

**Technical Report: Plant and invertebrate remains from
Anglo-Scandinavian deposits at 4-7 Parliament Street
(Littlewoods Store), York (site code 99.946)**

by Allan Hall and Harry Kenward

Summary

Samples from four richly organic deposits with excellent preservation by anoxic waterlogging of plant and invertebrate remains have been examined. They gave large assemblages of fossils amongst which were groups characteristic of dyebath and food waste, the latter perhaps largely in a faecal component. The source of the dung is not unambiguous and it seems possible that some, at least, may have originated from pigs. There were also well preserved specimens of honeybees, likely to indicate beekeeping nearby, or the processing or consumption of honey and wax.

Keywords: YORK; 4-7 PARLIAMENT STREET (LITTLEWOODS STORE); ANGLO-SCANDINAVIAN; OCCUPATION DEPOSITS; PLANT REMAINS; INVERTEBRATE REMAINS; PARASITE EGGS; INSECTS; PIT FILLS; DYEPLANTS; FOODPLANTS; FAECES

1 June 2000

Environmental Archaeology Unit
Department of Biology
University of York
PO Box 373
Heslington
York YO10 5YW

Prepared for: York Archaeological Trust
Cromwell House
13 Ogleforth
York YO1 7FG

List of Tables and Figures

Table 1. List of samples from 4-7 Parliament Street, York, examined for plant and invertebrate remains.

Table 2. Complete list of plant and invertebrate remains recorded from samples from 4-7 Parliament Street, York, in taxonomic order.

Table 3. Lists of plant remains and other components of the samples from 4-7 Parliament Street, York, in context, sample and subsample order.

Table 4. Values for the 'abundance-indicator value' (AIV) for assemblages of plant remains from 4-7 Parliament Street, York, in context order.

Table 5. Explanation of the codes used for AIV groups in Table 4.

Table 6. Main statistics for the assemblages of adult Coleoptera and Hemiptera (excluding Aphidoidea and Coccoidea) from 4-7 Parliament Street, York.

Table 7. Insects and other macro-invertebrates from 4-7 Parliament Street, York: species lists by context.

Table 8. Assemblages of adult Coleoptera and Hemiptera (excluding Aphidoidea and Coccoidea) from 4-7 Parliament Street, York: numbers of taxa (s) and individuals (n) placed in core Groups A-E of Carrott and Kenward (2000), by sample and for whole site.

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

Table 10. Ratios of Trichuris and Ascaris eggs from subsamples from Anglo-Scandinavian deposits at 16-22 Coppergate, York (where both taxa were present with more than five eggs) and 4-7 Parliament Street.

Technical Report: Plant and invertebrate remains from Anglo-Scandinavian deposits at 4-7 Parliament Street (Littlewoods Store), York (site code 99.946)

Introduction

Richly organic deposits dated to the Anglo-Scandinavian period were revealed during construction of a lift-shaft for Messrs Littlewoods in their York City Centre store in Parliament Street in September 1999 (NGR SE 60395 51780). The circumstances of the building works precluded adequate archaeological investigation: salvage works were undertaken by York Archaeological Trust in the period 8th-10th September which involved recording sections from three of the four walls of the shaft pit. A total of 20 samples for biological analysis was recovered during archaeological recording. Samples were taken from each of the three accessible walls, where the depth of deposits was just in excess of 0.8 m (Johnson 1999).

To provide data relevant to a synthesis of Anglo-Scandinavian York, an opportunity was taken to examine the plant and invertebrate remains from four samples from this site and it is that material with which this report is concerned. It is important to bear in mind the following caution offered by Johnson (1999, 4): *It has not proved possible to identify the exact nature of deposition of many of the contexts encountered. This is largely a result of their having been seen exclusively in section. Even those features that were identified such as the wattle fencing/walls have questions outstanding, particularly in terms of alignment and precise function. ... It is probable that refined interpretations can be made for many of the deposits, but this will be dependent upon the results of the examination of the environmental samples.*

Methods

Following a laboratory description of lithology, subsamples of 2 kg were processed according to the methods of Kenward *et al.* 1980; 1986), the residues being stored wet prior to examination. Plant remains (and other components of the residues) were recorded using direct input to a PC (using an input form and *Paradox* software). In this instance, the 'flots' from paraffin flotation were not examined since it seemed unlikely they would add much information, given the large and extremely richly organic residues. Abundance was recorded using a four-point scale from 1 (one or a few individuals or fragments or a small component of the matrix) to 4 (abundant remains or a major component of the matrix). For investigation of the composition of the plant assemblages, 'abundance-indicator values' (AIVs) were calculated which combine the measure of abundance with a score for the degree to which a taxon may represent one or more of a series of ecological and 'use' groups (Tables 4-5).

Insects were identified by comparison with modern reference material and using the standard works. Adult beetles and bugs, other than aphids and scale insects, were recorded fully quantitatively for two of the samples, and a minimum number of individuals estimated on the basis of the fragments present. The remaining two samples were 'rapid scan' recorded (Kenward 1992) because part of the flot had been accidentally lost during examination as part of an undergraduate project. Other invertebrate macrofossils were recorded semi-quantitatively for all samples, using the scale described by Kenward *et al.* (1986) and Kenward (1992), using estimates for extremely abundant taxa. Recording of the state of preservation of invertebrates followed Kenward and Large (1998), making use of the sheet illustrated in their fig. 2.

Any insect remains recovered from the residues during recording of plant remains were included in the record, although there were hardly ever any taxa additional to those from the flots and, indeed, rarely any additional individuals.

Data pertaining to invertebrate remains were transferred from a paper record to computer databases (using *Paradox* software) for analysis and long-term storage.

Results

The results of these investigations are presented in approximate stratigraphic order based on the available sections and Johnson's (1999) account. Table 1 gives a list of GBA samples from the site with an indication of those selected for this study. A full list of plant and invertebrate taxa recorded from these deposits appears in Table 2, with lists of plant remains (and other components of the residues) by context in Table 3. AIVs for plant remains are given in Table 4. Lists of insects are presented in Table 7 with main statistics in Table 6.

In the following accounts the words 'several' and 'many' are used in the semi-quantitative sense of Kenward *et al.* (1986), i.e. estimates of more than three and less than ten individuals are recorded as 'several' and translated to '6' for statistical purposes, and estimates of ten or more are recorded as 'many' and translated as '15', unless the numbers are very large, in which case a rough approximation is used. Numbers of individuals are 'MNI's, calculated from the numbers of parts (heads, pronota, elytra, etc.) recorded.

Context 1031: highly organic silty material with numerous lenses of plant material, one of the two earliest deposits visible in the trench.

Sample 8: moist, mid olive (oxidising black) crumbly (working slightly plastic), woody and herbaceous detritus and amorphous organic sediment with traces of oyster shell.

There was a huge residue, almost wholly organic in nature, with very large <2 mm fractions (much of it wheat/rye 'bran'). Some of the clasts of undisaggregated herbaceous detritus present bore a distinctive green, blue-green or purple to iridescent cast and some sloe (*Prunus spinosa*) stones bore remnants of their flesh (mesocarp), which had a pinkish colour. Other sloe stones were straw-coloured or black but all were perfectly hard and totally undecayed. Fragments of apple endocarp ('core') were pinkish in colour, presumably having adsorbed anthocyanins from fruits like sloe and blackberry. Fragments of plant epidermis which seem likely to have come from small fruits were abundant and in some cases there seemed to be whole drupelets (individual fruits from the compound fruit heads) of, for example, blackberry or raspberry. Overall, preservation was described during recording as being as good as the author had ever seen, the small amounts of pyritisation in places presumably indicating a highly reducing environment at deposition and during subsequent burial.

The deposit was clearly mainly faecal material though the presence of abundant uncharred cereal chaff with the bran and fruit remains, as seen in two cases at the Queen's Hotel site, 1-9 Micklegate (Kenward and Hall 2000), might suggest either that this inedible material was dumped separately or that the faeces were, or included, those of animals (e.g. pigs). Other probable foodplants recorded with the sloes, apple, and bran included ?leek (as leaf epidermis fragments), oats, hazel nut, linseed, pea, blackberry, 'bilberry' and field bean, and there was one plant likely to have been used mainly as a flavouring: celery seed.

Another component of the deposit was dyeplant waste, for there were small amounts of pod and vegetative fragments of woad (*Isatis tinctoria*), stem fragments of the clubmoss *Diphasium complanatum*, stem and twig epidermis fragments of dyer's greenweed (*Genista tinctoria*), and root fragments of madder (*Rubia tinctorum*)—a suite encountered in a very large proportion of the Anglo-Scandinavian deposits at nearby 16-22 Coppergate, as well as from deposits of this date at many other in York. The vegetative material of woad (spiral thickenings from xylem vessels) was mainly attached to moss. Whether this implies some

connexion in the past (e.g. that the moss was used as filter for a dye bath liquor), or simply that the moss acted as a suitable material onto which the thickenings could become entangled during laboratory processing, cannot be elucidated. Patches of plant material thought perhaps to be woad were observed in the sediment prior to processing, suggesting some, at least, may have been deposited separately from such a moss filter (unless it had formed a wad on top of it during filtration).

In any case, it is very likely that some other plant materials were deposited in this pit, for there were remains of taxa which might have arrived in hay or straw as well as from woodland habitats (though these might largely have been brought with moss for use in the latrine if the faeces present were at least partly from human inhabitants of the area). The remainder of the plant assemblage was composed of weeds of various kinds, mainly those of cornfields (probably from straw and grain contaminants from food), with only rather a modest component of annual weeds of nutrient rich habitats.

A microfossil squash showed eggs of parasitic nematodes to be moderately abundant and the ratio of *Trichuris* to *Ascaris* to be about 3:1.

Insect remains were abundant in the flot from Context 1031, and there were also numerous mites. The material was rapid scan recorded. The assemblage of adult beetles and bugs included 108 individuals of 61 taxa, in a group dominated by species which would have formed a community in foul conditions such as those suggested by the plant remains. The more abundant taxa were *Cercyon analis* (12 individuals), *Platystethus arenarius* (7), *Philonthus politus* (6), *Cercyon unipunctatus*, *Anotylus complanatus* and *A. nitidulus* (4 of each); many of the rarer taxa would have co-existed with these. In addition, of the order of 100 fly puparia were noted. It thus appears that foul matter was exposed for long enough for beetle and fly populations to build up: probably at least several weeks. No other ecological groups were clearly represented, the rather limited house fauna perhaps representing strays or colonisers of local drier areas in the deposit, although the presence of two sheep keds (*Melophagus ovinus*) (presumably from wool cleaning) and adult and nymphal human lice (*Pediculus humanus*) may indicate the presence of household waste. There were also specimens of *Sitona* sp. and *Hypera punctata*, sometimes suspected to have been imported in hay (cf. the evidence from the plant remains).

There were at least five honey bees (*Apis mellifera*), rather too many to have entered the deposit naturally. It seems that either a hive was kept locally, or that bees entered via faeces or food waste, having been present as contaminants in honey or honeycomb. The bees were superbly preserved, but it is uncertain whether this represents an argument against their having past through the mammalian gut. A parasitised 'mummy' of an aphid was recorded; Hall *et al.* (1983) suggested that one route by which these immobile remains might enter faecal deposits would be in ingested 'greens'. Two crucifer feeders (*Phyllotreta nemorum* group and *Ceutorhynchus contractus*) were noted in the present assemblage, but seem more likely to be from the local weed flora than to have been eaten.

A few feathers were noted.

Overall this deposit clearly included faecal material which was probably of human origin but a wide range of other materials became incorporated. One possibility is that it represented accumulation where animals (and pigs would be by far the most likely) were penned (see Discussion, below). Alternatively, this may be an unrecognised pit fill, or even particularly vile a midden in a wet back yard.

Context 1024: dark reddish-brown, somewhat silty organic material, which may have originated from dumping.

Sample 2: moist, black (locally light-mid-dark brown and dark grey), layered, fibrous and compressed (working crumbly) very humic woody and herbaceous detritus with traces of bark, wood and oyster shell and grey clay streaks.

