous	1	Urtica urens	1
Ranunculus Section Ranunculus	1	Veronica beccabunga-type	1
Ranunculus Subgenus Batrachium	1		
Rorippa palustris	1		
Rumex acetosella agg.	1		

Context 1029, Sample 80 (T1)			
?burnt peat/mor humus	2 max 5 mm	Sambucus nigra	1 inc fragments
Anthemis cotula	2	Silene vulgaris	1
cf. Calluna vulgaris (ch rt-tw fgts)	2 max 20	Stellaria media	1
charcoal	2 max 20 mm	stones	1 max 55 mm
Polygonum aviculare agg.	2	teeth	1 max 30 mm
sand	2	Triticum aestivo-compactum	1
sclereids (from bark)	2 max 2 mm	twig fgts	1 max 25 mm
Urtica dioica	2	Urtica urens	1
?daub	1 max 10 mm	wood fgts	1 v dec, max 20 mm
Aethusa cynapium	1 fragment(s) only		
Allium cf. sativum (ch cloves)	1 a single spec	Context 1031, Sample 84 (T)	
Atriplex sp(p). (ch)	1	bark fgts	2 v dec, max 20 mm
bark fgts	1 max 20 mm	Polygonum aviculare agg.	2
beetles (ch)	1	Sambucus nigra	2
bone fgts	1 max 25 mm	sand	2
Brassica rapa	1	sclereids (from bark)	2
burnt bone fgts	1 max 25 mm	Urtica dioica	2
burnt fish bone	1 max 2 mm	Urtica urens	2
Calluna vulgaris (ch caps)	1	?arthropod frass	1
Calluna vulgaris (ch fls)	1	?daub	1 max 30 mm
Calluna vulgaris (ch sht fgts)	1	Aethusa cynapium	1
Calluna vulgaris (ch sht tips)	1	amphibian bone	1
Calluna vulgaris (fls)	1	Atriplex sp(p).	1
Carex sp(p).	1	Avena sp(p).	1
Carex sp(p). (ch)	1	bone fgts	1 max 20 mm
Cerealia indet. (chaff)	1	brick/tile	1 max 10 mm
cf. Allium sativum (ch tunic)	1 a single spec	burnt bone fgts	1 max 10 mm
cf. Calluna vulgaris (rt-tw fgts)	1 max 10	Calluna vulgaris (ch fls)	1
cf. Cladium mariscus (ch lf fgts)	1 a single fgt	Calluna vulgaris (sht fgts)	1
cf. Mercurialis perennis	1 a single fgt	Carex sp(p).	1
cf. Schoenus nigricans	1 a single spec	Cenococcum (sclerotia)	1
cf. Secale cereale	1	cf. Calluna vulgaris (ch rt-tw fgts)	1
charred moss	1	cf. Secale cereale	1
Chenopodium album	1	charcoal	1 max 15 mm
Corylus avellana	1	Chenopodium album	1
Corylus avellana (ch)	1	Corylus avellana	1 v dec, max 10
fish bone	1 max 5 mm	Eleocharis palustris sl	1
fish scale	1 max 5 mm	Erica tetralix (ch lvs)	1
glassy slag	1 max 5 mm	fish bone	1 max 5 mm
Gramineae (ch)	1	fly puparia	1
gravel	1 max 25 mm	Galeopsis Subgenus Galeopsis	1
grit	1	gravel	1
herbaceous detritus (ch)	1	grit	1
Hordeum sp(p). (inc spr)	1	Juncus cf. gerardi	1
Juncus squarrosus	1 a single spec	Lophopus crystallinus	1
Lamium Section Lamiopsis	1	Potentilla anserina	1
leather fgts	1 max 2 mm	Potentilla cf. erecta	1
Marrubium vulgare	1	Ranunculus cf. sardous	1
Menyanthes trifoliata	1 fragment(s) only	Raphanus raphanistrum (pod segs/fgts)	1
Polygonum hydropiper	1	Rumex sp(p).	1
Polygonum persicaria	1	Rumex sp(p). (ch)	1
Potentilla anserina	1 v dec	Sambucus cf. ebulus	1
Potentilla cf. erecta (ch)	1	Umbelliferae	1
Raphanus raphanistrum (pod segs/fgts)	1	wood fgts	1 max 5 mm
root/rhizome fgts (ch)	1		
Rubus fruticosus agg.	1		
Rumex sp(p).	1		

Context 1031, Sample 1031 (BS)

bark fgts	1 v dec, max 10 mm
brick/tile	1 max 5 mm
burnt bone fgts	1 max 15 mm
charcoal	1 max 10 mm
gravel	1 max 30 mm
mammal bone	1 max 60 mm

Context 1033, Sample 68 (T)

sand	3
bark fgts	2 v dec, max 25 mm
charcoal	2 max 40 mm
gravel	2 max 25 mm
grit	2
sclereids (from bark)	2
Urtica dioica	2
Aethusa cynapium	1
Atriplex sp(p).	1
beetles	1
bone fgts	1 max 15 mm
Brassica sp./Sinapis arvensis	1
brick/tile	1 max 10 mm
Carex sp(p).	1
cf. Calluna vulgaris (ch rt-tw fgts)	1
cf. Calluna vulgaris (rt-tw fgts)	1
Chenopodium album	1
Corylus avellana	1 v dec, max 10 mm
fish bone	1 max 5 mm
oyster shell fgts	1 max 15 mm
Ranunculus sardous	1
Rumex sp(p).	1
Sambucus nigra	1
Stachys sp(p).	1
wood fgts	1 v dec, max 10 mm

Context 1033, Sample 1033 (BS)

bark fgts	1 max 10 mm
bird bone	1
charcoal	1 max 35 mm
gravel	1 max 80 mm
mammal bone	1 max dim 120 mm
pottery	1 max 50 mm

Context 1038, Sample 89 (T1)

sand	2
Urtica dioica	2
?pottery	1 max 15 mm
Alisma sp(p).	1 'embryos' only

Anethum graveolens	1
Atropa bella-donna	1 a single fgt
bark fgts	1 v dec, max 10 mm
beetles	1
bone fgts	1 max 10 mm
brick/tile	1 max 5 mm
Calluna vulgaris (sht fgts)	1
cf. Calluna vulgaris (rt-tw fgts)	1 v dec, um 10 mm
charcoal	1 max 15 mm
Chenopodium album	1
Chenopodium polyspermum	1
Coronopus squamatus (fr)	1
fly puparia	1 v dec
gravel	1 max 25 mm
Heterodera (cysts)	1
Potentilla anserina	1
Potentilla cf. reptans	1
Ranunculus Section Ranunculus	1
root/rootlet fgts	1
Rumex sp(p).	1
Sambucus nigra	1 inc fragments
sclereids (from bark)	1 max 1 mm
Umbelliferae	1
wood fgts	1 v dec, max 15 mm

Context 1039, Sample 90 (T)

bark fgts	3 v dec, max 20 mm
Linum usitatissimum (caps fgts)	2
Agrostemma githago (sf)	1
Anthemis cotula	1
Atriplex sp(p).	1
beetles	1
bone fgts	1 max 20 mm
Brassica sp./Sinapis arvensis	1
burnt bone fgts	1 max 40 mm
Carex sp(p).	1
charcoal	1 max 10 mm
fish bone	1 max 5 mm
fly puparia	1
gravel	1 max 10 mm
Potentilla anserina	1
Ranunculus Section Ranunculus	1
Raphanus raphanistrum (pod segs/fgts)	1
Rubus fruticosus agg.	1
Rumex sp(p).	1
Sambucus nigra	1
sand	1
Urtica dioica	1
Urtica urens	1
wood fgts	1 v dec, max 10 mm

Context 1039, Sample 90 (T1)

bark fgts	4 max 35 mm
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sclereids (from bark)	3	mostly <1 mm	<hr/> <hr/> Context 1039, Sample 1039 (BS)	
Atriplex sp(p).	2			
beetles	2		bark fgts	2 v dec, max 80mm
cf. Calluna vulgaris (ch rt-tw fgts)	2	max 15	gravel	1 max 30 mm
Chenopodium album	2		mammal bone	1 max 60 mm
fly puparia	2	v dec	wood fgts	1 v dec, max 80mm
Potentilla anserina	2			
Raphanus raphanistrum (pod segs/fgts)	2	nt(s) only		
Rubus fruticosus agg.	2			
Sambucus nigra	2	inc fragments		
Urtica dioica	2		<hr/> <hr/> Context 1047, Sample 95 (T)	
Urtica urens	2			
?charred bread	1	max 10 mm	sand	2
Aethusa cynapium	1	v dec	Agrostemma githago (sf)	1
Agrostemma githago (sf)	1		Anthemis cotula	1
Bilderdykia convolvulus (ff)	1		Atriplex sp(p).	1
bone fgts	1	max 80 mm	Avena cf. sativa (spkts/fgts)	1
Brassica rapa	1		bark fgts	1 v dec, max 5 mm
Brassica sp./Sinapis arvensis	1		Bilderdykia convolvulus (ff)	1
brick/tile	1	max 10 mm	Brassica rapa (sf)	1
Bromus sp(p).	1		Brassica sp./Sinapis arvensis (sf)	1
burnt bone fgts	1	max 10 mm	Carduus/Cirsium sp(p).	1
burnt fish bone	1	max 5 mm	Centaurea sp(p). (af)	1
Calluna vulgaris (chshd fgts)	1		Cerealina indet.	1 a single spec
Carex sp(p).	1		cf. Calluna vulgaris (ch rt-tw fgts)	1
Cenococcum (sclerotia)	1	max 1 mm	charcoal	1 max 5 mm
cf. Avena sp(p).	1		Chenopodium album	1
cf. Calluna vulgaris (rt-tw fgts)	1	max 15	Chenopodium Section Pseudoblitum	1
cf. Hordeum sp(p).	1	a single spec	coal	1
charcoal	1	max 10 mm	Coronopus squamatus (fr)	1
Corylus avellana	1		Corylus avellana	1 max 5 mm
earthworm egg caps	1		Eleocharis palustris sl	1
eggshell membrane fgts	1		gravel	1 max 60 mm
Euphorbia helioscopia	1		Heterodera (cysts)	1
fish bone	1	max 5 mm	Hyoscyamus niger	1
Gramineae	1		Polygonum aviculare agg.	1
Gramineae/Cerealina (ch c/n)	1		Polygonum hydropiper	1
gravel	1	max 40 mm	Polygonum persicaria	1
grit	1		Potentilla sp(p).	1
herbaceous detritus (ch)	1		Ranunculus sceleratus	1
Lapsana communis	1		Rumex sp(p).	1
leather fgts	1	v dec, max 5 mm	Sambucus nigra (sf)	1
Linum usitatissimum	1	v dec	Silene vulgaris	1
Linum usitatissimum (caps fgts)	1		Sphagnum sp(p). (lvs)	1
moss (contaminant)	1		Stellaria media	1
Polygonum lapathifolium	1		teeth	1
Prunus spinosa	1		Urtica dioica	1
Ranunculus Section Ranunculus	1		vivianite	1
root/rhizome fgts (ch)	1			
Rubus caesius	1			
Rumex sp(p).	1		<hr/> <hr/> Context 1047, Sample 1047 (BS)	
sand	1		brick/tile	1 max 25 mm
Scirpus maritimus	1		cobbles	1 max dim 150 mm
teeth	1		gravel	1
Thalictrum flavum	1		mammal bone	1 max 40 mm
unwashed sediment	1	max 5 mm		
Valerianella dentata	1			
Viola sp(p).	1	fragment(s) only		
wood fgts	1	max 90 mm		

<u>Context 1052, Sample 11 (T)</u>		Polygonum lapathifolium	1
bark fgts	3 v dec, max 55 mm	Ranunculus flammula	1
sclereids (from bark)	2	Rumex sp(p). (inc per)	1
Urtica dioica	2	Sambucus nigra	1
'ash beads'	1	Spergula arvensis	1
?burnt peat fgts	1	Stellaria media	1
Atriplex sp(p).	1	Triticum sp(p).	1
Atropa bella-donna	1	Triticum/Secale ('bran' fgts)	1
Brassica rapa (sf)	1	Urtica dioica	1
Brassica sp./Sinapis arvensis	1	Urtica urens	1
brick/tile	1 max 5 mm	wood fgts	1 max 10 mm
Calluna vulgaris (caps)	1	<u>Context 2004, Sample 132 (SPT)</u>	
Calluna vulgaris (chsht fgts)	1	Linum usitatissimum (stem/epid fgts)	3
Calluna vulgaris (sht tips)	1	<u>Context 2005, Sample 136 (SPT)</u>	
Carex sp(p).	1	Linum usitatissimum (stem/epid fgts)	3
cf. Avena sp(p). (chaff)	1	Linum usitatissimum (caps fgts)	1
cf. Calluna vulgaris (ch rt-tw fgts)	1	<u>Context 2005, Sample 137 (SPT)</u>	
charcoal	1 max 15 mm	Linum usitatissimum (stem/epid fgts)	3
charred rhizome/root fgts	1	Linum usitatissimum (caps fgts)	1
Chenopodium album	1	<u>Context 2005, Sample 138 (T1)</u>	
Conium maculatum (mf)	1	gravel	3
Corylus avellana	1 max 10 mm	sand	3
Corylus avellana (ch)	1 max 10 mm	Anthemis cotula	2
fish bone	1	Carex sp(p).	2
gravel	1 max 15 mm	charcoal	2 max 20 mm
Polygonum aviculare agg.	1	herbaceous detritus	2
Potentilla cf. erecta	1	Juncus bufonius	2
pottery	1 max 30 mm	Ranunculus sceleratus	2
root/rootlet fgts	1	Ranunculus Section Ranunculus	2
sand	1	Reseda luteola	2 inc fragments
<u>Context 1052, Sample 1052 (BS)</u>		Urtica dioica	2
bark fgts	1 v dec	wood fgts	2 max 50 mm
brick/tile	1 max 5 mm	Agrostemma githago (sf)	1
gravel	1 max 20 mm	Alisma sp(p).	1
mammal bone	1 max 80 mm	Anagallis arvensis	1
<u>Context 2003, Sample 147 (SPT)</u>		Antitrichia curtipendula	1
Linum usitatissimum (stem/epid fgts)	2	Arctium sp(p).	1
sand	2	Atriplex sp(p).	1
Agrostemma githago (sf)	1	Aulacomnium palustre	1
Arctium sp(p).	1	bark fgts	1 max 25 mm
bone fgts	1 max 5 mm	Bilderdykia convolvulus (ff)	1
burnt bone fgts	1 max 5 mm	bone fgts	1 max 50 mm
cf. Calluna vulgaris (ch rt-tw fgts)	1	Brassica rapa	1
gravel	1 max 5 mm	brick/tile	1 max 50 mm
Homalothecium sericeum/lutescens	1	burnt bone fgts	1 max 10 mm
Leucodon sciuroides	1	caddis larv a cases	1
Linum usitatissimum	1	Calliargon cf. giganteum	1
Linum usitatissimum (caps fgts)	1	Calliargon cuspidatum	1
Linum usitatissimum (sf)	1		
Marrubium vulgare	1		
Polygonum hydropiper	1		

Linum usitatissimum (stem/epid fgts)	3	max 10 mm	Chrysanthemum segetum (ch)	1
Agrostemma githago (sf)	2		cobbles	1 max 70 mm
Anthemis cotula	2		Compositae (inv fgts)	1
caddis larva cases	2		Conium maculatum	1 inc fragments
Calluna vulgaris (sht fgts)	2		Coronopus squamatus (fr)	1
Camelina sativa (pods)	2	inc fragments	Corylus avellana (ch)	1
Carduus/Cirsium sp(p).	2	inc fragments	Cristatella (statoblasts)	1
cf. Calluna vulgaris (ch rt-tw fgts)	2		Cruciferae (pedicels)	1
charcoal	2	max 15 mm	Daphnia (ephippia)	1
Corylus avellana	2		Daucus carota	1
daub	2	max 60 mm	dicot lf fgts	1
gravel	2	max 70 mm	Drepanodadus sp(p).	1
Juncus bufonius	2		earthworm egg caps	1
Leucobryum glaucum	2		Eleocharis palustris sl	1
Marrubium vulgare	2	inc fragments	Erica tetralix (lvs)	1
Polygonum aviculare agg.	2		Eupatorium cannabinum	1 fragment(s) only
Rumex maritimus	2	nutlets and perianth segs both present	Euphorbia lathyris	1 a single fgt
			fish bone	1 max 15 mm
			fish scale	1 max 5 mm
Salix sp(p). (b)	2		fly puparia	1
sand	2		Galeopsis Subgenus Galeopsis	1
Spergula arvensis	2		Gramineae	1
Urtica dioica	2		Gramineae (lef)	1
Urtica urens	2		Gramineae/Cerealía (culm fgts)	1
?cynipid galls	1		Homalothecium sericeum/lutescens	1
Aethusa cynapium	1		Hordeum vulgare (inc twstd)	1
Agrimonia eupatoria	1		Hylocomium splendens	1
Alisma sp(p).	1		Hyoscyamus niger	1
Alnus glutinosa (b/bs)	1		Hyoscyamus niger (ch)	1
Anthriscus caucalis	1		Hypnum cf. cupresiforme	1
Anthriscus sylvestris	1		Isothecium myurum	1
Antitrichia curtipendula	1		Lamium Section Lamiopsis	1
Arctium sp(p).	1		Lapsana communis	1
Arctium sp(p). (inv br/hooks)	1		leaf ab pads	1
Atriplex sp(p).	1		leather fgts	1 v dec, max 10 mm
Avena sp(p).	1			
bark fgts (ch)	1	max 15 mm	Leguminosae (fls/pet)	1
Bidens sp(p).	1	fragment(s) only	Leguminosae (pods/fgts)	1 max 5 mm
Bilderdykia convolvulus	1		Lemna sp(p).	1
bivalve periostracum	1	max 10 mm	Linum usitatissimum (caps septum fgts)	1
bone fgts	1	max 35 mm	Malus sylvestris (endo)	1
brick/tile	1	max 10 mm	Melophagus ovinus (sheep ked)	1
Bryonia cretica ssp. dioica	1		Mentha sp(p).	1
burnt bone fgts	1	max 15 mm	moss (contaminant)	1
Calluna vulgaris (fls)	1		moss (lfless stems)	1
Carex sp(p).	1		Myriophyllum alterniflorum	1
Centaurea sp(p).	1		Myriophyllum verticillatum/spicatum	1
Centaurea sp(p). (af)	1		Neckera crispa	1
cf. Aegopodium podagraria	1	fragment(s) only	Nepeta cataria	1
cf. Calluna vulgaris (rt-tw fgts)	1	max length 20 mm by 5 mm width/diameter	Oenanthe cf. aquatica	1
			Oenanthe cf. fluviatilis	1
			Oenanthe lachenalii	1
cf. Hordeum sp(p).	1		Onopordum acanthium	1 a single spec
cf. Salix sp(p). (lfy sht fgts)	1		oyster shell fgts	1 max 15 mm
cf. Secale cereale	1		percid scale	1
Chenopodium album	1		Plantago major	1
Chenopodium murale	1		Polygonum hydropiper	1
Chenopodium Section Pseudoblitum	1		Polygonum lapathifolium	1
Chrysanthemum segetum	1		Potamogeton cf. perfoliatum	1

