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ENVIRONMENTAL EVIDENCE FROM INSECT REMAINS AND PARASITE EGGS FROM THE LEWTHWAITES LANE A SITE, THE LANES, CARLISLE

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Summary

Subsamples from nineteen contexts, eighteen of Roman date and one medieval, have been examined for insect remains and eggs of intestinal parasitic nematodes. No phase was represented by more than three samples and the contexts were of diverse archaeological nature. Two thirds of the samples from Roman deposits gave rather few remains, of generally fairly mixed nature but often with a substantial component of taxa from natural or semi-natural habitats. Some Roman groups were much larger. They were of two kinds: those rich in decomposers indicative of mouldering matter, probably mostly stable manure, and those rich in moorland/heathland insects, presumably representing imported turf. Two samples contained several or many wireworm (Elateridae) larvae, probably of a species believed to be able to exploit peat. The single medieval deposit included few insects, and worm eggs were rare in all the subsamples examined.

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Environmental evidence from insect remains and parasite eggs from the Lewthwaites lane A site, The Lanes, Carlisle: technical report

by H.K.Kenward, M.Dainton*, I.K.Kemenés** and J.B.Carrott

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Introduction

This report is an outline of evidence from the studies of insect (and other arthropod) remains and parasite eggs from the Lewthwaites Lane A site, Carlisle (site code CAR 82 LELA, abbreviated to LELA in EAU records). The work constitutes part of the Lanes Project (1), carried out by the Carlisle Archaeological Unit under the direction of M.McCarthy.

Methods

All the samples were collected by the excavators. Whilst none of the authors saw the site during excavation, HKK visited the Lanes area at a late stage of the excavation program. Thus the sampling strategy was one of on site selection rather than intensive sampling with post-excavation selection (the approach now favoured by the EAU). Samples were chosen by CAU for biological analysis and subsamples of approximately 1 kg were provided for insect and parasite egg analysis.

All of the submitted subsamples were first examined in the laboratory and their sedimentary nature and inclusions recorded on a standard pro-forma. A small amount of sediment was then retained from each for analysis for eggs of intestinal parasites, before the remainder was processed for insect remains.

Insect analysis

'Test' subsamples of 1 kg were processed using the methods described by Kenward *et al.* (1980), in a modified form (Kenward *et al.*, 1986). Initially the flot was to be described in one of two ways; *scan recording* (now the standard method of the EAU) or *assessment recording* (methods described by Kenward 1992 and briefly by Kenward *et al.* 1992). In fact, all the flots were regarded as deserving scan recording, or contained so few remains that it was possible to record them in a few minutes.

The species lists were entered in shorthand form to a PASCAL system written by HKK, which outputs ordered species lists and a number of 'main statistics' for each subsample assemblage, most of them based on ecological codes assigned to the recorded species. The details of interpretation - in other words, the

extraction of archaeological information - have changed over the years, but the basic approach is outlined by Kenward (1978), while more up to date accounts are given by Kenward (1988) and Hall and Kenward (1990) and a brief account relating to the Lanes Project is given in Kenward *et al.* (1992). These methods are applied to most assemblages of adult beetles together with most bugs, whilst important additional information comes from some other groups of insects: fly puparia, insofar as they can yet be identified; fleas, lice and keds; beetle larvae, again to the extent that identification is feasible within most projects; bug nymphs and scale insects, and occasionally other material such as honey bees. Among the non-insect arthropods, mites have much potential (Schelvis 1992), but cannot, as yet, be identified as a matter of routine, while certain water flea resting eggs and earthworm egg capsules are useful indicators.

The residues from paraffin floatation were examined quickly. Their general nature was recorded and some were checked closely to monitor the efficiency of the insect extraction.

Eggs of intestinal parasites

Analysis for the eggs of nematode gut parasites of vertebrates was carried out using a semi-quantitative survey of all available samples, using 'squashes' of raw sediment. This method has been used in the study of parasite eggs from the Old Grapes Lane A site (Kenward *et al.*, 1992), along with a more elaborate method recommended by the Ministry of Agriculture, Fisheries and Food (1977); it was found that at the depth of investigation feasible within this project the simpler method gave satisfactory results. For this a small amount of sediment was collected from three separate points within the sampled material and homogenised in a little water. A drop of the resulting liquid was then placed on a 76x26 mm microscope slide and covered with a 22x50 mm cover slip. The whole mount was then rapidly scanned under a transmission microscope at x60 and the abundance of eggs recorded semi-quantitatively using a five point scale; one, trace (2-5), few (6-10), some (11-20), many (more than about 20).

The samples and the results of the analysis.

The analyses carried out on each sample, and the remains recovered, are described below, together with a laboratory description of the sediment.

Phase 2A [Immediately overlying natural subsoil. Late 1st century]

Context 647 [Small patch of burning]

Sample 20

Laboratory description - Black, moist, crumbly and brittle,

feeling sandy to the touch, probably as a result of the presence of fine charcoal. The only inclusions were a few lumps of greyish-yellow sandy clay (possibly burnt turf).

Parasite eggs - None found.

Insects - The processed subsample gave a very small flot, the only organic matter being what appeared to be very rotted plant fragments.

Phase 3 [Slight structural remains cut through phase 2C. Late 1st century].

Context 637 [Small area of clay with a burnt rim, may be a hearth]

Sample 19

Laboratory description - Mid-dark brown, moist, crumbly and brittle, then plastic when worked, humic silty clay, with greyish and orange casts locally. Small stones (6-20 mm) and nodules of red clay were present.

Parasite eggs - None found.

Insects - A small assemblage of beetles (and a single bug) was recovered (N = 31, S = 19), together with a few other arthropods. Among the latter, only mites ('several') were at all abundant. Over a third of the assemblage upon which statistics are based was contributed by 'outdoor' forms. Other statistics were distorted by the presence of 10 individuals (a third of the assemblage) of *Anotylus nitidulus*, a species difficult to code ecologically. The assemblage appeared to include remains of insects of various origins; some might have been brought, for example, in clay from a damp place, but all might have had more random origins.

Phase 5 [Late 1st century]

Context 599 [Gulley fill]]

Sample 17

Laboratory description - Mid-dark pinkish orange-brown, moist, crumbly to plastic, slightly sandy silty clay. A fragment of glass was the only obvious inclusion.

Parasite eggs - None found.

Insects - There were 'many' dipteran pupae and mites and 'several' adult flies and beetle larvae, a few other insects, and 30 individuals of 28 beetle and bug taxa. Nearly a third of the latter assemblage was contributed by forms coded 'oa' or

'ob', and aquatics were sufficiently numerous to suggest that they were attracted to the point of deposition (or at least carried there in or by water). Little more can usefully be said of this group.

Phase 6A [Late 1st century]

Context 607 [Part of area enclosed by stakes (possible fence)]

Sample 18

Laboratory description - Heterogeneous, with two main components - a light-mid pinkish-brown, brittle, plastic when worked, slightly sandy silty clay and a lesser component of mid-dark, grey-brown, humic, slightly sandy silty clay. Small fragments of bone (<20 mm) were the only obvious inclusions.

Parasite eggs - None found.

Insects - there were few insects, but 'several' mites were recorded. Beetles and bugs totalled 22 individuals of 20 taxa. Over a third of the individuals were 'outdoor' forms. This was almost certainly background fauna and it would be unwise to attempt further interpretation.

Phase 6A-E [Late 1st century]

Context 578 [Wood fragments]

Sample 16

Laboratory description - Mid-dark grey-brown, moist, crumbly then plastic when worked, humic slightly sandy silty clay. Medium stones (20-60 mm), wood fragments and clay traces were present.

Parasite eggs - None found.

Insects - Only 19 individuals of 17 beetle taxa, and a few other arthropods, were found. The OB component accounted for over half of the assemblage, and over a quarter of the fauna fell in the RF group. Accumulation in the open air seems certain; while there were three *Aphodius* species (5 individuals), suggesting the presence of herbivore dung not far away, the whole assemblage may have had a background origin.

Phase 6C [Late 1st century]

Context 570 [Part of possible construction deposit]

Sample 15

Laboratory description - Dark brown moist, crumbly, amorphous

organic material, most of which appeared to be crisp and rotten wood on a cm to 10 cm scale. There were no obvious inclusions.

Parasite eggs - None found.

Insects - Only a very small group of insects was recovered; of no interpretative value, they resembled a random extract of a typical larger assemblage from the present site.

Phase 6D [Late 1st century]

Context 564 ['Deposit']

Sample 12

Laboratory description - Mid grey-brown, dry to moist, brittle, layered, sandy, compressed amorphous organic and herbaceous detritus (>2mm). Wood fragments were the only obvious inclusions.

Parasite eggs - Trace *Trichuris*.

Insects - Insects were rare, although large numbers of mites were recorded. Only a few beetles were present (N = 12, S = 11), but these included some unusual elements: an unfamiliar ?*Cryptophagus* sp.; a cossonine weevil and a *Scolytus* species. There were also two (presumed) beetle larval abdominal apices of a kind not previously recorded by HK.

Phase 7A [Late 1st/early 2nd century]

Context 550 [Substantial deposit blanketing all earlier features]

Sample 13

Laboratory description - Mid brown, dry to moist, crumbly, humic sandy silt. Small and very small stones (2-20mm) were present.

Parasite eggs - None found.

Insects - A modest group of insects, including 68 individuals of 57 beetle and bug taxa, 'many' fly puparia, 'several' beetle larvae and Hymenoptera Parasitica, and assorted other remains, was recorded. There were also 'many' earthworm egg capsules.

Only *Megasternum obscurum* was represented by more than two individuals. The assemblage had no clear character. It had perhaps accumulated in 'soil', in situ or transported from a surface on which background fauna had accumulated, and - conceivably - on which stock had been kept.

Context 553 ['Deposit']

Sample 14

Laboratory description - Mid brown (rubs rich brown), moist, plastic, crumbly and just sticky when worked, slightly sandy silty clay. Contained abundant small stones (6-20mm), and medium stones (20-60 mm) were also recorded.

Parasite eggs - One *Trichuris*.

Insects - The small flot contained no recognisable arthropod remains.

Phase 7B [Late 1st/early 2nd century]

Context 539 ['Deposit']

Sample 8

Laboratory description - Mid-dark brown, moist, crumbly, working to plastic, amorphous organic material, with paler yellow patches. There were no obvious inclusions present.

Parasite eggs - None found.

Insects - Arthropod remains were abundant, and included 'many' fly pupae and puparia (at least 50 of the latter, it was estimated), and mites, 'several' fly larvae and earthworm egg capsules, and two lice (*Pediculus humanus* and *?Damalinia* sp.). Beetles and bugs were numerous (N = 142, S = 72). Diversity was moderate (α = 58, SE = 8), the outdoor component modest (%N OB = 14), and decomposers rather well represented (%N RT = 60). The upper ranks of the species list were dominated by decomposers (and *Oryzaephilus surinamensis*), perhaps representing a community of mouldering, foul but open textured, plant remains. There were a few heath/moor taxa. This *may* have been a deposit of material similar in texture and foulness to stable manure and, subjectively, it probably *was* stable manure, with some hay and peat. A specimen of *Aphodius porcus* and an unfamiliar *Ptinus* species were recorded.

Context 538 [Spread of turf]

Sample 9

Laboratory description - Mid-dark brown, moist, plastic, crumbly, amorphous organic material. Medium stones (20-60 mm) and ?wood fragments were present.

Parasite eggs - None found.

Insects - The processed subsample gave a large flot, mostly consisting of yellowish plant debris but with abundant insects.

There were 'many' fly pupae and puparia, and a substantial group of beetles and bugs. (%N = 138, S = 77). Mites were also numerous.

Diversity of the assemblage of adult Coleoptera and Hemiptera was high (α = 72, SE = 11), and the outdoor component large (%N OB = 30) Decomposers were moderately well represented (for material from the Lanes: %N RT = 53). The more abundant taxa included grain pests, a rather mixed group of decomposers and *Longitarsus* sp. (a phytophage). This sort of mixture could be seen throughout the lower ranks, too.

The variety of phytophages may reflect deposition in an area with herbaceous vegetation, but together with the grain pests and decomposers these insects are more likely to indicate the remains of animal feed and bedding. There was no clear indication of 'turf', although some elements represented by one or two individuals could well have been imported in such.

Phase 7C [Late 1st century]

Context 546 ['Deposit']

Sample 11

Laboratory description - Mid-dark brown, moist, brittle, platy, compressed herbaceous detritus. There were no obvious inclusions present.

Parasite eggs - One *Ascaris* was recorded.

Insects - A quite large group of Hemiptera and Coleoptera (N = 112, S = 45) was accompanied by various other insects including 'several' fly puparia and small Hymenoptera. The flot was very large and consisted mostly of filmy fibrous decayed plant debris.

Diversity of the beetle assemblage was quite low (α = 28, SE = 4), greatly reduced by the presence of 40 individuals (counted) of a *Corticaria* species. Other taxa seem likely to have bred in the material contributing to this deposit: *Typhaea stercorea* (7) and *Cryptophagus* sp. (6) and various of the less abundant species. These, and some dung beetles (*Aphodius prodromus* (4) and *A. contaminatus* (1)), contributed to the substantial decomposer component (%N RT = 61), which was of low diversity (α RT = 6, SE = 1).

Plant-associated taxa contributed over a quarter of the fauna, and nearly a third of the taxa. At rank 2 was a *Longitarsus* species (9 individuals), but other phytophages were dispersed throughout the ranks; it is quite possible that these species represent insects introduced in cut vegetation which was subsequently colonised by the decomposers. It seems very likely that this was 'stable manure', especially in view of its distinctive lithology. It is notable, however, that the rich community of insects able to exploit highly nitrogenous organic

waste seen at some other sites (e.g. Tanner Row, York) was not developed, although components of it were present.

Phase 8C [Probably early 2nd century]

Context 530 [Pit fill]

Sample 7

Laboratory description - Mid-dark brown, moist, plastic, crumbly, brittle, slightly sandy silty amorphous organic material, herbaceous detritus and woody detritus. Very small stones (2-6 mm) were the only obvious inclusions.

Parasite eggs - One *Trichuris* was noted.

Insects - The minute flot contained only two earthworm egg capsules. This was surprising in view of the richly organic nature of the deposit.