The extremely large residue of about 1600 cm³ was mostly of herbaceous detritus, especially in the <1 mm fraction. Again the bulk of the material appeared to be faecal in origin, with wheat/rye 'bran' forming a very large component and with abundant oat 'bran', linseed, and apple 'core'. The large numbers of fly puparia and ?rat-tailed maggot larvae are entirely consistent with this (and see further regarding insects, below). Other food remains present in moderate amounts included ?leek, hawthorn, sloe, blackberry, 'bilberry' and field bean, with traces of some other (wild) fruits: rowan, dewberry, and elderberry. Two possible flavourings were recorded: celery seed and hop (the latter in moderate amounts). There were modest quantities of fruit epidermis and waterlogged cereal chaff, this whole component of the assemblage being very similar to that from Context 1034. Preservation was, as in Context 1031, very good, with only a little mineralisation and traces of faecal concretions (to 10 mm); ?leek epidermis material had a yellow-green colour and a variety of remains, including sloe stones, apple 'core' fragments and even wild radish pod segments were often pinkish.

As for the sample from Context 1031, the dyeplants group here included woad, clubmoss and greenweed though no madder root was recorded (further emphasising that the pinkish colouration of remains came from food remains rather than a dyeplant). And again quantities of mammalian hairs, including bristles, were noted during sorting (these may be related to skin or hide preparation though many seemed to be in short lengths consistent with beard trimmings). (Mammal hair—and also feathers—were abundant in the flot, too.)

Other material must have been deposited in the pit, for moderate amounts of bark fragments (to 25 mm) and wood fragments (to 90 mm), including chips (up to 40 mm) were recorded. Some straw and perhaps also hay is likely to have been included, though plants indicating these materials were not very strongly represented. Two extremely well preserved ribwort (*Plantago lanceolata*) seeds preserved by waterlogging are counted with the grassland group; these remains are extremely rare in deposits of this kind, the usual modes of preservation being charring or, less commonly, mineralisation. Woodland and hedgerow taxa (other than many of the foodplants) included a range of mosses typically found on tree boles and other tree bark, perhaps used as toilet tissue (all were recorded in trace amounts, however).

A microfossil squash showed eggs of parasitic nematodes to be abundant and the ratio of *Trichuris* to *Ascaris* to be low (approximately unity). Such a ratio has been said to be indicative of pig, rather than human, faeces (Taylor 1955), although this assertion requires objective testing.

Macro-invertebrate remains were extremely abundant. Preservation was in many cases quite remarkably good, this being especially conspicuous in some larval remains. A few fossils were darkened (notably *Cercyon unipunctatus*, whose ground colour is yellow). A possible cause is staining by tannins from the bark observed in the residue.

Of the order of 500 fly puparia were estimated to be present, belonging to groups typical of very foul matter. One component of the beetle assemblage would have co-existed with these, including *Cercyon unipunctatus* and *Philonthus politus* (the most abundant beetles, with nine of each), *C. haemorrhoidalis* (4), *Platystethus arenarius* (3), and various of the less abundant taxa. Coded foul decomposers accounted for 18% of the assemblage (a high value), but this figure does not include *P. politus*.

In contrast to these indicators of foul conditions, there were moderate numbers of some 'house fauna' taxa,

this group (as defined by Carrott and Kenward's core Group A, Table 8) contributing 30% of the fauna. There were eight *Anobium punctatum*, together with *Lathridius minutus* group (7), *Aglenus brunneus* (5), *Cryptophagus* sp. and *Atomaria* sp. (4 each), single individuals of various other beetles, and a human flea (*Pulex irritans*). These probably came from a building, but this may have been a house or a stable. The presence of two *Melophagus ovinus* (sheep keds) and of dyeplants perhaps argues for a domestic origin (the flies having been shed during wool cleaning).

Aquatics were a little more common than might be expected by chance, especially if this was a surface dump, and included two water flea resting eggs. The aquatics may have originated in water used for some process (dyeing? skin cleaning?) or have been drunk by livestock.

The development of a seething invertebrate population (including the numerous mites as well as the flies and beetles noted above) indicates a long period of exposure of this material - several weeks at least. Clearly prolonged exposure of disgusting matter was tolerable in this area, but bacteria (and perhaps parasite eggs, Kenward and Large 1998) would have been carried from it by insects to infect people living nearby.

Two honey bees were noted.

In summary, this deposit included foul mixed waste, among it perhaps debris from skin cleaning. If skins were being cleaned it is possible that slaughtering was being carried out and the foul matter included gut contents. The abundant tiny feathers had the appearance of those left after plucking, so it is possible that they originated in faeces, having been ingested with cooked (but not roasted since none were charred) bird, for example.

The possibility that this and the other two layers in this series of samples were in fact fills of a very large pit is discussed below.

Context 1043: the single fill of Cut 1044, a homogeneous, greenish-tinged, highly organic slightly gritty silt.

Sample 4: black, crumbly, fibrous, compressed (working slightly plastic), slightly sandy, slightly silty fine and coarse woody and herbaceous detritus with amorphous organic sediment and traces of moss and 'straw', and with moderate numbers of twig fragments.

As might be expected in view of the nature of the sediment, there was a extremely large residue (of about 1200 cm³) mainly of herbaceous detritus, especially in the <1 mm fraction. And as with the previous two samples, the bulk of the identifiable material was wheat/rye 'bran', with large amounts also of oat 'bran', ?leek leaf, and uncharred cereal chaff. Food, but with other waste is indicated, the list of edible plants present in moderate amounts including linseed and apple, and those in trace amounts including hazel nut, sloe, bullace, blackberry and 'bilberry'. The usual suite of 'toilet' mosses was present although of the several taxa recorded at an abundance of '2' (*Campylium elodes*, *C. stellatum*, *Neckera complanata*, *Pseudoscleropodium purum*, and *Scorpidium scorpioides*), all but two are more characteristic of fens and marshes than woodland or heathland, the usual sources for such mosses (though by no means the only one). That this was largely faecal material does not seem to be in doubt, though the modest numbers of fragments of faecal concretion were small (up to 25 mm) and there was little mineralisation of individual plant remains.

Stem and twig epidermis fragments of dyer's greenweed were present in modest amounts, as were vegetative remains of woad (again, xylem vessels tangled amongst the moss, as in the sample from Context 1031), and other plants recorded in the DYES group were clubmoss (stem fragments) and bog

myrtle (traces of leaf fragments). The bog myrtle, together with traces of ‘seeds’ of dill were counted as the two plants likely to have been used as flavourings. Other taxa present were generally much like those from the previous samples, with various kinds of litter probably being represented and with a rather small component of weeds.

A microfossil squash showed eggs of parasitic nematodes to be abundant and the ratio of *Trichuris* to *Ascaris* to be about 2:1.

Preservation of invertebrates in the large flot was generally superb. Adult beetles and bugs were abundant (N = 177, S = 100), and there were numerous other invertebrates, notably mites (of the order of 100), around 50 fly puparia, and numerous water flea resting eggs (Cladocera ephippia). These remains appeared to have had various origins, and this is reflected in the high diversity of the assemblage of adult beetles and bugs ($\alpha = 95$, SE = 13). The principal ecological groups observed were ‘house fauna’, species associated with foul matter, *Bruchus rufimanus* (from pulses), and aquatics.

House fauna was represented by *Lathridius minutus* group (10 individuals) and three *Atomaria* species (8, 4, 3), but only one or two individuals of various others. The *Lathridius* and *Atomaria* may have occupied outdoor habitats, however. Thus, although this group (as represented by Carrott and Kenward’s core Group A, Table 8) contributed 27% of the assemblage, it is not wholly convincing evidence for the presence of material from indoors. The presence of two human lice and a human flea may support a domestic origin, but such remains are common in faecal deposits, perhaps being removed ‘at toilet’.

Species coded as foul decomposers (rf) contributed an appreciable proportion of the fauna (% NRF = 9), but there were further taxa associated with foul mouldering matter. These species seem most likely to have occurred together in material with the characteristics of stable manure—a fairly open texture but moist and fermenting.

Bruchus rufimanus (eight individuals) seems most likely to have arrived in rejected spoiled pulses or via faeces, having been accidentally eaten. Some of the remains were pale, strongly suggesting such a passive mode of entry, since pale (freshly emerged) insects are unlikely to disperse naturally.

There were seven aquatic beetles and bugs (although % NW only = 4), but the presence of water was very strongly argued by the cladocerans: about 50 of one type, ‘many’ of a second, and one of a third. Bearing in mind the nature of the deposit—extremely foul—these freshwater crustaceans seem most unlikely to have lived *in situ* in the cut, since the water would have been intolerably polluted. They therefore seem much more likely to have been deposited in waste water (from dyeing, perhaps), or entered via faeces, having been inadvertently ingested. If the latter, drinking (or cooking) water of a very poor quality is indicated. Presumably the water was obtained from an open pit-like well (some of the pits at 16-22 Coppergate were suspected to be such), or even from one of the rivers.

A very decayed ?honey bee ‘pollen basket’ (hind tarsal segment) may have been damaged by cooking and eating, but seems as likely to have entered accidentally (as dust, or in a dump) after decaying on a surface.

This deposit must have accumulated slowly, so that foul matter was exposed for a long period, unless it included dumps from elsewhere containing well-established fauna. The former appears far more probable.

In summary, this deposit appeared to be another accumulation of foul waste, probably largely faeces.

Context 1005: organic layer, part of a series of deposits accumulating after the life of a wooden (wattle) structure, and probably best interpreted as dumps (Context 1006, at the same level but to one side of 1005)

in the same section, was rich in leather-working waste and was the only context with stratified pottery: sherds of 10th-11th century glazed Stamford ware).

Another extremely large residue (of about 1200 cm³) was obtained, of which a very large proportion in the <2 mm fraction, and especially the <1 mm fraction, was wheat/rye 'bran'. Waterlogged cereal chaff was also abundant, but here, unlike the other three samples, there were large numbers of faecal concretions (up to 40 mm). Another abundant component was flax seed, and plant foods present in moderate amounts included leek leaf fragments, oat 'bran', apple pips and endocarp, sloe stones, blackberry seeds, 'bilberry' and field bean, with traces of hazel nut, pea, bullace, elderberry and rowan. Consistent with the greater degree of 'mineralisation', the sloe stones here only rather rarely showed a pinkish colour. Three taxa have been counted as possible flavourings: hop, bog myrtle and summer savory, the last recorded widely from Anglo-Scandinavian deposits at 16-22 Coppergate, but only in this assemblage from the present site.

The suite of mosses recorded were typical of those repeatedly recorded in faecal deposits, though only one (*Hylocomium splendens*) was present in more than trace amounts. This plant may have come from heathland or moorland habitats, and the traces of heather flowers and shoot fragments in this assemblage—the only secure records in these four samples for a plant which was generally quite regularly recorded in Anglo-Scandinavian deposits at nearby 16-22 Coppergate (in 44% of the 402 contexts), though only sparsely at 1-9 Micklegate (in 4 of 20 samples). *Hylocomium* and heather are also counted in analyses of the 'litter' content of these assemblages as possible indicators of 'turf' and here there is quite a strongly represented group of plants though none, except this moss, were recorded at an abundance of more than 1.

Other plant taxa in the residue were largely weeds, mostly those of cornfields and likely to have arrived with cereal-based food (especially the moderately frequent seed fragments of corncockle (*Agrostemma githago*) and achenes of stinking mayweed (*Anthemis cotula*).

A microfossil squash showed eggs of parasitic nematodes to be abundant and the ratio of *Trichuris* to *Ascaris* to be about 3:1.

The subsample from Context 1005 produced the smallest of the assemblages of beetles and bugs from this site (N = 77, S = 51), although other invertebrates were fairly abundant (notably of the order of 100 fly puparia). The deposit was probably foul, on the evidence of the puparia and of small numbers of beetles such as *Platystethus arenarius* and *Gyrophypnus fracticornis* (3 of each) and numerous rarer taxa. Although the two most abundant taxa (*Atomaria* sp., with seven individuals, and *Lathridius minutus* group, with five) are components of house fauna assemblages, they may equally have lived in fairly dry material outdoors (other house fauna taxa being weakly represented).

The four Cladocera ephippia (of three different kinds) perhaps entered via waste water or faeces, and the latter may be the means of entry of two *Bruchus ?rufimanus* (bean weevils).

This deposit clearly had a considerable content of faecal material, though whether primarily human or porcine remains uncertain.

Discussion

These samples have exhibited some of the best preserved plant and invertebrate remains recorded from archaeological deposits in York, though it must be remembered that they were processed within three weeks of excavation when little change had occurred (other than a general darkening of the sediments through oxidation). It may be noted, however, that those samples from 16-22 Coppergate which were processed within a few days of collection did not in general show such superb preservation.

