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**Technical Report: Biological remains from a site at Carberry Hall Farm,
East Riding of Yorkshire (site code: TSEP908)**

by

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Summary

A series of sediment samples and a very small quantity of hand-collected bone from Iron Age deposits at Carberry Hall Farm, East Riding of Yorkshire, were initially submitted for assessment of their bioarchaeological potential. Five of the six samples examined gave biological remains of limited value, with only a few charred plant remains (though often suggestive of material from burnt turves) or uncharred remains which were thought to be of recent origin. The sixth (Sample 17, Context 1045) produced very much more useful assemblages of plants and invertebrates and an additional subsample from this was processed subsequently to provide material for AMS dating as well as further plant and invertebrate remains. This ditch fill proved to be of mid Iron Age and yielded a rich assemblage, the plant and insect remains taken in combination indicating that the ditch was water-filled, with a diverse emergent and marginal flora. The local terrestrial vegetation was dominated by grassland and scrub and, whilst there was only limited evidence for local human activity, the wider landscape was indirectly dominated by humans in that much of it seems to have been grazing land.

The very small quantity of hand-collected bone was extremely poorly preserved and of no interpretative value.

Keywords: CARBERRY HALL FARM; EAST RIDING OF YORKSHIRE; IRON AGE; DITCH FILLS; PIT FILLS; PLANT REMAINS; INVERTEBRATE REMAINS; INSECTS; VERTEBRATE REMAINS

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Technical Report: Biological remains from a site at Carberry Hall Farm, East Riding of Yorkshire (site code: TSEP908)

Introduction and methods

A series of sediment samples ('GBA'/'BS' *sensu* Dobney *et al.* 1992), and a very small quantity of hand-collected bone, were recovered from the deposits, all of Iron Age. All of the material was submitted to the EAU for assessment of its bioarchaeological potential.

Sediment samples

The sediment samples were inspected in the laboratory. Six of the samples were selected for assessment. Their lithologies were recorded, using a standard *pro forma*, prior to processing, following the procedures of Kenward *et al.* (1980; 1986), for recovery of plant and invertebrate macrofossils. The flots, washovers and residues were examined for plant remains. The flots and washovers were also examined for invertebrate remains, and the residues were examined for other biological and artefactual remains.

Plant remains (and other components of the residues) were recorded using a semi-quantitative scale from 1 (one to five individuals per kg of sample, or one or a few fragments of material which could not easily be counted) to 4 (many hundreds of individuals per kg, or a major component of the sample). Adult beetles and bugs were recorded at the 'detailed' level of Kenward (1992), and other invertebrates were recorded using a semi-quantitative scale of 1, 2, 3, 'several' (translated as 6), 'many' (15), with estimates for very large numbers. Quality of preservation was recorded using the scales of Kenward and Large (1998). In summary, preservation is recorded as chemical erosion (E) and fragmentation (F), in each case on a scale from 0.5 (superb) to 5.5 (extremely decayed or fragmented). Plant data were recorded directly into a database using *Paradox* software and

insect data recorded on a *pro forma* and subsequently transferred to *Paradox* tables.

The principal sources for beetle ecology were Friday (1988), Hansen (1987), Koch (1989-92), and for bugs, Southwood and Leston (1959) and the Royal Entomological Society handbooks.

Table 1 shows a list of the examined samples and notes on their treatment.

Vertebrate remains

Brief notes were made on the preservational condition of the few vertebrate remains.

Results

A complete list of the plants and animals recorded is given in Table 2. Individual lists for plant remains and other components of residues and washovers from the sediment samples, recorded during analysis of plant material, appear in Table 3. Data concerning insect remains are presented in Tables 4 and 5.

Sediment samples

The results are presented in context number order. Archaeological information, provided by the excavator, is presented in square brackets.

Context 1005 [fill of latest Iron Age roundhouse gully 1002]

Sample 7/T (2 kg sieved to 300 microns with washover; assessment)

Just moist, mid to dark grey-brown, unconsolidated, slightly clay sand with traces of fine charcoal.

The moderate-sized to large residue of about 250 cm³ of sand and ?iron pan contained some iron-stained charcoal (to 15 mm); more fine charcoal was noted in the small washover, along with some very decayed ?modern weed seeds.

Context 1018 [fill of ?gully terminus 1017]

Sample 3/T (3kg sieved to 300 microns with washover; assessment)

There was a very large residue of about 700 cm³ of clean sand with a little ?iron pan; the small washover consisted of a few cm³ of ?pan, very poorly preserved charcoal (to 5 mm), modern seeds and rootlets, and some charred herbaceous plant remains including root/rhizome material perhaps from turves.

Context 1037 [fill of pit 1036]

Sample 14/T (3kg sieved to 300 microns with washover; assessment)

The large residue of about 400 cm³ was of clean quartz sand with rather a lot of ?iron pan. The washover of about 150 cm³ was roughly equal proportions of charcoal (to 15 mm) and sand.

Context 1045 [organic fill from lower part of Iron Age ditch 1019]

Sample 17/T (2 kg sieved to 300 microns with paraffin flotation; assessment)

Moist, mid to dark grey brown, crumbly (working soft and slightly sticky), slightly clay sandy silt with patches of light orange-brown sand. Traces of charcoal were present.

There was a moderate-sized residue of about 175 cm³, of which roughly half by volume was plant material, the rest sand. Both the residue and the flot contained very large numbers of very well preserved elder (*Sambucus nigra*), stinging nettle (*Urtica dioica*) and water-crowfoot (*Ranunculus* Subgenus *Batrachium*) seeds or fruits, together with a modest range of other taxa (Table 3). Taken together, the plant remains point to deposition in a pond or ditch

close to scrub, with alder (*Alnus*) present as well as elder, and perhaps a hedgebank nearby. The presence of charred ?heather basal twig/root fragments and charred rhizome suggest some burnt material like turves might have been deposited, too. There was also a little charcoal (to 10 mm).

A quite rich assemblage of insects, together with abundant Cladocera (water fleas) and a few mites, was recovered. Preservation was very variable (E 2.5-5.0, mode 3.5, weak; F 2.0-5.0, mode 3.0, weak), but it was considered that a large proportion of the remains would be identifiable given time. There were a few aquatics (a variety of beetles and the numerous *Daphnia ephippia*) and waterside taxa, but terrestrial forms were well represented. There were various species associated with plants, predominantly from open terrain (such as rough grazing), but perhaps also a few from scrub or woodland. There appeared to be at least two species of chafer, indicative of shortish vegetation. Dung beetles were rather common, *Aphodius ?prodromus* being fairly numerous and *A. contaminatus* represented by more than one individual (there were also *Onthophagus* and *Geotrupes* species). These insects all seem to have been locally derived by flight or inwash rather than imported in dumped material. Various other taxa may have come from dung, too (note that the *Aphodius ?prodromus* mostly proved to be *A. sphacelatus* on detailed examination). This material clearly deserved further investigation.

