

The beetles of decaying wood in Ireland.
A provisional annotated checklist of
saproxylic Coleoptera.



Irish Wildlife Manuals No. 65



*An Roinn
Ealaíon, Oidhreachta agus Gaeltachta*

*Department of
Arts, Heritage and the Gaeltacht*



The beetles of decaying wood in Ireland. A provisional annotated checklist of saproxylic Coleoptera.

Keith N. A. Alexander¹ & Roy Anderson²

¹59 Sweetbrier Lane, Heavitree, Exeter EX1 3AQ; ²1 Belvoirview Park, Belfast BT8 7BL, N. Ireland

Citation: Alexander, K. N. A. & Anderson, R. (2012) The beetles of decaying wood in Ireland. A provisional annotated checklist of saproxylic Coleoptera. *Irish Wildlife Manuals*, No. 65. National Parks and Wildlife Service, Department of the Arts, Heritage and the Gaeltacht, Dublin, Ireland.

Keywords: *beetles; saproxylic; deadwood; timber; fungal decay; checklist*

Cover photo: The Rhinoceros Beetle, *Sinodendron cylindricum* © Roy Anderson

The NPWS Project Officer for this report was: Dr Brian Nelson; brian.nelson@ahg.gov.ie

Irish Wildlife Manuals Series Editors: F. Marnell & N. Kingston

© National Parks and Wildlife Service 2012

ISSN 1393 – 6670

Contents

Executive Summary	2
Acknowledgements	2
Introduction	3
Aims and methods	3
Analysis of status	4
Special features of the Irish saproxylic fauna	8
Important sites	9
The checklist of Irish saproxylic Coleoptera	16
Structure of the checklist	16
Species accounts	17
References	131
Appendix 1 Recorders and list of abbreviations	144
Appendix II Taxonomic checklist of species	146
Index of beetle species	158

Executive Summary

A full list is provided of the saproxylic (wood-decay) beetles known to have been resident in Ireland in modern times, together with information about their ecology and distribution, with site records organised by vice county.

For each of the 274 species an estimation of their current status is suggested, and species with an apparent association with old growth (ancient woodland and/or ancient wood pasture conditions) are also identified. At least 208 species appear to be native to Ireland, while 9 of these may have become extinct within the past 100 years. Only 25 species appear to be common and widespread, in contrast to the 104 species (50% of the natives) which have been assessed as 'rare'. This suggests a serious imbalance in species status, reflecting the overall rarity and fragility of saproxylic habitats across Ireland. A list of important sites is included.

Acknowledgements

Brian Nelson arranged for this independent report to be published by NPWS. The authors would like to thank the recorders who have generously made their records available to us: Martin Cawley, Tom Gittings and Jervis Good. Also our thanks go to Eugenie Regan of the National Biodiversity Data Centre for encouragement to move towards publication.

Introduction

Saproxylic and other woodland invertebrates have a reputation for being very poorly represented in Ireland (Speight 1986, 1989b) although Alexander (2003) suggests that this merely reflects the overall species representation in Ireland in comparison with Britain and continental Europe – a factor of Ireland’s biogeographic relationships – rather than saproxylics being rarer than any other habitat grouping. However, what may be true is that the background fauna – the common and widespread species which can be found very widely across Ireland – is a relatively small range of species, while the more restricted species form a greater proportion of the fauna than might be expected. Species richness is certainly greatest in sites which are almost certainly ancient woodlands and ancient wood-pastures (including historic demesne parklands), and it is suggested that the species which are virtually exclusive to these relatively rich sites are the remains of Ireland’s old growth fauna (Alexander *et al.*, 2002). Ancient tree-scapes do appear to be relatively scarce across Ireland, although probably not as scarce as many people assume – the historic demesnes have hardly been studied at all. The definition of saproxylic used for the purposes of this list is the one proposed by Alexander (2008b) as it emphasises fungal decay of wood and does not require trees to be senescent or dead (Speight, 1989c): Species which are involved in or dependent on the process of fungal decay of wood, or on the products of that decay, and which are associated with living as well as dead trees. Conventionally two further groupings of organisms are included within the definition: i) sap-run associates, ie species dependent on fluxes of sap and its decomposition products, and ii) organisms other than fungi that feed directly on wood.

This checklist is presented in order to provide a complete statement of where we are with knowledge of the current Irish saproxylic beetle fauna. Subfossil records have not been included. It is hoped that this baseline data will provide a framework for developing an Irish Red List of saproxylic beetles and enable the development of site quality statistics along the lines of those already in use in Britain (Alexander, 2004; Fowles *et al.*, 1999).

Aims and methods

This checklist aims to include all resident breeding species, and so includes the long-established native fauna plus introductions which have proved able to maintain viable populations in Ireland. Casual imports are omitted where their status is clear-cut, e.g. *Silvanus bidentatus* in pallets associated with a consignment of computer parts from Japan (Good & Hume, 1991), but recent arrivals are included as these may become established.