The four samples, though none clearly came from a pit fill of the kind repeatedly observed in Anglo-Scandinavian levels at, for example, 16-22 Coppergate or 1-9 Micklegate, were all very similar in their content of food remains which it is tempting to see as having arrived in human faeces. However, the quantities of uncharred cereal chaff (at an abundance of '3' in three assemblages and '2' in the fourth) might lead one to suppose that, unless this component arrived by another route, the faecal material might partly, or even wholly, have originated in animals such as pigs.

Examination of the eggs of parasitic nematodes throws some light on this question. The ratio of *Trichuris* to *Ascaris* eggs has been said to have a role in differentiating faeces of pigs and humans, *Ascaris* being relatively more common in the former (Taylor 1955), although this assertion requires objective testing. The overall ratio for Anglo-Scandinavian 16-22 Coppergate for deposits which, on a range of evidence, and where worm eggs were abundant, were considered (with two possible exceptions) included only human faeces, was 13:1 (although there were numerous cases where the ratio was 3:1 or lower—see Table 10—and the high ratio may be influenced by differential loss of *Ascaris* was less good in the numerous samples with low egg counts). At the present site, by contrast, the ratio ranged from 1:1 to 3:1 for the four deposits investigated. There is thus some suspicion that pig faeces, or pig faeces containing recycled human faeces.

These Parliament Street deposits appear to have formed well away from the street frontage, in other words well removed from the likely position of houses, and so may represent an area where the foul conditions generated by livestock would be tolerated.

Insects included components indicating foul matter, compatible with interpretation as faeces of humans or livestock. The presence of abundant water fleas in some deposits perhaps point to latter (they would have been noticeable in drinking water for humans, surely, and would have sedimented out in brewing) unless the water was waste from a process such as dyeing or skin cleaning.

The remains of honeybees were present in all of the samples, and in one case appeared to be too abundant to be present by chance arrival as 'background'. Evidence from 16-22 Coppergate has led to the suggestion that bees were kept at that site, so the same may be true of the yards behind Ousegate. However, other means of entry for bees needs to be evaluated: firstly, their ingestion with food (having been contaminants in honey); secondly ejection during the extraction of honey from combs (or in subsequent purification), and thirdly, extraction during purification of wax. The superb preservation of some of the bees from 4-7 Parliament Street might suggest a direct entry rather than a route involving processes such as heating and straining. The effect of passage through the gut requires study.

The overall impression is that this site was unlike anything studied at 16-22 Coppergate, especially if it is accepted that the three 'dumps' were really on surfaces and not in unrecognised pits. Cuts on the scale of those seen in what may well be equivalent tenements fronting the Ousegate-Pavement line at 44-5 Parliament Street would not necessarily be recognizable as such in sections in an excavation as small as that at 4-7 Parliament Street. It seems possible that the present site lay in an area with poorer drainage than was experienced at 16-22 Coppergate and 6-8 Pavement. Equivalent deposits (in terms of quality of preservation) but of medieval date were observed in the level area at Swinegate, where there may have been impeded drainage.

Acknowledgements

The authors are grateful to Palaeoecology Research Services, and in particular Darren Worthy, for processing the subsamples discussed here and to York Archaeological Trust for archaeological information and for collecting samples under difficult circumstances.

References

- Carrott, J. and Kenward, H. (2000). Publication draft: Species associations among insect remains from urban archaeological deposits and their significance in reconstructing the past human environment. *Reports from the Environmental Archaeology Unit, York* **2000/11**.
- Fisher, R. A., Corbet, A. S. and Williams, C. B. (1943). The relation between the number of species and the number of individuals in a random sample of an animal population. *Journal of Animal Ecology* **12**, 42-58.
- Hall, A. R., Jones, A. K. G. and Kenward, H. K. (1983). *Cereal bran and human faecal remains from archaeological deposits - some preliminary observations*, pp. 85-104 in Proudfoot, B. (ed.) Site, environment and economy. *Symposia of the Association for Environmental Archaeology 3, British Archaeological Reports International Series* **173**.
- Hall, A. R. and Kenward, H. K. (1990). Environmental evidence from the Colonia: General Accident and Rougier Street. *The Archaeology of York* **14** (6), 289-434 + Plates II-IX + Fiche 2-11. London: Council for British Archaeology.
- Johnson, M. (ed.) (1999). 4-7 Parliament Street, York. Report on an archaeological watching brief. *York Archaeological Trust Field Report* **71**.
- Kenward, H. K. (1992). Rapid recording of archaeological insect remains - a reconsideration. *Circaea, the Journal of the Association for Environmental Archaeology* **9** (for 1991), 81-8.
- Kenward, H. K., Engleman, C., Robertson, A., and Large, F. (1986). Rapid scanning of urban archaeological deposits for insect remains. *Circaea* **3**, 163-72.
- Kenward, H. and Hall, A. (2000). Technical Report: Plant and invertebrate remains from Anglo-Scandinavian deposits at the Queen's Hotel site, 1-9 Micklegate, York (site code 88-9.17). *reports from the EAU, York* **2000/14**.
- Kenward, H. K., Hall, A. R. and Jones, A. K. G. (1980). A tested set of techniques for the extraction of plant and animal microfossils from waterlogged archaeological deposits. *Science and Archaeology* **22**, 3-15.
- Kenward, H. and Large, F. (1998). Insects in urban waste pits in Viking York: another kind of seasonality. *Environmental Archaeology* **3**, 35-53.
- Kloet, G. S. and Hincks, W. D. (1964-77). *A check list of British Insects*. (2nd ed.) London: Royal Entomological Society.
- Smith, A. J. E. (1978). *The moss flora of Britain and Ireland*. Cambridge: University Press.
- Taylor, E. L. (1955). Parasitic helminths in medieval remains. *Veterinary Record* **67**, 216.
- Tutin, T. G. *et al.* (1964-80). *Flora Europaea* **1-5**. Cambridge: University Press.

Table 1. List of samples from 4-7 Parliament Street, York, examined for plant and invertebrate remains. Wt.—weight processed (kg).

Context	Sample	Section from which sampled	Context type	Wt.
1005	11	1	layer	2
1024	2	2	layer	2
1031	8	3	layer (basal deposit encountered in trench)	2
1043	4	3	fill in cut 1044	2

Table 2. Complete list of plant and invertebrate remains recorded from samples from 4-7 Parliament Street, York, in taxonomic order. 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 6); ecode—ecological code used in generating main statistics (Table 6); sp(p).—species not previously listed; sp(p). indet.—may be a species already listed.

BRYOPHYTA (parts were leaves and/or shoot fragments unless otherwise specified)

Polytrichum commune Hedw.
Dicranum scoparium Hedw.
Barbula sp(p).
Racomitrium sp(p).
 cf. *Anomobryum filiforme* (Dicks.) So lms-Lau b.
Plagiomnium cf. *affine* (Funck.) Kop.
Ulota sp(p).
Leucodon sciuroides (Hedw.) Schwaeg.
Antitrichia curtispindula (Hedw.) Brid.
Neckera crispa Hedw.
N. complanata (Hedw.) Hüb.
Homalia trichomanoides (Hedw.) Br. Eur.
 cf. *Myrinia pulvinata* (Wahlenb.) Schimp.
Thuidium tamariscinum (Hedw.) Br. Eur.
Campylium stellatum (Hedw.) Lange & Jens.
C. elodes (Lindb.) Kindb.
Amblystegium sp(p).
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.) Br. Eur./*H. lutescens* (Hedw.) Robins.
Pseudoscleropodium purum (Hedw.) Fleisch
Eurhynchium striatum (Hedw.) Schimp.
E. praelongum (Hedw.) Br. Eur.
Rhynchostegiella tenella (Dicks.) Limpr.
Hypnum cf. *cupressiforme* Hedw.
Rhytidiadelphus sp(p).
Pleurozium schreberi (Brid.) Mitt.
Hylocomium brevirostre (Brid.) Br. Eur.
H. splendens (Hedw.) Br. Eur.

PTERIDOPHYTA

Diplazium complanatum (L.) Rothm. (complanate clubmoss): shoot fragments
Pteridium aquilinum (L.) Kuhn (bracken): pinnule, rachis and stalk fragments

GYMNOSPERMAE

Pinus sp(p). (pine): wood chips

ANGIOSPERMAE

Myrica gale L. (bog myrtle/sweet gale): leaf fragments
Betula sp(p). (birch): female catkin-scales
Corylus avellana L. (hazel): charred and uncharred nuts and/or nutshell fragments
Quercus sp(p). (oak): buds and/or bud-scales, wood chips
Humulus lupulus L. (hop): achenes
Urtica urens L. (annual nettle): achenes
Polygonum aviculare agg. (knotgrass): fruits
P. hydropiper L. (water-pepper): fruits
P. persicaria L. (persicaria/red shank): fruits
P. lapathifolium L. (pale persicaria): fruits
Bilderdykia convolvulus (L.) Dumort. (black bindweed): fruits (some with perianths/segments) and fruit fragments
Rumex acetosella agg. (sheep's sorrel): fruits
Rumex sp(p). (docks): charred and uncharred fruits
Chenopodium album L. (fat hen): seeds
Atriplex sp(p). (oraches): seeds
Stellaria holostea L. (greater stitchwort): stem fragments
Agrostemma githago L. (corncockle): uncharred and mineralised seeds, uncharred seed fragments
Ranunculus Section *Ranunculus* (meadow/creeping/bulbous buttercup): achenes
R. flammula L. (lesser spearwort): achenes
Isatis tinctoria L. (woad): pod and vegetative fragments
Thlaspi arvense L. (field penny-cress): seeds
Brassica rapa L. ('turnip'): seeds
Brassica sp(p). (cabbages, etc.): seeds and seed fragments
Brassica sp./*Sinapis arvensis* L. (brassica/charlock): seeds, seed fragments
Raphanus raphanistrum L. (wild radish): pod segments and/or fragments
Filipendula ulmaria (L.) Maxim. (meadowsweet): achenes

Rubus fruticosus agg. (blackberry/bramble): seeds
R. caesius L. (dewberry): seeds
Rosa sp(p). (roses): achenes
Agrimonia eupatoria L. (agrimony): fruits
Potentilla cf. *erecta* (L.) Rauschel (?tormentil):
 achenes
Malus sylvestris Miller (crab apple): endocarp,
 seeds, immature seeds, mineralised
 seeds/embryos
Sorbus aucuparia L. (rowan, mountain ash): seeds
Crataegus monogyna Jacq. (hawthorn): pyrenes
Crataegus sp(p). (hawthorns): thorns
Prunus spinosa L. (sloe): fruitstones, thorns
P. domestica cf. ssp. *domestica* (plums, etc.):
 fruitstones
P. domestica ssp. *insittia* (L.) C. K. Schneider
 (plums, etc.): fruitstones
Prunus sp(p). (sloe/plum/cherry, etc.): mesocarp
 fragments, mineralised mesocarp and endocarp
 Leguminosae (pea family): flowers and/or petals
Genista tinctoria L. (dyer's greenweed): charred
 and uncharred stem fragments, uncharred twig
 epidermis fragments
 cf. *G. tinctoria*: pod fragments
Vicia faba L. (field bean): mineralised and
 waterlogged testa fragments, tracheid bars
 underneath hilum
 cf. *V. faba*: charred seeds, immature seeds
 (waterlogged)
Pisum sativum L. (garden/field pea): mineralised
 hila
 cf. *P. sativum*: tracheid bars underneath hilum
P. cf. sativum: waterlogged hila
Linum usitatissimum L. (cultivated flax): capsule
 fragments, mineralised and uncharred seeds
Scandix pecten-veneris L. (shepherd's needle):
 mericarps
Aethusa cynapium L. (fool's parsley): mericarps
Anethum graveolens L. (dill): mericarps
Conium maculatum L. (hemlock): mericarp
 fragments
Apium graveolens L. (wild celery): mericarps
Pastinaca sativa L./*Heracleum sphondylium* L.
 (wild parsnip/hogweed): mericarps
Calluna vulgaris (L.) Hull (heather, ling): flowers,
 shoot fragments
 cf. *C. vulgaris*: root and/or basal twig fragments
Vaccinium sp(p). ('bilberries'): tori (plates at base
 of style, apex of fruit), seeds
Fraxinus sp(p). (ash): wood chips
Galium aparine L. (goosegrass, cleavers): epicarp
 (fruit skin), mineralised fruits
Rubia tinctorum L. (dyer's madder): root fragments
Galeopsis Subgenus *Galeopsis* (hemp-nettles):
 nutlets
Prunella vulgaris L. (selfheal): nutlets
Satureja hortensis L. (summer savory): nutlets