Sample 17/T2 (4 kg; main analysis)

A further subsample was processed for recovery of plant material for dating by AMS (see below) and for a more detailed study of the plant and invertebrate macrofossils.

There was a small to moderate-sized residue of about 400 cm³ of which about 100 cm³ comprised clean sand and gravel, the rest being woody detritus consisting of soft and rather decayed wood fragments and some flaky material presumed to be bark. Other remains were mainly elder seeds (with some large beetle fragments in the >2mm fraction),

consistent with the presence of elder twigs (see dating, below), water crowfoot and stinging nettle, with modest numbers of fruits of the umbellifers rough chervil (*Chaerophyllum temulentum*) and upright hedge-parsley (*Torilis japonica*), as well as blackberry (*Rubus fruticosus* agg.) and three-nerved sandwort (*Moehringia trinervia*): the impression these and the other remains offer is of a scrub/hedgerow community by water. The presence of some small pieces of charcoal, charred herbaceous detritus, ?heather (cf. *Calluna vulgaris*) basal twig/root fragments and charred root/rhizome fragments perhaps suggests that ash from burnt turves found its way into this ditch.

Abundant invertebrate remains were recovered from the flot, though sorting was made difficult by the presence of many pale filmy plant and insect fragments. At least 413 adult individuals of 179 beetle and bug taxa were present, together with a range of other invertebrates. Preservation was varied, from quite good to extremely poor, many remains being too decayed or fragmented to be identified (E 2.5-5.5, mode 3.0 weak; F 2.5-5.5, mode 3.5 weak; note that 5.5 is the most extreme degree of decay within the scale of Kenward and Large, 1998). Recognition was often limited by poor preservation, hence the large number of identifications to genus or higher level in the species list.

The deposit was undoubtedly formed in water. There were large numbers of water flea resting eggs (ephippia), including hundreds of *Daphnia* (recorded semi-quantitatively in the species list as 100 to indicate order of magnitude), and smaller numbers of two other types, two caddis larval cases, and numerous aquatic beetles (NW = 44; PNW = 11, see Table 5). The more abundant water beetles were *Ochthebius minimus* (9 individuals), two *Helophorus* species (6 and 5), *Agabus bipustulatus* (4), *Anacaena* sp. and *Hydraena* sp. (both 3), and *Hydrobius fuscipes*, a second *Ochthebius* and *Hydraena testacea* (all 2). These (and the aquatic taxa represented by single individuals) could all have lived in a rather shallow body of water, probably with a muddy bottom and a little submerged or emergent vegetation.

A number of species representing waterside vegetation were noted (Table 7), among them *Cyphon* sp. (9), *Aphrodes flavostriatus* (5: grasses), *Notaris acridulus* (4: on *Glyceria*), *Kateretes ?rufilabris* (3: usually *Carex* and *Juncus*), *Grypus equiseti* (3: on *Equisetum*) and *Chrysolina fastuosa* (2: typically on waterside labiates). Some of the rarer plant feeders are typically or facultatively found in damp places, too, while yet other taxa are associated with plants often, but not exclusively, found by water (e.g. *Cidnorhinus quadrimaculatus*, with three individuals, and single individuals of two *Brachypterus* species, all on nettles). Other taxa typically found in waterside habitats included *Platystethus nodifrons*, *Oxytelus fulvipes* and *Alophus triguttatus* (all 3), *Dyschirius globosus* and *Dryops* sp. (2 each), and some taxa represented by single individuals, notably *Blethisa multipunctata*. Many of the litter-dwellers (of which *Lathridius minutus* group, with nine individuals, was the most abundant) may have lived in waterside plant debris if it was not waterlogged, or in terrestrial litter. *Microcara testacea* (1) is a carr species whose larvae are found in wet rotting leaves in shallow water.

O. fulvipes is of special note, since it is now a rare species, confined to a few fen locations (such as Askham Bog, near York, Kenward 1978; 1980). The fossil record suggests that it was more abundant in Yorkshire in the past, however, doubtless reflecting much greater abundance of suitable wetland habitats prior to drainage. It seems to live in damp plant litter but, unlike *O. sculptus*, and some related species in the genera *Anotylus* and *Carpelimus*, it does not seem to have made the transition to artificial habitats on occupation sites, and the archaeological records are all from natural deposits. Carrott *et al.* (1993), noted it from medieval deposits at the evaluation excavations at Gowthorpe, Finkle Street and Micklegate, Selby, the plants and other insects suggesting natural wet woodland. *O. fulvipes* was found in fen deposits of mid Holocene date at Skipsea (Carrott *et al.* 1994) and in naturally accumulated 2nd to ?mid 3rd century pit fills at North Cave, East Yorkshire (Allison *et al.* 1997). The beetle was discussed by Buckland (1979, 87) in the context of Late Bronze Age

Thorne Moor, but no records appear in his species list. The presence of both *O. fulvipes* and *M. testacea* at Carberry Hall Farm suggests that this feature may have been an long-established swamp.

Vegetation which probably lay beyond the immediate vicinity of the water is not strongly represented, and grassland is the predominant component indicated (Table 7). The chafer *Phyllopertha horticola* was abundant (16 individuals), most likely originating in poor pastureland, and like the dung beetles (below), probably having ‘crash landed’ on to the water surface, from which it could not escape. *Hoplia philanthus* and *Agrypnus murinus* (both 2) and *Dascillus cervinus* (1) probably lived in similar habitats. *Aphrodes bicinctus* (8) is associated with grasses, but may have lived by water. Similarly, species often found on clovers and vetches in grassland (notably *Sitona lepidus* and *Hypera punctata*, both two individuals, but also most of the *Apion*) may have lived in the drier parts of waterside vegetation.

The best indication of a local vegetation type comes from the dung beetles, which collectively indicate grazing land. There were substantial numbers of *Aphodius*, including *A. contaminatus* (17), *A. sphacelatus* (12) and *A. prodromus* (3). Some other *Aphodius* were present (including two *A. ater* and *A. granarius*), as were *Geotrupes* sp. (2) and *Onthophagus joannae* and a second *Onthophagus* (both single individuals). This group of species must have come from herbivore dung, even though some are known from rotting plant remains or corpses. Some other species may have lived in dung, too, but equally may have exploited other kinds of decaying matter: *Megasternum obscurum* (18, the most abundant beetle in this assemblage), the various *Tachinus* species, *Cryptopleurum minutum* (2), and numerous others represented by one individual.