Phase 8E [Probably early 2nd century]

Context 502A ['Deposit']

Sample 2

Laboratory description - Mid-dark brown, moist, crumbly, plastic when worked, sandy clay silt, with patches of silty sand on a cm scale and at least one small lump of peat. Twig fragments were the only other inclusions observed.

Parasite eggs - None found.

Insects - there were 'many' fly puparia and remains of a few other invertebrates, together with 24 individuals of 19 beetle taxa. Almost half the individuals were 'outdoor' forms and only two coded decomposers were present. Although no species were numerous, it appears most likely that this fauna was derived from turf cut in a moist area; there were six individuals of four *Helophorus* species, perhaps even suggesting aquatic deposition.

Context 502B ['Deposit']

Sample 4

Laboratory description - Near black, moist, brittle, amorphous organic material, apparently peat. There were no obvious inclusions.

Parasite eggs - None found.

Insects - Arthropods were numerous and included 'many' Hymenoptera Parasitica, of the order of 100 mites and'several'

Aphidoidea and fly puparia. Beetle larvae were very abundant, and included 'many' Elateridae sp., apparently *Denticollis linearis* (see discussion by Kenward *et al.* 1992).

There were 161 individuals of 81 bug and beetle taxa, half of the former and over half of the latter being 'outdoor' forms. The (relatively) low value of the index of diversity for this outdoor component (α OB = 43, SE = 9) suggested the presence of a true community, and inspection of the species list indicated that this was so. The higher ranks were dominated by species likely to have occurred in related habitats in an area of the heathland or (perhaps less probably) moorland (%N M = 9). Particularly characteristic were the attractive bug *Macrodema micropterum* (5), the ground beetle *Bradycellus ruficollis* (5), the weevil *Micrelus ericae* (also 5) and *Olisthopus rotundatus* (2), but much of the remaining fauna might be found alive with these. Undoubtedly this material was predominantly surface heath/moor peaty soil (or less probably, deeper peat). The abundant elaterid larvae were presumably imported with this turf, and if they were indeed *Denticollis linearis*, then they appear to be consistent with the reconstruction based on the rest of the fauna (see Kenward *et al. loc. cit.*)

Coded decomposers were very rare (%N RT = 16, one of the lowest values ever recorded for a substantial assemblage, although some of the uncoded taxa were probably decomposers), and it appears that only a few individuals of the species typical of human settlements were able to enter the deposit.

The record of the lygaeid bug *Pachybrachius fracticollis* is notable.

This stands as a very characteristic assemblage, and may be usefully compared with that from sample 3, context 501.

Context 500 ['Deposit']

Sample 5

Laboratory description - Mid-dark brown, moist, brittle and layered, amorphous organic and herbaceous detritus. There were no obvious inclusions.

Parasite eggs - None found.

Insects - A quite large group of beetles and bugs was recorded (N = 131, S = 68), together with assorted other invertebrates including 'many' mites and fly puparia and 'several' Proctotrupoidea and unidentified Hymenoptera Parasitica. About a quarter of the fauna was accounted for by 'outdoor' forms. Grain pests were numerous (%N G = 31, occupying the first two ranks with a total of 38 individuals) and if these were removed the proportion of outdoor insects rose to 36%; the residual assemblage was of high diversity (α = 98, SE = 22) and probably of mixed origin. The decomposers, too, appeared to have had

varied origins. Aquatics were perhaps sufficiently well represented to suggest deposition in water.

Phase 8E-F [Probably early 2nd century]

Context 501 ['Deposit']

Sample 3

Laboratory description - Near black, moist, brittle, amorphous organic material, with 'glistening' mineral particles. There were no obvious inclusions.

Parasite eggs - None found.

Insects - Invertebrate remains were abundant and, in addition to 140 individuals of 65 beetle and bug taxa, included 'many' Proctotrupoidea, similar numbers of other Parasitica and indeterminate Hymenoptera, 'many' beetle larvae, about 50 mites, and 'several' ants, Lepidoptera pupae and fly puparia. There were also thirteen elaterid larvae of assorted sizes, identical to those from other Lanes samples and probably *Denticollis linearis*.

The beetle and bug assemblage was unusual in being of moderate diversity in combination with a very large proportion of outdoor insects (%N OB = 61) and a very low proportion of coded decomposers (%N RT = 8). These exceptional statistics resulted from the presence of what was undoubtedly a community from heathland/moorland (%N M = 14, but many other species probably or certainly belonged to such communities). Notable taxa were *Bradycellus ruficollis* (10), *Micrelus ericae* (5), *Ulopa reticulata* (3), *Macrodema micropterum* (2) and *Olisthopus rotundatatus* (also 2), but *Lathrobium* sp. (13), *Dyschirius globosus* (11), *Lesteva heeri* (6), *Euaesthetus bipunctatus* (6), *Altica* sp. (4), *Pterostichus diligens* (3) and various other taxa would have been part of the same community. Hardly any taxa which could *not* have been associated with these were present; examples were single individuals of two grain pests and a few decomposers, all of which may have strayed into the deposit.

This material was surely pure peat or heathland/moorland turf, the main plant species indicated being *Calluna vulgaris*. See also sample 4, context 502B.

Phase 11 [Later 2nd century]

Context 365.2 [Pit fill]

Sample 6

Laboratory description - Dark, grey-brown, oxidising to mid-dark brown externally, moist, brittle to crumbly, silty, amorphous organic and herbaceous detritus. Paler light brown patches were present.

Parasite eggs - Trace amounts of *Ascaris*.

Insects - Insects were very abundant: there were 304 individuals of 77 beetle and bug taxa of the groups used in the preparation of statistics, as well as 'many' Chalcidoidea, other Parasitica and fly pupae, of the order of 50 fly puparia and mites, and 'several' beetle larvae and earthworm egg capsules.

Diversity was rather low (α = 33, SE = 3); other statistics were somewhat unexceptional apart from the high value of %N RD (26) and low α RT (11, SE = 2). Grain beetles accounted for 38% of the individuals. The residual assemblage after their subtraction included 42% of RD individuals.

The most abundant species were the grain beetles *Oryzaephilus surinamensis* (56) and *Cryptolestes ferrugineus* (46) (there were also six each of *Palorus ratzeburgi* and *Sitophilus granarius*). The RD component included 36 *Cryptophagus* sp., 26 *Lathridus minutus* group, seven *Typhaea stercorea* and six *Atomaria* sp. Lower ranks included, in the main, taxa likely to co-exist with these abundant ones, but the small outdoor component included some species which were probably imported with material from heathland/moorland and others conceivably introduced in hay-like cut vegetation. This may have been organic debris from within a building, but there was nothing to suggest directly that it was animal litter.

Phase 21B [Medieval, probably 12th-13th century]

Context 15.4 [Pit fill]

Sample 1

Laboratory description - Strong mid brown, moist, plastic, crumbly, amorphous organic material, locally pale brown. There were no obvious inclusions present.

Parasite eggs - None found.

Insects - A small group of insects was recorded (N = 34, S = 30). There were 'many' fly puparia and 'several' mites. Main statistics for such a small group are of course unreliable as measures of the 'population' represented by it, but the outdoor component was strikingly small (only three individuals). The material may have been waste from within a building, but may merely have been rapidly deposited in the pit and sealed immediately.

Discussion

Perhaps the most notable feature of this group of assemblages lay in the material from samples 4 (context 502B) and 3 (context 501). In both cases a very large part of the fauna appears to have originated in heathland or moorland peaty soil, and

importation of cut turf from such a place seems very probable. The insects suggest that the turf was cut from heathy, *Calluna*-rich soil rather than wet bog. Both samples included substantial numbers of larvae of an elaterid ('click') beetle; they were most probably *Denticollis linearis*, discussed by Kenward *et al.* (1992) in the account of material from the Old Grapes Lane A site. The Elateridae larvae from OGLA appear after further investigation to probably be *D. linearis* also.

The purpose of this turf is unclear.

There is from LELA evidence strongly suggesting the presence of 'stable manure' or other animal bedding, as from OGLA and some other sites. The present site gave little indication of human dwellings - lice and fleas were rare. One context, 365.2 (sample 6) gave an assemblage of beetles rich in grain pests and something rather like 'house fauna' (Hall and Kenward 1990, p. 00), but not wholly characteristically so. Although there was no clear evidence this, too, may have been associated with the keeping of domestic animals rather than human habitation.

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Table 1. Summary of main statistics for the scan-recorded assemblages from LELA. The material is treated as a single unit. N, S - means of sample values; PNOB etc. - percentages of main ecological categories (see Hall and Kenward 1990) calculated for the sum of records from all samples (rather than mean of sample values); alpha, alpha OB, alpha RT - based on mean of sample values where the standard error is less than the value of alpha, the number of cases meeting this criterion being stated.

Statistic	All samples (6 cases)
N (= concentration by MNI)	36.5
number of taxa (S)	22.8
alpha	- (2 cases)
PNOB	32.4
PNW	2.7
PND	1.4
PNP	17.8
PNM	0.0
PNL	0.5
PNG	6.4
PNRT	51.1
PNRD	11.9
PNRF	8.7
alpha RT	- (2 cases)

Table 2. Complete list of invertebrate taxa recorded from LELA. Conventions: 'sp(?).' - indicates probable additional taxon; 'sp(?). indet.' - indicates may be (or include) previously listed taxa. Order and nomenclature for Insecta follows Kloet and Hincks (1964-77).

Annelida

Oligochaeta sp. (egg capsule)

Insecta

Hemiptera

Stygnocoris pedestris
Heteroptera sp.
Auchenorhyncha spp.
Aphidoidea sp.

Diptera

Diptera spp. (adult)
Diptera spp. (larva)
Diptera spp. (pupa)
Diptera sp. (puparium)

Coleoptera

Clivina ?fossor
Bembidion lampros or *properans*
Bembidion (*Philochthus*) sp.
Pterostichus sp.
Amara sp.
Carabidae spp.
Helophorus spp.
Cercyon analis
Cercyon atricapillus
Cercyon haemorrhoidalis
Cercyon sp. indet.
Megasternum obscurum
Onthophilus striatus
Histerinae sp.
Ochthebius sp.
Acrotrichis sp.
Olophrum sp.
Omalium sp.
Xylodromus ?concinnus
Carpelimus bilineatus
Carpelimus sp.
Platystethus arenarius
Anotylus nitidulus
Anotylus rugosus
Anotylus tetracarinatus
Stenus spp.
Lathrobium sp.

Othius sp.
Gyrohypnus angustatus
Xantholinus gallicus or *linearis*
Xantholinus sp. indet.
?Philonthus sp.
Staphylininae sp.
Tachyporus ?hypnorum
Tachyporus spp.
Tachinus laticollis or *marginellus*
Tachinus ?signatus
Cordalia obscura
Aleochara sp.
Aleocharinae spp.
Aphodius contaminatus
Aphodius prodromus
Aphodius spp.
Phyllopertha horticola
Elateridae sp.
Elateridae sp. (larva)
Ptinus ?fur
Ptinus sp. (?not *fur*)
Brachypterus sp.
Meligethes sp.
Monotoma sp.
Cryptolestes ferrugineus
Oryzaephilus surinamensis
Cryptophagus sp.
Atomaria sp.
Ephistemus globulus
Lathridius minutus group
Enicmus sp.
Corticaria sp.
Typhaea stercorea
Palorus ratzeburgi
Gastrophysa viridula
Chrysomelinae sp.
Phyllotreta nemorum group
Longitarsus sp.
Chaetocnema arida group
Apion spp.
Sitona regensteinensis
Sitona sp.
Hypera sp.
Cossoninae sp.
Sitophilus granarius
Dorytomus sp.
Ceutorhynchus sp.
Rhinoncus pericarpius
Limnobaris pilistriata
Curculionidae sp.
Scolytus sp.
Coleoptera sp.
Coleoptera sp. (larva)

Hymenoptera

Chalcidoidea sp.
Hymenoptera Parasitica sp.
Formicidae sp.
Hymenoptera sp.

Insecta sp. (larva)

Arachnida

Pseudoscorpiones sp.
Aranae sp.
Acarina sp.

Appendix: Main statistics and lists in rank order for the scan-recorded assemblages of adult beetles and bugs from the Lewthwaites Lane A site, Carlisle.

The material is listed in sample number order. Main statistics are given in full for assemblages with ten or more adult Coleoptera and Hemiptera of the groups used in preparing statistics. Number - minimum number of individuals; % - percentage for that taxon in the assemblage; Rank - rank position in the assemblage; Ecodes - ecological codes assigned to the taxon for the purposes of computing assemblage statistics. Erosion and fragmentation are on five point scales, with 1 = very well preserved through to 5 = very poorly preserved.

If a sample is recorded as having 'no records of beetles and bugs' this may be because none were present or because the material was assessment-recorded. See text for further information.