Plantago lanceolata L. (ribwort plantain): seeds
Sambucus nigra L. (elder): seeds
Valerianella dentata (L.) Pollich (narrow-fruited
 cornsalad): fruits
Dipsacus sativus (L.) Honckeny/D. *fullonum* L.
 (fullers'/wild teasel): fruit fragments
Bidens sp(p). (bur-marigolds): achenes
Anthemis cotula L. (stinking mayweed): achenes
Carduus/Cirsium sp(p). (thistles): achenes
Centaurea cf. *nigra* L. (?lesser knapweed):
 involucre/fragments
Centaurea sp(p). (knapweeds, etc.): achenes,
 achene fragments, involucre bracts
Hypochoeris sp(p). (cat's ears): achenes
Leontodon sp(p). (hawkbits): achenes
Picris hieracioides L. (hawkweed ox-tongue):
 achenes
Sonchus asper (L.) Hill (prickly sow-thistle):
 achenes
S. oleraceus L. (sow-thistle): achenes
Lapsana communis L. (nipplewort): achenes
Allium cf. *porrum* L. (?leek): leaf epidermis
 fragments
Allium sp(p). (onions, etc.): leaf epidermis
 fragments
Juncus bufonius L. (toad rush): seeds
 Gramineae (grasses): waterlogged caryopsis/es
 Gramineae/Cerealia (grasses/cereals): waterlogged
 culm fragments and culm nodes
 'Cerealia' indet. (cereals): waterlogged chaff and
 rachis fragments
Triticum/Secale (wheat/rye): waterlogged caryopses
 and periderm fragments ('bran')
Avena sp(p). (oats): charred, mineralised and
 waterlogged caryopses, waterlogged periderm
 fragments and spikelets/spikelet fragments
 cf. *Avena* sp(p): mineralised spikelets/spikelet
 fragments
 Cyperaceae (sedge family): papillose leaf epidermis
 fragments
Scirpus maritimus L./*S. lacustris* s.l. (sea
 club-rush/bulrush): nutlets
Eleocharis palustris s.l. (common spike-rush):
 nutlets
Carex sp(p). (sedges): mineralised and uncharred
 nutlets

Ecological code

NEMATODA	
<i>Ascaris</i> sp.	u
ANNELIDA	
* <i>Oligochaeta</i> sp. (egg capsule)	u
CRUSTACEA	
* <i>Cladocera</i> sp. (ephippium)	oa-w
* <i>Isopoda</i> sp.	u

DERMAPTERA		<i>Ochthebius minimus</i> (Fabricius)	oa-w
* <i>Forficula</i> sp.	u	<i>Ptenidium</i> sp.	rt
		<i>Acrotrichis</i> sp.	rt
MALLOPHAGA		<i>Catops</i> sp.	u
* <i>Damalinia ovis</i> (Schrank)	u	? <i>Aclypea opaca</i> (Linnaeus)	ob-rt
		<i>Megarthritis</i> sp.	rt
SIPHUNCULATA		<i>Phyllodrepa ?floralis</i> (Paykull)	rt-sf
* <i>Pediculus humanus</i> Linnaeus	ss	<i>Dropephylla</i> sp.	u
* <i>Pediculus humanus</i> Linnaeus (nymph)	ss	<i>Acrolocha sulcula</i> (Stephens)	rt
		<i>Omalius ?rivulare</i> (Paykull)	rt-sf
		<i>Omalius</i> sp.	rt
HEMIPTERA		<i>Xylodromus concinnus</i> (Marsham)	rt-st
<i>Heterogaster urticae</i> (Fabricius)	oa-p	<i>Xylodromus</i> sp.	rt-st
<i>Empicoris ?culiciformis</i> (Degeer)	rt	<i>Carpelimus bilineatus</i> Stephens	rt-sf
<i>Lyctocoris campestris</i> (Fabricius)	rd-st	<i>Carpelimus fuliginosus</i> (Gravenhorst)	st
<i>Xylocoris</i> sp.	u	<i>Carpelimus ?rivularis</i> (Motschulsky)	ob-d
Saldidae sp.	oa-d	<i>Carpelimus</i> sp.	u
Corixidae sp.	oa-w	<i>Platystethus arenarius</i> (Fou rcroy)	rf
*Heteroptera sp. (nymph)	u	<i>Platystethus degener</i> Mulsant & Rey	oa-d
Delphacidae sp.	oa-p	<i>Platystethus cornutus</i> group indet.	oa-d
*Auchenorrhyncha sp. (nymph)	oa-p	<i>Platystethus nitens</i> (Sahlberg)	oa-d
*Aphidoidea sp. (parasitised mummy)	u	<i>Anotylus complanatus</i> (Erichson)	rt-sf
*Coccoidea sp.	u	<i>Anotylus niidulus</i> (Gravenhorst)	rt
		<i>Anotylus rugosus</i> (Fabricius)	rt
DIPTERA		<i>Oxytelus sculptus</i> Gravenhorst	rt-st
*Syrphidae sp. (larva)	u	<i>Stenus</i> spp.	u
* <i>Melophagus ovinus</i> (Linnaeus) (adult)	u	<i>Lithocharis ochracea</i> (Gravenhorst)	rt-st
* <i>Melophagus ovinus</i> (puparium)	u	<i>Rugilus</i> sp.	rt
*Diptera spp. (larva)	u	<i>Leptacinus ?intermedius</i> Donisthorpe	rt-st
*Diptera spp. (pupa)	u	<i>Leptacinus ?pusillus</i> (Stephens)	rt-st
*Diptera spp. (puparium)	u	<i>Leptacinus</i> sp. indet.	rt-st
*Diptera spp. (adult)	u	<i>Phacophallus parumpunctatus</i> (Gyllenhal)	rt-st
		<i>Gyrophypnus angustatus</i> Stephens	rt-st
SIPHONAPTERA		<i>Gyrophypnus fracticornis</i> (Muller)	rt-st
* <i>Pulex irritans</i> Linnaeus	ss	<i>Neobisnius</i> sp.	u
		<i>Philonthus discoideus</i> (Gravenhorst)	rt-st
COLEOPTERA		<i>Philonthus politus</i> (Linnaeus)	rt-st
<i>Bembidion biguttatum</i> (Fabricius)	oa-d	<i>Philonthus</i> spp.	u
<i>Bembidion ?guttula</i> (Fabricius)	oa	<i>Quedius</i> sp.	u
<i>Bembidion guttula</i> or <i>mannerheimi</i>	oa	Staphylininae sp.	u
<i>Bembidion</i> sp.	oa	<i>Tachyporus</i> sp.	u
<i>Pterostichus ?melanarius</i> (Illiger)	ob	<i>Cypha</i> sp.	rt
<i>Pterostichus (Poecilus)</i> sp.	oa	<i>Falagria caesa</i> or <i>sulcatula</i>	rt-sf
<i>Pterostichus</i> sp. indet.	ob	<i>Falagria</i> or <i>Cordalia</i> sp. indet.	rt-sf
<i>Amara</i> sp.	oa	<i>Aleochara</i> sp.	u
Carabidae sp.	ob	Aleocharinae spp.	u
<i>Agabus bipustulatus</i> (Linnaeus)	oa-w	Pselaphidae sp.	u
<i>Helophorus</i> sp.	oa-w	<i>Trox scaber</i> (Linnaeus)	rt-sf
<i>Cercyon analis</i> (Paykull)	rt-sf	<i>Geotrupes</i> sp.	oa-rf
<i>Cercyon atricapillus</i> (Marsham)	rf-st	<i>Aphodius ?depressus</i> (Kugelann)	rf
<i>Cercyon haemorrhoidalis</i> (Fabricius)	rf-sf	<i>Aphodius granarius</i> (Linnaeus)	ob-rf
<i>Cercyon terminatus</i> (Marsham)	rf-st	<i>Aphodius</i> spp.	ob-rf
<i>Cercyon unipunctatus</i> (Linnaeus)	rf-st	<i>Clambus pubescens</i> Redtenbacher	rt-sf
<i>Cryptopleurum minutum</i> (Fabricius)	rf-st	<i>Clambus</i> sp. indet.	rt-sf
<i>Hydrobius fuscipes</i> (Linnaeus)	oa-w	? <i>Cyphon</i> sp.	oa-d
<i>Acritis nigricornis</i> (Hoffmann)	rt-st	?Scirtidae sp. indet.	oa-d
Histerinae sp.	rt	<i>Anobium punctatum</i> (Degeer)	l-sf

<i>Ptilinus pectinicornis</i> (Linnaeus)	l-sf	Chrysomelinae sp.	oa-p
<i>Ptinus fur</i> (Linnaeus)	rd-sf	<i>Phyllotreta nemorum</i> group	oa-p
<i>Ptinus</i> sp. indet.	rd-sf	<i>Chaetocnema arida</i> group	oa-p
<i>Lyctus linearis</i> (Goeze)	l-sf	<i>Chaetocnema concinna</i> (Marsham)	oa-p
<i>Malachius</i> sp.	u	<i>Psylliodes</i> sp.	oa-p
<i>Meligethes</i> sp.	oa-p	Halticinae sp.	oa-p
<i>Omosita colon</i> (Linnaeus)	rt-sf	<i>Apion</i> sp.	oa-p
<i>Omosita discoidea</i> (Fabricius)	rt-sf	<i>Sitona</i> sp.	oa-p
<i>Rhizophagus</i> sp.	u	<i>Hypera punctata</i> (Fabricius)	oa-p
<i>Monotoma longicollis</i> (Gyllenhal)	rt-st	<i>Ceutorhynchus contractus</i> (Marsham)	oa-p
<i>Monotoma</i> sp.	rt-sf	<i>Rhinoncus</i> sp.	oa-p
<i>Cryptophagus scutellatus</i> Newman	rd-st	Ceutorhynchinae sp.	oa-p
<i>Cryptophagus</i> spp.	rd-sf	Curculionidae sp.	oa
<i>Atomaria</i> spp.	rd	*Coleoptera sp. (larva)	u
<i>Ephistemus globulus</i> (Paykull)	rd-sf		
<i>Orthoperus</i> sp.	rt	HYMENOPTERA	
<i>Mycetaea hirta</i> (Marsham)	rd-ss	*? <i>Spalangia</i> sp.	u
<i>Stephostethus angusticollis</i> (Gyllenhal)	rt-st	*Chalcidoidea sp.	u
<i>Lathridius minutus</i> group	rd-st	*Proctotrupoidea sp.	u
<i>Enicmus</i> sp.	rt-sf	* <i>Apis mellifera</i> Linnaeus	u
<i>Dienerella</i> sp.	rd-sf	*Hymenoptera Parasitica spp.	u
<i>Corticaria</i> spp.	rt-sf	*Hymenoptera spp.	u
<i>Corticarina</i> or <i>Corticicara</i> sp.	rt		
<i>Typhaea stercorea</i> (Linnaeus)	rd-ss	ARACHNIDA	
<i>Aglenus brunneus</i> (Gyllenhal)	rt-ss	*Araneae sp.	u
<i>Blaps</i> sp.	rt-ss	*Acarina sp.	u
<i>Tenebrio obscurus</i> Fabricius	rt-ss		
? <i>Abdera quadrifasciata</i> (Curtis)	u	INCERTAE SEDIS	
<i>Anthicus formicarius</i> (Goeze)	rt-st	*Reticulate tubes	u
<i>Anthicus floralis</i> or <i>formicarius</i>	rt-st		
? <i>Phymatodes alni</i> (Linnaeus)	l	VERTEBRATA	
Cerambycidae sp.	l	*Aves sp. (feather)	u
<i>Bruchus rufimanus</i> Boheman	st	*Mammalia sp. (hair)	u

Table 3. Lists of plants remains and other components of the samples from 4-7 Parliament Street, York, in context, sample and subsample order. For each list records are presented in descending order by abundance score (on a 3- or 4-point scale as appropriate for the kind of sample) and for each score in alphabetical order.