While the vegetation seems to have been strongly under human influence, producing pastureland, there is no evidence from the beetles for nearby buildings or artificial accumulations of organic waste. The ‘facultative’ and ‘typical’ synanthropes (*sensu*

Kenward 1997) recorded all could have exploited natural accumulations of plant litter, lived under bark, or in other decaying matter. There were no obligate synanthropes.

No species confined to living trees were recorded (cf. the botanical evidence), though unpublished research suggests that woodland only a few metres from developing deposits may be unrepresented by the insects. There was some evidence of dead wood. *Anobium inexpectatum* (6), a recent addition to the British list but undoubtedly overlooked, is only known from old ivy (*Hedera*). This seems to be the first fossil record: the identification was based on the ‘silky’ surface texture and the orientation of hairs around the scutellary region of the elytra (see Allen 1977). There were also four *A. punctatum*, the woodworm, a species which is almost always present in archaeological deposits, but which exploits both natural and structural dead wood.

AMS dating: *Sambucus* twig fragments to about 7 mm diameter (and some knotty nodes), 1-2 years old.

Cal BC 110 to Cal AD 70 (Cal BP 2060 to 1880) (Beta-161366)

Context 2002 [upper fill (burnt) of small Iron Age pit 2003]

Sample 19/T (3 kg sieved to 300 microns with washover; assessment)

Just moist, varicoloured (light grey to light brown to mid orange-brown to dark brown) on a mm-scale, stiff to crumbly (working plastic), slightly sandy silty clay (to clay silt). Charcoal was present in the sample.

There was a very large residue of about 800 cm³ of clean quartz sand and a little ?iron pan, and a single clast (to 40 mm) of sandstone; the washover of about 40 cm³ comprised charcoal (to 15 mm, apparently mostly oak, *Quercus*) with some charred ?heather root/twig fragments and other material perhaps from burnt turves. All the charred material was very much coated with silt and encrusted with iron salts.

Context 2023 [fill of latest Iron Age roundhouse gully]

Sample 22/T (5 kg sieved to 300 microns with washover; assessment)

Moist, mid reddish grey-brown, unconsolidated, fine sand with inclusions of stiff, mottled (blue-grey/dark brown) clay.

The very large residue of about 900 cm³ consisted of clean quartz sand with some flints (to 30 mm) and a little iron pan. The small washover of about 20 cm³ included more iron pan and some charcoal, and there were again some charred heather root/twig fragments and very small lumps of burnt and unburnt peat (perhaps from turves) and some uncharred (presumably modern) material.

Hand-collected vertebrate remains

Eight bone fragments were recovered from a single context (1035). Preservation of the remains was extremely poor and it was impossible to identify from which species or elements they were derived. All the fragments were reddish-brown in colour.

Discussion

The vertebrate remains were of no interpretative value and the information from five of the six sediment samples studied was limited to some very sparse charred plant remains which may represent burnt turves or perhaps peat, with no indications in or around the cuts from which the samples came.

The sixth sediment sample, by contrast, gave a rich flora and invertebrate fauna with considerable archaeological significance. The ditch was water-filled (perhaps more or less permanently), with a diverse emergent and marginal flora (to judge from the insects, at least). Local terrestrial vegetation seems to have been dominated by grassland and scrub - though the plant and insect assemblages differ in the kinds of plant community they indicate. There clearly was some human activity (on the basis of the traces of charred heather), and the

wider landscape was indirectly dominated by humans in that much of it seems to have been grazing land. Neither plant nor insect assemblages gave evidence of occupation as this fill formed, although a model of the transfer of remains from structures to adjacent ditches suggests that such evidence will be sparse unless there was deliberate dumping of waste (Carrott and Kenward, unpublished).

It has rarely been possible to study rural deposits of this kind, especially in the north of England, so that the present investigation, and work on similar material from other sites along the BP TSE pipeline (see especially TSEP238), represent an important opportunity to research a poorly-known aspect of our past.

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Table 1: List of examined sediment samples from excavations at Carberry Hall Farm (TSEP 908), with notes on their treatment.

Context	Sample	Notes
1005	7	2 kg sieved to 300 microns with washover
1018	3	3 kg sieved to 300 microns with washover
1037	14	3 kg sieved to 300 microns with washover
1045	17	2 kg sieved to 300 microns with paraffin flotation; a further subsample of 4kg sieved to 300 microns, plant remains for dating removed, then subjected to paraffin flotation
2002	19	3 kg sieved to 300 microns with washover
2023	22	5 kg sieved to 300 microns with washover

Table 2: Complete list of plant and animal taxa recorded from deposits at Carberry Hall Farm (TSEP site 908). Nomenclature and taxonomy for plant remains follow Tutin et al. (1964-80), and Kloet and Hincks (1964-77) for insects.

Tentative records for insects are not included if secure ones were also made. Plant material not specifically noted as being preserved by charring or mineral replacement can be taken to be uncharred and unmineralised (i.e. 'waterlogged', but sometimes denoted simply as 'uncharred'). For invertebrates (all preserved by anoxic waterlogging), * = not used in calculating assemblage statistics (Table 5); ecode—ecological code used in generating main statistics; Sp(p).—species not previously listed; Sp(p). indet.—may be a species already listed.