Potamogeton crispus	1	Arctium sp(p).	1
Potamogeton natans	1	Arctium sp(p). (inv br/hooks)	1
Potamogeton pectinatus	1	Bilderdykia convolvulus	1
Potamogeton sp(p).	1	bivalve periostracum	1
Potamogeton sp(p). (st/lf fgts)	1	Brassica sp(p).	1
Potentilla cf. erecta	1	brick/tile	1 max 35 mm
pottery	1 max 50 mm	Calluna vulgaris (caps)	1
Prunella vulgaris	1	Calluna vulgaris (sht fgts)	1
Prunus spinosa	1	Carduus/Cirsium sp(p).	1
Quercus (charcoal)	1 max 10 mm	Carex sp(p).	1
Quercus (wood chips)	1 max 15 mm	cf. Calluna vulgaris (ch rt-tw fgts)	1
Quercus sp(p). (b/bs)	1	charcoal	1 max 30 mm
Ranunculus sardous	1	Chenopodium album	1
Ranunculus sceleratus	1	Chenopodium murale	1
Ranunculus Section Ranunculus	1	Chrysanthemum segetum (af)	1
Ranunculus Subgenus Batrachium	1 a single spec	cobbles	1 max 100 mm
Raphanus raphanistrum (pod segs/fgts)	1	Conium maculatum	1
Reseda luteola	1	Coronopus squamatus (fr)	1
Rumex sp(p).	1 nutlets and perianth segs both present	Corylus avellana	1 max 10 mm
Sagittaria sagittifolia	1	Cristatella (statoblasts)	1
Salix sp(p). (tcf)	1	Daphnia (ephippia)	1
Salix sp(p). (tw fgts)	1 max 10 mm	dicot lf fgts	1
Sambucus nigra	1 inc fragments	dicot stem fgts	1
Scandix pecten-veneris	1 fragment(s) only	Dicranum sp(p).	1
scleireids (from bark)	1	Dipsacus sativus/fullonum	1 fragment(s) only
Scorpidium scorpioides	1	Eleocharis palustris sl	1
Senecio sp(p).	1	Eurhynchium sp(p).	1
snails	1	fish scale	1
Solanum nigrum	1	Gramineae	1
Sonchus asper	1	Hylocomium splendens	1
Sonchus oleraceus	1	Hyoscyamus niger	1
Stellaria media	1	Hypnum cf. cupressiforme	1
teeth	1	Juncus bufonius	1
Thlaspi arvense	1	Juncus sp(p).	1
Thuidium cf. tamariscinum	1	Lamium Section Lamiopsis	1
Triticum aestivo-compactum	1	Leguminosae (fls/pet)	1
Triticum/Secale ('bran' fgts)	1	Leucobryum glaucum	1
twig fgts	1 max length 30 mm by 5 mm width/diameter	Malus sylvestris (endo)	1
Umbelliferae	1	Malva cf. sylvestris	1 fragment(s) only
wood chips	1 max 30 mm	mammal bone	1 max 70 mm
wood fgts	1 max 20 mm	Marrubium vulgare	1
Zannichellia palustris	1	Neckera complanata	1
		Nepeta cataria	1
		Nuphar lutea	1
		Nymphaea alba	1
		Oenanthe fluviatilis	1
		Onopordum acanthium	1
		oyster shell fgts	1
		Plantago major	1
		Polygonum aviculare agg.	1
		Polygonum hydropiper	1
		Polygonum persicaria	1
		Potamogeton sp(p).	1
		Potentilla anserina	1
		Potentilla cf. erecta	1
		pottery	1 max 40 mm
		Prunus domestica ssp. insititia	1
		Prunus spinosa	1
		Prunus spinosa (ch)	1
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Context 2006, Sample 2006 (BS)			
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Linum usitatissimum	2		
Linum usitatissimum (caps fgts)	2		
Urtica dioica	2		
Agrimonia eupatoria	1		
Agrostemma githago (sf)	1		
Alisma sp(p).	1		
Anthemis cotula	1		
Antitrichia curtipendula	1		
Apium nodiflorum	1		

Ranunculus flammula	1	Betula sp(p).	1
Ranunculus sceleratus	1	Bithynia opercula	1
Ranunculus Section Ranunculus	1	bone fgts	1 max 45 mm
Ranunculus Subgenus Batrachium	1	Brassica sp(p).	1
root/rhizome fgts (ch)	1	brick/tile	1 max 20 mm
Rumex acetosella agg.	1	caddis larva cases	1
Rumex cf. maritimus	1	Calluna vulgaris (ch fls)	1
Rumex sp(p).	1	Calluna vulgaris (fls)	1
Rumex sp(p). (inc per)	1	Calluna vulgaris (sht fgts)	1
Sagittaria sagittifolia	1	Calluna vulgaris (sht tips)	1
Sambucus nigra	1	Camelina sativa (pods)	1 a single spec
Scandix pecten-veneris	1	Cannabis sativa	1 a single fgt
snails	1 fragment(s) only	Capsella bursa-pastoris	1
Spergula arvensis	1	Centaurea sp(p).	1
Stellaria media	1	Centaurea sp(p). (af)	1
Triticum/Secale (bran' fgts)	1	Cerealia indet. (rachis fgts)	1
Urtica urens	1	cf. Calluna vulgaris (ch rt-tw fgts)	1 max 10
wood chips	1 max 10 mm	cf. Calluna vulgaris (rt-tw fgts)	1 max 15
wood fgts	1 max 30 mm	cf. Hordeum sp(p).	1
		cf. Rhytidiadelphus sp(p).	1
		cf. Salix sp(p). (tw fgts)	1 max 10 mm
		cf. Triticum sp(p).	1
		Chenopodium album	1
		Chenopodium Section Pseudoblitum	1
		Chrysanthemum segetum	1
		Cladium mariscus	1
		Cladium mariscus (ch)	1
		Conium maculatum	1
		Corylus avellana	1
		Daucus carota	1
		dicot lf fgts	1
		earthworm egg caps	1
		Eleocharis palustris sl	1
		Erica tetralix (lvs)	1
		fish bone	1 max 10 mm
		fish scale	1 max 5 mm
		fly puparia	1
		freshwater mussel periostracum	1
		Galeopsis Subgenus Galeopsis	1
		Gramineae	1
		Gramineae/Cerealia (culm fgts)	1
		gravel	1 max 25 mm
		grit	1
		Heracleum sphondylium	1 fragment(s) only
		herbaceous detritus	1
		Hylocomium sp(p).	1
		Hypnum cf. cupressiforme	1
		Ilex aquifolium (lef/prickles)	1
		Juncus bufonius	1
		Lamium Section Lamiopsis	1
		Lapsana communis	1
		leather fgts	1 v dec, max 10 mm
		Leguminosae (fls/pet)	1
		Leguminosae (tracheid bars)	1 max 1 mm
		Leontodon sp(p).	1
		Leucodon sciuroides	1
		Linum usitatissimum (caps septum fgts)	1
		Malva cf. sylvestris	1
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Context 2007, Sample 213 (T1)			
bark fgts	3 max 50 mm		
Linum usitatissimum (caps fgts)	3		
Anthemis cotula	2		
Carduus/Cirsium sp(p).	2		
Carex sp(p).	2 nutlets with utricles and/or free utricles		
charcoal	2 max 20 mm		
Coronopus squamatus (fr)	2		
Cristatella (statoblasts)	2		
freshwater mussel shell fgts	2 max 25 mm		
Hyoscyamus niger	2		
Linum usitatissimum	2 inc fragments		
Linum usitatissimum (stem/epid fgts)	2 max mm		
moss (contaminant)	2		
Myriophyllum verticillatum/spicatum	2		
Polygonum hydropiper	2 nutlets and perianth segs		
Ranunculus Section Ranunculus	2		
Rumex maritimus	2		
Rumex sp(p). (inc per)	2		
sand	2		
Sparganium sp(p).	2		
Urtica dioica	2		
Urtica urens	2		
wood fgts	2 max 10 mm		
?cynipid galls	1		
?daub	1 max 20 mm		
Achillea cf. millefolium	1		
Aethusa cynapium	1		
Agrimonia eupatoria	1		
Agrostemma githago (sf)	1		
Alisma sp(p).	1		
Atriplex sp(p).	1		
Atropa bella-donna	1		
Avena sp(p).	1		

Marrubium vulgare	1	gravel	1 max 30 mm
Melophagus ovinus (sheep ked)	1 fragment(s) only	mammal bone	1 max 200 mm
Menyanthes trifoliata	1	oyster shell fgts	1
Myrica gale (lf fgts)	1 max 5 mm	pottery	1 max 60 mm
Neckera complanata	1	wood fgts	1 v dec, max 10 mm
Nepeta cataria	1		
Nuphar lutea	1 a single fgt		
Nymphaea alba	1		
Oenanthe fluviatilis	1	<hr/> Context 2022, Sample 205 (SPT) <hr/>	
Oenanthe lachenalii	1		
Onopordum acanthium	1 a single fgt	?Callunetum mor humus (ch)	3
ostracods	1	cf. Calluna vulgaris (ch rt-tw fgts)	2 max 10
Plantago major	1	charcoal	2 max 15 mm
Polygonum aviculare agg.	1	root/rootlet fgts	2
Polygonum lapathifolium	1	sand	2
Potamogeton cf. filiformis	1	?Callunetum mor humus	1 max 5 mm
Potamogeton crispus	1	beetles	1
Potamogeton natans	1	bone fgts	1 max 40 mm
Potamogeton sp(p). (st/lf fgts)	1	burnt bone fgts	1 max 15 mm
Potentilla cf. erecta	1	Calluna vulgaris (ch fls)	1
Potentilla cf. reptans	1	Calluna vulgaris (ch sht tips)	1
pottery	1 max 35 mm	Carex sp(p). (ch)	1
Prunella vulgaris	1	Coronopus squamatus	1
Quercus sp(p). (b/bs)	1	Coronopus squamatus (fr)	1
Ranunculus flammula	1	Erica tetralix (ch lvs)	1
Ranunculus sardous	1	gravel	1 max 20 mm
Ranunculus scleratus	1	grit	1
Ranunculus Subgenus Batrachium	1	herbaceous detritus (ch)	1
Raphanus raphanistrum (pod segs/fgts)	1	oyster shell fgts	1 max 20 mm
root bark/epidermis fgts	1	part-burnt wood	1 max 20 mm
Rubus fruticosus agg.	1	Potentilla cf. reptans (ch)	1
Rumex acetosella agg.	1	root/rhizome fgts (ch)	1 max 10 mm
Sagittaria sagittifolia	1	Salix/Populus sp(p). (charcoal)	1 max 20
Salix sp(p). (b)	1	teeth	1 max 5 mm
Sambucus nigra	1 inc fragments	unwashed clay sediment	1 max 25 mm
Sambucus nigra (ch)	1	Urtica dioica	1
sclereids (from bark)	1 max 2 mm		
Scorpidium scorpioides	1	<hr/> Context 2023, Sample 206 (T) <hr/>	
Secale cereale	1		
snails	1		
Solanum nigrum	1	bark fgts	3 max 20 mm
Sonchus asper	1	cf. Calluna vulgaris (ch rt-tw fgts)	2
Sonchus oleraceus	1	charcoal	2 max 15 mm
Spergula arvensis	1	grit	2
Stellaria media	1	Ranunculus sardous	2
Thlaspi arvense	1	root/rootlet fgts	2
Torilis japonica	1	sand	2
twig fgts	1 max 30 mm	wood fgts	2 max 30 mm
Umbelliferae	1 a single fgt	?burnt peat fgts	1 max 2 mm
wood chips	1 max 10 mm	Anthemis cotula	1
yarn fgts	1 max 5 mm	Atriplex sp(p).	1
Zannichellia palustris	1	beetles	1
		Bilderdykia convolvulus	1
		bone fgts	1 max 20 mm
		brick/tile	1 max 2 mm
		Calluna vulgaris (fls)	1
		Carex sp(p).	1
		cf. Calluna vulgaris (rt-tw fgts)	1
		cf. Pteridium aquilinum (stalk fgts)	1
<hr/> Context 2013, Sample 2013 (BS) <hr/>			
brick/tile	1 max 35 mm		
charcoal	1 max 5 mm		
freshwater mussel shell fgts	1		

charred herbaceous detritus	1	earthworm egg caps	1
charred moss	1	fly puparia	1
Chenopodium album	1	gravel	1 max 15 mm
Corylus avellana	1 max 5 mm	Hyoscyamus niger	1
Daphnia (ephippia)	1	Juncus sp(p).	1
Diphasium complanatum	1 v dec	Lapsana communis	1
Erica tetralix (ch lvs)	1	Linum usitatissimum (caps fgts)	1
fish bone	1 max 15 mm	Neckera complanata	1
fly puparia	1	Polygonum aviculare agg.	1
gravel	1 max 10 mm	Polygonum hydropiper	1
Juncus sp(p).	1	Quercus sp(p). (b/bs)	1
Linum usitatissimum	1	Ranunculus sardous	1
Linum usitatissimum (caps fgts)	1	Ranunculus sceleratus	1
Plantago major	1	Ranunculus Section Ranunculus	1
Polygonum aviculare agg.	1	Rumex sp(p).	1
Potentilla anserina	1	Sambucus nigra (ch)	1
Quercus sp(p). (b/bs)	1	sand	1
Ranunculus Section Ranunculus	1	Scirpus maritimus/lacustris	1
Raphanus raphanistrum (pod segs/fgts)	1	Scorpidium scorpioides	1
Rumex sp(p).	1	snails	1
Sambucus nigra	1	Solanum nigrum	1
Scirpus cf. maritimus	1	Sonchus oleraceus	1
Scleranthus annuus	1	twig fgts	1
sclereids (from bark)	1	Urtica dioica	1
Sonchus asper	1	Urtica urens	1
Urtica dioica	1	Veronica beccabunga-type	1
Urtica urens	1		

Context 2030, Sample 286 (SPT)

Calluna vulgaris (rt-tw fgts)	2 max length 40 mm by 10 mm diameter
Calluna vulgaris (sht fgts)	2
vivianite	1

Context 2030, Sample 286 (T)

Calluna vulgaris (rt-tw fgts)	2 max length 100 mm by 10 mm diameter
Calluna vulgaris (sht fgts)	2
Gramineae	2
Anthemis cotula	1
bast fgts	1
brick/tile	1 max 5 mm
Calluna vulgaris (fls)	1
Calluna vulgaris (lvs)	1
Carex sp(p).	1
Cerastium sp(p).	1
cf. Campylium sp(p).	1
cf. Diphasium sp(p).	1
cf. Pseudoscleropodium purum	1
Chenopodium album	1
concretions	1 max 5 mm
Coronopus squamatus (fr)	1
dicot lf fgts	1

Context 2030, Sample 286 (T1)

Calluna vulgaris (rt-tw fgts)	3 max length 50 mm by 10 mm diameter
Calluna vulgaris (sht fgts)	3
Calluna vulgaris (tw fgts)	3
calcareous concretions	2 max 10 mm
Calluna vulgaris (caps)	2
Calluna vulgaris (sht tips)	2
Coronopus squamatus (fr)	2
Gramineae	2
gravel	2 max 35 mm
Juncus bufonius	2
Polygonum hydropiper (inc per)	2
sand	2
sclereids (from bark)	2 max 2 mm
Urtica urens	2
Aethusa cynapium	1
Agrostemma githago (sf)	1
Alisma sp(p).	1 'embryos' only
amphibian bone	1
Atriplex sp(p).	1
bark fgts	1 max 25 mm
beetles	1
bone fgts	1 max 40 mm
Brassica sp(p).	1
Brassica sp./Sinapis arvensis (ch)	1
brick/tile	1 max 25 mm
Calluna vulgaris (fls)	1
Calluna vulgaris (lvs)	1

Chenopodium album	1	Isothecium myurum	2
Chenopodium murale	1	Neckera complanata	2
Coronopus squamatus (fr)	1	Urtica urens	2
Corylus avellana	1 max 15 mm	Anthemis cotula	1
Crataegus sp./Prunus spinosa (thorns)	1	Antitrichia curtipendula	1
Daucus carota	1	Atriplex sp(p).	1
dicot lf fgts	1	Aulacomnium palustre	1
dicot stem fgts	1	beetles	1
Erica tetralix (lvs)	1	Betula sp(p).	1
Eurhynchium praelongum	1	bone fgts	1 max 50 mm
Eurhynchium striatum	1	Brassica sp(p).	1
gravel	1 max 15 mm	brick/tile	1 max 20 mm
Homalothecium sericeum/lutescens	1	Calluna vulgaris (fls)	1
Hordeum sp(p).	1 a single spec	Calluna vulgaris (sht fgts)	1
Hylocomium splendens	1	cf. Calluna vulgaris (rt-tw fgts)	1 max 20
Hypnum cf. cupresiforme	1	cf. Linum usitatissimum (stem fgts)	1
Isothecium myosuroides	1	cf. Quercus sp(p). (fgts)	1
Isothecium myurum	1	Chenopodium album	1
Juncus sp(p).	1	Chenopodium murale	1
Lamium Section Lamiopsis	1	Corylus avellana	1
Lapsana communis	1	Daucus carota	1
leather fgts	1 max 2 mm	detritus peat fgts	1 max 10 mm
Leguminosae (fls/pet)	1	dicot lf fgts	1
Leucobryum glaucum	1	Dicranum sp(p).	1
Linum usitatissimum (caps fgts)	1	earthworm egg caps	1
Linum usitatissimum (sf)	1	Eleocharis palustris sl	1
Malus sylvestris (endo)	1	Eurhynchium cf. praelongum	1
Neckera complanata	1	Eurhynchium striatum	1
Neckera crispa	1	fish bone	1 max 2 mm
Polygonum aviculare agg.	1	fly puparia	1
Polygonum hydropiper	1	Galeopsis Subgenus Galeopsis	1
Polygonum lapathifolium	1	Homalothecium sericeum/lutescens	1
Polygonum persicaria	1	Hyoscyamus niger	1
Potentilla anserina	1	Hypnum cf. cupresiforme	1
Rubus fruticosus agg.	1	Isothecium myosuroides	1
Rumex sp(p). (inc per)	1	Juncus sp(p).	1
Salix sp(p). (b)	1	Knautia arvensis (ff)	1
Sambucus nigra	1	Lapsana communis	1
sand	1	Leucobryum glaucum	1
Scandix pecten-veneris	1	Leucodon sciuroides	1
Scorpidium scorpioides	1	Linum usitatissimum	1 inc fragments
Sonchus asper	1	Linum usitatissimum (caps fgts)	1
Sphagnum sp(p).	1	Malus sylvestris (endo)	1
Stellaria media	1	Menyanthes trifoliata	1
Triticum/Secale (bran' fgts)	1	Neckera crispa	1
Ulotia sp(p).	1	Oenanthe fluviatilis	1
wood chips	1 max 10 mm	Oenanthe lachenalii	1
wood fgts	1 max 10 mm	part-burnt coal	1 max 20 mm
		Plantago major	1
		Polygonum aviculare agg.	1
		Polygonum hydropiper	1
		Polygonum lapathifolium	1
		Prunella vulgaris	1
		Prunus domestica cf. ssp. insititia	1
		Quercus sp(p). (b/bs)	1
		Ranunculus flammula	1
		Ranunculus sardous	1
		Ranunculus Section Ranunculus	1
		Ranunculus Subgenus Batrachium	1
<hr/>			
Context 2131, Sample 281 (T1)			
<hr/>			
bark fgts	4 max 40 mm		
sclereids (from bark)	4 max 5 mm		
Carex sp(p).	2		
cf. Calluna vulgaris (ch rt-tw fgts)	2 max 10		
charcoal	2 max 20 mm		
Diphysium complanatum	2 v dec, max mm		
gravel	2 max 40 mm		

Raphanus raphanistrum (pod segs/fgts)	1	Sambucus nigra	1
Rhytidadelphus sp(p).	1	Silene vulgaris (ch)	1
root bark/epidermis fgts	1	Sonchus asper	1
Rubia tinctorum	1 max 5 mm	Sonchus oleraceus	1
Rubus fruticosus agg.	1	Thuidium cf. tamariscinum	1
Rumex sp(p). (per/secs)	1		
Sambucus nigra	1 inc fragments		
sand	1	<hr/> Context 2160, Sample 287 (T1) <hr/>	
Scorpidium scorpioides	1	sclereids (from bark)	4 max 5 mm
Sonchus oleraceus	1	bark fgts	3 max 20 mm
Stachys sp(p).	1	charcoal	3 max 20 mm
Stellaria media	1	Cladium mariscus (ch lf fgts)	3
Thuidium tamariscinum	1	Anthemis cotula	2
twig fgts	1 max length 30 mm by 10 mm width/diameter	Atriplex sp(p).	2
		Carex sp(p). (ch)	2 max 20 mm
Ulotia sp(p).	1	cf. Linum usitatissimum (Scheben)	2 max 5
Urtica dioica	1	Coronopus squamatus (fr)	2
wood chips	1 max 10 mm	dicot stem fgts	2 max 10 mm
wood fgts	1 max 15 mm	gravel	2 max 20 mm
		Leucobryum glaucum	2
		Polygonum aviculare agg.	2
<hr/> Context 2160, Sample 287 (T) <hr/>		sand	2
charcoal	3 max 30 mm	Sonchus oleraceus	2
Chenopodium album	2	Urtica dioica	2
Cladium mariscus (ch lf fgts)	2	Urtica urens	2
gravel	2 max 15 mm	Aethusa cynapium	1
sand	2	Agrimonia eupatoria	1
Urtica dioica	2	Agrostemma githago	1
Urtica urens	2	Agrostemma githago (sf)	1
Agrimonia eupatoria (ch)	1	Antitrichia curtipendula	1
Agrostemma githago (ch sf)	1	Aulacomnium palustre	1
Anthemis cotula (ch)	1	beetles	1
Atriplex sp(p).	1	Bilderdykia convolvulus	1
Aulacomnium palustre	1	bone fgts	1 max 10 mm
bark fgts	1 max 10 mm	Brassica rapa	1
bone fgts	1 max 10 mm	Brassica sp./Sinapis arvensis	1
brick/tile	1 max 10 mm	brick/tile	1 max 20 mm
burnt bone fgts	1 max 10 mm	Calliargon cuspidatum	1
Carex sp(p).	1	Calluna vulgaris (caps)	1
Carex sp(p). (ch)	1	Calluna vulgaris (fls)	1
cf. Calluna vulgaris (ch rt-tw fgts)	1	Calluna vulgaris (sht fgts)	1
charred herbaceous detritus	1	Carduus/Cirsium sp(p).	1
Chenopodium murale	1	Carex sp(p).	1
Cladium mariscus (ch)	1	cf. Cratoneuron filicinum	1
Coronopus squamatus (fr)	1	cf. Genista tinctoria (st fgts)	1 a single spec
Corylus avellana	1 max 10 mm	cf. Pohlia nutans	1
Eurhynchium cf. striatum	1	cf. Schoenus nigricans	1 a single spec
fish bone	1 max 4 mm	charred moss	1
Gramineae/Cerealia (ch c/n)	1	Chenopodium album	1
Gramineae/Cerealia (ch culm fgts)	1	Chenopodium murale	1
Homalothecium sericeum/lutescens	1	Coronopus squamatus	1 a single spec
Hypnum cf. cupressiforme	1	Coronopus squamatus (ch fr)	1
Neckera complanata	1	Corylus (charred rods)	1 max length 30 mm by 10 mm diameter
Polygonum hydropiper	1		
Polygonum persicaria	1	Corylus (rods)	1 max length 30 mm by 10 mm diameter
Potentilla cf. erecta	1		
Raphanus raphanistrum (pod segs/fgts)	1		