Abbreviations: *af*—achene fragment(s); *b*—bud(s); *br*—bract(s); *bs*—bud-scale(s); *caps*—capsule(s); *ch*—charred; *c/n*—culm-nodes; *dec*—decayed; *endo*—endocarp; *fc*s—female catkin or cone scale(s); *ff*—fruit fragment(s); *fgt/s*—fragment(s); *fls*—flower(s); *fr*—fruit; *imm*—immature; *inc*—including; *inv*—involucre/involucral; *lef*—leaf epidermis fragment(s); *lf*—leaf; *lvs*—leaves; *max*—maximum; *meso*—mesocarp; *mf*—mericarp fragment(s); *min*—mineral-replaced ('mineralised'); *pap*—papillose; *per*—perianth(s); *pet*—petal(s); *pinn*—pinnule; *rt-tw*—root or basal twig; *s*—seed(s); *segs*—segment(s); *sf*—seed fragment(s); *sht*—shoot; *spkls*—spikelet(s); *st*—stem; *tcf*—twig epidermis fragment(s); *undisagg*—undisaggregated; *v*—very; *veg*—vegetative; *w/l*—waterlogged.

Context 1005, Sample 11/T1			
		Calluna vulgaris (sht fgts)	1
		Campyllum stellatum	1
Triticum/Secale ('bran' fgts)	4	Carex sp(p).	1
Cerealia indet. (w/l chaff)	3	Carex sp(p). (min)	1
faecal concretions	3 max 40 mm	Cerealia indet. (w/l rachis fgts)	1
Linum usitatissimum	3 inc fgts	cf. Anomobryum filiforme	1
Agrostemma githago (sf)	2	cf. Calluna vulgaris (rt-tw fgts)	1
Allium cf. porrum (lef)	2	cf. Genista tinctoria (pod fgts)	1
Anthemis cotula	2	cf. Pisum sativum (tracheid bars)	1
Atriplex sp(p).	2	Chenopodium album	1
Avena sp(p). ('bran' fgts)	2	Corylus avellana	1
cf. Avena sp(p). (min spkls/fgts)	2	Corylus avellana (ch)	1
charcoal	2 max 10 mm	dicot lf fgts	1
eggshell membrane fgts	2 max 20 mm	dicot stem fgts	1
fish bone	2 max 10 mm	Dicranum scoparium	1
fly puparia	2	Diphasium complanatum	1 v dec
herbaceous detritus	2	Drepanodadus sp(p).	1
Hylocomium splendens	2	earthworm egg caps	1
Lapsana communis	2	eggshell fgts	1 max 5 mm
Malus sylvestris	2	Eurhynchium praelongum	1
Malus sylvestris (endo)	2	Filipendula ulmaria	1
Prunus spinosa	2	fly puparia (min)	1
Rubus fruticosus agg.	2	fruit epidermis	1
Triticum/Secale (w/l)	2	fruit mesocarp	1
Vaccinium sp(p).	2	Galeopsis Subgenus Galeopsis	1
Vicia faba (tracheid bars)	2	Galium aparine (min)	1
wood chips	2 max 15 mm	Genista tinctoria (st fgts)	1
wood fgts	2 max 20 mm	Genista tinctoria (tcf)	1
'coils'	1	Gramineae	1
Aethusa cynapium	1	Gramineae/Cerealia (c/n)	1
Agrimonia eupatoria	1	gravel	1 max 5 mm
Agrostemma githago	1	Homalia trichomanoides	1
Antitrichia curtipendula	1	Humulus lupulus	1
Avena sp(p). (w/l)	1	Hypnum cf. cupresiforme	1
bark fgts	1 max 40 mm	leather fgts	1 v dec, max 10 mm
beetles	1	Leucodon sciuroides	1
Betula sp(p). (fcs)	1	Linum usitatissimum (min)	1
Bilderdykia convolvulus	1	Malus sylvestris (imm s)	1
Bilderdykia convolvulus (ff)	1	Malus sylvestris (min)	1
bone fgts	1 max 10 mm	Malus sylvestris (seed base cups)	1
Brassica rapa	1	mortar	1 max 10 mm
Brassica sp(p).	1	Myrica gale (lf fgts)	1
Brassica sp./Sinapis arvensis	1	Neckera complanata	1
burnt bone fgts	1 max 10 mm	Neckera crispa	1
Calliargon cuspidatum	1	Pisum sativum (min hila)	1
Calluna vulgaris (fls)	1		

plant fibres	1	Triticum/Secale (w/l)	2
Pleurozium schreberi	1	Vaccinium sp(p).	2
Polygonum aviculare agg.	1	Vicia faba (tracheid bars)	2
Polygonum hydropiper	1	wood chips	2 max 40 mm
Polygonum lapathifolium	1	wood fgts	2 max 90 mm
Polygonum persicaria	1	'coils'	1
Potentilla cf. erecta	1	Agrostemma githago	1
Prunus domestica ssp. insititia	1	Amblystegium sp(p).	1
Prunus spinosa (thorns)	1	Anethum graveolens	1
Pseudoscleropodium purum	1	Antitrichia curtipendula	1
Quercus sp(p). (b/bs)	1	Apium graveolens	1
Ranunculus Section Ranunculus	1	Avena sp(p). (w/l)	1
Raphanus raphanistrum (pod segs/fgts)	1	beetles	1
Rhynchostegiella tenella	1	Bilderdykia convolvulus (ff)	1
rodent droppings (min)	1	bone fgts	1 max 90 mm
Rubia tinctorum	1	Brassica rapa	1
Rumex sp(p). (ch)	1	Brassica sp(p). (sf)	1
Sambucus nigra	1	Brassica sp./Sinapis arvensis (sf)	1
sand	1	brick/tile	1 max 10 mm
Satureja hortensis	1	buds	1
Scandix pecten-veneris	1 fgt(s) only	burnt bone fgts	1 max 5 mm
Scirpus maritimus/lacustris	1	Calliergon cf. giganteum	1
Scorpidium scorpioides	1	Calliergon cuspidatum	1
Sonchus as per	1	Carduus/Cirsium sp(p).	1
Sonchus oleraceus	1	Carex sp(p).	1
Sorbus aucuparia	1	Centaurea cf. nigra (inv fgts)	1
twig fgts	1 max 40 x 10 mm	Centaurea sp(p).	1
Ulota sp(p).	1	Centaurea sp(p). (af)	1
Urtica urens	1	Centaurea sp(p). (inv br)	1
Vaccinium sp(p). (pistil bases)	1	cf. Avena sp(p).	1
Vicia faba (min testa fgts)	1	cf. Barbula sp(p).	1
worked wood fgts	1 max 65 mm	cf. Drepanocladus sp(p).	1
		cf. Myrinia pulvinata	1
		cf. Rubia tinctorum	1
		cf. Vicia faba (imm s)	1
		Chenopodium album	1
		Corylus avellana	1 inc material with apical knife marks
<hr/> Context 1024, Sample 2/T1 <hr/>			
Triticum/Secale ('bran' fgts)	4	Crataegus sp(p). (thorns)	1
?rat-tailed maggot (larva)	3	Cyperaceae (pap lef)	1
Avena sp(p). ('bran' fgts)	3	dicot lf fgts	1
fly puparia	3	dicot stem fgts	1
herbaceous detritus	3	Dicranum scoparium	1
Linum usitatissimum	3	Diphysium complanatum	1
Malus sylvestris (endo)	3	Dipsacus sativus/fullonum (fr fgts)	1
Agrostemma githago (sf)	2	eggshell membrane fgts	1 max 40 mm
Allium cf. porrum (lef)	2	Eleocharis palustris sl	1
animal bristles	2	Eurhynchium striatum	1
animal hairs	2	faecal concretions	1 max 10 mm
Anthemis cotula	2	fish bone	1 max 5 mm
Atriplex sp(p).	2	fish scale	1
bark fgts	2 max 25 mm	Galeopsis Subgenus Galeopsis	1
Cerealia indet. (w/l chaff)	2	Genista tinctoria (st fgts)	1
Crataegus monogyna	2	glassy slag	1 max 5 mm
fruit epidermis	2	Gramineae/Cerealia (c/n)	1
Humulus lupulus	2	Gramineae/Cerealia (culm fgts)	1
Lapsana communis	2	gravel	1 max 10 mm
Malus sylvestris	2	grit	1
Prunella vulgaris	2	Hylocomium splendens	1
Prunus spinosa	2	Hypnum cf. cupresiforme	1
Raphanus raphanistrum (pod segs/fgts)	2	Hypochoeris sp(p).	1
rodent droppings (min)	2		
Rubus fruticosus agg.	2		

Isatis tinctoria (pod fgts)	1	Corylus avellana	2
Isatis tinctoria (veg fgts)	1	faecal concretions	2 max 25 mm
Isothecium myosuroides	1	herbaceous detritus	2
Isothecium myurum	1	Humulus lupulus	2
leather fgts	1 v dec, max 20 mm	Leontodon sp(p).	2
Malus sylvestris (seed base cups)	1	Linum usitatissimum	2 inc fgts
Neckera complanata	1	Malus sylvestris	2
oyster shell fgts	1 max 60 mm	Malus sylvestris (endo)	2
Picris hieracioides	1	Raphanus raphanistrum (pod segs/fgts)	2
Pinus (wood chips)	1	Rubus fruticosus agg.	2
plant fibres	1	wood chips	2 max 40 mm
Plantago lanceolata	1	?daub	1 max 10 mm
Polygonum aviculare agg.	1	Agrostemma githago	1
Polygonum hydropiper	1	Agrostemma githago (min)	1
Polygonum lapathifolium	1	Anethum graveolens	1
Prunus domestica ssp. insititia	1	animal bristles	1
Prunus sp(p). (meso)	1	animal hairs	1
Pteridium aquilinum (rachis fgts)	1	Apium graveolens	1
Pteridium aquilinum (stalk fgts)	1	Avena sp(p).	1
Quercus (wood chips)	1	Avena sp(p). ('bran' fgts)	1
Quercus sp(p). (b/bs)	1	Avena sp(p). (w/l splkts/fgts)	1
Ranunculus Section Ranunculus	1	Avena sp(p). (w/l)	1
Rhytidadelphus sp(p).	1	bark chips	1 max 20 mm
Rosa sp(p).	1	bast fgts	1
Rubus caesius	1	beetles	1
Rumex acetosella agg.	1	Bidens sp(p).	1
Rumex sp(p).	1	Bilderdykia convolvulus (ff)	1
Sambucus nigra	1	Bilderdykia convolvulus (inc per)	1
sand	1	bone fgts	1 max 90 mm
Scorpidium scorpioides	1	Brassica rapa	1 inc fgts
snails	1	Brassica sp./Sinapis arvensis (sf)	1
Sonchus asper	1	brick/tile	1 max 5 mm
Sorbus aucuparia	1	burnt bone fgts	1 max 20 mm
Stellaria holostea (st fgts)	1	Calliargon cuspidatum	1
Thlaspi arvense	1	cf. Vicia faba	1 a single specimen
Thuidium cf. tamariscinum	1	charcoal	1 max 20 mm
twig fgts	1 max 30 x 10 mm	Conium maculatum (mf)	1
Ulotia sp(p).	1	Cyperaceae (pap leaf)	1
unwashed organic sediment	1 max 10 mm	dicot lf fgts	1
Urtica urens	1	dicot stem fgts	1
Vaccinium sp(p). (pistil bases)	1	Diphysium complanatum	1
Valerianella dentata	1	Drepanodadus sp(p).	1
Vicia faba (testa fgts)	1	earthworm egg caps	1
vivianite	1	eggshell membrane fgts	1 max 50 mm
worked wood fgts	1 max 60 mm	Eurhynchium praelongum	1
yarn fgts	1	Eurhynchium striatum	1
		fish bone	1 max 15 mm
		fish scale	1
		fly puparia	1
		Fraxinus (wood chips)	1
		Galeopsis Subgenus Galeopsis	1
		Genista tinctoria (st fgts)	1 max 20 mm
		Genista tinctoria (tef)	1
		Gramineae/Cerealia (culm fgts)	1
		gravel	1 max 15 mm
		grit	1
		gritstone	1 max 20 mm
		Homalothecium sericeum/lutescens	1
		Hylocomium cf. brevirostre	1
		Hypochoeris sp(p).	1
		Isatis tinctoria (pod fgts)	1
Context 1031, Sample 8/T1			
Cerealia indet. (w/l chaff)	3		
fruit epidermis	3		
Triticum/Secale ('bran' fgts)	3 mostly <1 mm		
Agrostemma githago (sf)	2		
Allium sp(p). (leaf)	2		
Anthemis cotula	2		
Atriplex sp(p).	2		
bark fgts	2 max 40 mm		
Chenopodium album	2		