Taxon	Vernacular name	Remains recorded
cf. <i>Betula</i> sp(p).	?birch	bud(s) and/or bud-scale(s)
<i>Alnus glutinosa</i> (L.) Gaertner	alder	female cone scale(s), female cone(s)/cone-axis(es), fruit(s), twig fragment(s)
<i>Quercus</i> sp(p).	oak	charcoal fragment(s)
<i>Urtica dioica</i> L.	stinging nettle	achene(s)
<i>U. urens</i> L.	annual nettle	achene(s)
<i>Polygonum persicaria</i> L.	persicaria/red shank	fruit(s)
<i>Rumex</i> sp(p).	docks	fruit(s)
<i>Chenopodium album</i> L.	fat hen	charred seed(s)
<i>Atriplex</i> sp(p).	oraches	charred and uncharred seed(s)
<i>Moehringia trinervia</i> (L.) Clairv.	three-nerved sandwort	seed(s)
<i>Stellaria media</i> (L.) Vill.	chickweed	seed(s)
<i>Ranunculus</i> Subgenus <i>Batrachium</i>	water crowfoots	achene(s)
Rosaceae	rose family	bud(s)/bud-scale(s)
<i>Filipendula ulmaria</i> (L.) Maxim.	meadowsweet	achene(s)
<i>Rubus fruticosus</i> agg.	blackberry/bramble	seed(s)
<i>Chaerophyllum temulentum</i> L.	rough chervil	mericarp(s)
<i>Torilis japonica</i> (Houtt.) DC.	upright hedge-parsley	mericarp(s)
<i>Calluna vulgaris</i> (L.) Hull	heather, ling	charred shoot fragment(s)
cf. <i>C. vulgaris</i>		charred and uncharred basal twig and/or root fragment(s)
<i>Galium aparine</i> L.	goosegrass, cleavers	charred fruit(s)
<i>Galium</i> sp(p).	bedstraws, etc.	fruit(s)
Labiatae	mint family	nutlet(s)
<i>Galeopsis</i> Subgenus <i>Galeopsis</i>	hemp-nettles	nutlet(s)
<i>Stachys</i> sp(p).	woundworts	nutlet(s)
<i>Hyoscyamus niger</i> L.	henbane	seed(s)
<i>Sambucus</i> cf. <i>ebulus</i> L.	?danewort	seed(s)
<i>S. nigra</i> L.	elder	seed(s), twig fragment(s)
<i>Carduus/Cirsium</i> sp(p).	thistles	achene(s)
<i>Alisma</i> sp(p).	water-plantains	carpel(s) and/or seed(s)
Gramineae	grasses	charred and uncharred
caryopsis/es		
<i>Glyceria</i> sp(p).	sweet-grasses	caryopsis/es
<i>Hordeum</i> sp(p).	barley	charred caryopsis/es
<i>Eleocharis palustris sensu lato</i>	common spike-rush	nutlet(s)
<i>Carex</i> sp(p).	sedges	charred and uncharred nutlet(s)

	ecode		
CRUSTACEA		<i>Amara</i> sp.	oa
CLADOCERA		? <i>Acupalpus consputus</i> (Duftschmid)	oa
* <i>Daphnia</i> sp. (ephippium)	oa-w	<i>Haliplus</i> sp.	oa-w
*Cladocera spp. (ephippium)	oa-w	Hydroporinae spp.	oa-w
		<i>Agabus bipustulatus</i> (Linnaeus)	oa-w
		<i>Agabus</i> sp.	oa-w
INSECTA		<i>Colymbetes fuscus</i> (Linnaeus)	oa-w
DERMAPTERA		<i>Hydrochus</i> sp.	oa-w
*Dermaptera sp.	u	<i>Helophorus aquaticus</i> or <i>grandis</i>	oa-w
		<i>Helophorus</i> spp.	oa-w
TRICHOPTERA		<i>Sphaeridium ?bipustulatum</i> Fabricius	rf
*Trichoptera sp.	oa-w	<i>Cercyon tristis</i> (Illiger)	oa-d
*Trichoptera sp. (case)	oa-w	<i>Cercyon</i> spp.	u
		<i>Megasternum obscurum</i> (Marsham)	rt
HEMIPTERA		<i>Cryptopleurum minutum</i> (Fabricius)	rf-st
<i>Stygnocoris fuliginus</i> (Geoff. in Fourc.)	oa-p	oa-p <i>Hydrobius fuscipes</i> (Linnaeus)	oa-w
<i>Stygnocoris pedestris</i> (Fallen)	oa-p	<i>Anacaena</i> sp.	oa-w
<i>Drymus sylvaticus</i> (Fabricius)	oa-p	<i>Saprinus</i> sp.	rt-sf
<i>Scolopostethus</i> sp.	oa-p	<i>Onthophilus striatus</i> (Forster)	rt-sf
<i>Dictyla convergens</i> (Herrich-Schaffer)	oa-p	Histerinae sp.	rt
<i>Anthocoris</i> sp.	oa-p	<i>Ochthebius minimus</i> (Fabricius)	oa-w
<i>Philaenus spumarius</i> (Linnaeus)	oa-p	<i>Ochthebius</i> sp.	oa-w
<i>Megophthalmus</i> sp.	oa-p	<i>Hydraena testacea</i> Curtis	oa-w
<i>Macropsis</i> sp.	oa-p	<i>Hydraena</i> sp.	oa-w
<i>Aphrodes bicinctus</i> (Schrank)	oa-p	<i>Acrotrichis</i> sp.	rt
<i>Aphrodes flavostriatus</i> (Donovan)	oa-p-d	<i>Nargus anisotomoides</i> (Spence)	u
<i>Aphrodes</i> sp.	oa-p	<i>Choleva</i> sp.	u
Cicadellidae spp.	oa-p	<i>Catops</i> sp.	u
? <i>Conomelus anceps</i> (Germar)	oa-p	Catopinae sp.	u
Delphacidae spp.	oa-p	<i>Aclypea opaca</i> (Linnaeus)	ob-rt
		Silphidae sp.	u
DIPTERA		<i>Micropeplus fulvus</i> Erichson	rt
*Diptera sp. (adult)	u	<i>Megarthritis</i> sp.	rt
*Diptera sp. (puparium)	u	<i>Anthobium atrocephalum</i> (Gyllenhal)	oa
*Diptera sp. (pupa)	u	<i>Lesteva heeri</i> Fauvel	oa-d
		<i>Lesteva longoelytrata</i> (Goeze)	oa-d
COLEOPTERA		<i>Omalium ?rivulare</i> (Paykull)	rt-sf
<i>Carabus arvensis</i> Herbst	oa	<i>Omalium</i> sp.	rt
<i>Nebria brevicollis</i> (Fabricius)	oa	Omalinae sp.	rt
<i>Blethisa multipunctata</i> (Linnaeus)	oa-d	<i>Platystethus nodifrons</i> (Mannerheim)	oa-d
<i>Loricera pilicornis</i> (Fabricius)	oa	<i>Anotylus nitidulus</i> (Gravenhorst)	rt
<i>Dyschirius globosus</i> (Herbst)	oa	<i>Anotylus rugosus</i> (Fabricius)	rt
<i>Clivina fossor</i> (Linnaeus)	oa	<i>Anotylus sculpturatus</i> group	rt
<i>Trechus ?quadristriatus</i> (Schrank)	oa	<i>Oxytelus fulvipes</i> Erichson	oa-d
<i>Bembidion (Philochthus)</i> sp.	oa	<i>Oxytelus sculptus</i> Gravenhorst	rt-st
<i>Pterostichus melanarius</i> (Illiger)	ob	<i>Stenus</i> spp.	u
<i>Pterostichus (Poecilus)</i> sp.	oa	<i>Lathrobium</i> spp.	u
<i>Pterostichus</i> sp.	ob	<i>Rugilus</i> sp.	rt
<i>Calathus fuscipes</i> (Goeze)	oa	Paederinae sp.	u
<i>Calathus</i> sp.	oa	<i>Othius myrmecophilus</i> Kiesenwetter	rt
<i>Agonum dorsale</i> (Pontoppidan)	oa	<i>Gyrohypnus fracticornis</i> (Muller)	rt-st
<i>Agonum</i> sp.	oa	<i>Xantholinus glabratus</i> (Gravenhorst)	rt