The data is primarily derived by extraction from published literature and contact with the active recorders that are known to the authors. The record is almost certainly not complete however, as unpublished information will largely remain uncollated for the time being.

Analysis of status

274 species are listed of which at least 208 are native – see Table 1. Nine of these species may now be extinct, having not been reported since Johnson & Halbert (1902) – see below. This is clearly a rich fauna, despite the various opinions which have been expressed over the years – see Introduction. However, only 25 species can be considered common and widespread, in contrast to the 104 (50%) species which have been assessed as rare in Ireland. This suggests a serious imbalance in species status, reflecting the overall rarity and fragility of saproxyllic habitats across Ireland.

Eight additional species are thought to be doubtfully Irish as only old records have been reported and no supporting voucher specimens are available, while the status of a further 8 have proved impossible to assess on the scant information available. 35 species are established non-natives, largely accidentally brought in by commercial forestry activities. There is also a clear trend of recent arrivals making first landfall in Northern Ireland, presumably carried from Scotland on air currents – 8 species have first appeared in the north-eastern counties and have proceeded to spread.

The species presumed to be extinct in Ireland are: *Nossidium pilosellum* (Marsham), *Amphicyllis globus* (F.), *Agathidium rotundatum* Gyllenhal, *Euplectus punctatus* Mulsant, *Cypha seminulum* (Erichson), *Calambus bipustulatus* (L.), *Malthodes dispar* (Germar), *Anthocomus fasciatus* (L.) and *Conopalpus testaceus* (Olivier). These represent a wide variety of saproxyllic habitat types.



Figure 1: The distinctive larva of the Red-headed Cardinal Beetle *Pyrochroa serraticornis* © Keith Alexander



Figure 2: Larvae of *Sinodendron cylindricum* bore in decaying heartwood of broad-leaved trees © Roy Anderson



Figure 3: Two wood-decay fungi *Ganoderma resinaceum* (left) and *Inonotus dryadeus* (right) © Roy Anderson

TABLE 1 The Irish status of saproxylic beetle species grouped by family (and subfamily for selected groups). (For heading codes see 'Structure of Checklist' below.)

Family/subfamily	All	Ex	R	Sc	Un	Wi	Cm	Est	Ca	Re	Do	Ucl
Histeridae	1		1									
Ptiliidae	9	1	5					3				
Leiodidae	8	2	3	2	1							
Scydmaenidae	1		1									
Staphylinidae												
• Omaliinae	12		6	4			2					
• Pselaphinae	7	1	6									
• Phloeocharinae	1			1								
• Tachyporinae	1			1								
• Aleocharinae	32	1	15	2	7		4	1		1		1
• Scaphidiinae	2			1	1							
• Piestinae	1			1								
• Staphylininae	6		4				1					1
Lucanidae	1					1						
Clambidae	1		1									
Scirtidae	1				1							
Eucnemidae	1		1									
Elateridae	6	1	1		1		2				1	
Lycidae	1		1									
Cantharidae	10	1	1		5	1	1				1	
Bostrichidae	1		1									
Anobiidae	11		4		2	1	1	3				
Lymexylidae	1		1									
Phloiophilidae	1		1									
Trogositidae	1										1	
Cleridae	2		1								1	

Family/subfamily	All	Ex	R	Sc	Un	Wi	Cm	Est	Ca	Re	Do	Ucl
Dasytidae	1											1
Malachiidae	2	1		1								
Aspidiphoridae	1		1									
Nitidulidae	19		6	1	4	2	2	2	1	1		
Monotomidae	7		1	2			1	2	1			
Laemophloeidae	1							1				
Cryptophagidae	5		3				1			1		
• Atomariinae	2		1					1				
Erotylidae	2			1							1	
Cerylonidae	3		1	2								
Endomychidae	1									1		
Corylophidae	1		1									
Latridiidae	1		1									
Mycetophagidae	2									2		
Ciidae	12		4	2	1	1	3	1				
Tetratomidae	3		2							1		
Melandryidae	6	1	4		1							
Mordellidae	1		1									
Colydiidae	3							2			1	
Tenebrionidae	4		1				1	2				
Oedemeridae	2		1					1				
Pyrochroidae	1		1									
Salpingidae	9		5		1	1	1	1				
Scraptiidae	7		2	1		2	2					
Cerambycidae	22		9	1	2	2	2	2	2		1	1
Anthribidae	1											1
Curculionidae	17		4	2	1		1	5	2			2
• Scolytinae	19		1	2	1	2		11		1		1
TOTALS	274	9	104	27	29	13	25	35	6	8	7	8

About 50 species appear to have an association with ancient woodland and ancient wood pasture conditions (old growth species) – nearly 25% of the natives. This emphasises the great importance of these habitats for saproxylic beetles, and also provides an opportunity for developing conservation quality statistics for site evaluation and comparison.