Isatis tinctoria (veg fgts)	1	Triticum/Secale (w/l)	2
Isothecium myosuroides	1	wood chips	2 max 50 mm
Juncus bufonius	1	Aethusa cynapium	1
Lapsana communis	1	Agrostemma githago	1
leaf ab pads	1	Anethum graveolens	1
leather fgts	1 max 25 mm	animal bristles	1
Leguminosae (fls/pet)	1	animal hairs	1
Linum usitatissimum (caps fgts)	1	Anthemis cotula	1
magnesian limestone	1 max 25 mm	Ascaris (eggs)	1
mortar	1 max 5 mm	Atriplex sp(p).	1
Neckera complanata	1	Avena sp(p). (min)	1
oolitic limestone	1 max 70 mm	Avena sp(p). (w/l)	1
oyster shell fgts	1 max 60 mm	Barbula sp(p).	1
Pisum cf. sativum (hila)	1	bark fgts	1 max 20 mm
plant fibres	1	beetles	1
Polygonum aviculare agg.	1	Bidens sp(p).	1
Polygonum lapathifolium	1	Bilderdykia convolvulus	1
Polygonum persicaria	1	Bilderdykia convolvulus (ff)	1
Prunella vulgaris	1	bone fgts	1 max 5 mm
Prunus sp(p). (min meso)	1	Brassica rapa	1
Prunus spinosa (thorns)	1	brick/tile	1 max 10 mm
Pteridium aquilinum (pinn fgts)	1	Calliergon cf. giganteum	1
Pteridium aquilinum (stalk fgts)	1	Calliergon cuspidatum	1
Quercus (wood chips)	1	Carduus/Cirsium sp(p).	1
Quercus sp(p). (b/bs)	1	Centaurea cf. nigra (inv fgts)	1
Racomitrium sp(p).	1	cf. Avena sp(p). (min spkls/fgts)	1
Ranunculus flammula	1	cf. Calluna vulgaris (rt-tw fgts)	1 max 15 mm
Ranunculus Section Ranunculus	1	cf. Genista tinctoria (pod fgts)	1
Rhytidadelphus sp(p).	1	cf. Vicia faba (min testa fgts)	1
rodent droppings (min)	1	charcoal	1 max 10 mm
Rubia tinctorum	1	Chenopodium album	1
Rumex sp(p).	1	Corylus avellana	1 max 5 mm
sand	1	dicot lf fgts	1
Scorpidium scorpioides	1	dicot lf fgts (min)	1
Triticum/Secale (w/l)	1	dicot stem fgts	1
twig fgts	1 max. 30 x 5 mm	Dicranum scoparium	1
unwashed organic sediment	1 max 35 mm	Diphysium complanatum	1
Vaccinium sp(p).	1	earthworm egg caps	1
Vicia faba (min testa fgts)	1	eggshell membrane fgts	1 max 25 mm
yarn fgts	1	Eurhynchium praelongum	1
		Eurhynchium striatum	1
		fish bone	1 max 10 mm
		fly puparia	1
		fruit epidermis	1
		Galeopsis Subgenus Galeopsis	1
		Galium aparine (epicarp)	1
		Genista tinctoria (ch st fgts)	1
		Gramineae/Cerealia (c/n)	1
		Hylocomium brevirostre	1
		Hylocomium splendens	1
		Isothecium myosuroides	1
		Lapsana communis	1
		leather fgts	1 max 10 mm
		Malus sylvestris	1
		Myrica gale (lf fgts)	1 max 5 mm
		Pastinaca sativa/ Heracleum sphondylium	1 fgt(s) only
		Plagiomnium cf. affine	1
		plant fibres	1
		Polygonum hydropiper	1

Context 1043, Sample 4/T1

Triticum/Secale ('bran' fgts)	4		
Allium cf. porrum (lef)	3		
Avena sp(p). ('bran' fgts)	3		
Cerealia indet. (w/l chaff)	3		
herbaceous detritus	3		
Agrostemma githago (sf)	2		
Campylium elodes	2		
Campylium stellatum	2		
faecal concretions	2 max 25 mm		
Genista tinctoria (st fgts)	2		
Genista tinctoria (tef)	2		
Isatis tinctoria (veg fgts)	2		
Linum usitatissimum	2		
Malus sylvestris (endo)	2		
Neckera complanata	2		
Pseudoscleropodium purum	2		
Scorpidium scorpioides	2		

Polygonum lapathifolium	1	Rhytidiadelphus sp(p).	1
Polygonum persicaria	1	Rubus fruticosus agg.	1
Polytrichum commune	1	textile fgts (min)	1 max 5 mm
Prunus domestica cf. ssp. domestica	1	Thuidium tamariscinum	1
Prunus domestica ssp. insititia	1	twig fgts	1 max 30 mm
Prunus sp(p). (min meso+endo)	1	Ulota sp(p).	1
Prunus spinosa	1	unwashed organic sediment	1 max 10 mm
Prunus spinosa (thorns)	1	Vaccinium sp(p).	1
Pteridium aquilinum (rachis fgts)	1	Vaccinium sp(p). (pistil bases)	1
Pteridium aquilinum (stalk fgts)	1 max 25 mm	wood fgts	1 max 20 mm
Ranunculus Section Ranunculus	1	yarn fgts	1
Raphanus raphanistrum (pod segs/fgts)	1		

Table 4. Values for the ‘abundance-indicator value’ (AIV) for assemblages of plant remains from 4-7 Parliament Street, York, in context order. For each sample, AIVs are given in descending order; an explanation of the group codes is given in Table 5. Also presented are sums for the ‘amount’ (on a four-point scale) of the taxa in each group. Note that the AIVs, whilst internally comparable, use a different scale for ‘score’ from that used by, for example, Hall and Kenward (1990); instead of an indicator score of 1, 2 or 3, the scale 1, 5, 25 is used to ‘stretch’ the range of the resulting AIVs. The two ‘unclassified’ groups are included here because, although they do not have AIVs, the sum of taxon amounts is worth recording.

<u>Group</u>	<u>Sum</u>	<u>AIV</u>	<u>Group</u>	<u>Sum</u>	<u>AIV</u>	<u>Group</u>	<u>Sum</u>	<u>AIV</u>
Context 1005, Sample 11/T1			Context 1024, Sample 2/T1			Context 1031, Sample 8/T1		
U FOOS	40	832	U FOOS	42	822	U FOOS	26	482
V CHEN	22	166	V SECA	16	196	V SECA	14	186
V SECA	18	166	V CHEN	19	151	U DYES	8	152
U DYES	8	104	U DYES	6	102	V CHEN	17	141
V QUFA	16	104	U FOOF	4	100	U FOOF	4	100
U FOOO	5	101	V RHPR	19	91	V MOAR	7	95
U FIBR	4	100	V QUFA	18	86	V QUFA	11	79
V NACA	7	67	V MOAR	9	81	U FOOO	4	76
V RHPR	13	65	U FOOO	4	76	U FIBR	3	75
V MOAR	6	62	U FIBR	3	75	U USEF	8	64
U FOOF	3	51	U USEF	10	66	V RHPR	10	50
V ARTE	10	46	M LIGN	10	62	V BIDE	5	45
V BIDE	5	45	V ARTE	10	42	V ARTE	7	31
M HEMO	5	41	V BIDE	4	40	V PLAN	2	30
M LIGN	10	38	V PLAN	4	40	M LIGN	6	26
M SLIT	8	36	M SLIT	7	31	M SLIT	6	26
M WOOF	6	26	V NACA	5	25	V ISNA	1	25
M GRAS	5	25	M WOOF	5	17	V NACA	4	20
M MARS	5	25	V FEBR	5	17	M MARS	3	15
V PLAN	1	25	M MARS	4	16	M WOOF	3	15
M OLIT	5	17	M OLIT	4	16	V QUER	3	11
V OXSP	4	16	V QUER	4	16	M FENS	2	10
V TRGE	4	16	V ALNE	3	15	V ALNE	2	10
M FENS	3	15	M BOGS	3	11	V CAKI	2	10
V FEBR	6	14	M FENS	3	11	V TRGE	2	10
M BOGS	2	10	E CALC	2	10	V FEBR	3	7
M DUNS	2	10	M GRAS	2	10	E CALC	1	5
V ALNE	2	10	V CAKI	2	10	M BOGS	1	5
V CAKI	2	10	V EPIL	2	10	M DUNS	1	5
V QUER	3	7	V TRGE	2	10	M GRAS	1	5
M SOIL	2	6	M HEMO	2	6	M OLIT	1	5
U HERB	6	6	M SOIL	2	6	M SOIL	1	5
U USEF	5	5	V PHRA	2	6	V EPIL	1	5
V EPIL	1	5	M DUNS	1	5	V LITT	1	5
U WOOD	3	3	M STRM	1	5	V SCCA	1	5
V PHRA	2	2	V SESC	1	5	U HERB	4	4
V BULB	1	1	U HERB	3	3	U WOOD	2	2
* UNCL	7	0	U WOOD	2	2	V PHRA	1	1
M UNCL	1	0	* UNCL	11	0	* UNCL	8	0
			M UNCL	4	0	M UNCL	3	0

<i>Group</i>	<i>Sum</i>	<i>AIV</i>
--------------	------------	------------

Context 1043, Sample 4/T1

U FOOS	27	459
U DYES	10	202
V SECA	12	136
V MOAR	8	132
V CHEN	14	106
V BIDE	5	65
U FOOO	3	51
U FIBR	2	50
V QUFA	8	48
M MARS	10	46
M LIGN	9	45

<i>Group</i>	<i>Sum</i>	<i>AIV</i>
--------------	------------	------------

M SLIT	9	45
M FENS	8	36
M WOOF	8	36
V RHPR	7	35
U FOOF	2	26
V ARTE	6	26
V TRGE	6	26
M BOGS	5	21
M GRAS	5	21
V NACA	5	21
M DUNS	3	15
M HEMO	3	15
U USEF	6	14

<i>Group</i>	<i>Sum</i>	<i>AIV</i>
--------------	------------	------------

V FEBR	8	12
M OLIT	2	10
V QUER	2	10
U HERB	7	7
V OXSP	2	6
M SOIL	1	5
V ALNE	1	5
V CAKI	1	5
V EPIL	1	5
U WOOD	1	1
V PHRA	1	1
* UNCL	4	0
M UNCL	2	0

Table 5. Explanation of the codes used for AIV groups in Table 4.

* UNCL	unclassified	V CAKI	plants of nitrophilous weedy communities of shingle beaches and sandy strandlines
E CALC	plants with distinctly calcicole habit	V CHEN	plants of annual nitrophilous weed communities of cultivated and other disturbed land, especially rootcrop fields and gardens
M BOGS	mosses of peat bogs	V EPIL	plants of nitrophilous woodland edge and clearing communities
M DUNS	mosses of dunes and dune slacks	V FEBR	plants of drier, typically calcareous, grassland
M FENS	mosses of fens and carr	V ISNA	plants of short-lived dwarf-rush communities of winter-wet (often sandy) habitats, pond edges, wet tracks
M GRAS	mosses of grassland	V LITT	plants of rooted aquatic vegetation at the edge of (usually oligotrophic) waters
M HEMO	mosses of heathland and moorland	V MOAR	plants of grassland, including the wetter meadows and pastures, and adjacent paths
M LIGN	mosses growing on tree bark/dead wood	V NACA	plants of grass- and dwarf-shrub (typically Calluna-) dominated dry heaths and moors
M MARS	mosses of marshes	V OXSP	plants of raised bogs and wet heaths
M OLIT	mosses of unshaded rocks	V PHRA	plants of freshwater reedswamp communities
M SLIT	mosses of shaded rocks	V PLAN	plants of trampled places
M SOIL	mosses growing on soil	V QUER	plants of deciduous woodland on poorer soils
M STRM	mosses of streams	V QUFA	plants of deciduous woodland on better soils
M UNCL	unclassified	V RHPR	plants of woodland edge scrub communities
M WOOF	mosses of woodland floors	V SCCA	plants of poor to intermediate fen communities (acid to mildly basic peat)
U DYES	plants certainly or probably used in dyeing	V SECA	plants of annual weed communities in cereal fields
U FIBR	plants certainly or probably used as a source of fibre	V SESC	plants of established vegetation of sand dunes and other sandy acidic soils
U FOOF	plants used as flavourings (including herbs, spices)	V TRGE	plants of species-rich communities of grassland/scrub boundaries, often calcicolous
U FOOO	plants certainly or probably used for oil		
U FOOS	primary food plants		
U HERB	plants certainly or probably used medicinally		
U USEF	plants useful in some way other than for food, fibre, oil, dyeing, medicine or as ornamentals		
U WOOD	plants likely to have originated with brushwood or timber		
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 BULB	plants of brackish and saline reedswamp		

Table 6. Main statistics for the assemblages of adult Coleoptera and Hemiptera (excluding Aphidoidea and Coccidoidea) from 4-7 Parliament Street, York.

