APPENDIX G5
ENTOMOLOGIAL SURVEY REPORT

Aleochara (Coprochara)
verna Say

Don Stenhouse – July 2007

Contents

Introduction

It is intended that this report will be included as an appendix to the A75 Hardgrove to Kinmount Improvement Environmental Statement (ES) which should be read in conjunction with this report. Target notes mentioned in this report relate to those target notes shown on Figure 7.1 of the ES.

This survey was carried out at three sites adjacent to the A75 near Carrutherstown, Dumfrieshire on behalf of Mouchel Parkman, on the 13th, 14th & 15th July 2007. The aim of the survey was to assess the quality of the sites as a habitat for terrestrial invertebrates, particularly Coleoptera.

Methodology

The following sampling techniques were used.

- Sweeping - using a standard sweeping technique
- Sieving – of moss and leaf litter
- Beating - of trees and shrubs
- Pitfall trapping – using plastic vending cups and detergent

Day 1 - 13th

Target note 4 – Braemoss wood NY108714
One trap set, but little surveying carried out due to rain

Target note 14 – Popin Well wood NY118709
One trap set, but little surveying carried out due to rain

Target note 37 – Kelhead Moss Plantation, NY129701
Two pitfall traps were set; one in a clearing amongst conifer trees and the other at the edge of the wood near a field boundary. Following this, sweeping and hand searching was carried out across the site. A small area of road side verge was swept for Hoverflies.

Day 2 - 14th

Target note 4 – Braemoss wood NY108714
The trap was removed, and the edge of the wood adjacent to the A75 was surveyed for several hundred metres. Part of the grass verge was swept for Hoverflies.

Target note 14 – Popin Well wood NY118709
The pitfall trap was removed, and the area thoroughly surveyed using all techniques. The ditch along one side was also sampled for aquatic beetles.

Day 3 - 15th

Target note 4 – Braemoss wood NY108714
A path along one side of the wood, and at right angles to the line surveyed yesterday was surveyed.

Target note 37 – Kelhead Moss Plantation, NY129701
Both pitfall traps were removed and surveying carried either side of a road that bisects the plantation.

Results

Pitfall traps

Trap	Location	Action	Result
1	TN4	Left overnight	one beetle
2	TN14	Left overnight	nothing taken
3	TN37	Left for two days	a few beetles
4	TN37	Left for two days	a few beetles

Although the pitfall traps were placed with the intention of trapping terrestrial beetles, the results were disappointing, partly because of heavy rain. The ground in TN14 was so water laden that the trap was pushed out although weighted with a rock.

Species list

Fidelity classes

Fidelity scores are applied to hygrophilous beetles, and reflect the degree of association with wetland habitats (Lott, 2003).

A: Species are routinely recorded from wetlands. It is likely that they are mainly dependent on wetlands to sustain viable populations.

B: Species are routinely recorded from wetlands, but also from semi-natural terrestrial habitats over all or part of their geographical area of distribution.

C: Species frequently recorded in numbers from wetlands, but predominantly terrestrial over all their British area of distribution.

The terms ‘common’ and ‘widespread’ mean commonly found in many parts of mainland Britain, although not necessarily Scotland.

For most of the organisms listed, there is no vernacular name. Where there is such a name, it has been added.

Abbreviations

RDBK = Red Data Book Category K – Insuffiently Known

Definition - Taxa that are suspected but not definitely known to belong to any of the Red Data Book categories 1 to 5, extinct or inderteminate, because of lackof information.

pt = pitfall trap

Orders are highlighted in blue and families in black bold type. To make a taxon easier to find, the list is alphabetical, rather than taxonomic.