Site: LELA Context: 15.4 Sample: 1/T - beetle/bug main statistics

Erosion = 4 Fragmentation = 3; Weight = 1.000kg

Number of individuals estimated as	N =	34
Number of taxa	S =	30
Index of diversity (alpha)	alpha =	119
Standard error of alpha	SE alpha =	61
Number of 'certain' outdoor taxa	SOA =	2
Percentage of 'certain' outdoor taxa	%SOA =	7
Number of 'certain' outdoor individuals	NOA =	2
Percentage of 'certain' outdoor individuals	%NOA =	6
Number of 'certain' and probable outdoor taxa	SOB =	3
Percentage of 'certain' and probable outdoor taxa	%SOB =	10
Number of 'certain' and probable outdoor individuals	NOB =	3
Percentage 'certain' and probable outdoor individuals	%NOB =	9
Diversity index for OB not calculated, NOB = SOB or NOB < 20		
Number of aquatic taxa	SW =	0
Percentage of aquatic taxa	%SW =	0
Number of aquatic individuals	NW =	0
Percentage of aquatic individuals	%NW =	0
Number of damp ground/waterside taxa	SD =	1
Percentage of damp ground/waterside taxa	%SD =	3
Number of damp ground/waterside individuals	ND =	1
Percentage of damp ground/waterside individuals	%ND =	3
Number of strongly plant-associated taxa	SP =	1
Percentage of strongly plant-associated taxa	%SP =	3
Number of strongly plant-associated individuals	NP =	1
Percentage of strongly plant-associated individuals	%NP =	3
Number of heathland/moorland taxa	SM =	0
Number of heathland/moorland individuals	NM =	0
Percentage of heathland/moorland individuals	%NM =	0
Number of wood-associated taxa	SL =	1
Number of wood-associated individuals	NL =	1
Percentage of wood-associated individuals	%NL =	3
Number of decomposer taxa	SRT =	16
Percentage of decomposer taxa	%SRT =	53
Number of decomposer individuals	NRT =	19
Percentage of decomposer individuals	%NRT =	56
Number of 'dry' decomposer taxa	SRD =	4
Percentage of 'dry'decomposer taxa	%SRD =	13
Number of 'dry' decomposer individuals	NRD =	6
Percentage of 'dry'decomposer individuals	%NRD =	18
Number of 'foul' decomposer taxa	SRF =	1
Percentage of 'foul' decomposer taxa	%SRF =	3
Number of 'foul' decomposer individuals	NRF =	1
Percentage of 'foul' decomposer individuals	%NRF =	3
Diversity index for RT not calculated, NRT = SRT or NRT < 20		
Number of individuals of grain pests	NG =	0
Percentage of individuals of grain pests	%NG =	0
Number of individuals of grain pests	NG =	0
Number of uncoded taxa	SU =	11
Percentage of uncoded individuals	PNU =	35

Site: LELA Context: 15.4 Sample: 1/T - species list in rank order

Taxon	Number	%	Rank	Ecodes
Cercyon sp. A	2	6	1	u
Gyrohypnus fracticornis (Muller)	2	6	1	rt
Cryptophagus sp.	2	6	1	rd
Atomaria sp.	2	6	1	rd
Trechus micros (Herbst)	1	3	5	u
Cercyon sp. B	1	3	5	u
Acritus nigricornis (Hoffmann)	1	3	5	rt
Histerinae sp.	1	3	5	u
Ptenidium sp.	1	3	5	rt
Omalium ?rivulare (Paykull)	1	3	5	rt
Omalium sp.	1	3	5	rt
Anotylus rugosus (Fabricius)	1	3	5	rt
Oxytelus sculptus Gravenhorst	1	3	5	rt
Stenus sp.	1	3	5	u
Lithocharis ochracea (Gravenhorst)	1	3	5	rt
Gyrohypnus angustatus Stephens	1	3	5	rt
Philonthus sp. A	1	3	5	u
Philonthus sp. B	1	3	5	u
Aleocharinae sp. A	1	3	5	u
Aleocharinae sp. B	1	3	5	u
Pselaphidae sp.	1	3	5	u
Aphodius sp.	1	3	5	ob rf
Anobiidae sp.	1	3	5	l
Ptinus sp.	1	3	5	rd
Monotoma sp.	1	3	5	rt
Lathridius minutus group	1	3	5	rd
Corticaria sp.	1	3	5	rt
Notaris acridulus (Linnaeus)	1	3	5	oa d p
Curculionidae sp.	1	3	5	oa
Coleoptera sp.	1	3	5	u

Site: LELA Context: 502.A Sample: 2/T - beetle/bug main statistics

Erosion = 3 Fragmentation = 3; Weight = 1.000kg

Number of individuals estimated as	N =	24
Number of taxa	S =	19
Index of diversity (alpha)	alpha =	43
Standard error of alpha	SE alpha =	22
Number of 'certain' outdoor taxa	SOA =	8
Percentage of 'certain' outdoor taxa	%SOA =	42
Number of 'certain' outdoor individuals	NOA =	10
Percentage of 'certain' outdoor individuals	%NOA =	42
Number of 'certain' and probable outdoor taxa	SOB =	9
Percentage of 'certain' and probable outdoor taxa	%SOB =	47
Number of 'certain' and probable outdoor individuals	NOB =	11
Percentage 'certain' and probable outdoor individuals	%NOB =	46
Diversity index for OB not calculated, NOB = SOB or NOB < 20		
Number of aquatic taxa	SW =	4
Percentage of aquatic taxa	%SW =	21
Number of aquatic individuals	NW =	6
Percentage of aquatic individuals	%NW =	25

Number of damp ground/waterside taxa	SD =	1
Percentage of damp ground/waterside taxa	%SD =	5
Number of damp ground/waterside individuals	ND =	1
Percentage of damp ground/waterside individuals	%ND =	4
Number of strongly plant-associated taxa	SP =	2
Percentage of strongly plant-associated taxa	%SP =	11
Number of strongly plant-associated individuals	NP =	2
Percentage of strongly plant-associated individuals	%NP =	8
Number of heathland/moorland taxa	SM =	0
Number of heathland/moorland individuals	NM =	0
Percentage of heathland/moorland individuals	%NM =	0
Number of wood-associated taxa	SL =	0
Number of wood-associated individuals	NL =	0
Percentage of wood-associated individuals	%NL =	0
Number of decomposer taxa	SRT =	2
Percentage of decomposer taxa	%SRT =	11
Number of decomposer individuals	NRT =	2
Percentage of decomposer individuals	%NRT =	8
Number of 'dry' decomposer taxa	SRD =	0
Percentage of 'dry'decomposer taxa	%SRD =	0
Number of 'dry' decomposer individuals	NRD =	0
Percentage of 'dry'decomposer individuals	%NRD =	0
Number of 'foul' decomposer taxa	SRF =	0
Percentage of 'foul' decomposer taxa	%SRF =	0
Number of 'foul' decomposer individuals	NRF =	0
Percentage of 'foul' decomposer individuals	%NRF =	0
Diversity index for RT not calculated, NRT = SRT or NRT < 20		
Number of individuals of grain pests	NG =	0
Percentage of individuals of grain pests	%NG =	0
Number of individuals of grain pests	NG =	0
Number of uncoded taxa	SU =	8
Percentage of uncoded individuals	PNU =	46

Site: LELA Context: 502.A Sample: 2/T - species list in rank order

Taxon	Number	%	Rank	Ecodes
Lathrobium sp. A	3	13	1	u
Helophorus sp. A	2	8	2	oa w
Helophorus sp. B	2	8	2	oa w
Lathrobium sp. B	2	8	2	u
Bradycellus sp.	1	4	5	oa
Carabidae sp.	1	4	5	ob
Helophorus aquaticus or grandis	1	4	5	oa w
Helophorus sp. C	1	4	5	oa w
Carpelimus pusillus group	1	4	5	u
Stenus sp. A	1	4	5	u
Stenus sp. B	1	4	5	u
Gyrohypnus sp.	1	4	5	rt
Xantholinus longiventris Heer	1	4	5	rt
Neobisnius sp.	1	4	5	u
Erichsonius cinerascens (Gravenhorst)	1	4	5	oa d
Staphylininae sp.	1	4	5	u
Phyllopertha horticola (Linnaeus)	1	4	5	oa p
Meligethes sp.	1	4	5	oa p
Cossoninae sp.	1	4	5	u

Site: LELA Context: 501 Sample: 3/T - beetle/bug main statistics

Erosion = 2 Fragmentation = 3; Weight = 1.000kg

Number of individuals estimated as	N =	140
Number of taxa	S =	65
Index of diversity (alpha)	alpha =	47
Standard error of alpha	SE alpha =	7
Number of 'certain' outdoor taxa	SOA =	32
Percentage of 'certain' outdoor taxa	%SOA =	49
Number of 'certain' outdoor individuals	NOA =	79
Percentage of 'certain' outdoor individuals	%NOA =	56
Number of 'certain' and probable outdoor taxa	SOB =	39
Percentage of 'certain' and probable outdoor taxa	%SOB =	60
Number of 'certain' and probable outdoor individuals	NOB =	86
Percentage 'certain' and probable outdoor individuals	%NOB =	61
Index of diversity of outdoor component	alpha OB =	28
Standard error	SE alpha OB =	5
Number of aquatic taxa	SW =	4
Percentage of aquatic taxa	%SW =	6
Number of aquatic individuals	NW =	7
Percentage of aquatic individuals	%NW =	5
Number of damp ground/waterside taxa	SD =	4
Percentage of damp ground/waterside taxa	%SD =	6
Number of damp ground/waterside individuals	ND =	11
Percentage of damp ground/waterside individuals	%ND =	8
Number of strongly plant-associated taxa	SP =	11
Percentage of strongly plant-associated taxa	%SP =	17
Number of strongly plant-associated individuals	NP =	21
Percentage of strongly plant-associated individuals	%NP =	15
Number of heathland/moorland taxa	SM =	4
Number of heathland/moorland individuals	NM =	20
Percentage of heathland/moorland individuals	%NM =	14
Number of wood-associated taxa	SL =	0
Number of wood-associated individuals	NL =	0
Percentage of wood-associated individuals	%NL =	0
Number of decomposer taxa	SRT =	10
Percentage of decomposer taxa	%SRT =	15
Number of decomposer individuals	NRT =	11
Percentage of decomposer individuals	%NRT =	8
Number of 'dry' decomposer taxa	SRD =	2
Percentage of 'dry'decomposer taxa	%SRD =	3
Number of 'dry' decomposer individuals	NRD =	2
Percentage of 'dry'decomposer individuals	%NRD =	1
Number of 'foul' decomposer taxa	SRF =	4
Percentage of 'foul' decomposer taxa	%SRF =	6
Number of 'foul' decomposer individuals	NRF =	4
Percentage of 'foul' decomposer individuals	%NRF =	3
Diversity index for RT not calculated, NRT = SRT or NRT < 20		
Number of individuals of grain pests	NG =	3
Percentage of individuals of grain pests	%NG =	2
Number of individuals of grain pests	NG =	3
Number of uncoded taxa	SU =	16
Percentage of uncoded individuals	PNU =	31

Site: LELA Context: 501 Sample: 3/T - species list in rank order

Taxon	Number	%	Rank	Ecodes
Lathrobium sp.	13	9	1	u
Dyschirius globosus (Herbst)	11	8	2	oa
Bradycellus ruficollis (Stephens)	10	7	3	oa m
Aleocharinae sp. B	7	5	4	u
Lesteva heeri Fauvel	6	4	5	oa d
Euaesthetus bipunctatus (Ljungh)	6	4	5	oa
Micrelus ericae (Gyllenhal)	5	4	7	oa p m
Staphylininae sp.	4	3	8	u
Altica sp.	4	3	8	oa p
Ulopa reticulata (Fabricius)	3	2	10	oa p m
Pterostichus diligens (Sturm)	3	2	10	oa d
Stenus sp. B	3	2	10	u
Mycetoporus sp.	3	2	10	u
Macrodema micropterum (Curtis)	2	1	14	oa p m
Trechus obtusus or quadristriatus	2	1	14	oa
Bembidion lampros (Herbst)	2	1	14	oa
Olisthopus rotundatus (Paykull)	2	1	14	oa
Hydroporinae sp. A	2	1	14	oa w
Hydroporinae sp. B	2	1	14	oa w
Helophorus sp.	2	1	14	oa w
Xantholinus gallicus or linearis	2	1	14	rt
Tachyporus sp.	2	1	14	u
Aleocharinae sp. A	2	1	14	u
Stygnocoris sp.	1	1	24	oa
Auchenorhyncha sp. A	1	1	24	oa p
Auchenorhyncha sp. B	1	1	24	oa p
Auchenorhyncha sp. C	1	1	24	oa p
Pterostichus (Poecilus) sp.	1	1	24	oa
Bradycellus sp.	1	1	24	oa
Carabidae sp. A	1	1	24	ob
Carabidae sp. B	1	1	24	ob
Gyrinus sp.	1	1	24	oa w
Onthophilus striatus (Forster)	1	1	24	rt
Scydmaenidae sp.	1	1	24	u
Olophrum sp.	1	1	24	oa
Acidota crenata (Fabricius)	1	1	24	oa
Lesteva longoelytrata (Goeze)	1	1	24	oa d
Dropephylla sp.	1	1	24	u
Carpelimus ?elongatulus (Erichson)	1	1	24	oa d
Carpelimus sp.	1	1	24	u
Platystethus arenarius (Fourcroy)	1	1	24	rf
Stenus sp. A	1	1	24	u
Stenus sp. C	1	1	24	u
Stenus sp. D	1	1	24	u
Euaesthetus laeviusculus Mannerheim	1	1	24	oa
Quedius sp.	1	1	24	u
Falagria caesa or sulcatula	1	1	24	rt
Aleocharinae sp. C	1	1	24	u
Aleocharinae sp. D	1	1	24	u
Geotrupes sp.	1	1	24	oa rf
Aphodius sp. A	1	1	24	ob rf
Aphodius sp. B	1	1	24	ob rf

Elateridae sp. A	1	1	24	ob
Elateridae sp. B	1	1	24	ob
Cantharidae sp.	1	1	24	ob
Cryptolestes ferrugineus (Stephens)	1	1	24	g
Oryzaephilus surinamensis (Linnaeus)	1	1	24	g
?Atomaria sp.	1	1	24	rd
Atomaria sp. B	1	1	24	rd
Corticaria sp.	1	1	24	rt
Palorus ratzeburgi (Wissman)	1	1	24	g
Chrysomelinae sp.	1	1	24	oa p
Phyllotreta nemorum group	1	1	24	oa p
Halticinae sp.	1	1	24	oa p
Chrysomelidae sp. (larva)	1	1	24	oa p

Site: LELA Context: 502B Sample: 4/T - beetle/bug main statistics

Erosion = 3 Fragmentation = 3; Weight = 1.000kg

Number of individuals estimated as	N =	161
Number of taxa	S =	81
Index of diversity (alpha)	alpha =	65
Standard error of alpha	SE alpha =	9
Number of 'certain' outdoor taxa	SOA =	39
Percentage of 'certain' outdoor taxa	%SOA =	48
Number of 'certain' outdoor individuals	NOA =	71
Percentage of 'certain' outdoor individuals	%NOA =	44
Number of 'certain' and probable outdoor taxa	SOB =	45
Percentage of 'certain' and probable outdoor taxa	%SOB =	56
Number of 'certain' and probable outdoor individuals	NOB =	80
Percentage 'certain' and probable outdoor individuals	%NOB =	50
Index of diversity of outdoor component	alpha OB =	43
Standard error	SE alpha OB =	9
Number of aquatic taxa	SW =	7
Percentage of aquatic taxa	%SW =	9
Number of aquatic individuals	NW =	11
Percentage of aquatic individuals	%NW =	7
Number of damp ground/waterside taxa	SD =	5
Percentage of damp ground/waterside taxa	%SD =	6
Number of damp ground/waterside individuals	ND =	6
Percentage of damp ground/waterside individuals	%ND =	4
Number of strongly plant-associated taxa	SP =	14
Percentage of strongly plant-associated taxa	%SP =	17
Number of strongly plant-associated individuals	NP =	27
Percentage of strongly plant-associated individuals	%NP =	17
Number of heathland/moorland taxa	SM =	3
Number of heathland/moorland individuals	NM =	15
Percentage of heathland/moorland individuals	%NM =	9
Number of wood-associated taxa	SL =	1
Number of wood-associated individuals	NL =	3
Percentage of wood-associated individuals	%NL =	2
Number of decomposer taxa	SRT =	14
Percentage of decomposer taxa	%SRT =	17
Number of decomposer individuals	NRT =	25
Percentage of decomposer individuals	%NRT =	16
Number of 'dry' decomposer taxa	SRD =	1
Percentage of 'dry'decomposer taxa	%SRD =	1