<i>Xantholinus linearis</i> (Olivier)	rt-sf	<i>Meligethes</i> sp.	oa-p
<i>Xantholinus longiventris</i> Heer	rt-sf	<i>Cryptophagus</i> sp.	rd-sf
<i>Neobisnius</i> sp.	u	<i>Atomaria</i> spp.	rd
<i>Philonthus</i> spp.	u	Phalacridae sp.	oa-p
? <i>Gabrius</i> sp.	rt	<i>Subcoccinella vigintiquatuorpunctata</i> (L.)	oa-p
<i>Quedius</i> sp.	u	? <i>Rhyzobius litura</i> (Fabricius)	oa-p
<i>Mycetoporus</i> sp.	u	<i>Lathridius minutus</i> group	rd-st
<i>Tachyporus</i> sp.	u	<i>Enicmus</i> sp.	rt-sf
<i>Tachinus corticinus</i> Gravenhorst	u	<i>Chrysolina fastuosa</i> (Scopoli)	oa-p
<i>Tachinus laticollis</i> or <i>marginellus</i>	u	<i>Chrysolina staphylaea</i> (Linnaeus)	oa-p
<i>Tachinus signatus</i> Gravenhorst	u	? <i>Gastrophysa viridula</i> (Degeer)	oa-p
<i>Tachinus</i> sp.	u	? <i>Hydrothassa glabra</i> (Herbst)	oa-d-p
<i>Falagria</i> sp.	rt-sf	<i>Prasocuris phellandrii</i> (Linnaeus)	oa-p-d
Aleocharinae spp.	u	<i>Longitarsus</i> spp.	oa-p
Pselaphidae sp.	u	<i>Crepidodera</i> sp.	oa-p
<i>Geotrupes</i> sp.	oa-rf	<i>Chaetocnema arida</i> group	oa-p
<i>Aphodius ater</i> (Degeer)	oa-rf	<i>Apion</i> spp.	oa-p
<i>Aphodius contaminatus</i> (Herbst)	ob-rf	<i>Otiorhynchus ovatus</i> (Linnaeus)	oa-p
<i>Aphodius granarius</i> (Linnaeus)	ob-rf	<i>Phyllobius ?viridiaeris</i> (Laicharting)	oa-p
<i>Aphodius prodromus</i> (Brahm)	ob-rf	<i>Tropiphorus</i> sp.	oa
<i>Aphodius sphacelatus</i> (Panzer)	oa-rf	<i>Sitona hispidulus</i> (Fabricius)	oa-p
<i>Aphodius</i> spp.	ob-rf	<i>Sitona lepidus</i> Gyllenhal	oa-p
<i>Onthophagus joannae</i> Goljan	oa-rf	<i>Hypera punctata</i> (Fabricius)	oa-p
<i>Onthophagus</i> sp.	oa-rf	<i>Alophus triguttatus</i> (Fabricius)	oa-p
<i>Hoplia philanthus</i> Illiger	oa	<i>Notaris acridulus</i> (Linnaeus)	oa-d-p
<i>Phyllopertha horticola</i> (Linnaeus)	oa-p	<i>Grypus equiseti</i> (Fabricius)	oa-p
<i>Dascillus cervinus</i> (Linnaeus)	oa-p	<i>Cidnorhinus quadrimaculatus</i> (Linnaeus)	oa-p
<i>Microcara testacea</i> (Linnaeus)	oa-p-d	<i>Ceutorhynchus</i> sp.	oa-p
<i>Cyphon</i> sp.	oa-d	<i>Gymnetron ?labile</i> (Herbst)	oa-p
<i>Byrrhus</i> sp.	oa-p	Coleoptera sp.	u
<i>Dryops</i> sp.	oa-d	*Coleoptera sp. (larva)	u
<i>Agrypnus murinus</i> (Linnaeus)	oa-p		
* <i>Melanotus erythropus</i> (larva) (Gmelin)	l	ARACHNIDA	
Elateridae sp.	ob	*Aranae sp.	u
<i>Anobium inexpectatum</i> Lohse	l	*Acarina sp.u	
<i>Anobium punctatum</i> (Degeer)	l-sf		
<i>Kateretes ?rufilabris</i> (Latreille)	oa-p-d	VERTEBRATA	
<i>Brachypterus glaber</i> (Stephens)	oa-p	Indet. bone fragments	
<i>Brachypterus ?urticae</i> (Fabricius)	oa-p		

Table 3: Complete lists of plant remains and other components of samples recorded during examination of plant material from Carberry Hall Farm (TSEP 908). Samples are presented in context and sample order and within each list components are listed by decreasing abundance, using a semi-quantitative four-point scale.

Abbreviations: b/bs—buds/bud-scales; caps—capsules; ch—charred; dec—decayed; ‘emb’—embryos; ff—fruit fragments; fca—female cone axes; fcs—female cone scales; fgts—fragments; inc—including; lf—leaf; max—max ; rt-tw—basal twig/root; sht—shoot; spec—specimen; tw—twig; v—very; w/l—waterlogged (i.e. uncharred); for twig fragments, measurements are length x diameter in mm.