Target note 4 – Braemoss wood

Taxon	14 July	15 July	Comments
Coleoptera (Beetles)			
Cantharidae			
Rhagonycha fulva 'Common Red Soldier Beetle'	umbellifers etc	umbellifers etc	ubiquitous on umbellifers
Malthodes mysticus Kiesenwetter	one ♀		common and widespread, especially in North – in woodland glades, develops under dead bark
Carabidae (ground beetles)			
Carabus problematicus Herbst		one in log	widespread and common, probably the commonest Carabus species.
Pterostichus diligens	numerous in moss		widespread and common, fidelity B, wet heath, mire, in grass tussocks etc
Chrysomelidae (leaf beetles)			
Asiorestia (Neocrepidodera) transversa (Marsham)		two ♂, one ♀	widespread, common on thistles
Cryptocephalus pusillus F		one taken on Birch	widespread and locally common
Coccinellidae (ladybirds)			
Adalia bipunctata (L)	swept		widespread, very common
Coccinella septempunctata L 'Seven-spot'	swept		the most recorded ladybird, widespread
Laemophloeidae			
Cryptolestes pusillus (Schoenherr)	Betula and Lonicera		distribution uncertain – the specimens are probably *C.pusillus*, which is an introduced species – see discussion and distribution map
Curculionidae (weevils)			
Coeliodes rana (F)	on Oak		widespread but local.
Otiorhynchus singularis (L)		one identified	widespread in England and Wales, common and polyyphagous
Phyllobius argentatus (L)		one	widespread and common, polyphagous on a wide range of trees
Polydrusus pterygomalis Boheman	one		widespread and abundant in the British Isles, polyphagous on broad leaved trees,
Rhynchaenus fagi (L) 'Beech Leaf-Mining Weevil'	one	one	widespread and common on Beech and introduced Oak
Elateridae (click beetles)			
Agriotes pallidulus (Illiger)		swept	widespread and very common in damp grassland

Hydrophilidae (water scavenger beetles)			
Anacaena globulus (Paykull)	from damp leaf litter in hollow		common, widespread

Latridiidae			
Cartodere bifasciata (Reitter)	one	one	widespread and extremely common, established introduction – in leaf litter, grass tussocks etc
Melyridae (soldier beetles)			
Malthodes mysticus Kiesenwetter		one ♀	common in grassy places, widespread
Nitidulidae (sap beetles)			
Epuraea melanocephala (Marsham)	swept		widespread and common on flowers and tree foliage
Scraptiidae			
Anaspis costai Emery	two		widespread and very common
Staphylinidae (rove beetles)			
Aleochara funebris Wollaston	one ♂, moss		distribution uncertain, probably widespread
Bythinus burrelli Denny	in moss on ground and tree stump		local throughout Britain, but tiny and difficult to find, and identify – males have the best features for identification, and all those taken are females – see distribution map
Geostiba circellaris (Gravenhorst)	one ♀ in moss		common, widespread - fidelity B
Gyrohypnus fracticornis (Muller)	one in moss		widespread but most records from the south of England
Gyrophaena sp	♂, one in bracket fungus on Pine log, and another on red rotten pine		difficult genus, identification to species needs disssection
Othius subuliformis S	one		widespread, common in litter etc
Phloeocharis subtilissima Mannerheim	under bark of pine log	under bark of pine log	widespread but not common, in woodland – see distribution map
Tachyporus nitidulus	one		widespread, very common in leaf litter etc
Tachinus rufipes L	one ♀		widespread, probably the commonest member of this genus
Diptera (Flies)			
Syrphidae (hoverflies)			
Cheilosia illustrata (Harris)	umbellifers		widespead and locally common, possibly no previous records for Dumfrieshire
Chrysogaster cemiteriorum (L)	one ♂, umbellifers		widespread, not common in the North, although there are records from Dumfrieshire - see distribution map