Number of 'dry' decomposer individuals	NRD =	1
Percentage of 'dry'decomposer individuals	%NRD =	1
Number of 'foul' decomposer taxa	SRF =	5
Percentage of 'foul' decomposer taxa	%SRF =	6
Number of 'foul' decomposer individuals	NRF =	8
Percentage of 'foul' decomposer individuals	%NRF =	5
Index of diversity of decomposer component	alpha RT =	13
Standard error	SE alpha RT =	5
Number of individuals of grain pests	NG =	7
Percentage of individuals of grain pests	%NG =	4
Number of individuals of grain pests	NG =	7
Number of uncoded taxa	SU =	23
Percentage of uncoded individuals	PNU =	33

Site: LELA Context: 502B Sample: 4/T - species list in rank order

Taxon	Number	%	Rank	Ecodes
Lathrobium sp.	11	7	1	u
Philonthus sp. A	8	5	2	u
Xantholinus longiventris Heer	7	4	3	rt
Aleocharinae sp. A	6	4	4	u
Macrodema micropterum (Curtis)	5	3	5	oa p m
Bradycellus ruficollis (Stephens)	5	3	5	oa m
Euaesthetus bipunctatus (Ljungh)	5	3	5	oa
Quedius boops group	5	3	5	u
Micrelus ericae (Gyllenhal)	5	3	5	oa p m
Dyschirius globosus (Herbst)	4	2	10	oa
Hydroporinae sp.	4	2	10	oa w
Oryzaephilus surinamensis (Linnaeus)	4	2	10	g
Auchenorhyncha sp. A	3	2	13	oa p
Scydmaenidae sp.	3	2	13	u
Euaesthetus laeviusculus Mannerheim	3	2	13	oa
Anobium punctatum (Degeer)	3	2	13	l
Cryptolestes ferrugineus (Stephens)	3	2	13	g
Stygnocoris pedestris (Fallen)	2	1	18	oa p
Psylloidea sp.	2	1	18	oa p
Pterostichus diligens (Sturm)	2	1	18	oa d
Olisthopus rotundatus (Paykull)	2	1	18	oa
Helophorus sp. B	2	1	18	oa w
Megasternum obscurum (Marsham)	2	1	18	rt
Anotylus tetracarinatus (Block)	2	1	18	rt
Stenus sp. B	2	1	18	u
Aleocharinae sp. B	2	1	18	u
Aphodius ?prodromus (Brahm)	2	1	18	ob rf
Aphodius sp. A	2	1	18	ob rf
Aphodius sp. B	2	1	18	ob rf
Phyllopertha horticola (Linnaeus)	2	1	18	oa p
Pachybrachius fracticollis (Schilling)	1	1	31	oa p
Saldula sp.	1	1	31	oa d
Corixidae sp.	1	1	31	oa w
Auchenorhyncha sp. B	1	1	31	oa p
Notiophilus sp.	1	1	31	oa
?Patrobus sp.	1	1	31	oa
?Bembidion sp.	1	1	31	oa
Pterostichus (Poecilus) sp.	1	1	31	oa

Pterostichus sp.	1	1	31	ob
Agonum sp.	1	1	31	oa
Trichocellus sp.	1	1	31	oa
Bradycellus sp.	1	1	31	oa
Colymbetinae sp.	1	1	31	oa w
Helophorus sp. A	1	1	31	oa w
Cercyon analis (Paykull)	1	1	31	rt
Cercyon ?atricapillus (Marsham)	1	1	31	rf
Cercyon sp.	1	1	31	u
Onthophilus striatus (Forster)	1	1	31	rt
Ochthebius sp.	1	1	31	oa w
Olophrum sp.	1	1	31	oa
Acidota cruentata Mannerheim	1	1	31	oa
Omaliinae sp.	1	1	31	u
Carpelimus ?bilineatus Stephens	1	1	31	rt
Carpelimus pusillus group	1	1	31	u
Platystethus nodifrons (Mannerheim)	1	1	31	oa d
Stenus sp. A	1	1	31	u
Stenus sp. C	1	1	31	u
Stenus sp. D	1	1	31	u
Ochthephilum ?fracticorne (Paykull)	1	1	31	oa d
Paederinae sp.	1	1	31	u
Philonthus sp. B	1	1	31	u
Tachyporus sp.	1	1	31	u
Tachinus ?signatus Gravenhorst	1	1	31	u
Aleocharinae sp. C	1	1	31	u
Aleocharinae sp. D	1	1	31	u
Aleocharinae sp. E	1	1	31	u
Aleocharinae sp. F	1	1	31	u
Aleocharinae sp. G	1	1	31	u
Aphodius ?granarius (Linnaeus)	1	1	31	ob rf
Cyphon sp.	1	1	31	oa d
Byrrhidae sp.	1	1	31	oa p
Denticollis linearis (Linnaeus)	1	1	31	u
Elateridae sp.	1	1	31	ob
Meligethes sp.	1	1	31	oa p
?Sericoderus lateralis (Gyllenhal)	1	1	31	rt
Lathridius minutus group	1	1	31	rd
Tenebrio obscurus Fabricius	1	1	31	rt
Donaciinae sp.	1	1	31	oa w p
Chrysomelinae sp.	1	1	31	oa p
Halticinae sp.	1	1	31	oa p
Ceuthorhynchinae sp.	1	1	31	oa p

Site: LELA Context: 500 Sample: 5/T - beetle/bug main statistics

Erosion = 2 Fragmentation = 3; Weight = 1.000kg

Number of individuals estimated as	N =	131
Number of taxa	S =	68
Index of diversity (alpha)	alpha =	57
Standard error of alpha	SE alpha =	9
Number of 'certain' outdoor taxa	SOA =	22
Percentage of 'certain' outdoor taxa	%SOA =	32
Number of 'certain' outdoor individuals	NOA =	28
Percentage of 'certain' outdoor individuals	%NOA =	21

Number of 'certain' and probable outdoor taxa	SOB =	26
Percentage of 'certain' and probable outdoor taxa	%SOB =	38
Number of 'certain' and probable outdoor individuals	NOB =	32
Percentage 'certain' and probable outdoor individuals	%NOB =	24
Index of diversity of outdoor component	alpha OB =	63
Standard error	SE alpha OB =	27
Number of aquatic taxa	SW =	4
Percentage of aquatic taxa	%SW =	6
Number of aquatic individuals	NW =	8
Percentage of aquatic individuals	%NW =	6
Number of damp ground/waterside taxa	SD =	0
Percentage of damp ground/waterside taxa	%SD =	0
Number of damp ground/waterside individuals	ND =	0
Percentage of damp ground/waterside individuals	%ND =	0
Number of strongly plant-associated taxa	SP =	11
Percentage of strongly plant-associated taxa	%SP =	16
Number of strongly plant-associated individuals	NP =	13
Percentage of strongly plant-associated individuals	%NP =	10
Number of heathland/moorland taxa	SM =	0
Number of heathland/moorland individuals	NM =	0
Percentage of heathland/moorland individuals	%NM =	0
Number of wood-associated taxa	SL =	3
Number of wood-associated individuals	NL =	6
Percentage of wood-associated individuals	%NL =	5
Number of decomposer taxa	SRT =	27
Percentage of decomposer taxa	%SRT =	40
Number of decomposer individuals	NRT =	41
Percentage of decomposer individuals	%NRT =	31
Number of 'dry' decomposer taxa	SRD =	6
Percentage of 'dry'decomposer taxa	%SRD =	9
Number of 'dry' decomposer individuals	NRD =	11
Percentage of 'dry'decomposer individuals	%NRD =	8
Number of 'foul' decomposer taxa	SRF =	5
Percentage of 'foul' decomposer taxa	%SRF =	7
Number of 'foul' decomposer individuals	NRF =	6
Percentage of 'foul' decomposer individuals	%NRF =	5
Index of diversity of decomposer component	alpha RT =	35
Standard error	SE alpha RT =	11
Number of individuals of grain pests	NG =	41
Percentage of individuals of grain pests	%NG =	31

NB - over 10% grain pests and n > 50: for corrected re-run see over.

Number of individuals of grain pests	NG =	41
Number of uncoded taxa	SU =	11
Percentage of uncoded individuals	PNU =	11

Site: LELA Context: 500 Sample: 5/T - beetle/bug main statistics re-run after subtraction of grain pest component

Erosion = 2 Fragmentation = 3; Weight = 1.000kg

Number of individuals estimated as	N =	90
Number of taxa	S =	64
Index of diversity (alpha)	alpha =	98
Standard error of alpha	SE alpha =	22
Number of 'certain' outdoor taxa	SOA =	22
Percentage of 'certain' outdoor taxa	%SOA =	34

Number of 'certain' outdoor individuals	NOA =	28
Percentage of 'certain' outdoor individuals	%NOA =	31
Number of 'certain' and probable outdoor taxa	SOB =	26
Percentage of 'certain' and probable outdoor taxa	%SOB =	41
Number of 'certain' and probable outdoor individuals	NOB =	32
Percentage 'certain' and probable outdoor individuals	%NOB =	36
Index of diversity of outdoor component	alpha OB =	63
Standard error	SE alpha OB =	27
Number of aquatic taxa	SW =	4
Percentage of aquatic taxa	%SW =	6
Number of aquatic individuals	NW =	8
Percentage of aquatic individuals	%NW =	9
Number of damp ground/waterside taxa	SD =	0
Percentage of damp ground/waterside taxa	%SD =	0
Number of damp ground/waterside individuals	ND =	0
Percentage of damp ground/waterside individuals	%ND =	0
Number of strongly plant-associated taxa	SP =	11
Percentage of strongly plant-associated taxa	%SP =	17
Number of strongly plant-associated individuals	NP =	13
Percentage of strongly plant-associated individuals	%NP =	14
Number of heathland/moorland taxa	SM =	0
Number of heathland/moorland individuals	NM =	0
Percentage of heathland/moorland individuals	%NM =	0
Number of wood-associated taxa	SL =	3
Number of wood-associated individuals	NL =	6
Percentage of wood-associated individuals	%NL =	7
Number of decomposer taxa	SRT =	27
Percentage of decomposer taxa	%SRT =	42
Number of decomposer individuals	NRT =	41
Percentage of decomposer individuals	%NRT =	46
Number of 'dry' decomposer taxa	SRD =	6
Percentage of 'dry'decomposer taxa	%SRD =	9
Number of 'dry' decomposer individuals	NRD =	11
Percentage of 'dry'decomposer individuals	%NRD =	12
Number of 'foul' decomposer taxa	SRF =	5
Percentage of 'foul' decomposer taxa	%SRF =	8
Number of 'foul' decomposer individuals	NRF =	6
Percentage of 'foul' decomposer individuals	%NRF =	7
Index of diversity of decomposer component	alpha RT =	35
Standard error	SE alpha RT =	11
Number of individuals of grain pests	NG =	41
Number of uncoded taxa	SU =	11
Percentage of uncoded individuals	PNU =	16

Site: LELA Context: 500 Sample: 5/T - species list in rank order

Taxon	Number	%	Rank	Ecodes
Oryzaephilus surinamensis (Linnaeus)	27	21	1	g
Cryptolestes ferrugineus (Stephens)	11	8	2	g
Carpelimus ?bilineatus Stephens	4	3	3	rt
Lathridius minutus group	4	3	3	rd
Helophorus sp. B	3	2	5	oa w
Anthicus formicarius (Goeze)	3	2	5	rt
Cercyon analis (Paykull)	2	2	7	rt
Cercyon atricapillus (Marsham)	2	2	7	rf

Hydrobius fuscipes (Linnaeus)	2	2	7	oa w
Ochthebius sp.	2	2	7	oa w
Oxytelus sculptus Gravenhorst	2	2	7	rt
Lathrobium sp.	2	2	7	u
Neobisnius sp.	2	2	7	u
Falagria ?caesa Erichson	2	2	7	rt
Aleocharinae sp. B	2	2	7	u
Anobium punctatum (Degeer)	2	2	7	l
Anobiidae sp.	2	2	7	l
Meligethes sp.	2	2	7	oa p
Cryptophagus sp.	2	2	7	rd
Atomaria sp.	2	2	7	rd
?Cis sp.	2	2	7	l
Palorus ratzeburgi (Wissman)	2	2	7	g
Longitarsus sp.	2	2	7	oa p
Lygaeidae sp.	1	1	24	oa p
Auchenorhyncha sp. A	1	1	24	oa p
Auchenorhyncha sp. B	1	1	24	oa p
Auchenorhyncha sp. C	1	1	24	oa p
Amara sp.	1	1	24	oa
Bradycellus sp.	1	1	24	oa
Carabidae sp.	1	1	24	ob
Helophorus sp. A	1	1	24	oa w
Megasternum obscurum (Marsham)	1	1	24	rt
Acritus nigricornis (Hoffmann)	1	1	24	rt
Scydmaenidae sp.	1	1	24	u
Olophrum sp.	1	1	24	oa
Acidota crenata (Fabricius)	1	1	24	oa
Platystethus arenarius (Fourcroy)	1	1	24	rf
Anotylus tetracarinatus (Block)	1	1	24	rt
Stenus sp. A	1	1	24	u
Stenus sp. B	1	1	24	u
Lithocharis sp.	1	1	24	rt
Leptacinus sp.	1	1	24	rt
Gyrohypnus angustatus Stephens	1	1	24	rt
Gyrohypnus fracticornis (Muller)	1	1	24	rt
Staphylininae sp.	1	1	24	u
Cordalia obscura (Gravenhorst)	1	1	24	rt
Aleocharinae sp. A	1	1	24	u
Aleocharinae sp. C	1	1	24	u
Aleocharinae sp. D	1	1	24	u
Aleocharinae sp. E	1	1	24	u
Aphodius sp. A	1	1	24	ob rf
Aphodius sp. B	1	1	24	ob rf
Aphodius sp. C	1	1	24	ob rf
?Ctenicera cuprea (Fabricius)	1	1	24	oa p
Ptinus fur (Linnaeus)	1	1	24	rd
Ptinus sp.	1	1	24	rd
Corticaria sp. A	1	1	24	rt
Corticaria sp. B	1	1	24	rt
Typhaea stercorea (Linnaeus)	1	1	24	rd
Anthicus sp.	1	1	24	rt
Phyllotreta sp.	1	1	24	oa p
Crepidodera sp.	1	1	24	oa p
Sitophilus granarius (Linnaeus)	1	1	24	g
Ceuthorhynchinae sp.	1	1	24	oa p