Corylus avellana	1 with apical knife marks	Scandix pecten-veneris	1 fragment(s) only
Corylus avellana (ch)	1	Scorpidium scorpioides	1
Daucus carota	1	Solanum nigrum	1
Dicranum sp(p).	1	Sonchus asper	1
Diphasium complanatum	1 v dec, a single en	Spergula arvensis	1
Drepanodadus sp(p).	1	Sphagnum sp(p). (lvs)	1 a single spec
Eleocharis palustris sl	1	Stachys sp(p).	1
Eleocharis palustris sl (ch)	1	Stellaria media	1
Eurhynchium praelongum	1	stone	1 max 60 mm
Eurhynchium striatum	1	Torilis japonica	1 fragment(s) only
Filipendula ulmaria	1	Ulotia sp(p).	1
fish bone	1 max 10 mm	wood chips	1 max 15 mm
fly puparia	1	wood fgts	1
Galeopsis Sub genus Galeopsis (ch)	1	worked wood fgts	1 max 30 mm
Gramineae	1		
Gramineae (ch)	1	<hr/> Context 2160, Sample 291 (T1) <hr/>	
Gramineae (spkts/fgts)	1	bark fgts	4 max 35 mm
Gramineae/Cerealia (ch c/n)	1	sclereids (from bark)	4 max 5 mm
Gramineae/Cerealia (ch culm fgts)	1	?sawdust	3 max 2 mm
herbaceous detritus (ch)	1	sand	2
Homalothecium sericeum/lutescens	1	Scorpidium scorpioides	2
Hordeum sp(p).	1	Urtica dioica	2
Humulus lupulus	1	Agrostemma githago (sf)	1
Hypnum cf. cupressiforme	1	Anthemis cotula	1
Isothecium myosuroides	1	Antitrichia curtipendula	1
Isothecium myurum	1	Atriplex sp(p).	1
Juncus bufonius	1	Aulacomnium palustre	1
Lapsana communis	1	beetles	1
leather fgts	1 max 20 mm	bone fgts	1 max 20 mm
Leguminosae (fls/pet)	1	Brassica sp(p).	1 fragment(s) only
Leontodon sp(p).	1	brick/tile	1 max 4 mm
Linum usitatissimum	1 inc fragments	Bryum sp(p).	1
Malus sylvestris	1 a single fgt	burnt bone fgts	1 max 15 mm
Melophagus ovinus (sheep ked)	1	Calliargon cuspidatum	1
Menyanthes trifoliata (ch)	1	Calluna vulgaris (fls)	1
moss	1	Carduus/Cirsium sp(p).	1
Neckera complanata	1	Carex sp(p).	1 nutlets with utricles and/or free utricles
Oenanthe lachenalii	1	Centaurea sp(p). (inv fgts)	1
Plagiomnium sp(p).	1	cf. Calluna vulgaris (ch rt-tw fgts)	1 max 10
Plantago major	1	cf. Calluna vulgaris (rt-tw fgts)	1 max 5
Pleurozium schreberi	1	cf. Gramineae (c/n)	1
Polygonum hydropiper	1	cf. Knautia arvensis	1
Polygonum lapathifolium	1	cf. Linum usitatissimum (stem fgts)	1
Polygonum persicaria	1	cf. Rorippa sp(p).	1
Potentilla anserina (ch)	1	charcoal	1 max 10 mm
Prunella vulgaris	1	Cruciferae (pedicels)	1
Quercus sp(p). (b/bs)	1	Dicranum cf. scoparium	1
Ranunculus cf. sardous (ch)	1	Diphasium complanatum	1 v dec
Ranunculus Section Ranunculus	1	Drepanodadus sp(p).	1
Raphanus raphanistrum (pod segs/fgts)	1	Eleocharis sp(p).	1
root bark/epidermis fgts	1	Eurhynchium sp(p).	1
root/rhizome fgts (ch)	1 max 10 mm	Eurhynchium striatum	1
Rosa sp(p).	1 fragment(s) only	Filipendula ulmaria	1
Rumex acetosella agg.	1	fly puparia	1
Rumex sp(p). (ch)	1	Gramineae	1
Rumex sp(p). (inc per)	1		
Salix sp(p). (tw fgts)	1 max 10 mm		
Sambucus nigra	1 inc fragments		

gravel	1	max 25 mm	Calluna vulgaris (rt-tw fgts)	1
grit	1		Calluna vulgaris (sht fgts)	1
Homalothecium sericeum/lutescens	1		Campylium stellatum	1
Hyoscyamus niger	1		Carex sp(p).	1
Hypnum cf. cupresiforme	1		Carex sp(p). (ch stem fgts)	1
Isothecium myosuroides	1		cf. Calluna vulgaris (ch rt-tw fgts)	1
Isothecium myurum	1		cf. Cladium mariscus (ch lf fgts)	1
leather fgts	1	v dec, max 15 mm	cf. Glycyeria sp(p).	1
Linum usitatissimum	1		charred herbaceous detritus	1
Linum usitatissimum (caps fgts)	1		charred moss	1
Neckera complanata	1		charred rhizome/root fgts	1
Neckera crispa	1		Coronopus squamatus	1
Polygonum aviculare agg.	1		Corylus avellana	1 v dec, max 5 mm
Polygonum hydropiper	1	inc fragments	Descurainia sophia	1
Polygonum persicaria	1		dicot stem fgts	1
Potentilla anserina	1		Dicranum sp(p).	1
Potentilla cf. erecta	1		Diphysium complanatum	1 v dec
Potentilla palustris	1		Erica tetralix (lvs)	1
Ranunculus sardous	1		Eurhynchium sp(p).	1
Raphanus raphanistrum (pod segs/fgts)	1		Eurhynchium striatum	1
Rubus fruticosus agg.	1		fly puparia	1
Rumex sp(p).	1		Galeopsis Subgenus Galeopsis	1
Sonchus oleraceus	1		Gramineae/Cerealina (ch c/n)	1
Spergula arvensis	1		gravel	1 max 15 mm
Sphagnum sp(p). (lvs)	1		Homalothecium sericeum/lutescens	1
Stellaria media	1		Hylocomium splendens	1
Thuidium tamariscinum	1		Hypnum cf. cupresiforme	1
Ulotia sp(p).	1		Isothecium myurum	1
Umbelliferae	1	v dec	Juncus cf. bufonius	1
Urtica urens	1		Lapsana communis	1
wood chips	1	max 5 mm	Leguminosae (pods/fgts)	1
wood fgts	1	max 5 mm	Linum usitatissimum	1
			Linum usitatissimum (caps fgts)	1
			Neckera complanata	1
			Pleurozium schreberi	1
			Polygonum aviculare agg.	1
			Polygonum hydropiper	1
			Polygonum lapathifolium	1
			Potentilla cf. reptans	1
			Pseudoscleropodium purum	1
			Quercus (charcoal)	1
			Quercus sp(p). (b/bs)	1
			Ranunculus sardous	1
			Raphanus raphanistrum (pod segs/fgts)	1
			root bark/epidermis fgts	1
			Rubus fruticosus agg.	1
			Rumex sp(p). (inc per)	1
			Sambucus nigra	1
			sand	1
			Scandix pecten-veneris	1
			Scorpidium scorpioides	1
			Sonchus asper	1
			Sonchus oleraceus	1
			Thuidium cf. tamariscinum	1
			Triglochin maritima	1
			Triticum/Secale ('bran' fgts)	1
			Ulotia sp(p).	1
			wood chips	1
<hr/>				
Context 2178, Sample 292 (T)				
<hr/>				
charcoal	3	max 20 mm		
Atriplex sp(p).	2			
bark fgts	2	v dec, max 15 mm		
sclereids (from bark)	2			
Urtica dioica	2			
Urtica urens	2			
wood fgts	2	v dec, max 20 mm		
Aethusa cynapium	1			
Agrostemma githago	1			
Agrostemma githago (sf)	1			
Anthemis cotula	1			
Antitrichia curtipendula	1			
Aulacomnium palustre	1			
beetles	1			
bone fgts	1	max 25 mm		
Brassica rapa	1			
Brassica sp(p).	1			
brick/tile	1	max 2 mm		
Calliargon cuspidatum	1			
Calluna vulgaris (fls)	1			

Context 2178, Sample 292 (T1)			
bark fgts	3	max 35 mm	Cruciferae (pedicels) 1
charcoal	3	max 20 mm	dicot lf fgts 1
sclereids (from bark)	3	max 4 mm	Diphasium complanatum 1
Atriplex sp(p).	2		earthworm egg caps 1
Aulacomnium palustre	2		Erica tetralix (lvs) 1
cf. Calluna vulgaris (ch rt-tw fgts)	2	max 10	Euphorbia helioscopia 1
cf. Calluna vulgaris (rt-tw fgts)	2	max 20	Eurhynchium praelongum 1
Cladium mariscus (ch lf fgts)	2		Eurhynchium striatum 1
Dicranum scoparium	2		Filipendula ulmaria 1
Hypnum cf. cupresiforme	2		fish bone 1 max 5 mm
Leucobryum glaucum	2		fly puparia 1
Pleurozium schreberi	2		Fraxinus (charcoal) 1 max 10 mm
Polygonum hydropiper	2		Galeopsis Subgenus Galeopsis 1
sand	2		Gramineae (epid fgts) 1
Urtica dioica	2		Gramineae/Cerealina (c/n) 1
Urtica urens	2		Gramineae/Cerealina (ch c/n) 1
?pottery	1	max 10 mm	Gramineae/Cerealina (ch culm fgts) 1
Achillea millefolium	1		Gramineae/Cerealina (culm fgts) 1
Aethusa cynapium	1		gravel 1 max 35 mm
Agrostemma githago	1		herbaceous detritus 1
Agrostemma githago (sf)	1		herbaceous detritus (ch) 1
Anthemis cotula	1		Homalothecium sericeum/lutescens 1
Anthriscus sylvestris	1		Hordeum sp(p). (spk/fts/fgts) 1
Antitrichia curtispindula	1		Hordeum vulgare (rachis fgts) 1
Avena sp(p). (bran' fgts)	1		Hylocomium cf. brevirostre 1
bark chips	1	max 35 mm	Hypochoeris sp(p). 1
bark fgts (ch)	1	max 10 mm	Isatis tinctoria (pod fgts) 1
beetles	1		Isothecium myosuroides 1
Betula sp(p).	1		Isothecium myurum 1
Betula sp(p). (b/bs)	1		Juncus sp(p). (ch caps) 1
Betula sp(p). (fcs)	1		Lapsana communis 1
Betula sp(p). (mc fgts)	1		leaf ab pads 1
bone fgts	1	max 50 mm	leather fgts 1 v dec, max 35 mm
Brassica rapa	1		Leguminosae (pods/fgts) 1 max 5 mm
Brassica sp(p).	1		Leontodon sp(p). 1
Bryum sp(p).	1		Linum usitatissimum 1
burnt bone fgts	1	max 10 mm	Linum usitatissimum (caps fgts) 1
Calliargon cf. giganteum	1		Malus sylvestris (endo) 1
Calliargon cuspidatum	1		monocot rhizome fgts 1 max 5 mm
Calluna vulgaris (ch sht fgts)	1		moss (contaminant) 1
Calluna vulgaris (fls)	1		Neckera complanata 1
Calluna vulgaris (sht fgts)	1		Neckera crispa 1
Campylium stellatum	1		Pastinaca sativa 1
Campylopus sp(p).	1		Polygonum aviculare agg. 1
Carex sp(p).	1		Polygonum lapathifolium 1
Centaurea cf. nigra (inv br)	1		Polygonum persicaria 1
Centaurea cf. nigra (inv fgts)	1		Polytrichum commune 1 a single spec
Cerealina indet. (chaff)	1		Potentilla anserina 1
cf. Cratoneuron filicinum	1		Potentilla cf. erecta 1
cf. Salix sp(p). (fr)	1		Primula cf. veris 1
cf. Secale cereale	1		Prunella vulgaris 1
charred rhizome/root fgts	1	max 5 mm	Quercus sp(p). (b/bs) 1
Chenopodium album	1		Ranunculus sardous 1
Chenopodium murale	1		Ranunculus Section Ranunculus 1
Cladium mariscus (lf fgts)	1		Raphanus raphanistrum (pod segs/fgts) 1
Coronopus squamatus (fr)	1		Raphanus raphanistrum (s) 1
Corylus avellana	1		Rhytidadelphus sp(p). 1
			root bark/epidermis fgts 1

cf. <i>Calluna vulgaris</i> (rt-tw fgts)	1	pottery	1 max 30 mm
cf. <i>Rorippa palustris</i>	1		
charcoal	1 max 5 mm		
<i>Coronopus squamatus</i> (fr)	1	<hr/> Context 3067, Sample 3067 (BS) <hr/>	
<i>Corylus avellana</i>	1 max 10 mm		
eggshell membrane fgts	1	brick/tile	1 max 70 mm
fish bone	1 max 10 mm	burnt bone fgts	1 max 10 mm
freshwater snails	1	charcoal	1 max 5 mm
<i>Galeopsis</i> Subgenus <i>Galeopsis</i>	1	cinders	1 max 20 mm
gravel	1 max 20 mm	coal	1 max 25 mm
grit	1	gravel	1 max 25 mm
<i>Isoethecium myurum</i>	1	mammal bone	1 max 30 mm
leather fgts	1 max 5 mm	pottery	1 max 80 mm
<i>Neckera complanata</i>	1		
oyster shell fgts	1		
<i>Polygonum hydropiper</i>	1		
<i>Ranunculus sceleratus</i>	1	<hr/> Context 2069, Sample 160 (T) <hr/>	
<i>Raphanus raphanistrum</i> (pod segs/fgts)	1		
<i>Rubus fruticosus</i> agg.	1	brick/tile	2 max 40 mm
<i>Rumex</i> sp(p).	1	charcoal	2 max 15 mm
<i>Sambucus nigra</i>	1	sand	2
sclereids (from bark)	1	<i>Alisma</i> sp(p).	1 'embryos' only
<i>Scorpidium scorpioides</i>	1	cinders	1 max 5 mm
snails	1 a single spec	coal	1 max 5 mm
<i>Sonchus asper</i>	1	fish bone	1
<i>Sonchus oleraceus</i>	1	fish scale	1
<i>Stellaria media</i>	1	<i>Juncus</i> sp(p).	1
<i>Thuidium</i> cf. <i>tamariscinum</i>	1	<i>Lemna</i> sp(p). (fronds)	1
<i>Veronica beccabunga</i> -type	1	pottery	1 max 15 mm
wood chips	1 max 10 mm		
wood fgts	1 v dec, max 10 mm		
		<hr/> Context 3069, Sample 3069 (BS) <hr/>	
<hr/> Context 3005, Sample 3005 (BS) <hr/>		bone fgts	1
brick/tile	2 max 70 mm	brick/tile	1 max 100 mm
bone fgts	1 max 70 mm	charcoal	1 max 10 mm
charcoal	1 max 5 mm	cobbles	1 max 80 mm
gravel	1 max 50 mm	gravel	1 max 30 mm
pottery	1 max 50 mm	otoliths	1
		oyster shell fgts	1
		pottery	1 max 40 mm
<hr/> Context 3006, Sample 3006 (BS) <hr/>		<hr/> Context 3077, Sample 156 (T) <hr/>	
bone fgts	1 max 25 mm	faecal concretions	3 max 30 mm
brick/tile	1 max 35 mm	rat-tailed maggot (min fgts)	2
burnt bone fgts	1 max 30 mm	'char'	1 max 1 mm
cf. <i>Calluna vulgaris</i> (ch rt-tw fgts)	1 max 15	<i>Agrostemma githago</i> (min casts/moulds)	1
gravel	1 max 45 mm	<i>Bilderdykia convolvulus</i> (min)	1
<i>Sambucus nigra</i>	1	bone fgts	1
		<i>Brassica</i> sp./ <i>Sinapis arvensis</i> (min cot)	1
<hr/> Context 3007, Sample 3007 (BS) <hr/>		brick/tile	1 max 50 mm
brick/tile	1 max 80 mm	<i>Cerealia</i> indet. (min)	1
charcoal	1 max 15 mm	cf. <i>Cannabis sativa</i> (min)	1 a single spec
gravel	1 max 50 mm	cf. <i>Prunus</i> sp(p). (min s)	1
mammal bone	1 max 100 mm	charcoal	1 max 5 mm
		fish bone	1
		fly puparia (min)	1

Table 6. Layerthorpe Bridge, York: 'abundance-indicator' values (AIVs) greater than 50 for the plant remains from GBA subsamples. See Table 7 for an explanation of the codes for groups.

<u>Context 14, Sample 48/T</u>			V	BIDE	125	V	CHEN	222
U	FOOS	177				V	PLAN	185
V	QUFA	101				V	BIDE	160
V	PLAN	75	<u>Context 38, Sample 17/T</u>			U	FOOS	125
V	CHEN	71	V	CHEN	166	V	ARTE	92
V	SECA	61	V	SECA	56	V	POTA	85
						V	SECA	76
						V	PHRA	61
						V	QUFA	61
						U	FOOO	51
<u>Sample 48/T1</u>			<u>Context 40, Sample 19/T</u>					
V	CHEN	246	U	FOOS	251			
U	FOOS	151	V	CHEN	245			
V	QUFA	77	V	BIDE	165			
			V	QUFA	100	<u>Context 1029, Sample 79/T</u>		
			V	ARTE	60	V	PLAN	685
			V	RHPR	55	V	CHEN	285
<u>Context 16, Sample 52/T</u>			V	SECA	55	V	SECA	205
V	CHEN	190	V	NACA	52	U	FOOS	76
U	FOOS	76	U	FOOO	51	V	NACA	65
V	QUFA	60				V	QUFA	60
			<u>Context 41, Sample 27/T</u>					
			V	CHEN	130	<u>Sample 80/T1</u>		
			U	FOOS	76	V	CHEN	175
			V	NACA	76	U	FOOS	153
						V	NACA	142
						V	PLAN	130
						V	QUFA	86
						V	SECA	85
						V	ARTE	65
			<u>Context 1012, Sample 56/T1</u>					
			V	CHEN	241	<u>Context 1031, Sample 84</u>		
			V	PLAN	130	V	CHEN	196
			U	FOOS	102	U	FOOS	152
			V	NACA	86	V	PLAN	130
			V	SECA	80	V	QUFA	75
						V	SECA	61
						V	NACA	52
			<u>Context 1014, Sample 59/T1</u>					
			V	CHEN	65	<u>Context 1033, Sample 68/T</u>		
			V	QUFA	55	V	QUFA	55
			V	NACA	53			
			U	FOOS	51			
			<u>Context 1024, Sample 73/T</u>					
			U	FOOS	225	<u>Context 1039, Sample 90/T</u>		
			V	LEMN	125	U	FOOS	175
			V	POTA	100	U	FIBR	125
			V	ARTE	81	U	FOOO	125
			V	RHPR	55	V	SECA	56
						U	FOOS	377
			<u>Context 19, Sample 45/T</u>					
V	ARTE	287	<u>Context 20, Sample 38/T</u>					
U	FOOS	200						
U	FOOO	151						
U	FIBR	150						
V	BIDE	140						
V	CHEN	132						
U	DYES	125						
V	PLAN	125						
V	SECA	116						
V	PHRA	106						
V	POTA	105						

V	SECA	100						
V	CHEN	75						
U	FOOS	75						
M	BOGS	56						
U	FIBR	51						
<u>Context 2178, Sample 292/T</u>			<u>Sample 292/T1</u>			<u>Context 2189, Sample 296/T</u>		
V	CHEN	235	V	CHEN	321	V	CHEN	272
U	FOOS	150	U	USEF	181	V	PLAN	210
V	SECA	120	M	HEMO	180	V	BIDE	190
V	NACA	81	U	FOOS	177	V	NACA	157
V	QUFA	61	V	BIDE	165	U	FOOS	150
V	ARTE	55	V	PHRA	151	V	SECA	102
V	BIDE	55	V	SECA	151	V	QUFA	72
U	FOOO	51	M	BOGS	111			
			M	LIGN	102	<u>Context 2191, Sample 311/T</u>		
			M	SLIT	97	V	CHEN	700
			V	NACA	86	V	BIDE	106
			V	ARTE	66	U	FOOS	75
			V	QUFA	62	V	QUFA	60
			V	PLAN	60			
			M	WOOF	56			
			U	FOOO	51			

Table 7. Explanation of AIV group codes used in Table 6.