Episyrphus balteatus (De Geer)		2 ♂, 1♀, umbellifers	widespread and very common – numbers boosted by immigration.
Eristalis pertinax (Scopoli)	one ♀, umbellifers		widespread, common wherever there are suitable flowers
Leucozona glaucia (L)	one ♀, dark form, umbellifers		widespread, particularly in the west
Rhingia campestris Meigen	several, umbellifers		widespread and common, larvae develop in cow dung – very distinctive
Hemiptera (Bugs)			
Lygaeidae (seed bugs)			
Drymus brunneus Sahlberg	moss		widespread and common in damp shady places
Pentatomidae (shieldbugs)			
Pentatoma rufipes - the 'Forest Bug'	swept	swept	widespread and common, usually on various trees in woodland
Hymenoptera (Bees, Wasps, Ants)			
Formicidae (ants)			
Formica lemani Bondroit	moss		widespread, but stronghold in northern Scotland – nests in stumps etc – see distribution map
Myrmica rubra (L)	moss		widespread and common in various situations
Myrmica ruginodis Nylander	moss		recorded everywhere except Shetland
Isopoda (woodlice etc)			
Philosciidae			
Philoscia muscorum (Scopoli)	moss etc	moss etc	very common and widespread
Porcellionidae			
Porcellio scaber Latreille 'Common Rough Woodlouse'	moss etc	moss etc	one of the commonest woodlice, widespread
Myriapoda (centipedes and millipedes)			
Julidae (millipedes)			
Tachypodoiulus niger	moss etc	moss etc	very common and widespread
Opiliones (harvestmen)			
Nemostomatidae			
Nemostoma bimaculatum	damp leaf litter in hollow		very common and widespread
Ixodida (ticks)			
Ixodidae			
Ixodes ricinus (L) 'sheep tick'		swept	widespread and common, especially in north of scotland and south of england

Target note 14 – Popin Well wood NY118709

Taxon	14 July	Comments
Coleoptera (Beetles)		
Carabidae (ground beetles)		
Nebria brevicollis	under bark	widespread, extremely common – fidelity C
Ocys harpaloides(Audinet-Serville)	in moss	widespread except in the extreme north, frequent.
Pterostichus melanarius (Illiger)	pitfall trap	widespread and very abundant.
Cryptophagidae (weevils)		
Micrambe vini (Panzer)	swept	widespread, probably common on Gorse and Broom particularly
Curculionidae (weevils)		
Nedyus quadrimaculatus (L) 'Small Nettle Weevil'	swept	widespread and common wherever nettles grow
Elmidae (riffle beetles)		
Elmis aenea Müller	one under stone in ditch	common in fairly unpolluted water over most of Britain.
Helophoridae		
Helophorus brevipalpis Bedel	in moss	ubiquitous and very common, often far from water
Kateretidae		
Brachypterus glaber (S)	swept	widespread and common on nettle
Scirtidae		
Cyphon coarctatus Paykull	one ♂	widespread and common in wet places
Staphylinidae (Rove beetles)		
Bythinus burrelli Denny	one ♀, sieved from moss	see above
Aleochara verna Say	one ♂, in moss	widespread but not many records, **RDBK** but see Welch (1997) and discussion below
Atrecus affinis (Paykull)	in moss	widespread and common
Geostiba circellaris (Gravenhorst)	one in moss	widespread and common. Fidelity C.
Othius subuliformis S	one in moss	see above
Oxypoda elongatula Aubé	one ♀, in moss	widespread and common, Fidelity A, fen, in moss tussocks and litter
Quedius curtipennis Bernhauer	one of each sex	widespread and common
Phloeocharis subtilissima Mannerheim	moss	widespread but not common
Quedius nitipennis (S)	one ♀, in moss	widespread and common, difficult to determine

Hemiptera (Bugs)		
Miridae (plant bugs)		
Bryocoris pteridis (Fallen) 'Fern bug'	one identified	widespread and common on various ferns, especially Lady Fern *Athyrium filix-femina* & Male Fern *Dryopteris filix- mas* – both of which are found in all three sites
Pentatomidae (shieldbugs)		
Pentatoma rufipes	on Birch	see above
Isopoda (woodlice etc)		
Philosciidae		
Philoscia muscorum (Scopoli)	numerous under objects	widespread and common
Myriapoda (centipedes and millipedes)		
Julidae (millipedes)		
Ommatoiulus sabulosus (L) 'Striped millipede'	moss	widespread and common, very distinctive brassy stripes
Tachypodoiulus niger (Leach)	one	very common and widespread
Opiliones (harvestmen)		
Nemostomatidae		
Nemostoma bimaculatum	under moss	very common and widespread