Gymnetron sp.	1	1	24	oa p
Curculionidae sp. A	1	1	24	oa
Curculionidae sp. B	1	1	24	oa
Curculionidae sp. C	1	1	24	oa

Site: LELA Context: 365.2 Sample: 6/T - beetle/bug main statistics

Erosion = 3 Fragmentation = 3; Weight = 1.000kg

Number of individuals estimated as	N =	304
Number of taxa	S =	77
Index of diversity (alpha)	alpha =	33
Standard error of alpha	SE alpha =	3
Number of 'certain' outdoor taxa	SOA =	25
Percentage of 'certain' outdoor taxa	%SOA =	32
Number of 'certain' outdoor individuals	NOA =	34
Percentage of 'certain' outdoor individuals	%NOA =	11
Number of 'certain' and probable outdoor taxa	SOB =	28
Percentage of 'certain' and probable outdoor taxa	%SOB =	36
Number of 'certain' and probable outdoor individuals	NOB =	38
Percentage 'certain' and probable outdoor individuals	%NOB =	13
Index of diversity of outdoor component	alpha OB =	49
Standard error	SE alpha OB =	18
Number of aquatic taxa	SW =	7
Percentage of aquatic taxa	%SW =	9
Number of aquatic individuals	NW =	10
Percentage of aquatic individuals	%NW =	3
Number of damp ground/waterside taxa	SD =	3
Percentage of damp ground/waterside taxa	%SD =	4
Number of damp ground/waterside individuals	ND =	3
Percentage of damp ground/waterside individuals	%ND =	1
Number of strongly plant-associated taxa	SP =	12
Percentage of strongly plant-associated taxa	%SP =	16
Number of strongly plant-associated individuals	NP =	15
Percentage of strongly plant-associated individuals	%NP =	5
Number of heathland/moorland taxa	SM =	0
Number of heathland/moorland individuals	NM =	0
Percentage of heathland/moorland individuals	%NM =	0
Number of wood-associated taxa	SL =	1
Number of wood-associated individuals	NL =	4
Percentage of wood-associated individuals	%NL =	1
Number of decomposer taxa	SRT =	28
Percentage of decomposer taxa	%SRT =	36
Number of decomposer individuals	NRT =	127
Percentage of decomposer individuals	%NRT =	42
Number of 'dry' decomposer taxa	SRD =	7
Percentage of 'dry'decomposer taxa	%SRD =	9
Number of 'dry' decomposer individuals	NRD =	80
Percentage of 'dry'decomposer individuals	%NRD =	26
Number of 'foul' decomposer taxa	SRF =	4
Percentage of 'foul' decomposer taxa	%SRF =	5
Number of 'foul' decomposer individuals	NRF =	6
Percentage of 'foul' decomposer individuals	%NRF =	2
Index of diversity of decomposer component	alpha RT =	11
Standard error	SE alpha RT =	2
Number of individuals of grain pests	NG =	114

Percentage of individuals of grain pests	%NG =	38
NB - over 10% grain pests and n > 50: for corrected re-run see over.		
Number of individuals of grain pests	NG =	114
Number of uncoded taxa	SU =	18
Percentage of uncoded individuals	PNU =	8

Site: LELA Context: 365.2 Sample: 6/T - beetle/bug main statistics re-run after subtraction of grain pest component

Erosion = 3 Fragmentation = 3; Weight = 1.000kg

Number of individuals estimated as	N =	190
Number of taxa	S =	73
Index of diversity (alpha)	alpha =	44
Standard error of alpha	SE alpha =	.5
Number of 'certain' outdoor taxa	SOA =	25
Percentage of 'certain' outdoor taxa	%SOA =	34
Number of 'certain' outdoor individuals	NOA =	34
Percentage of 'certain' outdoor individuals	%NOA =	18
Number of 'certain' and probable outdoor taxa	SOB =	28
Percentage of 'certain' and probable outdoor taxa	%SOB =	38
Number of 'certain' and probable outdoor individuals	NOB =	38
Percentage 'certain' and probable outdoor individuals	%NOB =	20
Index of diversity of outdoor component	alpha OB =	49
Standard error	SE alpha OB =	18
Number of aquatic taxa	SW =	7
Percentage of aquatic taxa	%SW =	10
Number of aquatic individuals	NW =	10
Percentage of aquatic individuals	%NW =	5
Number of damp ground/waterside taxa	SD =	3
Percentage of damp ground/waterside taxa	%SD =	4
Number of damp ground/waterside individuals	ND =	3
Percentage of damp ground/waterside individuals	%ND =	2
Number of strongly plant-associated taxa	SP =	12
Percentage of strongly plant-associated taxa	%SP =	16
Number of strongly plant-associated individuals	NP =	15
Percentage of strongly plant-associated individuals	%NP =	8
Number of heathland/moorland taxa	SM =	0
Number of heathland/moorland individuals	NM =	0
Percentage of heathland/moorland individuals	%NM =	0
Number of wood-associated taxa	SL =	1
Number of wood-associated individuals	NL =	4
Percentage of wood-associated individuals	%NL =	2
Number of decomposer taxa	SRT =	28
Percentage of decomposer taxa	%SRT =	38
Number of decomposer individuals	NRT =	127
Percentage of decomposer individuals	%NRT =	67
Number of 'dry' decomposer taxa	SRD =	7
Percentage of 'dry'decomposer taxa	%SRD =	10
Number of 'dry' decomposer individuals	NRD =	80
Percentage of 'dry'decomposer individuals	%NRD =	42
Number of 'foul' decomposer taxa	SRF =	4
Percentage of 'foul' decomposer taxa	%SRF =	5
Number of 'foul' decomposer individuals	NRF =	6
Percentage of 'foul' decomposer individuals	%NRF =	3
Index of diversity of decomposer component	alpha RT =	11

Standard error	SE alpha RT =	2
Number of individuals of grain pests	NG =	114
Number of uncoded taxa	SU =	18
Percentage of uncoded individuals	PNU =	13

Site: LELA Context: 365.2 Sample: 6/T - species list in rank order

Taxon	Number	%	Rank	Ecodes
Oryzaephilus surinamensis (Linnaeus)	56	18	1	g
Cryptolestes ferrugineus (Stephens)	46	15	2	g
Cryptophagus sp.	36	12	3	rd
Lathridius minutus group	26	9	4	rd
Cercyon analis (Paykull)	16	5	5	rt
Typhaea stercorea (Linnaeus)	7	2	6	rd
Atomaria sp. A	6	2	7	rd
Palorus ratzeburgi (Wissman)	6	2	7	g
Sitophilus granarius (Linnaeus)	6	2	7	g
Xylodromus concinnus (Marsham)	4	1	10	rt
Anobium punctatum (Degeer)	4	1	10	l
Auchenorhyncha sp. A	3	1	12	oa p
Megasternum obscurum (Marsham)	3	1	12	rt
Chaetarthria seminulum (Herbst)	3	1	12	oa w
Euaesthetus bipunctatus (Ljungh)	3	1	12	oa
Aleocharinae sp. C	3	1	12	u
Clambus sp.	3	1	12	rt
Lyctocoris campestris (Fabricius)	2	1	18	rd
Helophorus sp. A	2	1	18	oa w
Scydmaenidae sp.	2	1	18	u
Platystethus arenarius (Fourcroy)	2	1	18	rf
Euaesthetus laeviusculus Mannerheim	2	1	18	oa
Philonthus sp. A	2	1	18	u
Falagria caesa or sulcatula	2	1	18	rt
Aleocharinae sp. B	2	1	18	u
Aleocharinae sp. D	2	1	18	u
Aphodius sp. B	2	1	18	ob rf
Tipnus unicolor (Piller & Mitterpacher)	2	1	18	rd
Corticaria sp.	2	1	18	rt
?Longitarsus sp.	2	1	18	oa p
Aphrodes flavostriatus (Donovan)	1	0	31	oa p d
Auchenorhyncha sp. B	1	0	31	oa p
Auchenorhyncha sp. C	1	0	31	oa p
Dyschirius ?globosus (Herbst)	1	0	31	oa
Trechus obtusus or quadristriatus	1	0	31	oa
Amara sp.	1	0	31	oa
Carabidae sp.	1	0	31	ob
Hydroporinae sp.	1	0	31	oa w
Helophorus sp. B	1	0	31	oa w
Cercyon atricapillus (Marsham)	1	0	31	rf
Hydrophilinae sp.	1	0	31	oa w
Acritus nigricornis (Hoffmann)	1	0	31	rt
Hydraena sp.	1	0	31	oa w
Ptenidium sp.	1	0	31	rt
Olophrum sp.	1	0	31	oa
Carpelimus ?bilineatus Stephens	1	0	31	rt
Carpelimus sp.	1	0	31	u

Anotylus nitidulus (Gravenhorst)	1	0	31	rt d
Oxytelus sculptus Gravenhorst	1	0	31	rt
Stenus sp. A	1	0	31	u
Stenus sp. B	1	0	31	u
Rugilus sp.	1	0	31	rt
Leptacinus sp.	1	0	31	rt
Gyrohypnus fracticornis (Muller)	1	0	31	rt
Xantholinus sp.	1	0	31	u
Quedius sp.	1	0	31	u
Staphylininae sp. A	1	0	31	u
Staphylininae sp. B	1	0	31	u
Tachyporus sp.	1	0	31	u
Tachinus signatus Gravenhorst	1	0	31	u
Aleocharinae sp. A	1	0	31	u
Aleocharinae sp. E	1	0	31	u
Aleocharinae sp. ?X	1	0	31	u
Pselaphidae sp.	1	0	31	u
Aphodius sp. A	1	0	31	ob rf
Ptinus sp.	1	0	31	rd
Meligethes sp.	1	0	31	oa p
Monotoma sp.	1	0	31	rt
Enicmus sp.	1	0	31	rt
Anthicus formicarius (Goeze)	1	0	31	rt
Donaciinae sp.	1	0	31	oa w p
Chrysomelinae sp.	1	0	31	oa p
Chrysomelinae sp. B	1	0	31	oa p
Apion sp.	1	0	31	oa p
Notaris acridulus (Linnaeus)	1	0	31	oa d p
Ceutorhynchus sp.	1	0	31	oa p
Curculionidae sp.	1	0	31	oa

Site: LELA Context: 530; Sample: 7/T

NO RECORDS OF BEETLES OR BUGS

Site: LELA Context: 539 Sample: 8/T - beetle/bug main statistics

Erosion = 3 Fragmentation = 2; Weight = 1.000kg

Number of individuals estimated as	N =	142
Number of taxa	S =	72
Index of diversity (alpha)	alpha =	58
Standard error of alpha	SE alpha =	8
Number of 'certain' outdoor taxa	SOA =	14
Percentage of 'certain' outdoor taxa	%SOA =	19
Number of 'certain' outdoor individuals	NOA =	14
Percentage of 'certain' outdoor individuals	%NOA =	10
Number of 'certain' and probable outdoor taxa	SOB =	20
Percentage of 'certain' and probable outdoor taxa	%SOB =	28
Number of 'certain' and probable outdoor individuals	NOB =	20
Percentage 'certain' and probable outdoor individuals	%NOB =	14
Diversity index for OB not calculated, NOB = SOB or NOB < 20		
Number of aquatic taxa	SW =	2
Percentage of aquatic taxa	%SW =	3
Number of aquatic individuals	NW =	2
Percentage of aquatic individuals	%NW =	1

Number of damp ground/waterside taxa	SD =	2
Percentage of damp ground/waterside taxa	%SD =	3
Number of damp ground/waterside individuals	ND =	3
Percentage of damp ground/waterside individuals	%ND =	2
Number of strongly plant-associated taxa	SP =	8
Percentage of strongly plant-associated taxa	%SP =	11
Number of strongly plant-associated individuals	NP =	8
Percentage of strongly plant-associated individuals	%NP =	6
Number of heathland/moorland taxa	SM =	2
Number of heathland/moorland individuals	NM =	2
Percentage of heathland/moorland individuals	%NM =	1
Number of wood-associated taxa	SL =	1
Number of wood-associated individuals	NL =	1
Percentage of wood-associated individuals	%NL =	1
Number of decomposer taxa	SRT =	39
Percentage of decomposer taxa	%SRT =	54
Number of decomposer individuals	NRT =	85
Percentage of decomposer individuals	%NRT =	60
Number of 'dry' decomposer taxa	SRD =	8
Percentage of 'dry'decomposer taxa	%SRD =	11
Number of 'dry' decomposer individuals	NRD =	14
Percentage of 'dry'decomposer individuals	%NRD =	10
Number of 'foul' decomposer taxa	SRF =	7
Percentage of 'foul' decomposer taxa	%SRF =	10
Number of 'foul' decomposer individuals	NRF =	9
Percentage of 'foul' decomposer individuals	%NRF =	6
Index of diversity of decomposer component	alpha RT =	28
Standard error	SE alpha RT =	5
Number of individuals of grain pests	NG =	12
Percentage of individuals of grain pests	%NG =	8
Number of individuals of grain pests	NG =	12
Number of uncoded taxa	SU =	13
Percentage of uncoded individuals	PNU =	20