Group type	Group	Explanation
M	BOGS	mosses of peat bogs
M	HEMO	mosses of heathland and moorland
M	LIGN	mosses growing on tree bark/dead wood
M	SLIT	mosses of shaded rocks
M	WOOF	mosses of woodland floors
U	DYES	plants certainly or probably used in dyeing
U	FIBR	plants certainly or probably used as a source of fibre
U	FOOO	plants certainly or probably used for oil
U	FOOS	primary food plants
U	USEF	plants useful in some way other than for food, fibre, oil, dyeing, medicine or as ornamentals
V	ALNE	plants of alder carr
V	ARTE	plants of biennial and perennial nitrophilous tall-herb weed communities of waste places, river-banks, waysides and hedgerows
V	BIDE	plants of nitrophilous weed communities of pond edges, ditches and other places subject to periodic inundation
V	CHEN	plants of annual nitrophilous weed communities of cultivated and other disturbed land, especially rootcrop fields and gardens
V	EPIL	plants of nitrophilous woodland edge and clearing communities
V	FEBR	plants of drier, typically calcareous, grassland
V	ISNA	plants of short-lived dwarf-rush communities of winter-wet (often sandy) habitats, pond edges, wet tracks
V	LEMN	plants of free-floating aquatic communities of eutrophic waters
V	MOAR	plants of grassland, including the wetter meadows and pastures, and adjacent paths
V	NACA	plants of grass- and dwarf-shrub (typically Calluna-) dominated dry heaths and moors
V	OXSP	plants of raised bogs and wet heaths
V	PHRA	plants of freshwater reedswamp communities
V	PLAN	plants of trampled places
V	POTA	plants of rooted aquatic vegetation of still or slow-moving water
V	QUFA	plants of deciduous woodland on better soils
V	RHPR	plants of woodland edge scrub communities
V	SECA	plants of annual weed communities in cereal fields

Table 8. Layerthorpe Bridge, York: main statistics by subsample for assemblages of adult Coleoptera and Hemiptera (excluding Aphidoidea and Coccidoidea). Assessment-recorded samples are, of course, excluded. For explanation of codes see Table 9.

	14	16	1012	1014	1029	1038	1039	2005
CN	14	16	1012	1014	1029	1038	1039	2005
SN	48	52	56	59	80	89	90	138
Ext.	/T1	/T1	/T1	/T1	/T1	/T1	/T1	/T1
S	21	72	14	11	12	11	51	79
N	34	123	47	12	20	11	196	111
ALPHA	24	73	7	0	13	0	23	122
SEALPHA	8	12	2	0	6	0	3	24
SOB	6	23	3	4	1	8	8	38
PSOB	29	32	21	36	8	73	16	48
NOB	6	25	4	5	1	8	8	48
PNOB	18	20	9	42	5	73	4	43
ALPHAOB	0	132	0	0	0	0	0	83
SEALPHAOB	0	91	0	0	0	0	0	28
SW	2	2	0	0	0	1	1	11
PSW	10	3	0	0	0	9	2	14
NW	2	2	0	0	0	1	1	13
PNW	6	2	0	0	0	9	1	12
ALPHAW	0	0	0	0	0	0	0	0
SEALPHAW	0	0	0	0	0	0	0	0
SD	1	0	1	1	0	2	2	6
PSD	5	0	7	9	0	18	4	8
ND	1	0	1	2	0	2	2	7
PND	3	0	2	17	0	18	1	6
ALPHAD	0	0	0	0	0	0	0	0
SEALPHAD	0	0	0	0	0	0	0	0
SP	3	5	0	1	0	6	2	14
PSP	14	7	0	9	0	55	4	18
NP	3	5	0	1	0	6	2	20
PNP	9	4	0	8	0	55	1	18
ALPHAP	0	0	0	0	0	0	0	21
SEALPHAP	0	0	0	0	0	0	0	10
SM	0	1	0	0	0	0	0	1
PSM	0	1	0	0	0	0	0	1
NM	0	1	0	0	0	0	0	1
PNM	0	1	0	0	0	0	0	1
ALPHAM	0	0	0	0	0	0	0	0
SEALPHAM	0	0	0	0	0	0	0	0
SL	2	3	1	1	1	1	2	1
PSL	10	4	7	9	8	9	4	1
NL	4	4	1	1	1	1	7	2

	14	16	1012	1014	1029	1038	1039	2005
CN	14	16	1012	1014	1029	1038	1039	2005
SN	48	52	56	59	80	89	90	138
Ext.	/T1	/T1	/T1	/T1	/T1	/T1	/T1	/T1
PNL	12	3	2	8	5	9	4	2
ALPHAL	0	0	0	0	0	0	0	0
SEALPHAL	0	0	0	0	0	0	0	0
SRT	9	34	4	3	6	0	32	30
PSRT	43	47	29	27	50	0	63	38
NRT	20	80	30	3	12	0	169	51
PNRT	59	65	64	25	60	0	86	46
ALPHART	6	23	1	0	0	0	12	31
SEALPHART	2	4	0	0	0	0	2	8
SRD	1	4	0	0	0	0	3	6
PSRD	5	6	0	0	0	0	6	8
NRD	1	7	0	0	0	0	8	12
PNRD	3	6	0	0	0	0	4	11
ALPHARD	0	0	0	0	0	0	0	0
SEALPHARD	0	0	0	0	0	0	0	0
SRF	0	7	0	0	0	0	7	4
PSRF	0	10	0	0	0	0	14	5
NRF	0	11	0	0	0	0	10	4
PNRF	0	9	0	0	0	0	5	4
ALPHARF	0	0	0	0	0	0	0	0
SEALPHARF	0	0	0	0	0	0	0	0
SSA	9	23	3	2	4	1	24	22
PSSA	43	32	21	18	33	9	47	28
NSA	22	66	29	2	10	1	160	37
PNSA	65	54	62	17	50	9	82	33
ALPHASA	6	13	1	0	0	0	8	23
SEALPHASA	2	3	0	0	0	0	1	7
SSF	6	12	2	2	2	1	10	13
PSSF	29	17	14	18	17	9	20	16
NSF	19	42	28	2	8	1	78	21
PNSF	56	34	60	17	40	9	40	19
ALPHASF	0	6	1	0	0	0	3	15
SEALPHASF	0	1	0	0	0	0	1	6
SST	3	10	1	0	2	0	13	7
PSST	14	14	7	0	17	0	25	9
NST	3	23	1	0	2	0	80	13
PNST	9	19	2	0	10	0	41	12
ALPHAST	0	7	0	0	0	0	5	0
SEALPHAST	0	2	0	0	0	0	1	0
SSS	0	1	0	0	0	0	1	2
PSSS	0	1	0	0	0	0	2	3
NSS	0	1	0	0	0	0	2	3

	14	16	1012	1014	1029	1038	1039	2005
Ext.	/T1	/T1	/T1	/T1	/T1	/T1	/T1	/T1
PNSS	0	1	0	0	0	0	1	3
ALPHASS	0	0	0	0	0	0	0	0
SEALPHASS	0	0	0	0	0	0	0	0
SG	0	0	0	0	0	0	0	0
PSG	0	0	0	0	0	0	0	0
NG	0	0	0	0	0	0	0	0
PNG	0	0	0	0	0	0	0	0
ALPHAG	0	0	0	0	0	0	0	0
SEALPHAG	0	0	0	0	0	0	0	0

CN	2065	2131	2160	2160	2178	9271	Whole
SN	258	281	287	291	292	271	site
Ext.	/T1	/T1	/T1	/T1	/T1	/T1	
S	70	69	95	92	121	44	312
N	105	111	163	213	240	68	1454
ALPHA	91	78	95	61	97	54	122
SEALPHA	18	14	13	7	11	12	5
SOB	24	22	37	29	51	10	142
PSOB	34	32	39	32	42	23	46
NOB	27	23	55	45	91	10	356
PNOB	26	21	34	21	38	15	24
ALPHAOB	100	225	50	36	48	0	87
SEALPHAOB	58	201	14	10	9	0	8
SW	5	8	9	5	11	4	27
PSW	7	12	9	5	9	9	9
NW	5	9	18	11	28	4	94
PNW	5	8	11	5	12	6	6
ALPHAW	0	0	0	0	7	0	13
SEALPHAW	0	0	0	0	2	0	2
SD	1	2	6	3	4	1	22
PSD	1	3	6	3	3	2	7
ND	1	2	7	9	6	1	41
PND	1	2	4	4	3	1	3
ALPHAD	0	0	0	0	0	0	20
SEALPHAD	0	0	0	0	0	0	5
SP	8	8	15	12	20	2	59
PSP	11	12	16	13	17	5	19
NP	8	8	19	15	32	2	121
PNP	8	7	12	7	13	3	8
ALPHAP	0	0	0	0	23	0	46
SEALPHAP	0	0	0	0	8	0	7
SM	0	0	2	0	1	0	4
PSM	0	0	2	0	1	0	1
NM	0	0	3	0	1	0	6
PNM	0	0	2	0	0	0	0
ALPHAM	0	0	0	0	0	0	0
SEALPHAM	0	0	0	0	0	0	0
SL	2	3	2	4	6	3	15
PSL	3	4	2	4	5	7	5
NL	7	5	4	8	12	3	60
PNL	7	5	2	4	5	4	4
ALPHAL	0	0	0	0	0	0	7
SEALPHAL	0	0	0	0	0	0	1
SRT	27	27	36	45	42	26	300
PSRT	39	39	38	49	35	59	96

CN	2065	2131	2160	2160	2178	9271	Whole
SN	258	281	287	291	292	271	site
Ext.	/T1	/T1	/T1	/T1	/T1	/T1	
NRT	48	64	79	126	99	49	830
PNRT	46	58	48	59	41	72	57
ALPHART	26	18	26	25	28	23	169
SEALPHART	7	4	5	4	5	6	9
SRD	3	2	6	5	4	2	36
PSRD	4	3	6	5	3	5	12
NRD	3	8	18	25	20	8	110
PNRD	3	7	11	12	8	12	8
ALPHARD	0	0	0	2	2	0	19
SEALPHARD	0	0	0	1	1	0	3
SRF	4	5	4	5	7	3	46
PSRF	6	7	4	5	6	7	15
NRF	12	6	11	21	18	4	97
PNRF	11	5	7	10	8	6	7
ALPHARF	0	0	0	2	0	0	34
SEALPHARF	0	0	0	1	0	0	6
SSA	18	20	26	36	32	21	76
PSSA	26	29	27	39	26	48	24
NSA	33	43	56	98	79	42	678
PNSA	31	39	34	46	33	62	47
ALPHASA	16	15	19	21	20	17	22
SEALPHASA	5	4	4	3	4	5	2
SSF	12	11	14	19	19	11	40
PSSF	17	16	15	21	16	25	13
NSF	26	27	30	55	40	25	402
PNSF	25	24	18	26	17	37	28
ALPHASF	9	7	10	10	14	8	11
SEALPHASF	3	2	3	2	4	3	1
SST	5	8	11	12	11	8	30
PSST	7	12	12	13	9	18	10
NST	6	15	25	37	37	15	257
PNST	6	14	15	17	15	22	18
ALPHAST	0	0	8	6	5	0	9
SEALPHAST	0	0	3	2	1	0	1
SSS	1	1	1	5	2	2	6
PSSS	1	1	1	5	2	5	2
NSS	1	1	1	6	2	2	19
PNSS	1	1	1	3	1	3	1
ALPHASS	0	0	0	0	0	0	0
SEALPHASS	0	0	0	0	0	0	0
SG	0	0	0	0	0	0	0
PSG	0	0	0	0	0	0	0

CN	2065	2131	2160	2160	2178	9271	Whole
SN	258	281	287	291	292	271	site
Ext.	/T1	/T1	/T1	/T1	/T1	/T1	
NG	0	0	0	0	0	0	0
PNG	0	0	0	0	0	0	0
ALPHAG	0	0	0	0	0	0	0
SEALPHAG	0	0	0	0	0	0	0

Table 9. Abbreviations for ecological codes and statistics used for interpretation of insect remains in text and tables.

Lower case codes in parentheses are those assigned to taxa and used to calculate the group values (the codes in capitals). See Table 4 for codes assigned to taxa from the Layerthorpe Bridge site, York. Alpha - the index of diversity alpha (Fisher et al. 1943); Indivs - individuals (based on MNI); No - number.

No taxa	S	Percentage of indivs of grain pests	PNG
Estimated number of indivs (MNI)	N	No decomposer taxa (rt + rd + rf)	SRT
Index of diversity ()	alpha	Percentage of RT taxa	PSRT
Standard error of alpha	SE alpha	No RT indivs	NRT
No 'certain' outdoor taxa (oa)	SOA	Percentage of RT indivs	PNRT
Percentage of 'certain' outdoor taxa	PSOA	Index of diversity of RT component	alpha RT
No 'certain' outdoor indivs	NOA	Standard error	SEalphaRT
Percentage of 'certain' outdoor indivs	PNOA	No 'dry' decomposer taxa (rd)	SRD Percentage
No OA and probable outdoor taxa (oa+ob)	SOB	of RD taxa	PSRD
Percentage of OB taxa	PSOB	No RD indivs	NRD
No OB indivs	NOB	Percentage of RD indivs	PNRD
Percentage OB indivs	PNOB	Index of diversity of the RD component	alphaRD
Index of diversity of the OB component	alphaOB	Standard error	SEalphaRD
Standard error	SEalphaOB	No 'foul' decomposer taxa (rf)	SRF
No aquatic taxa (w)	SW	Percentage of RF taxa	PSRF
Percentage of aquatic taxa	PSW	No RF indivs	NRF
No aquatic indivs	NW	Percentage of RF indivs	PNRF
Percentage of W indivs	PNW	Index of diversity of the RF component	alphaRF
Index of diversity of the W component	alphaW	Standard error	SEalphaRF
Standard error	SEalphaW	No synanthropic taxa (sf+st+ss)	SSA
No damp ground/waterside taxa (d)	SD	Percentage of synanthropic taxa	PSSA
Percentage D taxa	PSD	No synanthropic indivs	NSA
No damp D indivs	ND	Percentage of SA indivs	PNSA
Percentage of D indivs	PND	Index of diversity of SA component	ALPHASA
Index of diversity of the D component	alphaD	Standard error	SEALPHASA
Standard error	SEalphaD	No facultatively synanthropic taxa (sf)	SSF
No strongly plant-associated taxa (p)	SP	Percentage of SF taxa	PSSF
Percentage of P taxa	PSP	No SF indivs	NSF
No strongly P indivs	NP	Percentage of SF indivs	PNSF
Percentage of P indivs	PNP	Index of diversity of SF component	ALPHASF
Index of diversity of the P component	alphaP	Standard error	SEALPHASF
Standard error	SEalphaP	No typical synanthropic taxa (st)	SST
No heathland/moorland taxa (m)	SM	Percentage of ST taxa	PSST
Percentage of M taxa	PSM	No ST indivs	NST
No M indivs	NM	Percentage of ST indivs	PNST
Percentage of M indivs	PNM	Index of diversity of ST component	ALPHAST
Index of diversity of the M component	alphaM	Standard error	SEALPHAST
Standard error	SEalphaM	No strongly synanthropic taxa (ss)	SSS
No wood-associated taxa (l)	SL	Percentage of SS taxa	PSSS
Percentage of L taxa	PSL	No SS indivs	NSS
No L indivs	NL	Percentage of SS indivs	PNSS
Percentage of L indivs	PNL	Index of diversity of SS component	ALPHASS
Index of diversity of the L component	alphaL	Standard error	SEALPHASS
Standard error	SEalphaL	No uncoded taxa (u)	SU
No indivs of grain pests (g)	NG	Percentage of uncoded indivs	PNU

Table 10. Layerthorpe Bridge, York: species lists by subsample for insects and other macro-invertebrates. Taxa are listed in descending order of abundance.

Key: n - minimum number of individuals; q - quantification (s - semi-quantitative 'several', m - semi-quantitative 'many', both sensu Kenward et al. (1986), e - estimate); ecodes - ecological codes (see Table 9 for explanation); * - not used in calculation of statistics in Table 8.

Context: 6 Sample: 4/SPT ReM: N	Anotylus rugosus	1 - rt
Weight: 0.00 E: 0.00 F: 0.00	Stenus sp.	1 - u
Notes: Odd specimen presented as spot sample	Leptacinus pusillus	1 - rt-st
Agonum sp. 1 - oa	Gyrophypnus sp.	1 - rt
	Neobisnius sp.	1 - u
	Philonthus sp.	1 - u
	Lyctus linearis	1 - l-sf
	Cryptophagus sp.	1 - rd-sf
Context: 14 Sample: 48/T ReM: A	Anthicus formicarius	1 - rt-st
Weight: 2.00 E: 0.00 F: 0.00	Chrysomelinae sp.	1 - oa-p
Notes: Small flot, mostly plant debris, some seeds and sand	?Notaris acidulus	1 - oa-d-p
	*Trichoptera sp. (case)	2 - oa-w
Trox scaber 6 s rt-sf		
Pterostichus sp. 1 - ob	Context: 15 Sample: 49/T ReM: A	
Cercyon sp. 1 - u	Weight: 1.00 E: 0.00 F: 0.00	
Elateridae sp. 1 - ob	Notes: Small flot, mostly plant debris	
Anobium punctatum 1 - l-sf	Aphodius sp.	2 - ob-rf
Chrysomelinae sp. 1 - oa-p	Helophorus sp.	1 - oa-w
Curculionidae sp. 1 - oa	Cercyon sp.	1 - u
*Daphnia sp. (ephippium) 1 - oa-w	Aleocharinae sp.	1 - u
*Diptera sp. (puparium) 1 - u	*?Heterodera sp. (cyst)	2 - u
	*Coleoptera sp. (larva)	1 - u
Context: 14 Sample: 48/T 1 ReM: D	*Acarina sp.	1 - u
Weight: 5.00 E: 4.50 F: 4.00		
Notes: Entered 8/9/00. Flot 1 cm in jar. Sorted Steve Rowland, checked HK 11/4/00. Recorded in flot and on filter paper. 'Detailed scan' record. E1-5-5.0, mode 4.5 D; F2.0-5.5, mode 4.0 D. Colour change to pale, 2-4, mode 3 D. AH tube contained quite a lot of <i>Trox</i> , and many <i>Trox</i> fragments were left in the flot. Fossils broke easily on handling.	Context: 16 Sample: 52/T ReM: A	
	Weight: 1.00 E: 0.00 F: 0.00	
	Notes: Moderate-sized flot; plant debris and seeds.	
Trox scaber 10 - rt-sf	Trox scaber	6 s rt-sf
Cercyon analis 3 - rt-sf	Lathridius minutus group	3 - rd-st
Anobium punctatum 3 - l-sf	Cercyon analis	2 - rt-sf
Auchenorhyncha sp. 1 - oa-p	Cercyon haemorrhoidalis	2 - rf-sf
Carabidae sp. 1 - ob	Acritus nigricornis	2 - rt-st
Helophorus sp. 1 - oa-w	Coprophilus striatulus	2 - rt-st
Cercyon sp. 1 - u	Gyrophypnus ?fracticornis	2 - rt-st
Hydrophilinae sp. 1 - oa-w	Aphodius sp.	2 - ob-rf
Omalium caesum or italicum 1 - rt-sf	Heteroptera sp.	1 - u
?Xylodromus concinnus 1 - rt-st	Hemiptera sp.	1 - u
	Trechus obtusus or quadristriatus	1 - oa
	Trechus micros	1 - u