Context	1005	1024	1031	1043	Whole site
Sample	11	2	8	4	
Ext	/T1	/T1	T1	/T1	
S	51	64	61	100	158
N	77	118	108	177	480
ALPHA	66	57	58	95	82
SEALPHA	15	9	10	13	6
SOB	8	20	15	22	43
PSOB	16	31	25	22	27
NOB	10	22	15	24	71
PNOB	13	19	14	14	15
ALPHAOB	0	101	0	121	47
SEALPHAOB	0	70	0	83	10
SW	1	3	1	5	5
PSW	2	5	2	5	3
NW	1	4	1	7	13
PNW	1	3	1	4	3
ALPHAW	0	0	0	0	0
SEALPHAW	0	0	0	0	0
SD	2	3	0	5	8
PSD	4	5	0	5	5
ND	3	3	0	5	11
PND	4	3	0	3	2
ALPHAD	0	0	0	0	0
SEALPHAD	0	0	0	0	0
SP	3	8	8	6	15
PSP	6	13	13	6	9
NP	4	9	8	6	27
PNP	5	8	7	3	6
ALPHAP	0	0	0	0	14
SEALPHAP	0	0	0	0	5
SM	0	0	0	0	0
PSM	0	0	0	0	0
NM	0	0	0	0	0
PNM	0	0	0	0	0
ALPHAM	0	0	0	0	0
SEALPHAM	0	0	0	0	0
SL	1	3	3	3	5
PSL	2	5	5	3	3
NL	2	11	5	4	22
PNL	3	9	5	2	5
ALPHAL	0	0	0	0	2
SEALPHAL	0	0	0	0	1
SRT	32	35	35	56	148
PSRT	63	55	57	56	94
NRT	53	78	75	118	324
PNRT	69	66	69	67	68
ALPHART	35	25	26	42	105
SEALPHART	9	5	5	7	10
SRD	5	6	6	12	29
PSRD	10	9	10	12	18

Context Sample	1005	1024	1031	1043	Whole site
NRD	15	18	11	36	80
PNRD	19	15	10	20	17
ALPHARD	0	0	0	6	17
SEALPHARD	0	0	0	2	3
SRF	6	7	7	9	29
PSRF	12	11	11	9	18
NRF	9	21	16	16	62
PNRF	12	18	15	9	13
ALPHARF	0	4	0	0	21
SEALPHARF	0	1	0	0	5
SSA	28	26	27	44	67
PSSA	55	41	44	44	42
NSA	40	71	56	90	257
PNSA	52	60	52	51	54
ALPHASA	42	15	21	34	30
SEALPHASA	14	3	5	6	3
SSF	11	15	15	20	31
PSSF	22	23	25	20	20
NSF	13	32	32	38	115
PNSF	17	27	30	21	24
ALPHASF	0	11	11	17	14
SEALPHASF	0	3	3	5	2
SST	14	8	10	22	30
PSST	27	13	16	22	19
NST	24	32	22	49	127
PNST	31	27	20	28	26
ALPHAST	14	4	7	16	13
SEALPHAST	5	1	3	4	2
SSS	3	3	2	2	6
PSSS	6	5	3	2	4
NSS	3	7	2	3	15
PNSS	4	6	2	2	3
ALPHASS	0	0	0	0	0
SEALPHASS	0	0	0	0	0
SG	0	0	0	0	0
PSG	0	0	0	0	0
NG	0	0	0	0	0
PNG	0	0	0	0	0
ALPHAG	0	0	0	0	0
SEALPHAG	0	0	0	0	0

Table 7. Insects and other macro-invertebrates from 4-7 Parliament Street, York: species lists by context and sample.

Context: 1005 Sample: 11/T1 ReM: R
Weight: 2.00 E: 2.00 F: 2.50

Notes: Entered 6.4.2000. Rapid scan recording since part of flot had been lost by SB. Recorded in flot, some problems on filter paper. E1.5-3.0, mode 2.0 (W); F 2.0-5.0, mode 2.5 (D). One *Apion* soft.

Atomaria sp.	7	-	rd
Lathridius minutus group	5	-	rd-st
Platystethus arenarius	3	-	rf
Anotylus nitidulus	3	-	rt
Gyrophypnus fracticornis	3	-	rt-st
Cercyon analis	2	-	rt-sf
Cercyon unipunctatus	2	-	rf-st
Acrotichis sp.	2	-	rt
Catops sp.	2	-	u
Platystethus cornutus group	2	-	oa-d
Oxytelus sculptus	2	-	rt-st
Philonthus ?politus	2	-	rt-st
Anobium punctatum	2	-	l-sf
Bruchus ?rufimanus	2	-	st
Apion sp.	2	-	oa-p
Corixidae sp.	1	-	oa-w
Carabidae sp.	1	-	ob
Cercyon ?atricapillus	1	-	rf-st
Cercyon haemorrhoidalis	1	-	rf-sf
Cercyon terminatus	1	-	rf-st
Acritus nigricornis	1	-	rt-st
Ptenidium sp.	1	-	rt
Omalium ?rivulare	1	-	rt-sf
Xylodromus concinnus	1	-	rt-st
Carpelimus ?bilineatus	1	-	rt-sf
Carpelimus fuliginosus	1	-	st
Platystethus nitens	1	-	oa-d
Anotylus complanatus	1	-	rt-sf
Anotylus rugosus	1	-	rt
Stenus sp.	1	-	u
Leptacinus sp.	1	-	rt-st
Neobisnius sp.	1	-	u
Philonthus sp.	1	-	u
Falagria caesa or sulcatula	1	-	rt-sf
Aleocharinae sp. A	1	-	u
Aleocharinae sp. B	1	-	u
Aleocharinae sp. C	1	-	u
Aleocharinae sp. D	1	-	u
Pselaphidae sp.	1	-	u
Aphodius sp.	1	-	ob-rf
Ptinus sp.	1	-	rd-sf
Meligethes sp.	1	-	oa-p
Monotoma longicollis	1	-	rt-st
Monotoma sp.	1	-	rt-sf
Cryptophagus sp.	1	-	rd-sf

Mycetaea hirta	1	-	rd-ss
Corticaria sp.	1	-	rt-sf
Aglenus brunneus	1	-	rt-ss
Tenebrio obscurus	1	-	rt-ss
Anthicus floralis or formicarius	1	-	rt-st
Chrysomelinae sp.	1	-	oa-p

*Diptera sp. (puparium)	100	e	u
*Diptera sp. (adult)	15	m	u
*Diptera sp. (pupa)	15	m	u
*Acanina sp.	15	m	u
*Coleoptera sp. (larva)	6	s	u
*Proctotrupoidea sp.	6	s	u
*Hymenoptera sp.	3	-	u
*Cladocera sp. S (ephippium)	2	-	oa-w
*Coccoidea sp.	2	-	u
*Aranae sp.	2	-	u
*Oligochaeta sp. (egg capsule)	1	-	u
*Cladocera sp. (ephippium)	1	-	oa-w
*Cladocera sp. F (ephippium)	1	-	oa-w
*?Pediculus humanus	1	-	ss
*Melophagus ovinus (puparium)	1	-	u
*Syrphidae sp. (larva)	1	-	u
*?Pulex irritans	1	-	ss
*?Spalangia sp.	1	-	u
*Apis mellifera	1	-	u
*Chalcidoidea sp.	1	-	u

Context: 1024 Sample: 2/T1 ReM: S
Weight: 2.00 E: 1.50 F: 2.00

Notes: Entered 6.4.2000. One tightly-packed jar of flot (put into two jars for storage after sorting). Identified in flot, problems on filter paper. Paraffin remained in the flot. Some quite remarkable preservation, especially of larvae. E1.0-3.0, mode 1.5 (D); F1.5-4.0, mode 2.0 (D). Some remains darkened (degree 0-2), notably *Cercyon unipunctatus*. One ?oak spangle gall.

Cercyon unipunctatus	9	-	rf-st
Philonthus politus	9	-	rt-st
Anobium punctatum	8	-	l-sf
Lathridius minutus group	7	-	rd-st
Aglenus brunneus	5	-	rt-ss
Cercyon haemorrhoidalis	4	-	rf-sf
Cryptophagus sp.	4	-	rd-sf
Atomaria sp. B	4	-	rd
Platystethus arenarius	3	-	rf
Helophorus sp.	2	-	oa-w
Cercyon analis	2	-	rt-sf
Cercyon terminatus	2	-	rf-st
Phyllodrepa ?floralis	2	-	rt-sf

Carpelimus ?bilineatus	2	-	rt-sf	*Mammalia sp. (hair)	100	e	u
Anotylus rugosus	2	-	rt	*Oligochaeta sp. (egg capsule)	6	s	u
Oxytelus sculptus	2	-	rt-st	*Coccoidea sp.	3	-	u
Aleocharinae sp. B	2	-	u	*Syrphidae sp. (larva)	3	-	u
Lyctus linearis	2	-	l-sf	*Cladocera sp. L (ephippium)	2	-	oa-w
Phyllotreta nemorum group	2	-	oa-p	*Melophagus ovinus (adult)	2	-	u
Saldidae sp.	1	-	oa-d	*Apis mellifera	2	-	u
Corixidae sp.	1	-	oa-w	*Hymenoptera Parasitica sp.	2	-	u
Delphacidae sp.	1	-	oa-p	*Proctotrupoidea sp.	2	-	u
Bembidion guttula or mannerheimi	1	-	oa	*Araneae sp.	2	-	u
Amara sp.	1	-	oa	*Melophagus ovinus (puparium)	1	-	u
Hydrobius fuscipes	1	-	oa-w	*Pulex irritans	1	-	ss
Ptenidium sp.	1	-	rt	*?Spalangia sp.	1	-	u
Acrotrichis sp.	1	-	rt	*Chalcidoidea sp.	1	-	u
?Aclypea opaca	1	-	ob-rt	*Hymenoptera sp.	1	-	u
Omalium ?rivulare	1	-	rt-sf				
Xylodromus concinnus	1	-	rt-st				
Platystethus nitens	1	-	oa-d	Context: 1031 Sample: 8/T1 ReM: R			
Anotylus complanatus	1	-	rt-sf	Weight: 2.00 E: 2.00 F: 2.50			
Anotylus nitidulus	1	-	rt				
Stenus sp.	1	-	u	Notes: Entered 7.4.2000. Flot 1 cm in jar. Recorded in			
Rugilus sp.	1	-	rt	flot, problems on filter paper. Rapid scan since part of			
Gyrophypnus angustatus	1	-	rt-st	flot had been lost by SB. Some remarkable			
Philonthus sp. A	1	-	u	preservation, e.g. of the body sclerites of bees.			
Philonthus sp. B	1	-	u	E1.0-3.5, mode 2.0 (W); F2.0-4.0, mode 2.5 (W).			
Philonthus sp. C	1	-	u				
Falagria sp.	1	-	rt-sf	Cercyon analis	12	-	rt-sf
Aleochara sp.	1	-	u	Platystethus arenarius	7	-	rf
Aleocharinae sp. A	1	-	u	Philonthus politus	6	-	rt-st
Trox scaber	1	-	rt-sf	Cercyon unipunctatus	4	-	rf-st
Geotrupes sp.	1	-	oa-rf	Anotylus complanatus	4	-	rt-sf
Aphodius granarius	1	-	ob-rf	Anotylus nitidulus	4	-	rt
Aphodius sp.	1	-	ob-rf	Lathridius minutus group	4	-	rd-st
?Scirtidae sp.	1	-	oa-d	Anotylus rugosus	3	-	rt
Ptilinus pectinicornis	1	-	l-sf	Philonthus sp. A	3	-	u
Ptinus ?fur	1	-	rd-sf	Aleocharinae sp. A	3	-	u
Meligethes sp.	1	-	oa-p	Anobium punctatum	3	-	l-sf
Rhizophagus sp.	1	-	u	Atomaria sp.	3	-	rd
Atomaria sp. A	1	-	rd	Omalium ?rivulare	2	-	rt-sf
Corticaria sp. A	1	-	rt-sf	Oxytelus sculptus	2	-	rt-st
Corticaria sp. B	1	-	rt-sf	Tachyporus sp.	2	-	u
Corticarina or Cortinicara sp.	1	-	rt	Delphacidae sp.	1	-	oa-p
Typhaea stercorea	1	-	rd-ss	Bembidion sp.	1	-	oa
Blaps sp.	1	-	rt-ss	Pterostichus sp.	1	-	ob
?Abdera quadrifasciata	1	-	u	Helophorus sp.	1	-	oa-w
Bruchus ?rufimanus	1	-	st	Cercyon haemorrhoidalis	1	-	rf-sf
Chaetocnema arida group	1	-	oa-p	Cryptopleurum minutum	1	-	rf-st
Psylliodes sp.	1	-	oa-p	Histerinae sp.	1	-	rt
Apion sp.	1	-	oa-p	Megarthus sp.	1	-	rt
Ceutorhynchus contractus	1	-	oa-p	Xylodromus concinnus	1	-	rt-st
Rhinoncus sp.	1	-	oa-p	Carpelimus ?bilineatus	1	-	rt-sf
				Stenus sp.	1	-	u
*Diptera sp. (puparium)	500	e	u	Leptacinus sp.	1	-	rt-st
*Diptera sp. (adult)	100	e	u	Gyrophypnus fracticornis	1	-	rt-st
*Coleoptera sp. (larva)	100	e	u	Neobisnius sp.	1	-	u
*Acarina sp.	100	e	u	Philonthus sp. B	1	-	u
*Aves sp. (feather)	100	e	u	Philonthus sp. C	1	-	u