Site: LELA Context: 539 Sample: 8/T - species list in rank order

Taxon	Number	%	Rank	Ecodes
Carpelimus bilineatus Stephens	9	6	1	rt
Oryzaephilus surinamensis (Linnaeus)	9	6	1	g
Cercyon analis (Paykull)	8	6	3	rt
Aleocharinae sp. A	8	6	3	u
Oxytelus sculptus Gravenhorst	6	4	5	rt
Gyrohypnus fracticornis (Muller)	5	4	6	rt
Philonthus sp.	4	3	7	u
Cordalia obscura (Gravenhorst)	4	3	7	rt
Cryptophagus sp.	4	3	7	rd
Cercyon atricapillus (Marsham)	3	2	10	rf
Megasternum obscurum (Marsham)	3	2	10	rt
Carpelimus pusillus group	3	2	10	u
Rugilus orbiculatus (Paykull)	3	2	10	rt
Lathridius minutus group	3	2	10	rd
Cercyon sp. A	2	1	15	u
Ptenidium sp.	2	1	15	rt
Acrotrichis sp. A	2	1	15	rt
Anotylus nitidulus (Gravenhorst)	2	1	15	rt d

Gyrohypnus angustatus Stephens	2	1	15	rt
Neobisnius sp.	2	1	15	u
Quedius boops group	2	1	15	u
Monotoma sp.	2	1	15	rt
Ephistemus globulus (Paykull)	2	1	15	rd
Corticaria sp. A	2	1	15	rt
Corticaria sp. B	2	1	15	rt
Palorus ratzeburgi (Wissman)	2	1	15	g
Stygnocoris pedestris (Fallen)	1	1	27	oa p
Lyctocoris campestris (Fabricius)	1	1	27	rd
Ulopa reticulata (Fabricius)	1	1	27	oa p m
Conomelus anceps (Germar)	1	1	27	oa p
Auchenorhyncha sp.	1	1	27	oa p
Dyschirius ?globosus (Herbst)	1	1	27	oa
Trechus obtusus or quadristriatus	1	1	27	oa
Bradycellus ruficollis (Stephens)	1	1	27	oa m
Carabidae sp. A	1	1	27	ob
Carabidae sp. B	1	1	27	ob
Hydroporinae sp.	1	1	27	oa w
Helophorus sp.	1	1	27	oa w
Cercyon unipunctatus (Linnaeus)	1	1	27	rf
Cercyon sp. B	1	1	27	u
Acrotrichis sp. B	1	1	27	rt
Omalium ?rivulare (Paykull)	1	1	27	rt
Xylodromus sp.	1	1	27	rt
Platystethus arenarius (Fourcroy)	1	1	27	rf
Anotylus rugosus (Fabricius)	1	1	27	rt
Anotylus tetracarinatus (Block)	1	1	27	rt
Stenus sp.	1	1	27	u
Lithocharis sp.	1	1	27	rt
Othius sp.	1	1	27	rt
Leptacinus sp.	1	1	27	rt
Xantholinus sp.	1	1	27	u
Aleocharinae sp. B	1	1	27	u
Aleocharinae sp. C	1	1	27	u
Aleocharinae sp. D	1	1	27	u
Pselaphidae sp.	1	1	27	u
Aphodius porcus (Fabricius)	1	1	27	ob rf
Aphodius sp. A	1	1	27	ob rf
Aphodius sp. B	1	1	27	ob rf
Aphodius sp. C	1	1	27	ob rf
Phyllopertha horticola (Linnaeus)	1	1	27	oa p
Dryops sp.	1	1	27	oa d
Anobium punctatum (Degeer)	1	1	27	l
Ptinus fur (Linnaeus)	1	1	27	rd
Ptinus sp.	1	1	27	rd
Omosita discoidea (Fabricius)	1	1	27	rt
Atomaria sp.	1	1	27	rd
Corticaria sp. C	1	1	27	rt
Typhaea stercorea (Linnaeus)	1	1	27	rd
Halticinae sp.	1	1	27	oa p
Apion sp.	1	1	27	oa p
Hypera nigrirostris (Fabricius)	1	1	27	oa p
Sitophilus granarius (Linnaeus)	1	1	27	g

Site: LELA Context: 538 Sample: 9/T - beetle/bug main statistics

Erosion = 2 Fragmentation = 3; Weight = 1.000kg

Number of individuals estimated as	N =	138
Number of taxa	S =	77
Index of diversity (alpha)	alpha =	72
Standard error of alpha	SE alpha =	11
Number of 'certain' outdoor taxa	SOA =	26
Percentage of 'certain' outdoor taxa	%SOA =	34
Number of 'certain' outdoor individuals	NOA =	32
Percentage of 'certain' outdoor individuals	%NOA =	23
Number of 'certain' and probable outdoor taxa	SOB =	31
Percentage of 'certain' and probable outdoor taxa	%SOB =	40
Number of 'certain' and probable outdoor individuals	NOB =	42
Percentage 'certain' and probable outdoor individuals	%NOB =	30
Index of diversity of outdoor component	alpha OB =	53
Standard error	SE alpha OB =	18
Number of aquatic taxa	SW =	5
Percentage of aquatic taxa	%SW =	6
Number of aquatic individuals	NW =	7
Percentage of aquatic individuals	%NW =	5
Number of damp ground/waterside taxa	SD =	2
Percentage of damp ground/waterside taxa	%SD =	3
Number of damp ground/waterside individuals	ND =	5
Percentage of damp ground/waterside individuals	%ND =	4
Number of strongly plant-associated taxa	SP =	17
Percentage of strongly plant-associated taxa	%SP =	22
Number of strongly plant-associated individuals	NP =	21
Percentage of strongly plant-associated individuals	%NP =	15
Number of heathland/moorland taxa	SM =	0
Number of heathland/moorland individuals	NM =	0
Percentage of heathland/moorland individuals	%NM =	0
Number of wood-associated taxa	SL =	1
Number of wood-associated individuals	NL =	1
Percentage of wood-associated individuals	%NL =	1
Number of decomposer taxa	SRT =	31
Percentage of decomposer taxa	%SRT =	40
Number of decomposer individuals	NRT =	73
Percentage of decomposer individuals	%NRT =	53
Number of 'dry' decomposer taxa	SRD =	5
Percentage of 'dry'decomposer taxa	%SRD =	6
Number of 'dry' decomposer individuals	NRD =	13
Percentage of 'dry'decomposer individuals	%NRD =	9
Number of 'foul' decomposer taxa	SRF =	4
Percentage of 'foul' decomposer taxa	%SRF =	5
Number of 'foul' decomposer individuals	NRF =	10
Percentage of 'foul' decomposer individuals	%NRF =	7
Index of diversity of decomposer component	alpha RT =	21
Standard error	SE alpha RT =	4
Number of individuals of grain pests	NG =	10
Percentage of individuals of grain pests	%NG =	7
Number of individuals of grain pests	NG =	10
Number of uncoded taxa	SU =	14
Percentage of uncoded individuals	PNU =	14

Site: LELA Context: 538 Sample: 9/T - species list in rank order

Taxon	Number	%	Rank	Ecodes
Corticaria sp. A	10	7	1	rt
Anotylus tetracarinatus (Block)	8	6	2	rt
Cryptophagus sp.	8	6	2	rd
Oryzaephilus surinamensis (Linnaeus)	6	4	4	g
Aphodius sp. B	5	4	5	ob rf
Longitarsus sp.	5	4	5	oa p
Anotylus nitidulus (Gravenhorst)	4	3	7	rt d
Cryptolestes ferrugineus (Stephens)	4	3	7	g
Cercyon analis (Paykull)	3	2	9	rt
Cercyon sp.	3	2	9	u
Helophorus sp. A	2	1	11	oa w
Helophorus sp. B	2	1	11	oa w
Ptenidium sp.	2	1	11	rt
Carpelimus ?bilineatus Stephens	2	1	11	rt
Carpelimus pusillus group	2	1	11	u
Platystethus arenarius (Fourcroy)	2	1	11	rf
Oxytelus sculptus Gravenhorst	2	1	11	rt
Othius sp.	2	1	11	rt
Gyrohypnus angustatus Stephens	2	1	11	rt
Xantholinus gallicus or linearis	2	1	11	rt
Neobisnius sp.	2	1	11	u
Aleocharinae sp. A	2	1	11	u
Aphodius sp. A	2	1	11	ob rf
Enicmus sp.	2	1	11	rt
Typhaea stercorea (Linnaeus)	2	1	11	rd
Lygaeidae sp.	1	1	26	oa p
?Berytinus sp.	1	1	26	oa p
Auchenorhyncha sp. A	1	1	26	oa p
Auchenorhyncha sp. B	1	1	26	oa p
Dyschirius ?globosus (Herbst)	1	1	26	oa
Bembidion (Philochthus) sp.	1	1	26	oa
Pterostichus sp. A	1	1	26	ob
Pterostichus sp. B	1	1	26	ob
Carabidae sp.	1	1	26	ob
Hydroporinae sp.	1	1	26	oa w
Helophorus sp.	1	1	26	oa w
Cercyon melanocephalus (Linnaeus)	1	1	26	rt
Megasternum obscurum (Marsham)	1	1	26	rt
Cryptopleurum minutum (Fabricius)	1	1	26	rf
Hydrophilinae sp.	1	1	26	oa w
Onthophilus striatus (Forster)	1	1	26	rt
Omalium sp.	1	1	26	rt
Omaliinae sp.	1	1	26	u
Platystethus ?nitens (Sahlberg)	1	1	26	oa d
Anotylus rugosus (Fabricius)	1	1	26	rt
Anotylus sculpturatus group	1	1	26	rt
Stenus sp.	1	1	26	u
Philonthus sp. A	1	1	26	u
Philonthus or Gabrius sp.	1	1	26	u
Staphylininae sp.	1	1	26	u
Tachyporus sp. A	1	1	26	u
Tachyporus sp. B	1	1	26	u

Tachinus laticollis or marginellus	1	1	26	u
Tachinus ?signatus Gravenhorst	1	1	26	u
Falagria or Cordalia sp.	1	1	26	rt
Aleocharinae sp. B	1	1	26	u
Phyllopertha horticola (Linnaeus)	1	1	26	oa p
Anobiidae sp.	1	1	26	l
Ptinus sp.	1	1	26	rd
Meligethes sp.	1	1	26	oa p
Atomaria sp.	1	1	26	rd
Orthoperus sp.	1	1	26	rt
Lathridius minutus group	1	1	26	rd
Corticaria sp. B	1	1	26	rt
Corticarina sp.	1	1	26	rt
Tenebrio obscurus Fabricius	1	1	26	rt
Gastrophysa viridula (Degeer)	1	1	26	oa p
Chrysomelinae sp.	1	1	26	oa p
Phyllotreta sp.	1	1	26	oa p
Chaetocnema concinna (Marsham)	1	1	26	oa p
?Chaetocnema sp.	1	1	26	oa p
Apion (Oxystoma) subulatum Kirby	1	1	26	oa p
Apion sp. A	1	1	26	oa p
Apion sp. B	1	1	26	oa p
Dorytomus sp.	1	1	26	oa p
Ceuthorhynchinae sp.	1	1	26	oa p
Curculionidae sp.	1	1	26	oa

Site: LELA Context: 546 Sample: 11/T - beetle/bug main statistics

Erosion = 2 Fragmentation = 3; Weight = 1.000kg

Number of individuals estimated as	N =	112
Number of taxa	S =	45
Index of diversity (alpha)	alpha =	28
Standard error of alpha	SE alpha =	4
Number of 'certain' outdoor taxa	SOA =	17
Percentage of 'certain' outdoor taxa	%SOA =	38
Number of 'certain' outdoor individuals	NOA =	29
Percentage of 'certain' outdoor individuals	%NOA =	26
Number of 'certain' and probable outdoor taxa	SOB =	19
Percentage of 'certain' and probable outdoor taxa	%SOB =	42
Number of 'certain' and probable outdoor individuals	NOB =	34
Percentage 'certain' and probable outdoor individuals	%NOB =	30
Index of diversity of outdoor component	alpha OB =	18
Standard error	SE alpha OB =	6
Number of aquatic taxa	SW =	1
Percentage of aquatic taxa	%SW =	2
Number of aquatic individuals	NW =	1
Percentage of aquatic individuals	%NW =	1
Number of damp ground/waterside taxa	SD =	2
Percentage of damp ground/waterside taxa	%SD =	4
Number of damp ground/waterside individuals	ND =	2
Percentage of damp ground/waterside individuals	%ND =	2
Number of strongly plant-associated taxa	SP =	14
Percentage of strongly plant-associated taxa	%SP =	31
Number of strongly plant-associated individuals	NP =	26
Percentage of strongly plant-associated individuals	%NP =	23

Number of heathland/moorland taxa	SM =	0
Number of heathland/moorland individuals	NM =	0
Percentage of heathland/moorland individuals	%NM =	0
Number of wood-associated taxa	SL =	0
Number of wood-associated individuals	NL =	0
Percentage of wood-associated individuals	%NL =	0
Number of decomposer taxa	SRT =	15
Percentage of decomposer taxa	%SRT =	33
Number of decomposer individuals	NRT =	68
Percentage of decomposer individuals	%NRT =	61
Number of 'dry' decomposer taxa	SRD =	3
Percentage of 'dry'decomposer taxa	%SRD =	7
Number of 'dry' decomposer individuals	NRD =	14
Percentage of 'dry'decomposer individuals	%NRD =	13
Number of 'foul' decomposer taxa	SRF =	4
Percentage of 'foul' decomposer taxa	%SRF =	9
Number of 'foul' decomposer individuals	NRF =	7
Percentage of 'foul' decomposer individuals	%NRF =	6
Index of diversity of decomposer component	alpha RT =	6
Standard error	SE alpha RT =	1
Number of individuals of grain pests	NG =	4
Percentage of individuals of grain pests	%NG =	4
Number of individuals of grain pests	NG =	4
Number of uncoded taxa	SU =	10
Percentage of uncoded individuals	PNU =	10