Bembidion sp.	1 - oa	Platystethus arenarius	4 - rf
Agonum sp.	1 - oa	Anotylus complanatus	3 - rt-sf
Carabidae sp.	1 - ob	Falagria caesa or sulcatula	3 - rt-sf
Sphaeridium ?bipustulatum	1 - rf	Ptinus ?fur	3 - rd-sf
Cercyon atricapillus	1 - rf-st	Dyschirius globosus	2 - oa
Megastemum obscurum	1 - rt	Stenus sp. C	2 - u
Xylodromus concinnus	1 - rt-st	Leptacinus intermedius	2 - rt-st
Platystethus arenarius	1 - rf	Gyrophypnus fracticornis	2 - rt-st
Anotylus nitidulus	1 - rt	Philon thus sp. B	2 - u
Anotylus sculpturatus group	1 - rt	Aleocharinae sp. B	2 - u
Anotylus tetracarınatus	1 - rt	Aphodius granarius	2 - ob-rf
Oxytelus sculptus	1 - rt-st	Anobium punctatum	2 - l-sf
Lathrobium sp.	1 - u	Cryptophagus sp.	2 - rd-sf
Neobisnius sp.	1 - u	Clivina fossor	1 - oa
Philon thus sp. A	1 - u	Patrobus atroufuf	1 - oa
Philon thus sp. B	1 - u	Trechus obtusus or quadristriatus	1 - oa
Cordalia obscura	1 - rt-sf	Trechus micros	1 - u
Aleocharinae sp.	1 - u	Bembidion lampros or properans	1 - oa
Aphodius ?prodromus	1 - ob-rf	Bembidion (Philochthus) sp.	1 - oa
Oxyomus sylvestris	1 - rt-sf	?Pterostichus melanarius	1 - ob
?Elateridae sp.	1 - ob	Carabidae sp. A	1 - ob
Elateridae sp.	1 - ob	Carabidae sp. B	1 - ob
Anobium punctatum	1 - l-sf	Helophorus sp.	1 - oa-w
Cryptophagus sp.	1 - rd-sf	Cryptopleurum minutum	1 - rf-st
Atomaria sp.	1 - rd	Teretrius fabricii	1 - l
Corticanna sp.	1 - rt	Onthophilus striatus	1 - rt-sf
Apion sp.	1 - oa-p	Histerinae sp.	1 - rt
Curculionidae sp.	1 - oa	Ochthebius sp.	1 - oa-w
		Catops sp.	1 - u
*Coleoptera sp. (larva)	15 m u	Olophrum sp.	1 - oa
*Daphnia sp. (ephippium)	6 s oa-w	Omalius ?rivulare	1 - rt-sf
*Insecta sp. (pupa)	6 s u	Carpelimus pusillus group	1 - u
*Acarina sp.	6 s u	Anotylus nitidulus	1 - rt
*Insecta sp. (larva)	3 - u	Anotylus rugosus	1 - rt
*Diptera sp. (puparium)	1 - u	Anotylus ?tetracarınatus	1 - rt
*Sepsidae sp. (puparium)	1 - u	Stenus sp. A	1 - u
*Sphaeroceridae sp. (puparium)	1 - rt	Stenus sp. B	1 - u
		Stenus sp. D	1 - u
		Rugilus sp.	1 - rt
Context: 16 Sample: 52/T 1 ReM: D		Gyrophypnus angustatus	1 - rt-st
Weight: 3.00 E: 4.00 F: 4.00		Xantholinus sp.	1 - u
		Philon thus sp. A	1 - u
Notes: Entered 8/9/00. Flot 1 cm in jar. Sorted Steve Rowland, checked HK 18/8/00. Large proportion of <i>Trox</i> came in AH tube. Conspicuously few puparia. E2.0-5.0, mode 4.0 S; F 1.5-4.0, mode 4.0 S; colour change to pale 1-4, mode 3 D. Sorted scraps returned to jar. Remains mostly very fragile, fell apart on handling. One <i>Trox</i> la unexpanded.		?Creophilus maxillosus	1 - rt
		Aleocharinae sp. A	1 - u
		Aleocharinae sp. C	1 - u
		Aleocharinae sp. D	1 - u
		Pselaphidae sp.	1 - u
		Aphodius ater	1 - oa-rf
		Aphodius sp. A	1 - ob-rf
		Aphodius sp. B	1 - ob-rf
		Aphodius sp. C	1 - ob-rf
		Oxyomus sylvestris	1 - rt-sf
		Xestobium rufovillosum	1 - l-st
		Atomaria sp.	1 - rd
Trox scaber	19 - rt-sf		
Acritus nigricornis	9 - rt-st		
Cercyon analis	5 - rt-sf		
Xylodromus concinnus	4 - rt-st		

?Stephostethus angusticollis	1 - rt-st	?Bradycellus sp.	1 - oa
Lathridius minutus group	1 - rd-st	Chlaenius sp.	1 - u
Enicmus sp.	1 - rt-sf	Colymbetes fuscus	1 - oa-w
Corticaria sp.	1 - rt-sf	Dytiscidae sp.	1 - oa-w
Blaps sp.	1 - rt-ss	Cercyon ?terminatus	1 - rf-st
Anthicus floralis or formicarius	1 - rt-st	Cercyon sp. A	1 - u
Chaetocnema concinna	1 - oa-p	Cercyon sp. B	1 - u
Halticinae sp.	1 - oa-p	Anacaena sp.	1 - oa-w
Apion sp.	1 - oa-p	Hydrophilinae sp.	1 - oa-w
Micrelus ericae	1 - oa-p-m	Acidota crenata	1 - oa
Ceutorhynchus sp.	1 - oa-p	Carpelimus ?rivularis	1 - ob-d
Curculionidae sp.	1 - oa	Carpelimus sp.	1 - u
Coleoptera sp. A	1 - u	Platystethus cornutus group	1 - oa-d
Coleoptera sp. B	1 - u	Platystethus nitens	1 - oa-d
		Anotylus sculpturatus group	1 - rt
*Daphnia sp. (ephippium)	15 m oa-w	Stenus sp. A	1 - u
*Oligochaeta sp. (egg capsule)	6 s u	Stenus sp. B	1 - u
*Diptera sp. (puparium)	1 - u	Gyrophypnus fracticornis	1 - rt-st
*Chalcidoidea sp.	1 - u	Gyrophypnus punctulatus	1 - rt-st
*Acarina sp.	1 - u	Xantholinus linearis or longiventris	1 - rt-sf
		Philon thus sp. A	1 - u
		Philon thus sp. B	1 - u
		Philon thus sp. C	1 - u
		Gabrieus sp.	1 - rt
		Tachyporus sp. A	1 - u
		Tachyporus sp. B	1 - u
		Pselaphidae sp.	1 - u
		Aphodius ?prodromus	1 - ob-rf
		Aphodius sp.	1 - ob-rf
		Anobium punctatum	1 - l-sf
		Meligethes sp.	1 - oa-p
		Cryptophagus ?scutellatus	1 - rd-st
		Cryptophagus sp.	1 - rd-sf
		Atomaria sp. A	1 - rd
		Orthoperus sp.	1 - rt
		Coccinellidae sp.	1 - oa-p
		Lathridius minutus group	1 - rd-st
		Corticaria sp.	1 - rt-sf
		Corticaria sp.	1 - rt
		Bruchinae sp.	1 - u
		Donaciinae sp.	1 - oa-d-p
		Chrysomelinae sp.	1 - oa-p
		Phyllotreta nemorum group	1 - oa-p
		Halticinae sp.	1 - oa-p
		Apion sp.	1 - oa-p
		Tanysphyrus lemnae	1 - oa-w-p
		Bagous sp.	1 - oa-w
		?Notaris acridulus	1 - oa-d-p
		Ceutorhynchus ?contractus	1 - oa-p
		Scolytidae sp.	1 - l
		*Oligochaeta sp. (egg capsule)	15 m u
		*Daphnia sp. (ephippium)	15 m oa-w
		*Diptera sp. (larva)	15 m u

Context: 18 Sample: 41/T ReM: A

Weight: 2.00 E: 0.00 F: 0.00

Notes: Very large flot, much plant debris, many insect immatures

Ochthebius sp.	15 m oa-w
Aleocharinae sp.	15 m u
Hydroporinae sp.	6 s oa-w
Cercyon haemorrhoidalis	6 s rf-sf
Cercyon sp. C	6 s u
Megastemum obscurum	6 s rt
Phaedon sp.	6 s oa-p
Helophorus sp. A	2 - oa-w
Helophorus sp. B	2 - oa-w
Hydrobius fuscipes	2 - oa-w
Limnebius sp.	2 - oa-w
Ptiliidae sp.	2 - u
Anotylus nitidulus	2 - rt
Anotylus rugosus	2 - rt
Atomaria sp. B	2 - rd
Drymus sp.	1 - oa-p
Anthocoris sp.	1 - oa-p
Saldidae sp.	1 - oa-d
?Loricera pilicornis	1 - oa
Clivina fossor	1 - oa
Bembidion (Philochthus) sp.	1 - oa
Bembidion sp. A	1 - oa
Bembidion sp. B	1 - oa
Pterostichus sp.	1 - ob
Amara sp. A	1 - oa
Amara sp. B	1 - oa

*Diptera sp. (puparium)	15 m u
*Coleoptera sp. (larva)	15 m u
*Insecta sp. (pupa)	15 m u
*Opiliones sp.	15 m u
*Acarina sp.	15 m u
*Ostracoda sp.	6 s u
*Aranae sp.	6 s u
*Aphidoidea sp.	1 - u
*Formicidae sp.	1 - u

Context: 19 Sample: 45/T ReM: A
Weight: 2.00 E: 0.00 F: 0.00

Notes: Medium-sized flot, some plant debris and a few seeds but mostly invertebrates, especially immatures

Aleocharinae sp.	15 m u
Hemiptera sp.	6 s u
Helophorus sp. A	6 s oa-w
Helophorus sp. B	6 s oa-w
Staphylininae sp.	6 s u
Ochthebius sp.	2 - oa-w
Carpelimus sp.	2 - u
Lathridius minutus group	2 - rd-st
Saldidae sp.	1 - oa-d
Clivina sp.	1 - oa
Trechus obtusus or quadristriatus	1 - oa
Bembidion (Philochthus) sp.	1 - oa
Bembidion sp.	1 - oa
Bembidion sp. B	1 - oa
Pterostichus melanarius	1 - ob
Agonum sp.	1 - oa
Amara sp.	1 - oa
?Harpalus sp.	1 - oa
Metabletus sp.	1 - oa
Haliplidae sp.	1 - oa-w
Agabus or Ilybius sp.	1 - oa-w
Helophorus sp. C	1 - oa-w
Cercyon analis	1 - rt-sf
Cercyon atricapillus	1 - rf-st
Cercyon sp.	1 - u
Hydrobius fuscipes	1 - oa-w
Lesteva sp.	1 - oa-d
Omalium sp.	1 - rt
Xylodromus concinnus	1 - rt-st
Aploderus caelatus	1 - rt
Platystethus nitens	1 - oa-d
Anotylus nitidulus	1 - rt
Anotylus rugosus	1 - rt
Anotylus sculpturatus group	1 - rt
Anotylus tetracaratus	1 - rt
Stenus sp.	1 - u
Gyrophypnus fracticornis	1 - rt-st

Philonthus sp.	1 - u
Tachyporus sp.	1 - u
Tachyporus sp. B	1 - u
Tachyporus sp. C	1 - u
Tachinus sp.	1 - u
Aleochara sp.	1 - u
Aphodius ?granarius	1 - ob-rf
Aphodius sp. A	1 - ob-rf
Aphodius sp. B	1 - ob-rf
Cyphon sp.	1 - oa-d
Anobium punctatum	1 - l-sf
Tipnus unicolor	1 - rt-ss
Ptinus fur	1 - rd-sf
Meligethes sp.	1 - oa-p
Oryzaephilus surinamensis	1 - g-ss
Atomaria sp.	1 - rd
Corticaria sp.	1 - rt-sf
Corticaria fuscata	1 - rt
Donaciinae sp.	1 - oa-d-p
Phaedon sp.	1 - oa-p
Chaetocnema concinna	1 - oa-p
?Psylliodes sp.	1 - oa-p
Apion sp.	1 - oa-p
Sitona sp.	1 - oa-p
Ceuthorhynchinae sp.	1 - oa-p

*Daphnia sp. (ephippium)	15 m oa-w
*Diptera sp. (larva)	15 m u
*Coleoptera sp. (larva)	15 m u
*Insecta sp. (pupa)	15 m u
*Acarina sp.	15 m u
*Diptera sp. (adult)	6 s u
*Diptera sp. (puparium)	6 s u
*Insecta sp. (larva)	6 s u
*Opiliones sp.	2 - u

Context: 20 Sample: 38/T ReM: A
Weight: 2.00 E: 0.00 F: 0.00

Notes: Small flot, mainly plant debris; many seeds. Preservation poor; remains pale and brown

Aleocharinae sp.	6 s u
Platystethus cornutus group	2 - oa-d
Oxytelus sculptus	2 - rt-st
Cercyon haemorrhoidalis	1 - rf-sf
Cercyon sp.	1 - u
Megastemum obscurum	1 - rt
Hydrobius fuscipes	1 - oa-w
Lesteva sp.	1 - oa-d
Platystethus nitens	1 - oa-d
Anotylus rugosus	1 - rt
Gyrophypnus sp.	1 - rt

Philon thus sp. A	1 - u	Donaciinae sp.	1 - oa-d-p
Philon thus sp. B	1 - u	Halticinae sp.	1 - oa-p
Philon thus sp. C	1 - u	Apion sp.	1 - oa-p
Aphodius sp.	1 - ob-rf		
Ptinus sp.	1 - rd-sf	*Diptera sp. (larva)	15 m u
Atomaria sp.	1 - rd	*Diptera sp. (puparium)	6 s u
?Chrysomelinae sp.	1 - oa-p	*Acarina sp.	6 s u
Ceutorhynchus sp.	1 - oa-p	*Ostracoda sp.	1 - u
		*Apoidea sp.	1 - u
*Coleoptera sp. (larva)	6 s u	*Insecta sp. (pupa)	1 - u
*Insecta sp. (pupa)	6 s u	*Aranae sp.	1 - u
*Daphnia sp. (ephippium)	1 - oa-w		
*Diptera sp. (puparium)	1 - u		

Context: 41 Sample: 27/T ReM: A

Weight: 1.00 E: 0.00 F: 0.00

Context: 38 Sample: 17/T ReM: A

Weight: 1.00 E: 0.00 F: 0.00

Notes: Tiny flot, a few seeds and plant fragments, a few fragments of beetles

Dytiscidae sp.	1 - oa-w
Catops sp.	1 - u
Trox sp.	1 - rt
Melolonthinae/Rutelinae/Cetoniae sp.	1 -
	oa-p
Anobium punctatum	1 - l-sf
Lathridius minutus group	1 - rd-st
Coleoptera sp.	1 - u

Context: 40 Sample: 19/T ReM: A

Weight: 1.00 E: 0.00 F: 0.00

Notes: Small flot, a few seeds but mostly invertebrates

Hemiptera sp.	6 s u
Hydroporinae sp.	6 s oa-w
Aleocharinae sp.	6 s u
Colymbetinae sp. A	1 - oa-w
Colymbetinae sp. B	1 - oa-w
Helophorus sp.	1 - oa-w
Cercyon sp.	1 - u
Hydrobius fuscipes	1 - oa-w
?Laccobius sp.	1 - oa-w
Stenus sp.	1 - u
Xantholinus linearis or longiventris	1 - rt-sf
Trox scaber	1 - rt-sf
Aphodius sp.	1 - ob-rf
Elmidae sp.	1 - oa-w
Anobium punctatum	1 - l-sf
Ptinus sp.	1 - rd-sf
Atomaria sp.	1 - rd
Lathridius minutus group	1 - rd-st

Notes: Tiny flot, a few seeds and some sand

Hemiptera sp.	1 - u
Dyschirius sp.	1 - oa
Xantholinus linearis or longiventris	1 - rt-sf
Trox scaber	1 - rt-sf
Aphodius sp.	1 - ob-rf
Cryptophagus sp.	1 - rd-sf
Phyllotreta nemorum group	1 - oa-p
*Insecta sp. (larva)	1 - u

Context: 1003 Sample: 36/BS ReM: N

Weight: 0.00 E: 0.00 F: 0.00

Notes: Odd specimens picked from BS by ARH

Hydrobius fuscipes	1 - oa-w
Donaciinae sp.	1 - oa-d-p
Chrysomelinae sp.	1 - oa-p
*Diptera sp. (puparium)	2 - u
*Sphaeroceridae sp. (puparium)	1 - rt
*Insecta sp. (pupa)	1 - u

Context: 1012 Sample: 56/T1 ReM: D

Weight: 3.00 E: 3.00 F: 4.00

Notes: Entered 8/9/00. Flot 5mm in jar, mainly fine wood. Sorted by Steve Rowland. Checked HK 18/8/00. Recorded on filter paper and in flot. Masses of *Trox* in AH residue tube, almost none in flot. Many very rotted, patchy and holed. E 1.5-4.0, mode 3.0 W; F 2.0-5.0, mode 4.0 W.

Trox scaber	27 - rt-sf
Trechus micros	7 - u

Pterostichus melanarius	2	-	ob
Clivina fossor	1	-	oa
Cercyon sp.	1	-	u
Histerinae sp.	1	-	rt
?Lesteva sp.	1	-	oa-d
Dropephylla ?iptera	1	-	u
Anotylus rugosus	1	-	rt
Stenus sp.	1	-	u
Gyrophypnus fracticornis	1	-	rt-st
Neobisnius sp.	1	-	u
Tachinus ?signatus	1	-	u
Anobium ?punctatum	1	-	l-sf
*Daphnia sp. (ephippium)	1	-	oa-w
*Diptera sp. (puparium)	1	-	u
*Coleoptera sp. (larva)	1	-	u
*Chalcidoidea sp.	1	-	u
*Wood with insect bores	1	-	u

Context: 1014 Sample: 59/T1 ReM: R
Weight: 3.00 E: 4.00 F: 4.00

Notes: Entered 11.9.00. Sorted by Steve Rowland, checked roughly 18/8/00. Recorded on filter paper, remains returned to flot jar. E3.0-5.0, mode 4.0 W; F 2.0-5.0. mode 4 W. Residue tube contained very decayed scraps including *Trox*.

Platystethus cornutus group	2	-	oa-d
Dyschirius ?globosus	1	-	oa
Cercyon sp. A	1	-	u
Cercyon sp. B	1	-	u
Omalinae sp.	1	-	rt
Anotylus rugosus	1	-	rt
Staphylininae sp.	1	-	u
Trox scaber	1	-	rt-sf
?Anobium punctatum	1	-	l-sf
Halticinae sp.	1	-	oa-p
Curculionidae sp.	1	-	oa

Context: 1024 Sample: 73/T ReM: A
Weight: 1.00 E: 0.00 F: 0.00

Notes: Medium-sized flot, mainly plant debris and insect immatures; some seeds

Hydroporinae sp.	6	s	oa-w
Aleocharinae sp.	6	s	u
Hemiptera sp.	3	-	u
Helophorus sp.	2	-	oa-w
Helophorus sp. B	2	-	oa-w
Corixidae sp.	1	-	oa-w

Bembidion sp.	1	-	oa
Carabidae sp.	1	-	ob
Halipilidae sp.	1	-	oa-w
Dytiscidae sp.	1	-	oa-w
Cercyon terminatus	1	-	rf-st
Cercyon ?ustulatus	1	-	oa-d
Ochthebius sp.	1	-	oa-w
Omalium rivulare	1	-	rt-sf
Carpelimus sp.	1	-	u
Platystethus arenarius	1	-	rf
Anotylus rugosus	1	-	rt
Anotylus sculpturatus group	1	-	rt
Anotylus tetracarinatus	1	-	rt
Stenus sp.	1	-	u
Lathrobium sp.	1	-	u
Gabrieus sp.	1	-	rt
Mycetoporus sp.	1	-	u
Aphodius granarius	1	-	ob-rf
Aphodius sp.	1	-	ob-rf
Dryops sp.	1	-	oa-d
Elmidae sp.	1	-	oa-w
Elateridae sp.	1	-	ob
Meligethes sp.	1	-	oa-p
Atomaria sp.	1	-	rd
Coccinellidae sp.	1	-	oa-p
Corticaria sp.	1	-	rt-sf
Corticaria sp.	1	-	rt
Donacinae sp. A	1	-	oa-d-p
Donacinae sp. B	1	-	oa-d-p
Halticinae sp.	1	-	oa-p
Sitona sp.	1	-	oa-p
Coleoptera sp.	1	-	u
*Oligochaeta sp. (egg capsule)	15	m	u
*Daphnia sp. (ephippium)	15	m	oa-w
*Ostracoda sp.	15	m	u
*Diptera sp. (adult)	15	m	u
*Diptera sp. (larva)	15	m	u
*Coleoptera sp. (larva)	15	m	u
*Insecta sp. (pupa)	15	m	u
*Acarina sp.	15	m	u
*Diptera sp. (puparium)	6	s	u
*Opiliones sp.	6	s	u
*Trichoptera sp. (case)	1	-	oa-w
*Aranae sp.	1	-	u

Context: 1027 Sample: 75/T ReM: A
Weight: 2.00 E: 0.00 F: 0.00

Notes: Moderate-sized flot, mostly plant debris, many seeds.