Target note 37 – Kelhead Moss Plantation, NY129701

Taxon	13 July	15 July	Comments
Coleoptera (Beetles)			
Apionidae (weevils)			
Oxystoma subulatum Kirby		one ♂, swept,	widespread & common, on Meadow vetchling *Lathryus pratense*
Protapion fulvipes (Geoffroy in Fourcroy)		one ♂, swept	widespread & common, on Trifolium repens/T.hybridum
Cantharidae			
Rhagonycha fulva 'Common Red Soldier Beetle'	umbellifer	umbellifer	ubiquitous, very common and obvious on umbellifers
Carabidae (ground beetles)			
Leistus rufescens		on soft rush	widespread, common, near water - fidelity A
Patrobus atrorufus (Ström)		one, pitfall trap	widespread except in the extreme north, fidelity A, in wet woodland, litter
Platynus assimilis (Paykull)		at edge of ditch	widespread and very common in damp places
Pterostichus melanarius		under fence post in woodland –	widespread and very common in grassland
Cerylonidae			
Cerylon ferrugineum S		under bark of fallen Pine	common in South, tends to indicate old woodland in the North
Chrysomelidae (leaf beetles)			
Cryptocephalus pusillus F		one on Birch	widespread and locally common, particularly on young Birch

Oulema melanopus (L) sensu stricto		one ♂, swept	widespread & common, but can be confused with O.rufocyanea. This specimen was verified by dissection
Sphaeroderma rubidum (Graells)		one ♀	widespread and locally common
Coccinellidae (ladybirds)			
Aphidecta obliterata (L) 'Larch ladybird		on Birch	aphidophagous and generally common,
Cryptophagidae			
Antherophagus pallens (L)		one ♀, Birch	lives in bumblebee nests, widespread but local
Micrambe ? villosa (Heer) - difficult to identify as it is a female	swept		widespread, but possibly more local than *M.vini* - in Gorse and Broom mainly
Curculionidae (weevils)			
Barypeithes araneiformis (Schrank)		several, pitfall trap	widespread & local, in moss/leaf litter
Curculio salicivorus Paykull		one	widespread and common, polyphagous
Otiorrhynchus singularis (L)	two	Birch	widespread and common, larvae on plant roots
Polydrusus pterygomalis Boheman		one from Birch	widespread and common, polyphagous
Dytiscidae			
Ilybius ater		on grass on verge in sun!	widespread & very common in various waters
Elateridae (click beetles)			
Agriotes pallidulus (Illiger)		swept	widespread and very common in damp grassland
Dalopius marginatus (L)		from fallen Oak	widespread & common in damp habitats
Hydrophilidae (water scavenger beetles)			
Anacaena globulus (Paykull)		under stones in ditch	widespread and very common in decaying vegetation and water
Cercyon analis (Paykull)		under stones in ditch	widespread and very common in decaying vegetation and water
Latridiidae			
Cartodere nodifer (Westwood)	one		
Stephostethus lardarius (De Geer)		from fallen Oak	widespread and common in grass tussocks etc
Melyridae (soldier beetles)			
Malthodes mysticus Kiesenwetter		one ♀	common in grassy places, widespread
Monotomidae			
Rhizophagus ferrugineus (Paykull)	one ♀ under bark of sappy stump		locally common in old woodlands, widespread, but probably more southern
Rhizophagus dispar (Paykull)	one under bark of sappy stump		very common and widespread, at sap and in fungi
Nitidulidae (sap beetles)			
Epuraea melanocephala (Marsham)		on Birch	widespread and common on flowers and tree foliage