Site: LELA Context: 546 Sample: 11/T - species list in rank order

Taxon	Number	%	Rank	Ecodes
Corticaria sp.	40	36	1	rt
Longitarsus sp.	9	8	2	oa p
Typhaea stercorea (Linnaeus)	7	6	3	rd
Cryptophagus sp.	6	5	4	rd
Aphodius prodromus (Brahm)	4	4	5	ob rf
Apion sp. A	3	3	6	oa p
Aleocharinae sp. A	2	2	7	u
Oryzaephilus surinamensis (Linnaeus)	2	2	7	g
Phyllotreta nemorum group	2	2	7	oa p
Sitona regensteinensis (Herbst)	2	2	7	oa p
Stygnocoris pedestris (Fallen)	1	1	11	oa p
Heteroptera sp.	1	1	11	u
Auchenorhyncha sp. A	1	1	11	oa p
Auchenorhyncha sp. B	1	1	11	oa p
Carabidae sp.	1	1	11	ob
Helophorus sp.	1	1	11	oa w
Cercyon ?analis (Paykull)	1	1	11	rt
Cercyon atricapillus (Marsham)	1	1	11	rf
Cercyon haemorrhoidalis (Fabricius)	1	1	11	rf
Megasternum obscurum (Marsham)	1	1	11	rt
Histerinae sp.	1	1	11	u
Acrotrichis sp.	1	1	11	rt
Olophrum sp.	1	1	11	oa
Anotylus nitidulus (Gravenhorst)	1	1	11	rt d
Anotylus tetracarinatus (Block)	1	1	11	rt
Stenus sp. A	1	1	11	u

Stenus sp. B	1	1	11	u
Othius sp.	1	1	11	rt
Xantholinus gallicus or linearis	1	1	11	rt
Tachyporus sp. A	1	1	11	u
Tachyporus sp. B	1	1	11	u
Aleocharinae sp. B	1	1	11	u
Aleocharinae sp. C	1	1	11	u
Aleocharinae sp. D	1	1	11	u
Aphodius contaminatus (Herbst)	1	1	11	oa rf
Phyllopertha horticola (Linnaeus)	1	1	11	oa p
Cryptolestes ferrugineus (Stephens)	1	1	11	g
Atomaria sp.	1	1	11	rd
Apion sp. B	1	1	11	oa p
Sitona sp.	1	1	11	oa p
Sitophilus granarius (Linnaeus)	1	1	11	g
Dorytomus sp.	1	1	11	oa p
Ceutorhynchus sp.	1	1	11	oa p
Rhinoncus pericarpius (Linnaeus)	1	1	11	oa p
Limnobaris pilistriata (Stephens)	1	1	11	oa p d

Site: LELA Context: 564 Sample: 12/T - beetle/bug main statistics

Erosion = 0 Fragmentation = 0; Weight = 1.000kg

Number of individuals estimated as	N =	12
Number of taxa	S =	11
Index of diversity not calculated, n = s or n < 20		
Number of 'certain' outdoor taxa	SOA =	0
Percentage of 'certain' outdoor taxa	%SOA =	0
Number of 'certain' outdoor individuals	NOA =	0
Percentage of 'certain' outdoor individuals	%NOA =	0
Number of 'certain' and probable outdoor taxa	SOB =	2
Percentage of 'certain' and probable outdoor taxa	%SOB =	18
Number of 'certain' and probable outdoor individuals	NOB =	2
Percentage 'certain' and probable outdoor individuals	%NOB =	17
Diversity index for OB not calculated, NOB = SOB or NOB < 20		
Number of aquatic taxa	SW =	0
Percentage of aquatic taxa	%SW =	0
Number of aquatic individuals	NW =	0
Percentage of aquatic individuals	%NW =	0
Number of damp ground/waterside taxa	SD =	0
Percentage of damp ground/waterside taxa	%SD =	0
Number of damp ground/waterside individuals	ND =	0
Percentage of damp ground/waterside individuals	%ND =	0
Number of strongly plant-associated taxa	SP =	0
Percentage of strongly plant-associated taxa	%SP =	0
Number of strongly plant-associated individuals	NP =	0
Percentage of strongly plant-associated individuals	%NP =	0
Number of heathland/moorland taxa	SM =	0
Number of heathland/moorland individuals	NM =	0
Percentage of heathland/moorland individuals	%NM =	0
Number of wood-associated taxa	SL =	1
Number of wood-associated individuals	NL =	1
Percentage of wood-associated individuals	%NL =	8
Number of decomposer taxa	SRT =	2
Percentage of decomposer taxa	%SRT =	18

Number of decomposer individuals	NRT =	2
Percentage of decomposer individuals	%NRT =	17
Number of 'dry' decomposer taxa	SRD =	2
Percentage of 'dry'decomposer taxa	%SRD =	18
Number of 'dry' decomposer individuals	NRD =	2
Percentage of 'dry'decomposer individuals	%NRD =	17
Number of 'foul' decomposer taxa	SRF =	0
Percentage of 'foul' decomposer taxa	%SRF =	0
Number of 'foul' decomposer individuals	NRF =	0
Percentage of 'foul' decomposer individuals	%NRF =	0
Diversity index for RT not calculated, NRT = SRT or NRT < 20		
Number of individuals of grain pests	NG =	4
Percentage of individuals of grain pests	%NG =	33
Number of individuals of grain pests	NG =	4
Number of uncoded taxa	SU =	3
Percentage of uncoded individuals	PNU =	25

Site: LELA Context: 564 Sample: 12/T - species list in rank order

Taxon	Number	%	Rank	Ecodes
Cryptolestes ferrugineus (Stephens)	2	17	1	g
Carabidae sp.	1	8	2	ob
Aleocharinae sp.	1	8	2	u
Elateridae sp.	1	8	2	ob
Ptinus sp.	1	8	2	rd
Oryzaephilus surinamensis (Linnaeus)	1	8	2	g
Cryptophagus sp.	1	8	2	rd
Palorus ratzeburgi (Wissman)	1	8	2	g
Cossoninae sp.	1	8	2	u
Scolytus sp.	1	8	2	l
Coleoptera sp.	1	8	2	u

Site: LELA Context: 550 Sample: 13/T - beetle/bug main statistics

Erosion = 3 Fragmentation = 4; Weight = 1.000kg

Number of individuals estimated as	N =	68
Number of taxa	S =	57
Index of diversity (alpha)	alpha =	164
Standard error of alpha	SE alpha =	53
Number of 'certain' outdoor taxa	SOA =	16
Percentage of 'certain' outdoor taxa	%SOA =	28
Number of 'certain' outdoor individuals	NOA =	17
Percentage of 'certain' outdoor individuals	%NOA =	25
Number of 'certain' and probable outdoor taxa	SOB =	21
Percentage of 'certain' and probable outdoor taxa	%SOB =	37
Number of 'certain' and probable outdoor individuals	NOB =	23
Percentage 'certain' and probable outdoor individuals	%NOB =	34
Index of diversity of outdoor component	alpha OB =	111
Standard error	SE alpha OB =	76
Number of aquatic taxa	SW =	3
Percentage of aquatic taxa	%SW =	5
Number of aquatic individuals	NW =	4
Percentage of aquatic individuals	%NW =	6
Number of damp ground/waterside taxa	SD =	1

Percentage of damp ground/waterside taxa	%SD =	2
Number of damp ground/waterside individuals	ND =	1
Percentage of damp ground/waterside individuals	%ND =	1
Number of strongly plant-associated taxa	SP =	9
Percentage of strongly plant-associated taxa	%SP =	16
Number of strongly plant-associated individuals	NP =	9
Percentage of strongly plant-associated individuals	%NP =	13
Number of heathland/moorland taxa	SM =	0
Number of heathland/moorland individuals	NM =	0
Percentage of heathland/moorland individuals	%NM =	0
Number of wood-associated taxa	SL =	0
Number of wood-associated individuals	NL =	0
Percentage of wood-associated individuals	%NL =	0
Number of decomposer taxa	SRT =	21
Percentage of decomposer taxa	%SRT =	37
Number of decomposer individuals	NRT =	29
Percentage of decomposer individuals	%NRT =	43
Number of 'dry' decomposer taxa	SRD =	4
Percentage of 'dry'decomposer taxa	%SRD =	7
Number of 'dry' decomposer individuals	NRD =	7
Percentage of 'dry'decomposer individuals	%NRD =	10
Number of 'foul' decomposer taxa	SRF =	4
Percentage of 'foul' decomposer taxa	%SRF =	7
Number of 'foul' decomposer individuals	NRF =	6
Percentage of 'foul' decomposer individuals	%NRF =	9
Index of diversity of decomposer component	alpha RT =	35
Standard error	SE alpha RT =	14
Number of individuals of grain pests	NG =	4
Percentage of individuals of grain pests	%NG =	6
Number of individuals of grain pests	NG =	4
Number of uncoded taxa	SU =	14
Percentage of uncoded individuals	PNU =	22

Site: LELA Context: 550 Sample: 13/T - species list in rank order

Taxon	Number	%	Rank	Ecodes
Megasternum obscurum (Marsham)	3	4	1	rt
Helophorus sp. A	2	3	2	oa w
Platystethus arenarius (Fourcroy)	2	3	2	rf
Stenus sp. B	2	3	2	u
Cordalia obscura (Gravenhorst)	2	3	2	rt
Aphodius ?prodromus (Brahm)	2	3	2	ob rf
Ptinus ?fur (Linnaeus)	2	3	2	rd
Oryzaephilus surinamensis (Linnaeus)	2	3	2	g
Cryptophagus sp.	2	3	2	rd
Atomaria sp.	2	3	2	rd
Heteroptera sp.	1	1	11	u
Auchenorhyncha sp.	1	1	11	oa p
Clivina ?fossor (Linnaeus)	1	1	11	oa
Bembidion lampros or properans	1	1	11	oa
Bembidion (Philochthus) sp.	1	1	11	oa
Pterostichus sp.	1	1	11	ob
Carabidae sp. A	1	1	11	ob
Carabidae sp. B	1	1	11	ob

Helophorus sp. B	1	1	11	oa w
Cercyon analis (Paykull)	1	1	11	rt
Cercyon ?haemorrhoidalis (Fabricius)	1	1	11	rf
Onthophilus striatus (Forster)	1	1	11	rt
Ochthebius sp.	1	1	11	oa w
Omalium sp.	1	1	11	rt
Carpelimus ?bilineatus Stephens	1	1	11	rt
Carpelimus sp.	1	1	11	u
Anotylus nitidulus (Gravenhorst)	1	1	11	rt d
Anotylus rugosus (Fabricius)	1	1	11	rt
Anotylus tetracarinatus (Block)	1	1	11	rt
Stenus sp. A	1	1	11	u
Lathrobium sp.	1	1	11	u
Gyrohypnus angustatus Stephens	1	1	11	rt
Xantholinus sp.	1	1	11	u
?Philonthus sp.	1	1	11	u
Tachyporus ?hypnorum (Fabricius)	1	1	11	u
Tachinus ?signatus Gravenhorst	1	1	11	u
Aleochara sp.	1	1	11	u
Aleocharinae sp. A	1	1	11	u
Aleocharinae sp. B	1	1	11	u
Aleocharinae sp. C	1	1	11	u
Aleocharinae sp. D	1	1	11	u
Aphodius sp.	1	1	11	ob rf
Phyllopertha horticola (Linnaeus)	1	1	11	oa p
Brachypterus sp.	1	1	11	oa p
Meligethes sp.	1	1	11	oa p
Monotoma sp.	1	1	11	rt
Cryptolestes ferrugineus (Stephens)	1	1	11	g
Ephistemus globulus (Paykull)	1	1	11	rd
Enicmus sp.	1	1	11	rt
Corticaria sp.	1	1	11	rt
Gastrophysa viridula (Degeer)	1	1	11	oa p
Chrysomelinae sp.	1	1	11	oa p
Longitarsus sp.	1	1	11	oa p
Apion sp.	1	1	11	oa p
Sitophilus granarius (Linnaeus)	1	1	11	g
Dorytomus sp.	1	1	11	oa p
Curculionidae sp.	1	1	11	oa

Site: LELA Context: 553; Sample: 14/T

NO RECORDS OF BEETLES OR BUGS

Site: LELA Context: 570 Sample: 15/T - beetle/bug main statistics

Erosion = 3 Fragmentation = 3; Weight = 1.000kg

Number of individuals estimated as	N = 8
Number of taxa	S = 7

Site: LELA Context: 570 Sample: 15/T - species list in rank order

Taxon	Number	%	Rank	Ecodes
Lathridius minutus group	2	25	1	rd

Stenus sp.	1	13	2	u
Staphylininae sp.	1	13	2	u
Aleocharinae sp.	1	13	2	u
Aphodius sp.	1	13	2	ob rf
Phyllopertha horticola (Linnaeus)	1	13	2	oa p
Sitophilus granarius (Linnaeus)	1	13	2	g

Site: LELA Context: 578 Sample: 16/T - beetle/bug main statistics

Erosion = 0 Fragmentation = 0; Weight = 1.000kg

Number of individuals estimated as	N =	19
Number of taxa	S =	17
Index of diversity not calculated, n = s or n < 20		
Number of 'certain' outdoor taxa	SOA =	5
Percentage of 'certain' outdoor taxa	%SOA =	29
Number of 'certain' outdoor individuals	NOA =	5
Percentage of 'certain' outdoor individuals	%NOA =	26
Number of 'certain' and probable outdoor taxa	SOB =	8
Percentage of 'certain' and probable outdoor taxa	%SOB =	47
Number of 'certain' and probable outdoor individuals	NOB =	10
Percentage 'certain' and probable outdoor individuals	%NOB =	53
Diversity index for OB not calculated, NOB = SOB or NOB < 20		
Number of aquatic taxa	SW =	1
Percentage of aquatic taxa	%SW =	6
Number of aquatic individuals	NW =	1
Percentage of aquatic individuals	%NW =	5
Number of damp ground/waterside taxa	SD =	0
Percentage of damp ground/waterside taxa	%SD =	0
Number of damp ground/waterside individuals	ND =	0
Percentage of damp ground/waterside individuals	%ND =	0
Number of strongly plant-associated taxa	SP =	3
Percentage of strongly plant-associated taxa	%SP =	18
Number of strongly plant-associated individuals	NP =	3
Percentage of strongly plant-associated individuals	%NP =	16
Number of heathland/moorland taxa	SM =	0
Number of heathland/moorland individuals	NM =	0
Percentage of heathland/moorland individuals	%NM =	0
Number of wood-associated taxa	SL =	0
Number of wood-associated individuals	NL =	0
Percentage of wood-associated individuals	%NL =	0
Number of decomposer taxa	SRT =	8
Percentage of decomposer taxa	%SRT =	47
Number of decomposer individuals	NRT =	10
Percentage of decomposer individuals	%NRT =	53
Number of 'dry' decomposer taxa	SRD =	1
Percentage of 'dry'decomposer taxa	%SRD =	6
Number of 'dry' decomposer individuals	NRD =	1
Percentage of 'dry'decomposer individuals	%NRD =	5
Number of 'foul' decomposer taxa	SRF =	3
Percentage of 'foul' decomposer taxa	%SRF =	18
Number of 'foul' decomposer individuals	NRF =	5
Percentage of 'foul' decomposer individuals	%NRF =	26
Diversity index for RT not calculated, NRT = SRT or NRT < 20		
Number of individuals of grain pests	NG =	1
Percentage of individuals of grain pests	%NG =	5