Figure 4: Caledon Deer Park, Co. Tyrone © Keith Alexander

Special features of the Irish saproxylic fauna

Ireland is the global epicentre for at least one species of saproxylic beetle. The Holly Weevil *Rhopalomesites tardyi* was discovered new to science and named after James Tardy a prominent Dublin entomologist of the early 19th century – as *Cossonus tardii* – and taken by him and N.A.Vigors in July, 1822, near Powerscourt waterfall, Co. Wicklow, under the bark of decayed hollies. Strangely, Tardy is reported as saying “I have in vain sought for it in places abounding as much in holly and in similar situations in the same country” (Nash, 1983). Today it is one of the most widespread species to be found, occurring in hedgerow and boundary stands of trees as well as old woodlands. Interestingly it has subsequently been found in Britain, although it is very localised and concentrated along the western seaboard. Its global range is restricted to offshore islands and extreme western coasts of

Europe from the British Isles to the Azores, taking in coastal north-west France and southern Portugal (eg in driftwood at Rio Arade, Portugal, 24.vi.1994, RA).

The presence of the red click beetle *Ampedus pomonae* in Ireland but not Britain is another interesting feature of the Irish saproxylic beetle fauna. However, it is widespread on the near Continent and its absence from Britain is the curiosity rather than its presence in Ireland.

A third species is also of note, *Quedius lyszkowskii*, as it is only known globally from Ireland and Scotland. It was described new to science only recently (Lott 2010), having previously been overlooked within *Q. aetolicus* by modern workers and historically with *Q. puncticollis* in Irish collections. Its earliest known record is from 1905 and so it seems reasonable to assume that it is long-established native – at least until evidence to the contrary is forthcoming.

Important sites

As already stated, the saproxylic beetle fauna of Ireland is not well-studied and undoubtedly important sites remain overlooked. The situation has been made worse by the spurious notion that rare and threatened species are primarily associated with semi-natural vegetation and therefore the parklands of historic demesnes would not be expected to be of special interest. In reality many of the historic demesnes actually protected and maintained more features of earlier Irish landscapes than did the average area of countryside. Saproxylic interest is focused on trees rather than woodlands, and sites which retain relatively large concentrations of veteran trees over time support the richest variety of saproxylic beetles. Such sites tend to be the historic demesnes rather than the ancient woodlands – themselves relatively rare in Ireland anyway. Most historic demesnes have not been assessed for their saproxylic interests – the compilation of an inventory of such sites and an investigation into the fauna present should be a high priority for invertebrate conservation in Ireland. Recent work in Northern Ireland has demonstrated the great value of historic parklands for Ireland's wood-decay invertebrates (Alexander *et al.*, 2007).

The sites are listed in order of known importance for saproxylic beetles. Only eight areas are currently known to support more than one species of great rarity:

Killarney National Park area, Co. Kerry

This is the outstanding site historically, very well studied up to the early 20th century, notably by Edwin Bullock, but very neglected in recent decades. There is an urgent need for a re-assessment in view of the management changes that have been taking place. More than 20 notable species – considerably more than any other area that has been studied; the only known Irish site for the Six-

spotted Longhorn Beetle *Anoplodera sexguttata* (1859 & 1879); one of only two known sites for the Fire-winged Beetle *Pyropterus nigroruber* (discovered in 1866 & still there in 1989). The majority of the records stand merely as 'Killarney' making it impossible to allocate particular records to particular locations within the area. Derrycunihy and Tomies Woods are well-known to be good examples of the habitat, but equally the open parkland areas are also notably important for saproxylic beetles, especially Muckcross Park. The whole area forms a mosaic of ancient woodland, ancient wood pasture and historic parkland, which in turn forms the largest extent of veteran tree habitat anywhere in Ireland. Greater attention to its saproxylic beetle importance is needed as this will greatly inform site management for conservation objectives.



Figure 5: Glena Wood, Killarney National Park, Co.. Kerry © John Cross

Powerscourt Deer Park and area, Co. Wicklow

A very famous site known to the early recorders; the only known Irish site for the black and red flower beetle *Ischnomera sanguinicollis* (still there in 1985); one of very few known sites for the fungus beetle *Anisotoma orbicularis* (1927) and the false darkling beetle *Melandrya caraboides* (1824).

Glengarriff Woods, Co. Cork

Only known Irish site for *Mordellistena neuwaldeggiana* (1924); one of only two known sites for the false click beetle *Melasis buprestoides* (1985); best Irish site for Hornet Longhorn Beetle *Leptura aurulenta*; one of very few known sites for the ambrosia beetle *Hylecoetus dermestoides*. Glengarriff Castle Demesne is of especial note for its veteran oaks; it was here that the ambrosia beetle was found and this is also a good area for the longhorn beetle.