Rhynchitidae			
Deporaus betulae (L)		two ♂, Birch, neither kept	widespread & common wherever the foodplant grows
Scirtidae			
Cyphon ochraceus S		one ♂, discarded	
Scraptiidae			
Anaspis costai Emery	one on small Oak		widespread and very common
Staphylinidae (rove beetles)			
Atrecus affinis (Paykull)	under bark	under bark	widespread and common
Dropephylla devillei Bernhauer		one ♂, under Pine bark	redominantly northern species. Common in Scotland, very local elsewhere
Cilea silphoides (L)		one	apparently local in the south, but probably under recorded
Lordithon thoracicus (F)		in fungus	widespread and common, in fungus
Phloeocharis subtilissima Mannerheim	under bark of pine log	one under bark	widespread but not common, in woodland – see distribution map
Stenus impressus Germar		one ♂, moss	widespread & common, fidelity B, mire, moss
Tachyporus nitidulus	one		widespread, very common in leaf litter etc
Tachinus rufipes L		umbellifer	widespread, probably the commonest member of this genus
Tachyporus obtusus (L)		moss	widespread and very common in leaf litter etc
Diptera (Flies)			
Conopidae			
Sicus ferrugineus (L)		pair in cop in grassland	Parasitic fly with larvae in the nests of various Bumblebees. Uncommon, but widely distributed. Very scarce in the north – see distribution map
Syrphidae (hoverflies)			
Cheilosia illustrata (Harris)	umbellifers	umbellifers	widespead and locally common, possibly no previous records for Dumfrieshire
Episyrphus balteatus (De Geer)	umbellifers		widespread and very common – numbers boosted by immigration.
Melanostoma scalare (F)		umbellifers	widespread and very common
Hemiptera (Bugs)			
Pentatomidae (shieldbugs)			
Pentatoma rufipes - the 'Forest Bug'		swept	widespread and common, usually on various trees in woodland

Hymenoptera (Bees, Wasps, Ants)			
Formicidae (ants)			
Leptothorax acervorum (F)		*in* Pine log	widespread and very common
Myrmica ruginodis Nylander		nest under barkt	widespread and very common in various situations
Lepidoptera (Butterflies and moths)			
Satyridae			
Aphantopus hyperantus Linnaeus 'Ringlet'		several seen, one dead one found on road and verified by Kev McCabe	Tall grassland is usedRange expanding.This widespread butterfly has extended it range in England and Scotland in recent years.
Yponomeutidae			
Argyresthia brockeella (Hübner)		swept	a common species throughout Britain. The larvae feed on the catkins of birch (*Betula*) and alder (*Alnus glutinosa*).
Orthoptera (Grasshoppers and Crickets)			
Acrididae (grasshoppers)			
Omocestus viridulus (L) 'Common Green Grasshopper'		numerous in very restricted area of grassland	widepread and generally common, except in some parts of the South East
Plecoptera (stoneflies)			
Nemouridae			
Nemoura cinerea (Retzius)		two taken, discarded	widespread and common. The only British stonefly to tolerate still water.
Araneae (spiders)			
Theridiidae			
Enoplognatha ovata (Clerck)		swept	widespread and very common – very variable
Isopoda (woodlice etc)			
Philosciidae			
Philoscia muscorum (Scopoli)	moss	moss	very common and widespread
Myriapoda (centipedes and millipedes)			
Julidae (millipedes)			
Tachypodoiulus niger		litter	very common and widespread
Opiliones (harvestmen)			
Nemostomatidae			
Nemostoma bimaculatum	moss	moss	very common and widespread
Phalangiidae			
Paroligolophus hansenii (Kraepelin)		swept	widespread but very local and found on various trees but especially Pine – see distribution map
Ixodida (ticks)			
Ixodidae			
Ixodes ricinus (L) 'sheep tick'		swept	widespread and common, especially in north of scotland and south of england

Discussion

Unfortunately the weather was very inclement for the majority of the time during this survey. Heavy rain on the first and second day undoubtedly affected the results obtained.
A few patches of umbellifer adjacent to TN4 and TN37 were swept for hoverflies. A large number of these were seen, but appeared to be the same few species. To avoid unnecessary complication, these have been listed under the appropriate site in the results table.

TN37 Braemoss Wood
After working on the outer deciduous perimeter, an attempt was made to penetrate the conifer plantation proper. It soon became apparent that this would not be possible due to the sheer density of the planting. Because any impact of work on the A75 would be restricted to the outer edge of the wood, this was not thought to be a problem. Conifers are not usually very productive and botanically the fringes are more diverse. On the first visit, sampling was focused mainly on the thick moss that covers the ground in this (and the other two sites). Most of the species taken are nationally common, except *Bythinus burrelli*. A short period of sweeping yielded the Laemophloeid *Cryptolestes pusillus,* which is not only poorly recorded, but somewhat of an enigma. In Booth (2006) there is a footnote, suggesting this species is a rare introduction and found on stored products, which it undoubtedly is. So why it is present on vegetation at the edge of a pine plantation is slightly puzzling. However, this and several other related species are associated with cereals including Oat *Avena sativa* and considering the commercial movements along the A75, to and from the Stranraer ferry, it is quite possible that this population derives from shipped grain. There was a large pile of unidentified seed dumped near the path. A distribution map clearly shows how few records have been submitted for this cosmopolitan species.