Aleocharinae sp.	6	s	u
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Helophorus sp.	2 - oa-w	*Insecta sp. (pupa)	6 s u
Anobium punctatum	2 - l-sf	*Acarina sp.	6 s u
Cryptophagus sp.	2 - rd-sf	*Diptera sp. (puparium)	3 - u
Lathridius minutus group	2 - rd-st	*Trichoptera sp. (case)	1 - oa-w
Aglenus brunneus	2 - rt-ss	*Formicidae sp.	1 - u
Apion sp. C	2 - oa-p		
Nebria sp.	1 - oa		
Trechus obtusus or quadristriatus	1 - oa	Context: 1029 Sample: 79/T ReM: A	
Bembidion sp.	1 - oa	Weight: 2.00 E: 0.00 F: 0.00	
Harpalus sp.	1 - oa		
Carabidae sp. A	1 - ob	Notes: Small flot, mostly plant debris; many seeds, a little sand	
Carabidae sp. B	1 - ob		
Hydroporinae sp. A	1 - oa-w		
Hydroporinae sp. B	1 - oa-w	Trox scaber	6 s rt-sf
Cercyon convexiusculus group	1 - oa-d	Hemiptera sp.	1 - u
Megastemum obscurum	1 - rt	Cercyon sp.	1 - u
Hydrobius fuscipes	1 - oa-w	Staphylinidae sp.	1 - u
Hydrophilinae sp. A	1 - oa-w	Aphodius sp.	1 - ob-rf
Hydrophilinae sp. B	1 - oa-w	Cyphon sp.	1 - oa-d
Hydrophilinae sp. C	1 - oa-w	Anobium punctatum	1 - l-sf
Hydrophilinae sp. D	1 - oa-w	Lathridius minutus group	1 - rd-st
Acritus nigricornis	1 - rt-st	Chrysomelinae sp. A	1 - oa-p
Ochthebius sp.	1 - oa-w	Chrysomelinae sp. B	1 - oa-p
Ptenidium sp.	1 - rt		
Omaliinae sp.	1 - rt	*Diptera sp. (puparium)	3 - u
Carpelimus ?fuliginosus	1 - st	*?Heterodera sp. (cyst)	1 - u
Platystethus arenarius	1 - rf	*Coleoptera sp. (larva)	1 - u
Anotylus nitidulus	1 - rt		
Stenus sp.	1 - u		
Gyrophypnus sp.	1 - rt	Context: 1029 Sample: 80/T1 ReM: R	
Gabrius sp.	1 - rt	Weight: 3.00 E: 0.00 F: 0.00	
?Bobitobius sp.	1 - u		
Tachinus sp.	1 - u	Notes: Entered 11/9/00. Flot 1.5 cm in jar, mostly large woody fragments. Sorted Steve Rowland, checked HK 11/4/00. Recorded in flot and on filter paper: no record of preservation other than 'varied' and 'Trox extremely decayed'. Some Trox remains to Sam Bolton's project. Residue tube contained rather a lot of remains. All fossils returned to flot jar.	
Aphodius sp. A	1 - ob-rf		
Aphodius sp. B	1 - ob-rf	Trox scaber	7 - rt-sf
Elatecidae sp.	1 - ob	Carpelimus pusillus group	2 - u
Brachypterus sp.	1 - oa-p	Tachinus sp.	2 - u
?Telmatophilus sp.	1 - oa-d	Patrobus atrorufus	1 - oa
Corticaria sp.	1 - rt-sf	Cercyon ?nalis	1 - rt-sf
Anthicus sp.	1 - rt	Histerinae sp.	1 - rt
?Macroplea sp.	1 - oa-w	Omaliium sp.	1 - rt
Donaciinae sp.	1 - oa-d-p	Stenus sp.	1 - u
Apion sp.	1 - oa-p	Gyrophypnus angustatus	1 - rt-st
Apion sp. B	1 - oa-p	Neobisnius sp.	1 - u
Notaris sp.	1 - oa-d-p	Anthicus floralis or formicarius	1 - rt-st
Ceutorhynchus sp. A	1 - oa-p	?Dryocoetinus villosus	1 - l
Ceutorhynchus sp. B	1 - oa-p		
Scolytidae sp.	1 - l		
*Diptera sp. (adult)	15 m u		
*Diptera sp. (larva)	15 m u		
*Coleoptera sp. (larva)	15 m u		
*Oligochaeta sp. (egg capsule)	6 s u		
*Ostracoda sp.	6 s u		

Context: 1031 Sample: 84/T ReM: A
Weight: 2.00 E: 0.00 F: 0.00

Notes: Small flot, mostly plant debris; a few seeds

Trox scaber	3	-	rt-sf
Hemiptera sp.	1	-	u
Cercyon sp.	1	-	u
Anotylus rugosus	1	-	rt
Anobium punctatum	1	-	l-sf
*?Heterodera sp. (cyst)	1	-	u
*Coleoptera sp. (larva)	1	-	u

Context: 1032 Sample: 85/T CA: /1033 ReM: A
Weight: 1.00 E: 0.00 F: 0.00

Notes: Small flot, mainly very fine plant debris, a little sand, a few seeds

Omalium sp.	1	-	rt
?Staphylininae sp.	1	-	u
Aphodius sp.	1	-	ob-rf
Chrysomelinae sp.	1	-	oa-p
?Scolytidae sp.	1	-	l
*Oligochaeta sp. (egg capsule)	1	-	u

Context: 1033 Sample: 68/T ReM: A
Weight: 2.00 E: 0.00 F: 0.00

Notes: Small flot, mostly plant material; many seeds

Trox scaber	2	-	rt-sf
Cercyon sp.	1	-	u
Gyrophynus sp.	1	-	rt
Aleocharinae sp.	1	-	u
Staphylinidae sp.	1	-	u
Lathridius minutus group	1	-	rd-st
Chrysomelinae sp.	1	-	oa-p
Halticinae sp.	1	-	oa-p
*Oligochaeta sp. (egg capsule)	6	s	u
*Diptera sp. (puparium)	2	-	u
*Acarina sp.	1	-	u

Context: 1038 Sample: 89/T1 ReM: R
Weight: 3.00 E: 3.00 F: 5.00

Notes: Entered 11/9/00. Flot sorted Steve Rowland, checked rapidly HK 18/8/00. Recorded in flot and on

filter paper. Residue tube contained only scraps. Remains very fragmentary, cannot record preservation adequately.

Carabidae sp.	1	-	ob
Xantholinus sp.	1	-	u
Staphylininae sp.	1	-	u
?Phyllopertha horticola	1	-	oa-p
Anobium punctatum	1	-	l-sf
Donaciinae sp.	1	-	oa-d-p
Chrysomelinae sp. A	1	-	oa-p
Chrysomelinae sp. B	1	-	oa-p
Apion sp.	1	-	oa-p
?Bagous sp.	1	-	oa-w
Notaris acridulus	1	-	oa-d-p

Context: 1039 Sample: 90/T ReM: A
Weight: 1.00 E: 0.00 F: 0.00

Notes: Moderate-sized flot, some fine plant debris, some sand, many invertebrates

Cercyon analis	6	s	rt-sf
Cercyon ?terminatus	6	s	rf-st
Oxytelus sculptus	6	s	rt-st
Aleocharinae sp.	6	s	u
Trox scaber	6	s	rt-sf
Histeridae sp.	3	-	u
Trechus sp.	1	-	ob
Bembidion sp.	1	-	oa
Helophorus sp.	1	-	oa-w
Ptenidium sp.	1	-	rt
Anotylus nitidulus	1	-	rt
Anotylus rugosus	1	-	rt
Xantholininae sp.	1	-	u
Philonthus sp.	1	-	u
Aleochara sp.	1	-	u
Cyphon sp.	1	-	oa-d
Anobium punctatum	1	-	l-sf
Lyctus linearis	1	-	l-sf
Atomaria sp.	1	-	rd
Lathridius minutus group	1	-	rd-st
Anthicus sp.	1	-	rt
Bruchinae sp.	1	-	u
Chrysomelinae sp.	1	-	oa-p
Apion sp.	1	-	oa-p
Coleoptera sp.	1	-	u

*Diptera sp. (larva)	15	m	u
*Diptera sp. (puparium)	15	m	u
*Muscidae sp. (puparium)	6	s	u
*Sphaeroceridae sp. (puparium)	6	s	rt
*Insecta sp. (pupa)	6	s	u

*Daphnia sp. (ephippium) 1 - oa-w
 *?Scatopse notata (puparium) 1 - rt
 *Sepsidae sp. (puparium) 1 - u
 *Coleoptera sp. (larva) 1 - u

Context: 1039 Sample: 90/T1 ReM: D
 Weight: 3.00 E: 4.00 F: 4.00

Notes: Entered 11/9/00. Flot 1 cm in jar. Sorted Steve Rowland, part checked HK 17/8/00. 'Detailed scan' record in flot and on filter paper. 'Refloat of <1mm' jar combined with main flot. Vast quantities of very comminuted *Trox*, so decayed that they fell apart when touched with a brush. Residue tube contained abundant *Trox* remains. E 3.5-5.0, mode 4.0 S; F 2.5-5.5, mode 4.0 S. Identifications difficult. Bruchus rolled or crushed.

Oxytelus sculptus 56 - rt-st
 Cercyon analis 33 - rt-sf
 Trox scaber 31 - rt-sf
 Anobium punctatum 6 - l-sf
 Lathridius minutus group 5 - rd-st
 Ptenidium sp. 4 - rt
 Neobisnius sp. 4 - u
 Cercyon atricapillus 3 - rf-st
 Anotylus rugosus 3 - rt
 Leptacinus pusillus 3 - rt-st
 Cercyon terminatus 2 - rf-st
 Xylodromus concinnus 2 - rt-st
 Carpelimus ?bilineatus 2 - rt-sf
 Gauropterus fulgidus 2 - rt-st
 Gyrohypnus fracticornis 2 - rt-st
 Atomaria sp. 2 - rd
 Aglenus brunneus 2 - rt-ss
 Bembidion sp. 1 - oa
 Helophorus sp. 1 - oa-w
 Sphaeridium sp. 1 - rf
 Cercyon ?haemorrhoidalis 1 - rf-sf
 Cercyon unipunctatus 1 - rf-st
 Acritus nigricornis 1 - rt-st
 Histerinae sp. 1 - rt
 Catops sp. 1 - u
 Phyllo Drepa sp. 1 - rt
 Omalium ?rivulare 1 - rt-sf
 Omalium sp. 1 - rt
 Carpelimus sp. 1 - u
 Platystethus arenarius 1 - rf
 Platystethus cornutus group 1 - oa-d
 Platystethus nodifrons 1 - oa-d
 Anotylus complanatus 1 - rt-sf
 Anotylus nitidulus 1 - rt
 Lithocharis ochracea 1 - rt-st

Leptacinus intermedius 1 - rt-st
 Philonthus sp. A 1 - u
 Philonthus sp. B 1 - u
 Philonthus sp. C 1 - u
 Staphylininae sp. 1 - u
 Aleocharinae sp. A 1 - u
 Aleocharinae sp. B 1 - u
 Aphodius sp. 1 - ob-rf
 Ptinus sp. 1 - rd-sf
 Lyctus linearis 1 - l-sf
 Corticaria sp. 1 - rt-sf
 Anthicus floralis or formicarius 1 - rt-st
 Bruchinae sp. 1 - u
 Phyllotreta nemorum group 1 - oa-p
 Ceuthorhynchinae sp. 1 - oa-p
 Curculionidae sp. 1 - oa

*Diptera sp. (larva and/or pupa) 15 m u
 *Diptera sp. (puparium) 3 - u
 *Coleoptera sp. (larva) 2 - u
 *Dermaptera sp. 1 - u

Context: 1047 Sample: 95/T ReM: A
 Weight: 3.00 E: 0.00 F: 0.00

Notes: Large washover, mostly charcoal and plant debris; many seeds

Anotylus rugosus 1 - rt
 Staphylinidae sp. 1 - u
 Anobium punctatum 1 - l-sf
 Rhizophagus sp. 1 - u
 Atomaria sp. 1 - rd
 Lathridius minutus group 1 - rd-st
 ?Gastrophysa viridula 1 - oa-p
 Sitona sp. 1 - oa-p
 Curculionidae sp. 1 - oa

*Insecta sp. (larva) 3 - u
 *Oligochaeta sp. (egg capsule) 1 - u
 *Diptera sp. (adult) 1 - u
 *Diptera sp. (puparium) 1 - u
 *Sepsidae sp. (puparium) 1 - u
 *Syrphidae sp. (larva) 1 - u

Context: 1052 Sample: 117/T ReM: A
 Weight: 1.00 E: 0.00 F: 0.00

Notes: Medium-sized flot, mostly plant debris, many seeds

Trox scaber 15 m rt-sf

Cercyon sp.	1	-	u	Catops sp.	1	-	u
Histerinae sp.	1	-	rt	Lesteva sp.	1	-	oa-d
Omalium sp.	1	-	rt	Dropephylla sp.	1	-	u
Cyphon sp.	1	-	oa-d	Xylodromus concinnus	1	-	rt-st
Chrysomelinae sp.	1	-	oa-p	Carpelimus ?bilineatus	1	-	rt-sf
Curculionidae sp.	1	-	oa	Aploderus caelatus	1	-	rt
				Platystethus arenarius	1	-	rf
*Diptera sp. (puparium)	2	-	u	Platystethus degener	1	-	oa-d
*Daphnia sp. (ephippium)	1	-	oa-w	Platystethus nitens	1	-	oa-d
				Anotylus complanatus	1	-	rt-sf
				Anotylus sculpturatus group	1	-	rt
Context: 2005 Sample: 138/T1 ReM: RS				Anotylus ?tetracarinatus	1	-	rt
Weight: 13.00 E: 2.50 F: 2.50				Oxytelus sculptus	1	-	rt-st
				Stenus sp. A	1	-	u
Notes: Entered 11/9/00. Flot 7 mm in jar, sorted Steve Rowland, not checked. Recorded on filter paper. Residue tube contained egg masses and some beetles. E1.5-3.5, mode 2.5 D; F 1.5-4.0, mode 2.5 W. River deposit + dumping or washed out dump?				Stenus sp. B	1	-	u
				Stenus sp. C	1	-	u
				Philonthus sp.	1	-	u
				Tachinus signatus	1	-	u
				?Crataraea suturalis	1	-	rt-st
				Aleochara sp.	1	-	u
				Aleocharinae sp. A	1	-	u
				Aleocharinae sp. B	1	-	u
				Aleocharinae sp. C	1	-	u
				Aphodius ?prodromus	1	-	ob-rf
				Aphodius sp. A	1	-	ob-rf
				Elateridae sp.	1	-	ob
				Ptinus sp.	1	-	rd-sf
				Brachypterus sp.	1	-	oa-p
				Omosita sp.	1	-	rt-sf
				Rhizophagus sp.	1	-	u
				Cryptophagus sp.	1	-	rd-sf
				Atomaria sp.	1	-	rd
				Mycetaea hirta	1	-	rd-ss
				Corticaria sp. A	1	-	rt-sf
				Corticaria sp. B	1	-	rt-sf
				Donacia sp.	1	-	oa-d-p
				Chrysomelinae sp.	1	-	oa-p
				Chaetocnema concinna	1	-	oa-p
				Apion sp. B	1	-	oa-p
				Apion sp. C	1	-	oa-p
				Sitona sp. A	1	-	oa-p
				Sitona sp. B	1	-	oa-p
				Tanysphyrus lemnae	1	-	oa-w-p
				Ceuto rhynchus sp. A	1	-	oa-p
				Ceuto rhynchus sp. B	1	-	oa-p
				*Pulex irritans	7	-	ss
				*Egg mass indet.	3	-	u
				*Insecta sp. (larval case)	3	-	u
				*Formicidae sp. B	2	-	u
				*Diptera sp. (adult)	1	-	u
				*Melophagus ovinus (puparium)	1	-	u
				*Siphonaptera sp.	1	-	u
				*Formicidae sp. A	1	-	u
Cercyon analis	6	s	rt-sf				
Anotylus nitidulus	6	s	rt				
Lathridius minutus group	6	s	rd-st				
Apion sp. A	6	s	oa-p				
Anotylus rugosus	3	-	rt				
Bembidion sp. A	2	-	oa				
Helophorus sp. A	2	-	oa-w				
Ochthebius sp.	2	-	oa-w				
Falagria caesa or sulcatula	2	-	rt-sf				
Trox scaber	2	-	rt-sf				
Dryops sp.	2	-	oa-d				
Anobium punctatum	2	-	l-sf				
Cryptophagus scutellatus	2	-	rd-st				
Aglenus brunneus	2	-	rt-ss				
Cidnorhinus quadrimaculatus	2	-	oa-p				
Saldula sp.	1	-	oa-d				
Corixidae sp.	1	-	oa-w				
Ulopa reticulata	1	-	oa-p-m				
Dyschirius ?globosus	1	-	oa				
Trechus obtusus or quadristriatus	1	-	oa				
Bembidion sp. B	1	-	oa				
Pterostichus madidus	1	-	ob-st				
Amara sp.	1	-	oa				
Halipidae sp.	1	-	oa-w				
Hydroporinae sp.	1	-	oa-w				
Gyrinus sp.	1	-	oa-w				
Hydrochus sp.	1	-	oa-w				
Helophorus aquaticus or grandis	1	-	oa-w				
Helophorus sp. B	1	-	oa-w				
Cercyon haemorrhoidalis	1	-	rf-sf				
Hydrobius fuscipes	1	-	oa-w				
Acritus nigricornis	1	-	rt-st				
Gnathonecus sp.	1	-	rt-sf				
Histerinae sp.	1	-	rt				

Context: 2006 Sample: 214/T1 ReM: A
Weight: 5.00 E: 0.00 F: 0.00

Notes: Entered 11/9/00. Sorted Steve Rowland, not checked. Residue tube of egg masses, caddis cases and scraps. Assessment record: plenty of insects, but scrappy remains. Broadly like assemblage from 138, Context 2005, but with weaker urban component. Probably aquatic deposition, with hints of filth.

Chlaenius sp.	1	-	u
Histerinae sp.	1	-	rt
*Melophagus ovinus (puparium)	1	-	u

Context: 2007 Sample: 213/T1 ReM: A
Weight: 3.00 E: 0.00 F: 0.00

Notes: Entered 11/9/00. Flot 0.5 cm in jar, sorted Steve Rowland, checked HK 11/4/00. Recorded at assessment level on filter paper and in flot. Residue tube contained some useful remains. Urban and aquatic invertebrates - waterlain with dumping or washed-out dumps.