Context 1005, Sample 7/T		Chenopodium album (ch)	1
sand	3	Galeopsis Subgenus Galeopsis	1
?iron pan fgts	2 max 10 mm	Gramineae	1
Betula sp(p).	1 ?modern	Hyoscyamus niger	1
Bilderdykia convolvulus (ff)	1 ?modern	Moehringia trinervia	1
Chenopodium album	1 ?modern	Pre-Quaternary megaspores	1
Gramineae	1 modern	Rubus fruticosus agg.	1
Papaver cf. rhoeas	1 ?modern	Rumex sp(p).	1
Spergula arvensis	1 ?modern	Sambucus cf. ebulus	1
Viola sp(p).	1 ?modern	Stachys sp(p).	1
charcoal	1 max 15 mm	Torilis japonica	1
charred herbaceous detritus	1	?bark fgts	1 max 5 mm
		charcoal	1 max 10 mm
		dicot lf fgts	1
		flint	1 max 15 mm
Context 1018, Sample 3/T		fly puparia	1
sand	4	gravel	1 max 15 mm
Chenopodium album	1 modern	iron-rich concretions	1 max 5 mm
Leguminosae (w/l)	1 modern	leaf ab pads	1
charcoal	1 max 5 mm	mites	1
charred herbaceous detritus	1	root/rhizome fgts (ch)	1
?cinders	1 max 10 mm	root/rootlet fgts	1
?iron pan fgts	1 max 15 mm	twig fgts	1 max 5 mm
root/rhizome fgts (ch)	1	wood fgts	1 v dec, max 10mm
root/rootlet fgts (modern)	1		
Context 1037, Sample 14/T		Context 1045, Sample 17/T2	
?iron pan fgts	3 max 30 mm	Sambucus nigra	4
sand	3	Ranunculus Subgenus Batrachium	3
charcoal	2 max 15 mm	Urtica dioica	3
Chenopodium album	1 ?modern	wood fgts	3 v dec, max 20 mm
Context 1045, Sample 17/T		Chaerophyllum temulentum	2
Ranunculus Subgenus Batrachium	3	Daphnia (ephippia)	2
Sambucus nigra	3 inc fgts	Moehringia trinervia	2
Urtica dioica	3	Rubus fruticosus agg.	2
Chaerophyllum temulentum	2	Stachys sp(p).	2
Daphnia (ephippia)	2	Torilis japonica	2
beetles	2	beetles	2
earthworm egg caps	2	earthworm egg caps	2
sand	2	sand	2
Alnus glutinosa (fca)	1	Alisma sp(p).	1 'emb' only
Alnus glutinosa (tw fgts)	1 max 10 mm	Alnus glutinosa	1
cf. Calluna vulgaris (ch rt-tw fgts)	1 max 5 mm	Alnus glutinosa (fca)	1
Carduus/Cirsium sp(p).	1	Alnus glutinosa (fcs)	1

Alnus glutinosa (tw fgts)	1 max 10 mm
Atriplex sp(p). (ch)	1
cf. Betula sp(p). (b/bs)	1
Calluna vulgaris (ch sht fgts)	1 max 5 mm
cf. Calluna vulgaris (ch rt-tw fgts)	1 max 5 mm
Carduus/Cirsium sp(p).	1
Carex sp(p).	1
Carex sp(p). (ch)	1 single spec
Eleocharis palustris sl	1
Filipendula ulmaria	1
Galium sp(p).	1
Glyceria sp(p).	1
Gramineae	1
Gramineae (ch)	1
Hyoscyamus niger	1
Labiatae	1
Polygonum persicaria	1
Pre-Quaternary megaspores	1
Rosaceae (b/bs)	1
Rumex sp(p).	1
Sambucus cf. ebulus	1
Sambucus nigra (tw fgts)	1 max 30 mm
Stellaria media	1
Urtica urens	1
bark fgts	1 v dec, max
20 mm	
caddis larva cases	1
charcoal	1 max 5 mm
coal	1 max 2 mm
dicot lf fgts	1
flint	1 max 15 mm
fly puparia	1
herbaceous detritus (ch)	1
leaf ab pads	1
mites	1
root bark/epidermis fgts	1
root/rhizome fgts (ch)	1 max 3 mm
twig fgts	1 max 20 mm

Context 2002, Sample 19/T

sand	4
Bilderdykia convolvulus	1 modern
cf. Calluna vulgaris (ch rt-tw fgts)	1 max 5 mm
Hordeum sp(p). (inc hulled)	1
Papaver cf. rhoeas	1 modern
Quercus sp(p). (b/bs)	1 modern
Quercus sp(p). (charcoal)	1 max 15 mm
charcoal	1 max 15 mm
?iron pan fgts	1 max 15 mm
root/rhizome fgts (ch)	1 max 3 mm
sandstone	1 max 40 mm

Context 2023, Sample 22/T

sand	4
Atriplex sp(p).	1
cf. Calluna vulgaris (rt-tw fgts)	1 max 10 mm
Galium aparine (ch)	1
Polygonum aviculare agg.	1 modern
Quercus sp(p). (b/bs)	1 modern
Viola sp(p).	1 modern
?burnt peat fgts	1 max 5 mm
charcoal	1 max 10 mm
charred herbaceous detritus	1
earthworm egg caps (contaminant)	1
flint	1 max 30 mm
?iron pan fgts	1 max 5 mm
?peat fgts	1 max 5 mm

Table 4: Insects and other macro-invertebrates from Carberry Hall Farm (TSEP site 908): species lists by sample. Taxa are listed in descending order of abundance.

*Key: n - minimum number of individuals; q - quantification (s - semi-quantitative 'several', m - semi-quantitative 'many', both sensu Kenward et al. (1986), e - estimate); ecodes - ecological codes (see Table 6 for explanation); * - not used in calculation of statistics in Table 5.*

Context: 1045, Sample: 17/T2 ReM: D

Weight: 4.00 E: 3.00 F: 3.50

Notes: Entered HK 19/2/02. Flot difficult to sort, with many pale floating remains (plant and invertebrate). Many fragments too rotted or fragmented to be named. E 2.5-5.5, mode 3.0 weak; F 2.5-5.5, mode 3.5 weak. Most identifications made from filter paper.

	n	q	ecode
Megasternum obscurum	18	-	rt
Aphodius contaminatus	17	-	ob-rf
Phyllopertha horticola	16	-	oa-p
Aphodius sphaelatus	12	-	oa-rf
Ochthebius minimus	9	-	oa-w
Lathrobium sp. A	9	-	u
Cyphon sp.	9	-	oa-d
Lathridius minutus group	9	-	rd-st
Aphrodes bicinctus	8	-	oa-p
Aleocharinae sp. B	7	-	u
Helophorus sp. A	6	-	oa-w
Anobium inexpectatum	6	-	l
Aphrodes flavostriatus	5	-	oa-p-d
Helophorus sp. B	5	-	oa-w
Tachinus laticollis or marginellus	5	-	u
Aphodius sp. A	5	-	ob-rf
Apion sp. A	5	-	oa-p
Calathus sp.	4	-	oa
Agabus bipustulatus	4	-	oa-w
Omalium sp. B	4	-	rt
Anotylus rugosus	4	-	rt
Tachinus corticinus	4	-	u
Tachinus signatus	4	-	u
Anobium punctatum	4	-	l-sf
Notaris acridulus	4	-	oa-d-p
Stygnocoris fuliginosus	3	-	oa-p
Cicadellidae sp. D	3	-	oa-p
Trechus ?quadristriatus	3	-	oa
Calathus fuscipes	3	-	oa
Anacaena sp.	3	-	oa-w
Hydraena sp.	3	-	oa-w
Platystethus nodifrons	3	-	oa-d
Oxytelus fulvipes	3	-	oa-d
Stenus sp. B	3	-	u
?Gabrius sp.	3	-	rt
Mycetoporus sp.	3	-	u
Aphodius prodromus	3	-	ob-rf
Kateretes ?rufilabris	3	-	oa-p-d
Enicmus sp.	3	-	rt-sf
Tropiphorus sp.	3	-	oa
Alophus triguttatus	3	-	oa-p