Quedius sp.	1	-	u	of < 2mm fraction. E1.0-3.0, mode 1.5 (D); F1.0-4.5,
Cypha sp.	1	-	rt	mode 2 (D). Recorded in flot and on filter paper.
Falagria sp.	1	-	rt-sf	Some <i>Bruchus</i> elytra pale. <i>Apis</i> 'pollen basket'
Aleocharinae sp. B	1	-	u	decayed.
Aleocharinae sp. C	1	-	u	
Aleocharinae sp. D	1	-	u	Lathridius minutus group
Aphodius granarius	1	-	ob-rf	Atomaria sp. C
Aphodius sp. A	1	-	ob-rf	Bruchus rufimanus
Aphodius sp. B	1	-	ob-rf	Cercyon analis
Clambus sp.	1	-	rt-sf	Anotylus nitidulus
Ptinus sp.	1	-	rd-sf	Platystethus arenarius
Lyctus linearis	1	-	l-sf	Carpelimus bilineatus
Meligethes sp.	1	-	oa-p	Philonthus ?politus
Omosita discoidea	1	-	rt-sf	Atomaria sp. D
Cryptophagus scutellatus	1	-	rd-st	Anthicus formicarius
Cryptophagus sp. A	1	-	rd-sf	Anotylus rugosus
Cryptophagus sp. B	1	-	rd-sf	Clambus pubescens
Enicmus sp.	1	-	rt-sf	Atomaria sp. B
Corticaria sp.	1	-	rt-sf	Helophorus sp.
Aglenus brunneus	1	-	rt-ss	Cercyon atricapillus
Tenebrio obscurus	1	-	rt-ss	Cercyon haemorrhoidalis
Anthicus floralis or formicarius	1	-	rt-st	Cercyon unipunctatus
Cerambycidae sp.	1	-	l	Ochthebius minimus
Phyllotreta nemorum group	1	-	oa-p	Acrotichis sp.
Chaetocnema concinna	1	-	oa-p	Anotylus complanatus
Sitona sp.	1	-	oa-p	Oxytelus sculptus
Hypera punctata	1	-	oa-p	Stenus sp. A
Ceutorhynchus contractus	1	-	oa-p	Leptacinus ?pusillus
Ceuthorhynchinae sp.	1	-	oa-p	Neobisnius sp.
Curculionidae sp.	1	-	oa	Falagria or Cordalia sp.
				Aleocharinae sp. B
*Diptera sp. (puparium)	100	e	u	Aleocharinae sp. E
*Acarina sp.	50	e	u	Aleocharinae sp. F
*Diptera sp. (adult)	15	m	u	Anobium punctatum
*Coleoptera sp. (larva)	15	m	u	Monotoma sp.
*?Spalangia sp.	6	s	u	Cryptophagus scutellatus
*Proctotrupoidea sp.	6	s	u	Cryptophagus sp. A
*Aves sp. (feather)	6	s	u	Cryptophagus sp. B
*Apis mellifera	5	-	u	Enicmus sp.
*Oligochaeta sp. (egg capsule)	3	-	u	Aglenus brunneus
*Hymenoptera sp.	3	-	u	Heterogaster urticae
*Diptera sp. (larva)	2	-	u	Empicoris ?culiciformis
*Melophagus ovinus (adult)	2	-	u	Lyctocoris campestris
*Syrphidae sp. (larva)	2	-	u	Xylocoris sp.
*Pediculus humanus	1	-	ss	Corixidae sp.
*Pediculus humanus (nymph)	1	-	ss	Bembidion biguttatum
*Auchenorhyncha sp. (nymph)	1	-	oa-p	Bembidion ?guttula
*Aphidoidea sp. (parasitised mummy)	1	-	u	Pterostichus ?melanarius
				Pterostichus (Poecilus) sp.
				Carabidae sp.
				Agabus bipustulatus
				Cercyon terminatus
				Cryptopleurum minutum
				Hydrobius fuscipes
				?Acritis nigricornis
				Histerinae sp.

Context: 1043 Sample: 4/T1 ReM: S
Weight: 2.00 E: 1.50 F: 2.00

Notes: Entered 6.4.2000. >120 ml of flot, with bran, moss, wood and other coarse plant detritus, and abundant insect immatures. Superb preservation. Paraffin left in. Re-sieved to 2 mm, giving about 70 ml

Phyllodrepa ?floralis	1	-	rt-sf	*Acarina sp.	100	e	u
Dropephylla sp.	1	-	u	*Cladocera sp. S (ephippium)	50	e	oa-w
Acrolocha sulcula	1	-	rt	*Diptera sp. (puparium)	50	e	u
Omalium sp.	1	-	rt	*Bryophyta sp.	15	m	u
Xylodromus sp.	1	-	rt-st	*Cladocera sp. F (ephippium)	15	m	oa-w
Carpelimus fuliginosus	1	-	st	*Diptera sp. (adult)	15	m	u
Carpelimus ?rivularis	1	-	ob-d	*Diptera sp. (pup a)	15	m	u
Carpelimus sp.	1	-	u	*Syrphidae sp. (larva)	15	m	u
Platystethus degener	1	-	oa-d	*Coleoptera sp. (larva)	15	m	u
Platystethus nitens	1	-	oa-d	*Proctotrupoidea sp.	15	m	u
Stenus sp. B	1	-	u	*Aves sp. (feather)	15	m	u
Lithocharis ochracea	1	-	rt-st	*Agrostemma githago (seed)	6	s	u
Leptacinus ?intermedius	1	-	rt-st	*Coccoidea sp.	6	s	u
Phacophallus parumpunctatus	1	-	rt-st	*Reticulate tubes	6	s	u
Gyrohypnus angustatus	1	-	rt-st	*Aranae sp.	3	-	u
Philonthus discoideus	1	-	rt-st	*Damalinia ovis	2	-	u
Philon thus sp. A	1	-	u	*Pediculus humanus	2	-	ss
Philon thus sp. B	1	-	u	*?Spalangia sp.	2	-	u
Philon thus sp. C	1	-	u	*Isopoda sp.	1	-	u
Staphylininae sp.	1	-	u	*Oligochaeta sp. (egg capsule)	1	-	u
Tachyporus sp.	1	-	u	*Cladocera sp. L (ephippium)	1	-	oa-w
Aleochara sp.	1	-	u	*Forficula sp.	1	-	u
Aleocharinae sp. A	1	-	u	*Heteroptera sp. (nymph)	1	-	u
Aleocharinae sp. C	1	-	u	*Melophagus ovinus (adult)	1	-	u
Aleocharinae sp. D	1	-	u	*Melophagus ovinus (puparium)	1	-	u
Trox scaber	1	-	rt-sf	*Pulex irritans	1	-	ss
Aphodius ?depressus	1	-	rf	*?Apis mellifera	1	-	u
Aphodius sp. A	1	-	ob-rf	*Chalcidoidea sp.	1	-	u
Aphodius sp. B	1	-	ob-rf	*Hymenoptera sp.	1	-	u
?Cyphon sp.	1	-	oa-d				
Ptinus fur	1	-	rd-sf				
Lyctus linearis	1	-	l-sf				
Malachius sp.	1	-	u				
Meligethes sp.	1	-	oa-p				
Omosita colon	1	-	rt-sf				
Monotoma longicollis	1	-	rt-st				
Atomaria sp. A	1	-	rd				
Ephistemus globulus	1	-	rd-sf				
Orthoperus sp.	1	-	rt				
Stephostethus angusticollis	1	-	rt-st				
Dienerella sp.	1	-	rd-sf				
Corticaria sp. A	1	-	rt-sf				
Corticaria sp. B	1	-	rt-sf				
Tenebrio ?obscurus	1	-	rt-ss				
?Phymatodes alni	1	-	l				
Phylloreta nemorum group	1	-	oa-p				
Chaetocnema concinna	1	-	oa-p				
Halticinae sp.	1	-	oa-p				
Ceutorhynchus contractus	1	-	oa-p				

Table 8. Assemblages of adult Coleoptera and Hemiptera (excluding Aphidoidea and Coccidoidea) from 4-7 Parliament Street, York: Numbers of taxa (s) and individuals (n) placed in core Groups A-E of Carrott and Kenward (2000), by sample and for whole site.

Core Group	Whole site		1005		1024		1031		1043	
	n	%	n	%	n	%	n	%	n	%
A	126	26	23	30	35	30	20	19	48	27
B	47	10	12	16	6	5	7	6	22	12
C	47	10	12	16	6	5	12	11	17	10
D	21	4	3	4	11	9	4	4	3	2
E	20	4	3	4	4	3	2	2	11	6
N	480		77		118		108		177	

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 2 for codes assigned to taxa from 4-7 Parliament Street, 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. Ratios of *Trichuris* and *Ascaris* eggs from subsamples from Anglo-Scandinavian deposits at 16-22 Coppergate, York (where both taxa were present with more than five eggs) and 4-7 Parliament Street.

Key to feature types: EL—external layer; GF—gully fill; PF—pit fill; WF—well fill.

Context	No. <i>Trichuris</i>	No. <i>Ascaris</i>	Phase	Feature type	Ratio <i>Trichuris</i> : <i>Ascaris</i>
16-22 Coppergate					
27203	9	17	4B	EL	0.5
15456	6	10	5B	PF	0.6
27203	8	12	4B	EL	0.7
6570	10	10	5CR	PF	1.0
27813	12	12	3	PF	1.0
16763	7	6	5CR	EL	1.2
15456	13	10	5B	PF	1.3
19622	19	14	5B	GF	1.4
31161	46	33	4A	PF	1.4
18529	14	9	4B	PF	1.6
21141	57	30	5CR	PF	1.9
21141	25	12	5CR	PF	2.1
31161	56	24	4A	PF	2.3
26012	34	14	4B	PF	2.4
18529	18	7	4B	PF	2.6
19626	18	6	4B	GF	3.0
6903	37	12	5CR	PF	3.1
34397	139	45	4B	PF	3.1
15700	93	29	5B	EL	3.2
6926	34	9	5CR	PF	3.8
28403	31	8	3	PF	3.9
19626	30	7	4B	GF	4.3
15700	102	22	5B	EL	4.6
19622	52	9	5B	GF	5.8
22376	41	7	5A	PF	5.9
15466	92	15	5B	PF	6.1
6909	86	11	5CR	PF	7.8
26957	85	10	4B	PF	8.5
31695	157	10	3	PF	15.7
27194	117	7	3	WF	16.7
27873	119	6	3	PF	19.8
4-7 Parliament Street					
1005	15	5			3.0
1024	11	9			1.2
1031	7	2			3.5
1043	14	6			2.3