TN14 Popin Well Wood
The nature of this woodland would seem to mitigate against any strong entomological interest. It does not have the range of plants, structure, or size to support an interesting invertebrate fauna. It is dominated by Male fern *Dryopteris filix-mas*, and a variety of fairly ordinary and not particularly old trees. Despite quite intense searching, including sampling in the ditch, very little was found. The two species of interest were the staphylinids *Bythinus burrelli* and *Aleochara verna*. However, the first of these was also taken in TN4, and this may suggest that it is common locally. I suspect *A.verna* latter may also be fairly common in the area, and not confined to this wood. In a revision of this genus, Welch (1997) suggests that Past confusion with a sibling species makes status a little uncertain, and it is best identified using males.

TN37 Kelhead Moss Plantation
The number of fallen trees made surveying some parts of this wood quite difficult, and on the first visit it was raining heavily. Although there was a lot of dead wood, it yielded very few invertebrates, with *Rhizophagus ferrugineus* being the species of most interest. On the second visit, more attention was paid to sweeping deciduous trees and grassland at the edges of the plantation, bordering Stenries Lane. Although most insects taken are common, the Conopid fly *Sicus ferrugineus* was of interest. This strange looking parasite attacks bumblebees by gluing an egg to the abdomen and appears to be little recorded. Because it is fairly large, distinctively shaped and yellow, it is probably genuinely scarce.

Overall, the most interesting species taken are *Bythinus burrelli*, *Aleochara verna*, *Cryptolestes pusillus* and *Sicus ferrugineus.* The writer has not seen any of these species before, and all are probably either under recorded or scarce.

Summary

As expected, few invertebrates were taken from TN14 and those from TN4 and TN37 came from the periphery, on deciduous trees, or umbellifers. Many phytophagous beetles are found in the spring and late summer, so *apparent* diversity may have been affected by both weather conditions and the timing of the survey. However, on the evidence, none of the sites would appear to be of high entomological value.

Distribution maps for local and rare species – taken from the NBN Gateway

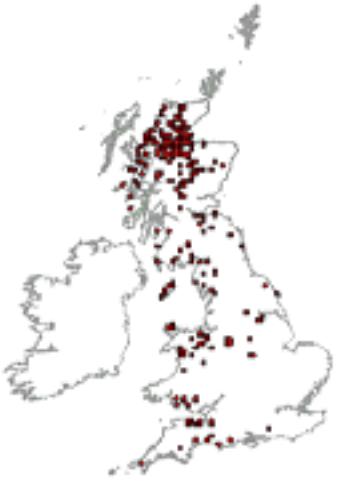
Bythinus burrelli

Aleochara verna

Phloeocharis subtillisima

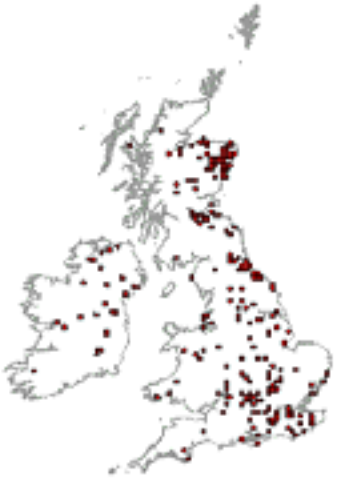
Sicus ferrugineus

Chrysogaster cemiteriorum



Formica lemani

Cryptolestes pusillus



Paraliogolophus hanseni

NBN distribution maps need to be viewed with caution. It is a fact that more entomologists, especially coleopterists, are active in the south. This may skew apparent distribution.

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