Grypus equiseti	3	-	oa-p
Cidnorhinus quadrimaculatus	3	-	oa-p
Drymus sylvaticus	2	-	oa-p
Scolopostethus sp.	2	-	oa-p
Macropsis sp.	2	-	oa-p
Cicadellidae sp. A	2	-	oa-p
Delphacidae sp. C	2	-	oa-p
Dyschirius globosus	2	-	oa
?Acupalpus consputus	2	-	oa
Sphaeridium ?bipustulatum	2	-	rf
Cryptopleurum minutum	2	-	rf-st
Hydrobius fuscipes	2	-	oa-w
Ochthebius sp.	2	-	oa-w
Hydraena testacea	2	-	oa-w
Catops sp.	2	-	u
Anotylus sculpturatus group	2	-	rt
Stenus sp. A	2	-	u
Lathrobium sp. B	2	-	u
Othius myrmecophilus	2	-	rt
Xantholinus longiventris	2	-	rt-sf
Philonthus sp. B	2	-	u
Quedius sp.	2	-	u
Tachyporus sp.	2	-	u
Aleocharinae sp. A	2	-	u
Aleocharinae sp. C	2	-	u
Aleocharinae sp. G	2	-	u
Geotrupes sp.	2	-	oa-rf
Aphodius ater	2	-	oa-rf
Aphodius granarius	2	-	ob-rf
Aphodius sp. C	2	-	ob-rf
Hoplia philanthus	2	-	oa
Dryops sp.	2	-	oa-d
Agrypnus murinus	2	-	oa-p
Atomaria sp. B	2	-	rd
?Rhyzobius litura	2	-	oa-p
Chrysolina fastuosa	2	-	oa-p
Longitarsus sp. B	2	-	oa-p
Crepidodera sp.	2	-	oa-p
Apion sp. B	2	-	oa-p
Otiorhynchus ovatus	2	-	oa-p
Sitona lepidus	2	-	oa-p
Hypera punctata	2	-	oa-p
Stygnocoris pedestris	1	-	oa-p
Dictyla convergens	1	-	oa-p
Anthocoris sp.	1	-	oa-p
Philaenus spumarius	1	-	oa-p
Megophthalmus sp.	1	-	oa-p
Aphrodes sp.	1	-	oa-p
Cicadellidae sp. B	1	-	oa-p
Cicadellidae sp. C	1	-	oa-p
Cicadellidae sp. E	1	-	oa-p
Cicadellidae sp. F	1	-	oa-p
?Conomelus anceps	1	-	oa-p
Delphacidae sp. A	1	-	oa-p
Delphacidae sp. B	1	-	oa-p
Carabus arvensis	1	-	oa
Nebria brevicollis	1	-	oa

Blethisa multipunctata	1	-	oa-d
Loricera pilicornis	1	-	oa
Clivina fossor	1	-	oa
Bembidion (Philochthus) sp.	1	-	oa
Pterostichus melanarius	1	-	ob
Pterostichus (Poecilus) sp.	1	-	oa
Pterostichus sp.	1	-	ob
Agonum dorsale	1	-	oa
Agonum sp.	1	-	oa
Amara sp.	1	-	oa
Haliplus sp.	1	-	oa-w
Hydroporinae sp. A	1	-	oa-w
Hydroporinae sp. B	1	-	oa-w
Hydroporinae sp. C	1	-	oa-w
Agabus sp.	1	-	oa-w
Colymbetes fuscus	1	-	oa-w
Hydrochus sp.	1	-	oa-w
Helophorus aquaticus or grandis	1	-	oa-w
Cercyon tristis	1	-	oa-d
Cercyon sp. A	1	-	u
Cercyon sp. B	1	-	u
Saprinus sp.	1	-	rt-sf
Onthophilus striatus	1	-	rt-sf
Histerinae sp.	1	-	rt
Acrotrichis sp.	1	-	rt
Nargus anisotomoides	1	-	u
Choleva sp.	1	-	u
Catopinae sp.	1	-	u
Aclypea opaca	1	-	ob-rt
Silphidae sp.	1	-	u
Micropeplus fulvus	1	-	rt
Megarthus sp.	1	-	rt
Anthobium atrocephalum	1	-	oa
Lesteva heeri	1	-	oa-d
Lesteva longoelytrata	1	-	oa-d
Omalium ?rivulare	1	-	rt-sf
Omalium sp. A	1	-	rt
Omalinae sp.	1	-	rt
Anotylus nitidulus	1	-	rt
Oxytelus sculptus	1	-	rt-st
Stenus sp. C	1	-	u
Rugilus sp.	1	-	rt
Paederinae sp.	1	-	u
Gyrophypnus fracticornis	1	-	rt-st
Xantholinus glabratus	1	-	rt
Xantholinus linearis	1	-	rt-sf
Neobisnius sp.	1	-	u
Philonthus sp. A	1	-	u
Philonthus sp. C	1	-	u
Tachinus sp.	1	-	u
Falagria sp.	1	-	rt-sf
Aleocharinae sp. D	1	-	u
Aleocharinae sp. F	1	-	u
Pselaphidae sp.	1	-	u
Aphodius sp. B	1	-	ob-rf
Onthophagus joannae	1	-	oa-rf
Onthophagus sp.	1	-	oa-rf