Corixidae sp.	6	s	oa-w
Helophorus sp.	6	s	oa-w
Heterogaster urticae	1	-	oa-p
Lygaeidae sp.	1	-	oa-p
?Miridae sp.	1	-	oa-p
Saldidae sp.	1	-	oa-d
Gerris sp.	1	-	oa-w
Colymbetes fuscus	1	-	oa-w
Histerinae sp.	1	-	rt
Trox scaber	1	-	rt-sf
Ptilinus pectinicornis	1	-	l-sf
Gracilia minuta	1	-	l
Donaciinae sp.	1	-	oa-d-p

*Insecta sp. (larva)	15	m	u
*Insecta sp. (pupa)	15	m	u
*Cladocera sp. B (ephippium)	6	s	oa-w
*Acarina sp.	6	s	u
*Oligochaeta sp. (egg capsule)	3	-	u
*Daphnia sp. (ephippium)	3	-	oa-w
*Melophagus ovinus (puparium)	3	-	u
*Cristatella mucedo (statoblast)	2	-	w
*Cladocera sp. A (ephippium)	1	-	oa-w
*Ostracoda sp.	1	-	u
*Trichoptera sp. (case)	1	-	oa-w
*Siphonaptera sp.	1	-	u
*Coleoptera sp. (larva)	1	-	u
*Apoidea sp.	1	-	u
*Araneae sp.	1	-	u

Context: 2023 Sample: 206/T ReM: A
Weight: 1.00 E: 0.00 F: 0.00

Notes: Small flot, plant debris and seeds

Cercyon analis	6	s	rt-sf
Anobium punctatum	3	-	l-sf
Trox scaber	2	-	rt-sf
Helophorus sp.	1	-	oa-w
Histerinae sp.	1	-	rt
Xylodromus concinnus	1	-	rt-st
Carpelimus sp.	1	-	u
Anotylus nitidulus	1	-	rt
Anotylus tetracaratus	1	-	rt
Gyrophypnus ?fracticornis	1	-	rt-st
Aleocharinae sp.	1	-	u
Staphylinidae sp.	1	-	u
Aphodius sp.	1	-	ob-rf
Cryptophagus sp.	1	-	rd-sf
Atomaria sp.	1	-	rd
Lathridius minutus group	1	-	rd-st
Corticaria sp.	1	-	rt-sf

*Diptera sp. (puparium)	15	m	u
*Acarina sp.	15	m	u
*Diptera sp. (larva)	6	s	u
*Coleoptera sp. (larva)	6	s	u
*Insecta sp. (pupa)	6	s	u
*Daphnia sp. (ephippium)	1	-	oa-w

Context: 2030 Sample: 286/T ReM: A
Weight: 1.00 E: 0.00 F: 0.00

Notes: Moderate-sized flot, mainly plant debris

Aleocharinae sp.	6	s	u
Platystethus cornutus group	3	-	oa-d
Lyctus linearis	3	-	l-sf
Lathridius minutus group	3	-	rd-st
Ochthebius sp.	2	-	oa-w
Hydraena sp.	2	-	oa-w
Anotylus nitidulus	2	-	rt
Trechus micros	1	-	u
Bembidion (Peryphus) sp.	1	-	oa
Bembidion sp. A	1	-	oa
Bembidion sp. B	1	-	oa
Bembidion sp. C	1	-	oa
?Amara sp.	1	-	oa
Carabidae sp.	1	-	ob
Dytiscidae sp.	1	-	oa-w
Helophorus sp. A	1	-	oa-w
Helophorus sp. B	1	-	oa-w
Cercyon analis	1	-	rt-sf

Cercyon sp. A	1 - u	Anotylus rugosus	4 - rt
Cercyon sp. B	1 - u	Neobisnius sp.	4 - u
Hydrobius fuscipes	1 - oa-w	Trechus micros	3 - u
Limnebius sp.	1 - oa-w	Cercyon analis	3 - rt-sf
Micropeplus fulvus	1 - rt	Aphodius ?prodromus	3 - ob-rf
Omalium sp.	1 - rt	Clivina fossor	2 - oa
Xylodromus concinnus	1 - rt-st	Cercyon haemorrhoidalis	2 - rf-sf
Carpelimus bilineatus	1 - rt-sf	Hister ?merdarius	2 - rt-sf
Anotylus rugosus	1 - rt	Xylodromus concinnus	2 - rt-st
Xantholinus linearis or longiventris	1 - rt-sf	Carpelimus bilineatus	2 - rt-sf
Philonthus ?politus	1 - rt-st	Anotylus nitidulus	2 - rt
?Gabrius sp.	1 - rt	Philonthus sp. A	2 - u
Trox sp.	1 - rt	Philonthus sp. D	2 - u
Aphodius sp.	1 - ob-rf	Aleocharinae sp. A	2 - u
Anobium punctatum	1 - l-sf	Aleocharinae sp. B	2 - u
Corticaria sp.	1 - rt-sf	Trox scaber	2 - rt-sf
Corticarina sp.	1 - rt	?Heterogaster urticae	1 - oa-p
Halticinae sp.	1 - oa-p	Aphrophora alni	1 - oa-p
Coleoptera sp.	1 - u	Auchenorhyncha sp. A	1 - oa-p
		Auchenorhyncha sp. B	1 - oa-p
*Acarina sp.	15 m u	Trechus discus	1 - u
*Coccoidea sp.	6 s u	Bembidion (Philochthus) sp.	1 - oa
*Diptera sp. (larva)	6 s u	Carabidae sp. A	1 - ob
*Coleoptera sp. (larva)	6 s u	Carabidae sp. B	1 - ob
*Oligochaeta sp. (egg capsule)	1 - u	Helophorus aquaticus or grandis	1 - oa-w
*Dermaptera sp.	1 - u	Helophorus sp.	1 - oa-w
*Diptera sp. (adult)	1 - u	Hydrophilinae sp.	1 - oa-w
*Bibionidae sp.	1 - u	Acritus nigricornis	1 - rt-st
		Ochthebius sp.	1 - oa-w
		Limnebius sp.	1 - oa-w
		Ptenidium sp.	1 - rt
		Acrotrichis sp.	1 - rt
		Omalium ?rivulare	1 - rt-sf
		Carpelimus pusillus group	1 - u
		Carpelimus rivularis	1 - ob-d
		Anotylus ?tetracarinatus	1 - rt
		Oxytelus sculptus	1 - rt-st
		Stenus sp. A	1 - u
		Stenus sp. B	1 - u
		Stenus sp. C	1 - u
		Stenus sp. D	1 - u
		Stenus sp. F	1 - u
		Paederinae sp.	1 - u
		Gyrohypnus fracticornis	1 - rt-st
		Philonthus sp. B	1 - u
		Philonthus sp. C	1 - u
		Falagria caesa or sulcatula	1 - rt-sf
		Aleocharinae sp. C	1 - u
		Aphodius sp.	1 - ob-rf
		Melanotus ?erythropus	1 - l
		Elateridae sp. A	1 - ob
		Elateridae sp. B	1 - ob
		Anthocomus fasciatus	1 - ob
		Brachypterus sp.	1 - oa-p
Cercyon analis	15 m rt-sf		
Trox scaber	1 - rt-sf		
Context: 2030 Sample: 286/T1 ReM: A			
Weight: 3.00 E: 0.00 F: 0.00			
Notes: Entered 11/9/00. Sorted Steve Rowland, not checked. Beetles fairly abundant. Examined on filter paper. Residue tube contained scraps of <i>Trox</i> . Some aquatic and abundant urban fauna.			
Context: 2065 Sample: 258/T1 ReM: D			
Weight: 3.00 E: 2.50 F: 2.50			
Notes: Entered 11/9/00. Flot 3 mm in jar, sorted Steve Rowland, checked HK 7/4/00. Recorded in flot and on filter paper at 'detailed scan' level. E 1.5-3.5, mode 2.5 D; F 1.5-4.0, mode 2.5 W. Surfaces often very fresh. Residue tube recorded.			
Platystethus arenarius	6 - rf		
Anobium punctatum	6 - l-sf		
Anotylus complanatus	4 - rt-sf		

Meligethes sp.	1 - oa-p	Platystethus sp.	1 - oa-d
Omosita sp.	1 - rt-sf	Oxytelus sculptus	1 - rt-st
Rhizophagus sp.	1 - u	Stenus sp.	1 - u
Cryptophagus sp. A	1 - rd-sf	Leptacinus sp.	1 - rt-st
Cryptophagus sp. B	1 - rd-sf	Philonthus sp.	1 - u
Atomaria sp.	1 - rd	Aphodius sp.	1 - ob-rf
Orthoperus sp.	1 - rt	Oxyomus sylvestris	1 - rt-sf
Aglenus brunneus	1 - rt-ss	Cyphon sp.	1 - oa-d
Anthicus floralis or formicarius	1 - rt-st	Ptinus fur	1 - rd-sf
Cidnorhinus quadrimaculatus	1 - oa-p	?Rhizophagus sp.	1 - u
Ceutorhynchus sp.	1 - oa-p	Monotoma sp. A	1 - rt-sf
Curculionidae sp.	1 - oa	Monotoma sp. B	1 - rt-sf
Stenus sp. E		Atomaria sp.	1 - rd
	- u	Mycetaea hirta	1 - rd-ss
*Diptera sp. (puparium)	15 m u	Lathridius minutus group	1 - rd-st
*Acarina sp.	15 m u	?Enicmus sp.	1 - rt-sf
*Daphnia sp. (ephippium)	6 s oa-w	Corticaria sp. A	1 - rt-sf
*Coleoptera sp. (larva)	6 s u	Corticaria sp. B	1 - rt-sf
*Hymenoptera Parasitica sp.	6 s u	Aglenus brunneus	1 - rt-ss
*Heteroptera sp. (nymph)	4 - u	Chaetocnema concinna	1 - oa-p
*Cladocera sp. F (ephippium)	2 - oa-w	Halticinae sp.	1 - oa-p
*Diptera sp. (adult)	2 - u	Curculionidae sp.	1 - oa
*Cladocera sp. S (ephippium)	1 - oa-w		
*Chilopoda sp.	1 - u	*Acarina sp.	15 m u
*Aphidoidea sp.	1 - u	*Diptera sp. (adult)	6 s u
*Diptera sp. (pupa)	1 - u	*Diptera sp. (puparium)	6 s u
*Siphonaptera sp.	1 - u	*Coleoptera sp. (larva)	6 s u
*Hymenoptera sp.	1 - u	*Insecta sp. (pupa)	6 s u
*Proctotrupeoidea sp.	1 - u	*Coccoidea sp.	1 - u
*Aranae sp.	1 - u	*Apoidea sp.	1 - u
*Lophopus crystallinus	1 - oa-w	*Opiliones sp.	1 - u

Context: 2131 Sample: 280/T ReM: A
Weight: 1.00 E: 0.00 F: 0.00

Notes: Small flot, some plant debris and seeds but mostly invertebrates

Platystethus arenarius	6 s rf
Platystethus cornutus group	6 s oa-d
Anotylus nitidulus	6 s rt
Aleocharinae sp.	6 s u
Trox scaber	6 s rt-sf
Anotylus rugosus	2 - rt
Anobium punctatum	2 - l-sf
Carabus sp.	1 - oa
Bembidion sp.	1 - oa
?Bradycellus sp.	1 - oa
Helophorus sp.	1 - oa-w
Cercyon analis	1 - rt-sf
Cercyon ?haemorrhoidalis	1 - rf-sf
Acritus nigricornis	1 - rt-st
Carpelimus sp.	1 - u

Context: 2131 Sample: 281/T1 ReM: RS
Weight: 3.00 E: 2.00 F: 4.00

Notes: Entered 12/9/00. Flot 4 mm in jar, sorted Steve Rowland, checked HK 7/4/00. Recorded in flot and on filter paper. Residue tube material incorporated. E 1.5-3.5, mode 2.0 S; F 1.0-4.0, mode 4.0 W.

Anotylus nitidulus	15 m rt
Cercyon analis	6 s rt-sf
Carpelimus ?bilineatus	6 s rt-sf
Lathridius minutus group	6 s rd-st
Trox scaber	4 - rt-sf
Neobisnius sp.	3 - u
Anobium punctatum	3 - l-sf
Helophorus sp.	2 - oa-w
Acritus nigricornis	2 - rt-st
Platystethus arenarius	2 - rf
Anotylus rugosus	2 - rt
Leptacinus sp.	2 - rt-st
Cryptophagus sp.	2 - rd-sf

Scolopostethus sp.	1 - oa-p	Coleoptera sp. A	1 - u
Corixidae sp.	1 - oa-w	Coleoptera sp. B	1 - u
Bembidion lampros or properans	1 - oa		
Pterostichus melanarius	1 - ob	*Acarina sp.	15 m u
Carabidae sp.	1 - ob	*Coleoptera sp. (larva)	6 s u
?Rhantus sp.	1 - oa-w	*Aphidoidea sp.	2 - u
Helophorus aquaticus or grandis	1 - oa-w	*Pulex irritans	2 - ss
Cercyon ?atricapillus	1 - rf-st	*Oligochaeta sp. (egg capsule)	1 - u
Cercyon ?haemorrhoidalis	1 - rf-sf	*Heteroptera sp. (nymph)	1 - u
Hydrophilinae sp.	1 - oa-w	*Auchenorhyncha sp. (nymph)	1 - oa-p
Teretrius fabricii	1 - l	*Melophagus ovinus (adult)	1 - u
Histerinae sp.	1 - rt	*Formicidae sp.	1 - u
Ochthebius sp.	1 - oa-w	*Hymenoptera Parasitica sp.	1 - u
Hydraena sp.	1 - oa-w	*Proctotrupoidea sp.	1 - u
Limnebius sp.	1 - oa-w	*Araneae sp.	1 - u
Scydmaenidae sp.	1 - u		
Phyllodrepa sp.	1 - rt		
Dropephylla sp.	1 - u	Context: 2160 Sample: 287/T ReM: A	
Omalium ?excavatum	1 - rt-sf	Weight: 1.00 E: 0.00 F: 0.00	
Coprophilus striatulus	1 - rt-st		
Carpelimus fuliginosus	1 - st	Notes: Very small flot, mostly invertebrates; a few seeds	
Platystethus nitens	1 - oa-d		
Anotylus complanatus	1 - rt-sf		
Oxytelus sculptus	1 - rt-st	Anotylus rugosus	6 s rt
Stenus sp.	1 - u	Aleocharinae sp.	6 s u
Stenus sp. A	1 - u	Clivina sp.	1 - oa
Stenus sp. B	1 - u	Trechus sp.	1 - ob
Lathrobium sp. A	1 - u	Carabidae sp.	1 - ob
Lathrobium sp. B	1 - u	Dytiscidae sp.	1 - oa-w
Rugilus sp.	1 - rt	Helophorus sp. A	1 - oa-w
Gyrophypnus sp.	1 - rt	Helophorus sp. B	1 - oa-w
Philonthus sp. A	1 - u	Cercyon analis	1 - rt-sf
Philonthus sp. B	1 - u	Cercyon sp.	1 - u
Philonthus sp. C	1 - u	Ptiliidae sp.	1 - u
Staphylininae sp.	1 - u	Omalium caesum or italicum	1 - rt-sf
Tachyporus sp.	1 - u	Xylodromus concinnus	1 - rt-st
Tachinus signatus	1 - u	Carpelimus fuliginosus	1 - st
Falagria caesa or sulcatula	1 - rt-sf	Platystethus arenarius	1 - rf
Aleochara sp.	1 - u	Stenus sp.	1 - u
Pselaphidae sp.	1 - u	Xantholinus linearis or longiventris	1 - rt-sf
Aphodius ?granarius	1 - ob-rf	Philonthus sp.	1 - u
Aphodius ?prodromus	1 - ob-rf	Gabrieus sp.	1 - rt
Clambus sp.	1 - rt-sf	Creophilus maxillosus	1 - rt
Melanotus ?erythropus	1 - l	Falagria sp.	1 - rt-sf
?Tipnus unicolor	1 - rt-ss	Trox scaber	1 - rt-sf
Phalacridae sp.	1 - oa-p	Aphodius sp.	1 - ob-rf
Corticaria sp.	1 - rt-sf	Anobium punctatum	1 - l-sf
Anthicus floralis or formicarius	1 - rt-st	Rhizophagus sp.	1 - u
Chrysomelinae sp.	1 - oa-p	Atomaria sp.	1 - rd
Chaetocnema concinna	1 - oa-p	Corticaria sp.	1 - rt-sf
Apion sp.	1 - oa-p	Gastrophysa viridula	1 - oa-p
Sitona sp.	1 - oa-p	Halticinae sp.	1 - oa-p
?Notaris acridulus	1 - oa-d-p	Apion sp.	1 - oa-p
Rhinoncus sp.	1 - oa-p	Ceutorhynchus sp.	1 - oa-p

Longitarsus sp.	1	-	oa-p
Chaetocnema arida group	1	-	oa-p
Psylliodes sp.	1	-	oa-p
Halticinae sp.	1	-	oa-p
Sitona hispidulus	1	-	oa-p
Ceutorhynchus sp.	1	-	oa-p
Curculionidae sp.	1	-	oa
*Diptera sp. (puparium)	15	m	u
*Acarina sp.	15	m	u
*Coleoptera sp. (larva)	6	s	u
*Hymenoptera sp.	6	s	u
*Chalcidoidea sp.	3	-	u
*Proctotrupoidea sp.	2	-	u
*Diptera sp. (adult)	1	-	u
*Diptera sp. (pupa)	1	-	u
*Pulex irritans	1	-	ss

Context: 2178 Sample: 292/T ReM: A
Weight: 1.00 E: 0.00 F: 0.00

Notes: Moderate-sized flot, mainly plant material;
many seeds

Aleocharinae sp.	6	s	u
Lathridius minutus group	6	s	rd-st
Xylodromus concinnus	2	-	rt-st
Platystethus arenarius	2	-	rf
Trox scaber	2	-	rt-sf
Cimicidae sp.	1	-	oa-p
Hemiptera sp. A	1	-	u
Hemiptera sp. B	1	-	u
Hydroporinae sp.	1	-	oa-w
Dytiscidae sp.	1	-	oa-w
Helophorus sp. A	1	-	oa-w
Helophorus sp. B	1	-	oa-w
Cercyon analis	1	-	rt-sf
Ochthebius sp.	1	-	oa-w
Limnebius sp.	1	-	oa-w
Lesteva longoelytrata	1	-	oa-d
Platystethus nitens	1	-	oa-d
Anotylus nitidulus	1	-	rt
Anotylus sculpturatus group	1	-	rt
Stenus sp. A	1	-	u
Stenus sp. B	1	-	u
Xantholinus linearis or longiventris	1	-	rt-sf
Neobisnius sp.	1	-	u
Staphylinidae sp.	1	-	u
Aphodius sp.	1	-	ob-rf
Clambus sp.	1	-	rt-sf
Anobium punctatum	1	-	l-sf
Rhizophagus sp.	1	-	u
Cryptophagus sp.	1	-	rd-sf
Atomaria sp.	1	-	rd

Orthoperus sp.	1	-	rt
Corticaria sp.	1	-	rt-sf
?Tenebrio obscurus	1	-	rt-ss
Anthicus formicarius	1	-	rt-st
Chrysomelinae sp. A	1	-	oa-p
Chrysomelinae sp. B	1	-	oa-p
Halticinae sp.	1	-	oa-p
Curculionidae sp.	1	-	oa

*Diptera sp. (puparium)	15	m	u
*Acarina sp.	15	m	u
*Diptera sp. (adult)	6	s	u
*Insecta sp. (larva)	6	s	u
*Insecta sp. (pupa)	6	s	u

Context: 2178 Sample: 292/T1 ReM: D
Weight: 3.00 E: 2.50 F: 2.50

Notes: Entered 12/9/00. Flot 1 cm in jar, sorted Steve Rowland, checked HK 11/4/00. Recorded in flot and on filter paper. No residue tube. Remains often very fragmentary (hence numerous high level identifications). E 1.5-3.5, mode 2.5 D; F 1.5-5.0, mode 2.5 W. Sorted scraps returned to flot.

Lathridius minutus group	13	-	rd-st
Helophorus sp.	11	-	oa-w
Aleocharinae sp. G	8	-	u
Carpelimus fuliginosus	7	-	st
Aphodius ?prodromus	7	-	ob-rf
Anobium punctatum	6	-	l-sf
Phyllotreta nemorum group	6	-	oa-p
Cercyon analis	5	-	rt-sf
Anotylus nitidulus	5	-	rt
Longitarsus sp. A	5	-	oa-p
Acritus nigricornis	4	-	rt-st
Ochthebius ?minimus	4	-	oa-w
Xylodromus concinnus	4	-	rt-st
Philonthus sp. C	4	-	u
Falagria caesa or sulcatula	4	-	rt-sf
Trox scaber	4	-	rt-sf
Aphodius granarius	4	-	ob-rf
Atomaria sp.	4	-	rd
Carpelimus ?bilineatus	3	-	rt-sf
Platystethus arenarius	3	-	rf
Anotylus rugosus	3	-	rt
Stenus sp. A	3	-	u
Philonthus sp. B	3	-	u
Chaetocnema concinna	3	-	oa-p
Hydroporinae sp.	2	-	oa-w
Helophorus aquaticus or grandis	2	-	oa-w
Limnebius sp. A	2	-	oa-w
Limnebius sp. B	2	-	oa-w
Catops sp.	2	-	u