Number of individuals of grain pests	NG =	1
Number of uncoded taxa	SU =	3
Percentage of uncoded individuals	PNU =	16

Site: LELA Context: 578 Sample: 16/T - species list in rank order

Taxon	Number	%	Rank	Ecodes
Aphodius sp. A	3	16	1	ob rf
Amara sp.	1	5	2	oa
Helophorus sp.	1	5	2	oa w
Cercyon sp.	1	5	2	u
Xylodromus ?concinnus (Marsham)	1	5	2	rt
Carpelimus bilineatus Stephens	1	5	2	rt
Anotylus rugosus (Fabricius)	1	5	2	rt
Tachinus laticollis or marginellus	1	5	2	u
Aleocharinae sp.	1	5	2	u
Aphodius sp.	1	5	2	ob rf
Aphodius sp. B	1	5	2	ob rf
?Phyllopertha horticola (Linnaeus)	1	5	2	oa p
Cryptolestes ferrugineus (Stephens)	1	5	2	g
Cryptophagus sp.	1	5	2	rd
Enicmus sp.	1	5	2	rt
Chaetocnema arida group	1	5	2	oa p
Hypera sp.	1	5	2	oa p

Site: LELA Context: 599 Sample: 17/T - beetle/bug main statistics

Erosion = 3 Fragmentation = 3; Weight = 1.000kg

Number of individuals estimated as	N =	30
Number of taxa	S =	28
Index of diversity (alpha)	alpha =	195
Standard error of alpha	SE alpha =	133
Number of 'certain' outdoor taxa	SOA =	8
Percentage of 'certain' outdoor taxa	%SOA =	29
Number of 'certain' outdoor individuals	NOA =	9
Percentage of 'certain' outdoor individuals	%NOA =	30
Number of 'certain' and probable outdoor taxa	SOB =	8
Percentage of 'certain' and probable outdoor taxa	%SOB =	29
Number of 'certain' and probable outdoor individuals	NOB =	9
Percentage 'certain' and probable outdoor individuals	%NOB =	30
Diversity index for OB not calculated, NOB = SOB or NOB < 20		
Number of aquatic taxa	SW =	4
Percentage of aquatic taxa	%SW =	14
Number of aquatic individuals	NW =	5
Percentage of aquatic individuals	%NW =	17
Number of damp ground/waterside taxa	SD =	1
Percentage of damp ground/waterside taxa	%SD =	4
Number of damp ground/waterside individuals	ND =	1
Percentage of damp ground/waterside individuals	%ND =	3
Number of strongly plant-associated taxa	SP =	4
Percentage of strongly plant-associated taxa	%SP =	14
Number of strongly plant-associated individuals	NP =	4
Percentage of strongly plant-associated individuals	%NP =	13
Number of heathland/moorland taxa	SM =	0

Number of heathland/moorland individuals	NM =	0
Percentage of heathland/moorland individuals	%NM =	0
Number of wood-associated taxa	SL =	0
Number of wood-associated individuals	NL =	0
Percentage of wood-associated individuals	%NL =	0
Number of decomposer taxa	SRT =	13
Percentage of decomposer taxa	%SRT =	46
Number of decomposer individuals	NRT =	14
Percentage of decomposer individuals	%NRT =	47
Number of 'dry' decomposer taxa	SRD =	3
Percentage of 'dry'decomposer taxa	%SRD =	11
Number of 'dry' decomposer individuals	NRD =	3
Percentage of 'dry'decomposer individuals	%NRD =	10
Number of 'foul' decomposer taxa	SRF =	1
Percentage of 'foul' decomposer taxa	%SRF =	4
Number of 'foul' decomposer individuals	NRF =	1
Percentage of 'foul' decomposer individuals	%NRF =	3
Diversity index for RT not calculated, NRT = SRT or NRT < 20		
Number of individuals of grain pests	NG =	1
Percentage of individuals of grain pests	%NG =	3
Number of individuals of grain pests	NG =	1
Number of uncoded taxa	SU =	6
Percentage of uncoded individuals	PNU =	20

Site: LELA Context: 599 Sample: 17/T - species list in rank order

Taxon	Number	%	Rank	Ecodes
Helophorus sp. B	2	7	1	oa w
Anotylus tetracarinatus (Block)	2	7	1	rt
Auchenorhyncha sp. A	1	3	3	oa p
Auchenorhyncha sp. B	1	3	3	oa p
Helophorus ?grandis Illiger	1	3	3	oa w
Helophorus sp. A	1	3	3	oa w
Cercyon analis (Paykull)	1	3	3	rt
Megasternum obscurum (Marsham)	1	3	3	rt
Ochthebius sp.	1	3	3	oa w
Omalium ?rivulare (Paykull)	1	3	3	rt
Xylodromus concinnus (Marsham)	1	3	3	rt
Carpelimus pusillus group	1	3	3	u
Platystethus arenarius (Fourcroy)	1	3	3	rf
Anotylus nitidulus (Gravenhorst)	1	3	3	rt d
Staphylininae sp.	1	3	3	u
Tachinus sp.	1	3	3	u
Falagria sp.	1	3	3	rt
Aleocharinae sp. A	1	3	3	u
Aleocharinae sp. B	1	3	3	u
Ptinus sp.	1	3	3	rd
Atomaria sp.	1	3	3	rd
Stephostethus lardarius (Degeer)	1	3	3	rt
Lathridius minutus group	1	3	3	rd
Corticaria sp.	1	3	3	rt
?Palorus ratzeburgi (Wissman)	1	3	3	g
Chrysomelinae sp.	1	3	3	oa p
Ceutorhynchus sp.	1	3	3	oa p
Coleoptera sp.	1	3	3	u

Site: LELA Context: 607 Sample: 18/T - beetle/bug main statistics

Erosion = 4 Fragmentation = 4; Weight = 1.000kg

Number of individuals estimated as	N =	22
Number of taxa	S =	20
Index of diversity (alpha)	alpha =	101
Standard error of alpha	SE alpha =	70
Number of 'certain' outdoor taxa	SOA =	4
Percentage of 'certain' outdoor taxa	%SOA =	20
Number of 'certain' outdoor individuals	NOA =	4
Percentage of 'certain' outdoor individuals	%NOA =	18
Number of 'certain' and probable outdoor taxa	SOB =	7
Percentage of 'certain' and probable outdoor taxa	%SOB =	35
Number of 'certain' and probable outdoor individuals	NOB =	8
Percentage 'certain' and probable outdoor individuals	%NOB =	36
Diversity index for OB not calculated, NOB = SOB or NOB < 20		
Number of aquatic taxa	SW =	1
Percentage of aquatic taxa	%SW =	5
Number of aquatic individuals	NW =	1
Percentage of aquatic individuals	%NW =	5
Number of damp ground/waterside taxa	SD =	1
Percentage of damp ground/waterside taxa	%SD =	5
Number of damp ground/waterside individuals	ND =	1
Percentage of damp ground/waterside individuals	%ND =	5
Number of strongly plant-associated taxa	SP =	2
Percentage of strongly plant-associated taxa	%SP =	10
Number of strongly plant-associated individuals	NP =	2
Percentage of strongly plant-associated individuals	%NP =	9
Number of heathland/moorland taxa	SM =	0
Number of heathland/moorland individuals	NM =	0
Percentage of heathland/moorland individuals	%NM =	0
Number of wood-associated taxa	SL =	1
Number of wood-associated individuals	NL =	1
Percentage of wood-associated individuals	%NL =	5
Number of decomposer taxa	SRT =	8
Percentage of decomposer taxa	%SRT =	40
Number of decomposer individuals	NRT =	9
Percentage of decomposer individuals	%NRT =	41
Number of 'dry' decomposer taxa	SRD =	1
Percentage of 'dry'decomposer taxa	%SRD =	5
Number of 'dry' decomposer individuals	NRD =	1
Percentage of 'dry'decomposer individuals	%NRD =	5
Number of 'foul' decomposer taxa	SRF =	2
Percentage of 'foul' decomposer taxa	%SRF =	10
Number of 'foul' decomposer individuals	NRF =	3
Percentage of 'foul' decomposer individuals	%NRF =	14
Diversity index for RT not calculated, NRT = SRT or NRT < 20		
Number of individuals of grain pests	NG =	4
Percentage of individuals of grain pests	%NG =	18
Number of individuals of grain pests	NG =	4
Number of uncoded taxa	SU =	3
Percentage of uncoded individuals	PNU =	14

Site: LELA Context: 607 Sample: 18/T - species list in rank order

Taxon	Number	%	Rank	Ecodes
Aphodius sp. B	2	9	1	ob rf
Cryptolestes ferrugineus (Stephens)	2	9	1	g
Auchenorhyncha sp.	1	5	3	oa p
Trechus obtusus or quadristriatus	1	5	3	oa
Carabidae sp.	1	5	3	ob
Helophorus sp.	1	5	3	oa w
Acritus nigricornis (Hoffmann)	1	5	3	rt
Carpelimus ?bilineatus Stephens	1	5	3	rt
Anotylus nitidulus (Gravenhorst)	1	5	3	rt d
Neobisnius sp.	1	5	3	u
Aphodius sp. A	1	5	3	ob rf
Oryzaephilus surinamensis (Linnaeus)	1	5	3	g
Lathridius minutus group	1	5	3	rd
Corticaria sp.	1	5	3	rt
Corticarina or Cortinicara sp.	1	5	3	rt
?Palorus ratzeburgi (Wissman)	1	5	3	g
Halticinae sp.	1	5	3	oa p
Scolytus sp.	1	5	3	l
Coleoptera sp.	1	5	3	u
Coleoptera sp. B	1	5	3	u

Site: LELA Context: 637 Sample: 19/T - beetle/bug main statistics

Erosion = 3 Fragmentation = 3; Weight = 1.000kg

Number of individuals estimated as	N =	31
Number of taxa	S =	19
Index of diversity (alpha)	alpha =	21
Standard error of alpha	SE alpha =	7
Number of 'certain' outdoor taxa	SOA =	7
Percentage of 'certain' outdoor taxa	%SOA =	37
Number of 'certain' outdoor individuals	NOA =	8
Percentage of 'certain' outdoor individuals	%NOA =	26
Number of 'certain' and probable outdoor taxa	SOB =	10
Percentage of 'certain' and probable outdoor taxa	%SOB =	53
Number of 'certain' and probable outdoor individuals	NOB =	11
Percentage 'certain' and probable outdoor individuals	%NOB =	35
Diversity index for OB not calculated, NOB = SOB or NOB < 20		
Number of aquatic taxa	SW =	3
Percentage of aquatic taxa	%SW =	16
Number of aquatic individuals	NW =	4
Percentage of aquatic individuals	%NW =	13
Number of damp ground/waterside taxa	SD =	1
Percentage of damp ground/waterside taxa	%SD =	5
Number of damp ground/waterside individuals	ND =	10
Percentage of damp ground/waterside individuals	%ND =	32
Number of strongly plant-associated taxa	SP =	4
Percentage of strongly plant-associated taxa	%SP =	21
Number of strongly plant-associated individuals	NP =	4
Percentage of strongly plant-associated individuals	%NP =	13
Number of heathland/moorland taxa	SM =	0
Number of heathland/moorland individuals	NM =	0

Percentage of heathland/moorland individuals	%NM =	0
Number of wood-associated taxa	SL =	0
Number of wood-associated individuals	NL =	0
Percentage of wood-associated individuals	%NL =	0
Number of decomposer taxa	SRT =	8
Percentage of decomposer taxa	%SRT =	42
Number of decomposer individuals	NRT =	18
Percentage of decomposer individuals	%NRT =	58
Number of 'dry' decomposer taxa	SRD =	1
Percentage of 'dry'decomposer taxa	%SRD =	5
Number of 'dry' decomposer individuals	NRD =	2
Percentage of 'dry'decomposer individuals	%NRD =	6
Number of 'foul' decomposer taxa	SRF =	3
Percentage of 'foul' decomposer taxa	%SRF =	16
Number of 'foul' decomposer individuals	NRF =	3
Percentage of 'foul' decomposer individuals	%NRF =	10
Diversity index for RT not calculated, NRT = SRT or NRT < 20		
Number of individuals of grain pests	NG =	3
Percentage of individuals of grain pests	%NG =	10
Number of individuals of grain pests	NG =	3
Number of uncoded taxa	SU =	1
Percentage of uncoded individuals	PNU =	3

Site: LELA Context: 637 Sample: 19/T - species list in rank order

Taxon	Number	%	Rank	Ecodes
Anotylus nitidulus (Gravenhorst)	10	32	1	rt d
Helophorus sp.	2	6	2	oa w
Cryptolestes ferrugineus (Stephens)	2	6	2	g
Atomaria sp.	2	6	2	rd
Auchenorhyncha sp.	1	3	5	oa p
Carabidae sp.	1	3	5	ob
Colymbetinae sp.	1	3	5	oa w
Ochthebius sp.	1	3	5	oa w
Platystethus arenarius (Fourcroy)	1	3	5	rf
Gyrohypnus fracticornis (Muller)	1	3	5	rt
Cordalia obscura (Gravenhorst)	1	3	5	rt
Aleocharinae sp.	1	3	5	u
Aphodius sp. A	1	3	5	ob rf
Aphodius sp. B	1	3	5	ob rf
Phyllopertha horticola (Linnaeus)	1	3	5	oa p
Corticarina or Cortinicara sp.	1	3	5	rt
Phyllotreta sp.	1	3	5	oa p
Chaetocnema ?concinna (Marsham)	1	3	5	oa p
Sitophilus granarius (Linnaeus)	1	3	5	g