Dascillus cervinus	1	-	oa-p
Microcara testacea	1	-	oa-p-d
Byrrhus sp.	1	-	oa-p
Elateridae sp.	1	-	ob
Brachypterus glaber	1	-	oa-p
Brachypterus ?urticae	1	-	oa-p
Meligethes sp.	1	-	oa-p
Cryptophagus sp.	1	-	rd-sf
Atomaria sp. A	1	-	rd
Phalacridae sp.	1	-	oa-p
Subcoccinella			
vigintiattuorpunctata	1	-	oa-p
Chrysolina staphylaea	1	-	oa-p
?Gastrophysa viridula	1	-	oa-p
?Hydrothassa glabra	1	-	oa-d-p
Prasocuris phellandrii	1	-	oa-p-d
Longitarsus sp. A	1	-	oa-p
Longitarsus sp. C	1	-	oa-p
Chaetocnema arida group	1	-	oa-p
Apion sp. C	1	-	oa-p
Phyllobius ?viridiaeris	1	-	oa-p
Sitona hispidulus	1	-	oa-p
Ceutorhynchus sp.	1	-	oa-p
Gymnetron ?labile	1	-	oa-p
Coleoptera sp.	1	-	u
*Daphnia sp. (ephippium)	100e		oa-w
*Cladocera sp. L (ephippium)	15m		oa-w
*Acarina sp.	15m		u
*Dermaptera sp.	6	s	u
*Diptera sp. (adult)	6	s	u
*Diptera sp. (pupa)	6	s	u
*Diptera sp. (puparium)	6	s	u
*Aranae sp.	6	s	u
*Trichoptera sp. (case)	2	-	oa-w
*Trichoptera sp.	1	-	oa-w
*Cladocera sp. (ephippium)	1	-	oa-w
*Melanotus erythropus (larva)	1	-	l
*Coleoptera sp. (larva)	1	-	

Table 5: Main statistics for the assemblage of adult Coleoptera and Hemiptera (excluding Aphidoidea and Coccidoidea) from Carberry Hall Farm (TSEP site 908). For explanation of codes see Table 6.

Context	1045
Sample	17
Ext	/T2
S	179
N	413
ALPHA	120
SEALPHA	10
SOB	115
PSOB	64
NOB	263
PNOB	64
ALPHAOB	78
SEALPHAOB	8
SW	17
PSW	9
NW	44
PNW	11
ALPHAW	10
SEALPHAW	3
SD	14
PSD	8
ND	36
PND	9
ALPHAD	9
SEALPHAD	2
SP	58
PSP	32
NP	117
PNP	28

ALPHAP	46
SEALPHAP	7
SM	0
PSM	0
NM	0
PNM	0
ALPHAM	0
SEALPHAM	0
SL	2
PSL	1
NL	10
PNL	2
ALPHAL	0
SEALPHAL	0
SRT	42
PSRT	23
NRT	120
PNRT	29
ALPHART	23
SEALPHART	3
SRD	4
PSRD	2
NRD	13
PNRD	3
ALPHARD	0
SEALPHARD	0
SRF	13
PSRF	7
NRF	52
PNRF	13

ALPHARF	6
SEALPHARF	1
SSA	13
PSSA	7
NSA	28
PNSA	7
ALPHASA	10
SEALPHASA	3
SSF	9
PSSF	5
NSF	15
PNSF	4
ALPHASF	0
SEALPHASF	0
SST	4
PSST	2

NST	13
PNST	3
ALPHAST	0
SEALPHAST	0
SSS	0
PSSS	0
NSS	0
PNSS	0
ALPHASS	0
SEALPHASS	0
SG	0
PSG	0
NG	0
PNG	0
ALPHAG	0
SEALPHAG	0

Table 6: Abbreviations for ecological codes and statistics used for interpretation of insect remains in text and tables. Lower case codes in parentheses are those assigned to taxa and used to calculate the group values (the codes in capitals). See Table 2 for codes assigned to taxa from the present site. Alpha - the index of diversity alpha (Fisher et al. 1943); Indivs - individuals (based on MNI); No - number.

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

Table 7: Plant feeding beetles and bugs from Carberry Hall Farm (TSEP site 908), excluding taxa which cannot be tied to a narrow host plant range or vegetation type.

Taxon	n	Host or vegetation type
<i>Phyllopertha horticola</i>	16	Larvae typically in soil of unimproved meadows
<i>Aphrodes bicinctus</i>	8	Grasses
<i>Aphrodes flavostriatus</i>	5	Grasses in damp places
<i>Apion</i> spp.	5-2-1	Mostly on herbaceous plants
<i>Notaris acridulus</i>	4	<i>Glyceria</i>
<i>Stygnocoris fuliginus</i>	3	At base of low plants
<i>Kateretes rufilabris</i> (?)	3	Usually <i>Carex</i> and <i>Juncus</i>
<i>Tropiphorus</i> sp.	3	At roots of short vegetation
<i>Alophus triguttatus</i>	3	Various herbaceous plants, often near water
<i>Grypus equiseti</i>	3	<i>Equisetum</i>
<i>Cidnorhinus quadrimaculatus</i>	3	Nettles (<i>Urtica</i> spp.)
<i>Drymus sylvaticus</i>	2	At base of low plants
<i>Hoplia philanthus</i>	2	Larvae among grass roots
<i>Agrypnus murinus</i>	2	Larvae among roots of low vegetation
<i>Chrysolina fastuosa</i>	2	<i>Galeopsis</i> ; sometimes <i>Lamium</i>
<i>Otiorhynchus ovatus</i>	2	At base of, and at roots of, low plants
<i>Sitona lepidus</i>	2	Fabaceae
<i>Hypera punctata</i>	2	Fabaceae
<i>Stygnocoris pedestris</i>	1	Around base of low plants
<i>Dictyla convergens</i>	1	Water forget-me-not (<i>Myosotis</i>)
<i>Philaenus spumarius</i>	1	Polyphagous
<i>Megophthalmus</i> sp.	1	Grasses
<i>Conomelus anceps</i> (?)	1	<i>Juncus</i>
<i>Dascillus cervinus</i>	1	At roots of short vegetation
<i>Brachypterus urticae</i> (?), <i>B. glaber</i>	1-1	Nettles

Taxon	n	Host or vegetation type
<i>Chrysolina staphylaea</i>	1	Herbaceous plants, often by water
<i>Gastrophysa viridula</i> (?)	1	<i>Rumex</i> , <i>Polygonum</i>
<i>Hydrothassa glabra</i> (?)	1	<i>Ranunculus</i> spp. in damp places and waterside
<i>Prasocuris phellandrii</i>	1	Waterside Umbelliferae
<i>Chaetocnema arida</i> group	1	Mostly grasses and <i>Juncus</i>
<i>Phyllobius viridiaeris</i> (?)	1	Polyphagous on herbaceous plants
<i>Sitona hispidulus</i>	1	Fabaceae, especially <i>Trifolium</i>
<i>Gymnetron ?labile</i>	1	<i>Plantago</i>