Omalium caesum or italicum	2	-	rt-sf	Philon thus sp. D	1	-	u
Platystethus ?degener	2	-	oa-d	Tachyporus sp. A	1	-	u
Platystethus nitens	2	-	oa-d	Tachyporus sp. B	1	-	u
Anotylus complanatus	2	-	rt-sf	Aleocharinae sp. C	1	-	u
Leptacinus pusillus	2	-	rt-st	Aleocharinae sp. D	1	-	u
Gyrohypnus fracticornis	2	-	rt-st	Aleocharinae sp. E	1	-	u
Philon thus sp. E	2	-	u	Aleocharinae sp. F	1	-	u
Quedius boops group	2	-	u	Aleocharinae sp. H	1	-	u
Aleocharinae sp. A	2	-	u	Aphodius sp. A	1	-	ob-rf
Aleocharinae sp. B	2	-	u	Aphodius sp. B	1	-	ob-rf
Meligethes sp.	2	-	oa-p	Oxyomus sylvestris	1	-	rt-sf
Omosita discoidea	2	-	rt-sf	Lyctus linearis	1	-	l-sf
Cryptophagus sp.	2	-	rd-sf	Monotoma longicollis	1	-	rt-st
Corticarina or Cortinicara sp.	2	-	rt	Ephistemus globulus	1	-	rd-sf
Cisidae sp.	2	-	l	Orthoperus sp.	1	-	rt
Heterogaster urticae	1	-	oa-p	Coccinellidae sp.	1	-	oa-p
Anthocoris sp.	1	-	oa-p	Enicmus sp.	1	-	rt-sf
Ulopa reticulata	1	-	oa-p-m	Corticaria sp. A	1	-	rt-sf
Delphacidae sp.	1	-	oa-p	Corticaria sp. B	1	-	rt-sf
Auchenorhyncha sp.	1	-	oa-p	Aglenus brunneus	1	-	rt-ss
Elaphrus riparius	1	-	oa-d	Blaps sp.	1	-	rt-ss
Dyschirius globosus	1	-	oa	Anthicus floralis or formicarius	1	-	rt-st
Clivina fossor	1	-	oa	Gracilia minuta	1	-	l
Trechus obtusus or quadristriatus	1	-	oa	Pogonocherus hispidulus	1	-	l
Bembidion lampros	1	-	oa	Cerambycidae sp.	1	-	l
Bembidion guttula or mannerheimi	1	-	oa	Gastrophysa viridula	1	-	oa-p
Bembidion sp.	1	-	oa	Chrysomelinae sp.	1	-	oa-p
Pterostichus melanarius	1	-	ob	Longitarsus sp. B	1	-	oa-p
Agonum dorsale	1	-	oa	Altica sp.	1	-	oa-p
Carabidae sp.	1	-	ob	?Psylliodes sp.	1	-	oa-p
Agabus or Ilybius sp.	1	-	oa-w	Apion (Oxystoma) sp.	1	-	oa-p
?Rhantus sp.	1	-	oa-w	Sitona sp.	1	-	oa-p
Helophorus ?grandis	1	-	oa-w	Ceutorhynchus ?contractus	1	-	oa-p
Cercyon haemorrhoidalis	1	-	rf-sf	Ceutorhynchus sp.	1	-	oa-p
Cryptopleurum minutum	1	-	rf-st	Ceuthorhynchinae sp.	1	-	oa-p
Hydrophilinae sp.	1	-	oa-w	Curculionidae sp. A	1	-	oa
Gnathoncus sp.	1	-	rt-sf	Curculionidae sp. B	1	-	oa
Ochthebius sp.	1	-	oa-w	Hylesinus oleiperda	1	-	u
Acrotichis sp.	1	-	rt				
Olophrum ?piceum	1	-	oa	*Diptera sp. (puparium)	50	e	u
Lesteva ?longoelytrata	1	-	oa-d	*Acarina sp.	50	e	u
Omalium ?rivulare	1	-	rt-sf	*Diptera sp. (adult)	15	m	u
Omalinae sp.	1	-	rt	*Diptera sp. (pupa)	15	m	u
Carpelimus pusillus group	1	-	u	*Oligochaeta sp. (egg capsule)	6	s	u
Carpelimus sp.	1	-	u	*Coleoptera sp. (larva)	6	s	u
Anotylus sculpturatus group	1	-	rt	*Hymenoptera Parasitica sp.	6	s	u
Oxytelus sculptus	1	-	rt-st	*Aphidoidea sp.	4	-	u
Stenus sp. B	1	-	u	*Cladocera sp. F (ephippium)	2	-	oa-w
Stenus sp. C	1	-	u	*Lepidoptera sp. (pupa)	2	-	u
Stenus sp. D	1	-	u	*Formicidae sp.	2	-	u
Gyrohypnus angustatus	1	-	rt-st	*Cladocera sp. L (ephippium)	1	-	oa-w
Xantholinus longiventris	1	-	rt-sf	*Dermaptera sp.	1	-	u
Neobisnius sp.	1	-	u	*Bibionidae sp.	1	-	u
Philon thus sp. A	1	-	u	*Melophagus ovinus (puparium)	1	-	u

*Siphonaptera sp. 1 - u

Context: 2191 Sample: 311/T ReM: A

Weight: 1.00 E: 0.00 F: 0.00

Context: 2189 Sample: 296/T ReM: A

Weight: 2.00 E: 0.00 F: 0.00

Notes: Medium-sized flot, plant debris, many seeds

Notes: Some plant debris and seeds, many invertebrates

Aleocharinae sp. 15 m u
 Hemiptera sp. 6 s u
 Helophorus sp. 6 s oa-w
 Cercyon analis 6 s rt-sf
 Lathridius minutus group 6 s rd-st
 Anotylus nitidulus 2 - rt
 Aphodius sp. 2 - ob-rf
 Anobium punctatum 2 - l-sf
 Cryptophagus sp. 2 - rd-sf
 Corticaria sp. 2 - rt
 Trechus micros 1 - u
 Bembidion sp. 1 - oa
 ?Agonum sp. 1 - oa
 Hydroponinae sp. 1 - oa-w
 Dytiscidae sp. 1 - oa-w
 ?Georissus crenulatus 1 - oa-w
 Helophorus sp. B 1 - oa-w
 Megastemum obscurum 1 - rt
 Acritus nigricornis 1 - rt-st
 Ochthebius sp. 1 - oa-w
 Omalium sp. 1 - rt
 Platystethus cornutus group 1 - oa-d
 Anotylus rugosus 1 - rt
 Anotylus sculpturatus group 1 - rt
 Oxytelus sculptus 1 - rt-st
 Lithocharis sp. 1 - rt
 Leptacinus sp. 1 - rt-st
 Philonthus sp. 1 - u
 ?Gabrius sp. 1 - rt
 Tachyporus sp. 1 - u
 Falagria sp. 1 - rt-sf
 Trox scaber 1 - rt-sf
 Oxyomus sylvestris 1 - rt-sf
 Oulimnius sp. 1 - oa-w
 Elateridae sp. 1 - ob
 Atomaria sp. 1 - rd
 Corticaria sp. 1 - rt-sf
 Apion sp. 1 - oa-p
 Ceuthorrhynchinae sp. 1 - oa-p

*Diptera sp. (larva) 15 m u

*Acarina sp. 15 m u

*Diptera sp. (puparium) 6 s u

*Coccoidea sp. 1 - u

*Coleoptera sp. (larva) 1 - u

*Araneae sp. 1 - u

Anotylus nitidulus 6 s rt
 Aleocharinae sp. 6 s u
 Corticaria sp. 2 - rt-sf
 Hemiptera sp. 1 - u
 Dyschirius sp. 1 - oa
 Bembidion sp. A 1 - oa
 Bembidion sp. B 1 - oa
 Bembidion sp. C 1 - oa
 Carabidae sp. A 1 - ob
 Carabidae sp. B 1 - ob
 Carabidae sp. C 1 - ob
 Carabidae sp. D 1 - ob
 Hydroponinae sp. 1 - oa-w
 Dytiscidae sp. 1 - oa-w
 Helophorus sp. A 1 - oa-w
 Helophorus sp. B 1 - oa-w
 Helophorus sp. R 1 - oa
 Cercyon sp. 1 - u
 Megastemum obscurum 1 - rt
 Ochthebius sp. 1 - oa-w
 Omalium sp. 1 - rt
 Xylodromus concinnus 1 - rt-st
 Carpelimus sp. 1 - u
 Platystethus arenarius 1 - rf
 Platystethus cornutus group 1 - oa-d
 Anotylus rugosus 1 - rt
 Anotylus tetracarinatus 1 - rt
 Stenus sp. A 1 - u
 Stenus sp. B 1 - u
 ?Leptacinus sp. 1 - rt-st
 Gyrohypnus sp. 1 - rt
 Xantholinus linearis or longiventris 1 - rt-sf
 Tachyporus sp. 1 - u
 Falagria sp. 1 - rt-sf
 Staphylinidae sp. 1 - u
 Trox scaber 1 - rt-sf
 Aphodius granarius 1 - ob-rf
 Aphodius sp. 1 - ob-rf
 Oulimnius sp. 1 - oa-w
 Anobium punctatum 1 - l-sf
 Ptinus sp. 1 - rd-sf
 Atomaria sp. 1 - rd
 Lathridius minutus group 1 - rd-st
 Anthicus formicarius 1 - rt-st
 Phyllodecta sp. 1 - oa-p
 Chaetocnema concinna 1 - oa-p
 Halticinae sp. 1 - oa-p
 Apion sp. 1 - oa-p
 Sitona sp. A 1 - oa-p

Sitona sp. B	1 - oa-p
Curculionidae sp.	1 - oa
Coleoptera sp.	1 - u
*Acarina sp.	15 m u
*Diptera sp. (puparium)	6 s u
*Siphonaptera sp.	1 - u
*Opiliones sp.	1 - u

Context: 3069 Sample: 160/T ReM: A
Weight: 2.00 E: 0.00 F: 0.00

Notes: Medium-sized washover, mainly charcoal, some sand

*null	0 - u
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Context: 3077 Sample: 156/T ReM: A
Weight: 1.00 E: 0.00 F: 0.00

Notes: Small washover, mainly plant debris and fine charcoal.

*Oligochaeta sp. (egg capsule)	6 s u
*Eristalini sp. (larva)	6 s w

Context: 3169 Sample: 184/T ReM: A
Weight: 2.00 E: 0.00 F: 0.00

Notes: Large washover; mostly charcoal, some Sambucus seeds.

*Oligochaeta sp. (egg capsule)	1 - u
*Trichoptera sp. (case)	1 - oa-w
*Melophagus ovinus (puparium)	1 - u

Context: 9271 Sample: 271/T ReM: A
Weight: 1.00 E: 0.00 F: 0.00

Notes: Small flot, mostly plant debris

Neobisnius sp.	6 s u
Aleocharinae sp.	6 s u
Trox scaber	4 - rt-sf
Lathridius minutus group	3 - rd-st
Clivina sp.	1 - oa
?Carabidae sp.	1 - ob
Helophorus sp.	1 - oa-w
Omalium rivulare	1 - rt-sf
?Xylodromus sp.	1 - rt-st

Carpelimus sp.	1 - u
Anotylus rugosus	1 - rt
Gyrophypnus sp.	1 - rt
Falagria sp.	1 - rt-sf
Aphodius sp. A	1 - ob-rf
Aphodius sp. B	1 - ob-rf
Omosita discoidea	1 - rt-sf
Cryptophagus sp.	1 - rd-sf
Longitarsus sp.	1 - oa-p
Halticinae sp.	1 - oa-p
Ceutorhynchus sp.	1 - oa-p

*Diptera sp. (larva)	15 m u
*Acarina sp.	15 m u
*Diptera sp. (puparium)	6 s u
*?Louse s.l. sp.	2 - u
*Diptera sp. (adult)	2 - u
*Pulex irritans	2 - ss
*Muscidae sp. (puparium)	1 - u
*Coleoptera sp. (larva)	1 - u
*Araneae sp.	1 - u

Context: 9271 Sample: 271/T1 ReM: RS
Weight: 3.00 E: 2.50 F: 2.50

Notes: Entered 14/9/00. Flot nearly 1cm in jar, sorted Steve Rowland, part checked HK 4/9/00. Residue tube contained mainly scraps. Recorded on filter paper. E 2.0-3.5, mode 2.5 W; F 2.0-4.0, mode 2.5 W.

Cercyon analis	6 s rt-sf
Carpelimus ?bilineatus	6 s rt-sf
Lathridius minutus group	6 s rd-st
Trox scaber	3 - rt-sf
Acritus nigricornis	2 - rt-st
Xylodromus concinnus	2 - rt-st
Platystethus arenarius	2 - rf
Anotylus nitidulus	2 - rt
Neobisnius sp.	2 - u
Cordalia obscura	2 - rt-sf
Cryptophagus sp.	2 - rd-sf
Clivina fossor	1 - oa
Carabidae sp.	1 - ob
Haliplidae sp.	1 - oa-w
Helophorus grandis	1 - oa-w
Cryptopleurum minutum	1 - rf-st
Acritus nigricornis	1 - rt-st
Histerinae sp. A	1 - rt
Histerinae sp. B	1 - rt
Ochthebius sp.	1 - oa-w
Hydraena sp.	1 - oa-w
Silpha atrata	1 - u
Omalium ?rivulare	1 - rt-sf

Carpelimus pusillus group	1 - u	Omosita sp.	1 - rt-sf
Carpelimus sp.	1 - u	Cerylon histeroideus	1 - l
Platystethus nitens	1 - oa-d	Corticaria sp.	1 - rt-sf
Anotylus rugosus	1 - rt	Aglenus brunneus	1 - rt-ss
Anotylus sculpturatus group	1 - rt	Tenebrio obscurus	1 - rt-ss
Lathrobium sp.	1 - u	Anthicus formicarius	1 - rt-st
Gyrophypnus angustatus	1 - rt-st	Longitarsus sp.	1 - oa-p
Gyrophypnus fracticornis	1 - rt-st	Chaetocnema arida group	1 - oa-p
Falagria sp.	1 - rt-sf		
Aleocharinae sp.	1 - u	*Oligochaeta sp. (egg capsule)	1 - u
Aphodius granarius	1 - ob-rf	*Coleoptera sp. (larva)	1 - u
Anobium punctatum	1 - l-sf	*Proctotrupoidea sp.	1 - u
Lyctus linearis	1 - l-sf	*Acarina sp.	1 - u

Table 11. Layerthorpe Bridge, York: records of *Trox scaber* and bark/bark sclereids. Percentages not calculated for assemblages with only an assessment record. RM: recording method (for insects). The last two columns give the semi-quantitative abundance scores for bark and bark sclereids, respectively. * - this sample also yielded 'chips' of bark. Many of the *Trox* were severely decayed.

CN	SN	Ext.	RM	N	No. <i>T. scaber</i>	% <i>T. scaber</i>	B	BS
14	48	/T	A	-	6	-	3	2
14	48	/T1	D	34	10	29	3	3
15	49	/T	A	-	-	-	-	1
16	52	/T	A	-	6	-	3	1
16	52	/T1	D	123	19	15	4	3
38	17	/T	A	-	1	-	3	1
40	19	/T	A	-	1	-	2	1
41	27	/T	A	-	1	-	3	2
1012	56	/T1	D	47	27	57	3	3
1014	59	/T1	R	12	1	8	2	1
1027	75	/T	A	-	0	-	2	-
1029	79	/T	A	-	6	-	-	1
1029	80	/T1	R	20	7	35	1	2
1031	84	/T	A	-	3	-	2	2
1033	68	/T	A	-	2	-	2	2
1038	89	/T1	R	-	0	-	1	1
1039	90	/T	A	-	6	-	3	-
1039	90	/T1	D	196	31	16	4	3
1047	95	/T	A	-	0	-	1	-
1052	117	/T	A	-	15	-	3	2
2005	138	/T1	RS	111	2	2	1	1
2006	214	/T1	A	-	0	-	3	1
2007	213	/T1	A	-	1	-	3	1
2023	206	/T	A	-	2	-	3	1
2030	286	/T	A	-	1	-	-	-
2030	286	/T1	A	-	1	-	1	2
2065	258	/T1	D	105	2	2	-	1
2131	280	/T	A	-	6	-	4	3
2131	281	/T1	RS	111	4	4	4	4

CN	SN	Ext.	RM	N	No. T. scaber	% T. scaber	B	BS
2160	287	/T	A	-	1	-	1	-
2160	287	/T1	D	163	4	2	3	4
2160	291	/T1	S	213	4	2	4	4
2178	292	/T	A	-	2	-	2	2
2178	292	/T1	D	240	4	2	3*	3
2189	296	/T	A	-	1	-	3	1
2191	311	/T	A	-	1	-	2	1
9271	271	/T	A	-	4	-	4	1
9271	271	/T1	RS	68	3	4	4	4
1032/ 1033	85	/T	A	-	0	-	3	-
Whole site				1443	119	8		

Table 12. Layerthorpe Bridge, York: Spearman's rank-order correlation coefficients (and probability estimates) for semi-quantitative scores for bark fragments, bark sclereids and Trox remains from 39 subsamples from Anglo-Scandinavian and medieval deposits which contained any one of these kinds of remains (cf. Table 11). For comparison: for a group of 301 samples from Anglo-Scandinavian deposits at 16-22 Coppergate, York, there was a correlation between semi-quantitative scores for bark fragments and Trox of 0.0287 ($p = 0.62$) (bark sclereids were not recognised for deposits from that site).

		<i>T. scaber</i>	bark fragments
bark fragments	Correlation coefficient	.419	-
	Sig. (2-tailed)	.008	
sclereids	Correlation coefficient	.626	.466
	Sig. (2-tailed)	.000	.003

Table 13. Layerthorpe Bridge, York: hand-collected vertebrate remains from Trench 1, Area 1.

Abbreviation : meas. - measurable

Species		?medieval				medieval			early modern	
		No. fragments	No. meas.	No. mandibles	No. fragments	No. meas.	No. mandibles	No. fragments	No. meas.	No. mandibles
<i>Canis</i> f. domestic	dog	1	-	-	-	-	-	1	1	-
<i>Sus</i> f. domestic	pig	2	-	1	4	1	1	-	-	-
<i>Bos</i> f. domestic	cattle	40	8	4	121	17	14	2	2	-
Caprovid	sheep/ goat	21	11	5	77	18	24	-	-	-
<i>Anser</i> sp.	goose	-	-	-	2	1	-	-	-	-
<i>Gallus</i> f. domestic	chicken	-	-	-	1	1	-	-	-	-
cf. <i>Gallus</i> f. domestic	?chicken	-	-	-	1	-	-	-	-	-
<i>Sub-total</i>		64	19	10	206	38	39	3	3	-
Unidentifiable		117	-	-	275	-	-	17	-	-
Total		181	19	10	481	38	39	20	3	0

Table 14. Layerthorpe Bridge, York: hand-collected vertebrate remains from Trench 1, Area 2.

Abbreviations: frags—fragments; mands—mandibles; meas.—measurable.

Species		Roman			?Anglo-Scand			Anglo-Scand			?medieval			medieval		
		No. frags	No. meas.	No. mands	No. frags	No. meas.	No. mands	No. frags	No. meas.	No. mands	No. frags	No. meas.	No. mands	No. frags	No. meas.	No. mands
<i>Canis f. domestic</i>	dog	-	-	-	1	-	1	-	-	-	-	-	-	7	4	1
<i>Felis f. domestic</i>	cat	-	-	-	3	-	1	4	1	-	-	-	-	3	-	1
<i>Equus f. domestic</i>	horse	15	2	-	-	-	-	1	-	-	1	-	-	9	2	-
<i>Sus f. domestic</i>	pig	4	1	-	2	-	-	7	-	-	3	1	-	21	2	1
<i>Cervus elaphus</i> L.	red deer	-	-	-	-	-	-	-	-	-	1	-	-	1	-	-
<i>Bos f. domestic</i>	cattle	39	11	2	87	13	9	133	24	12	80	17	8	304	76	23
Caprovid	sheep/ goat	20	14	3	27	5	9	83	25	25	17	9	1	143	56	33
<i>Anser</i> sp.	goose	-	-	-	-	-	-	-	-	-	-	-	-	4	2	-
cf. <i>Anser</i> sp.	?goose	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-
<i>Gallus f. domestic</i>	chicken	2	2	-	1	1	-	1	1	-	-	-	-	2	2	-
Fish	fish	-	-	-	-	-	-	-	-	-	1	-	-	1	-	-
<i>Homo sapiens</i>	human	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-
<i>Sub-total</i>		82	30	5	121	19	20	229	51	37	104	27	9	495	144	59
Unidentified bird		-	-	-	-	-	-	1	-	-	-	-	-	-	-	-
Unidentified		83	-	-	175	-	-	295	-	-	104	-	-	663	-	-
<i>Sub-total</i>		83	-	-	175	-	-	296	-	-	104	-	-	663	144	59
Total		165	30	5	296	19	20	525	51	37	208	27	9	1158	144	59

Table 15. Layerthorpe Bridge, York: hand-collected vertebrate remains from Trench 2. Abbreviations as for Table 14.

Species		?Roman			Roman			?medieval		
		No. frags	No. meas.	No. mands	No. frags	No. meas.	No. mands	No. frags	No. meas	No. mands
<i>Oryctolagus cuniculus</i> (L.)	rabbit	-	-	-	1	-	-	-	-	-
<i>Canis f. domestic</i>	dog	-	-	-	6	1	1	-	-	-
<i>Felis f. domestic</i>	cat	-	-	-	1	-	-	-	-	-
<i>Equus f. domestic</i>	horse	-	-	-	3	2	-	-	-	-
<i>Sus f. domestic</i>	pig	1	-	-	13	-	1	-	-	-
<i>Dama dama</i> (L.)	fallow deer	-	-	-	2	1	-	-	-	-
<i>Bos f. domestic</i>	cattle	6	2	-	65	7	3	2	1	-
Caprovid	sheep/goat	4	1	-	36	9	5	6	-	-
<i>Anser sp.</i>	goose	1	1	-	7	1	-	5	3	-
cf. <i>Gallus f. domestic</i>	?chicken	-	-	-	0	-	-	1	-	-
<i>Gallus f. domestic</i>	chicken	1	1	-	12	8	-	2	2	-
Fish	fish	-	-	-	2	-	-	2	-	-
<i>Homo sapiens</i>	human	-	-	-	1	-	-	1	-	-
<i>Sub-total</i>		13	5	-	149	29	10	24	6	-
Unidentified bird		-	-	-	1	-	-	-	-	-
Unidentified		38	-	-	331	-	-	38	-	-
<i>Sub-total</i>		38	-	-	332	-	-	38	-	-
Total		51	5	0	481	29	10	62	6	0