Figure 6: Glengarriff, Co. Cork © Keith Alexander

Glencar area, Co. Kerry

Long famous as the only site in Ireland for the red click beetle *Ampedus pomonae* (discovered here in 1902 and still there, but now also known from Co. Clare); also the first area where the false click beetle *Melasis buprestoides* was found (1924); also one of only two known sites for the narrow-waisted beetle *Lissodema denticolle* (1906 & 1924); the first place that the ambrosia beetle *Hylecoetus dermestoides* was found in Ireland (1902).

Crom Castle Demesne, Co. Fermanagh

Accessible for recording only since 1987 and with a steady increase in notable finds: first Irish site for the false darkling beetle *Abdera flexuosa*, the fungus beetle *Agathidium confusum* and the bracket fungus beetle *Dorcatoma dresdensis*; one of few modern localities for the fungus beetle *Anisotoma orbicularis* and the short-winged mould beetle *Bibloporus bicolor*. An important and unusually large concentration of old parkland, as well as having areas of more typical ancient wood pasture and ancient woodland.



Figure 7: Veteran trees on Inisherck, Crom Castle Estate, Co. Fermanagh © Keith Alexander

Charleville Park and Woods, Co. Offaly

Also only recorded in recent years; first Irish record for the longhorn beetle *Grammoptera ustulata* (2003) and one of few Irish sites for the minute fungus beetle *Cis villosulus* (2003). An important area for the oak high forest habitat as well as remnant parkland.



Figure 8: A mature tree and regeneration at Charleville, Co. Offaly © John Cross

Belvoir Park, Co. Down

Has received a lot of attention in recent decades: the only Irish site for the old forest spider beetle *Ptinus subpilosus* (1992 onwards) and also with one of the Killarney rarities, the rove beetle *Atheta pilicornis*. This site contains many old parkland trees especially oak – of 130 native oaks with a girth of 3m or more, 55 have girths in the range of 4-6m (Simon, 2005).

St John's Wood, Co. Roscommon

First investigated in any detail in 2010 (Alexander 2011); notably, one of few Irish sites for the short-winged mould beetle *Euplectus piceus* and the stone beetle *Stenichnus bicolor*; first known site in the Republic for the bracket fungus beetle *Dorcatoma dresdensis*. This wood is said to be the largest and most natural woodland in the Irish midlands. Its coppice-with-standards structure means that it contains a large number of veteran trees, particularly oaks, as well as old hazels and alders.

Other sites, with at least one great rarity:

The Great Deer Park, Glenarm, Co. Antrim – one of only two known sites for the fungus beetle *Agathidium confusum*. This site has a notably large extent of semi-natural ancient wood pasture and is an outstanding site in the context of Northern Ireland (Alexander *et al.*, 2007).



Figure 9: The Great Deer Park, Glenarm, Co. Antrim © Keith Alexander

Slish Wood, Co. Sligo – one of only two sites for the Fire-winged Beetle *Pyropterus nigroruber*. Remnant ancient oak woodland.

Shane's Castle Park, Co. Antrim – an important modern site for another Killarney rarity, the sap beetle *Eपुरaea terminalis*. Parkland and broad-leaved woodland.

Castle Coole Park, Co. Fermanagh – one of the few modern sites for the rove beetle *Hapalaraea pygmaea*; a large expanse of historic parkland with many veteran oak, etc.

Tynan Abbey Park, Co. Tyrone – one of the few modern sites for the rove beetle *Hapalaraea pygmaea*; a large expanse of historic parkland with many veteran oak, etc; more or less continuous with Caledon Deer Park which is another important area of historic parkland.

It is very obvious that historic parklands and ancient wood pastures feature very strongly in this short list, while conventional ancient woodland is relatively poorly represented. However, the detailed survey of St John's Wood (Alexander, 2011) has demonstrated that ancient woodlands may also be rich in saproxylic invertebrates. The overwhelming majority of ancient woodland sites listed by Perrin and Daly (2010) have not yet been assessed for their saproxylic beetle interest.



Figure 10: A sap run, an important microhabitat for woodland insects © Keith Alexander

The checklist of Irish saproxylic Coleoptera

Structure of the checklist

The checklist of species considered saproxylic is given in Appendix II. The listing in this and the species account section below follows the current taxonomic checklist order (Duff, 2008), with species name, proposed Irish status (see below), and a short account of its ecology. The records follow and are ordered by vice county, with locality name, grid reference (where readily available), recorders name, date of record, and source. The sequence is in date order, the earliest record first. Where a historic record is ambiguous to county then the record is placed in the most likely vice county.

The Irish status in bold is provided as a starting point, based on existing evidence, to stimulate thought and discussion. This is very likely to be modified as knowledge progresses. The expressions used are as follows:

Extinct (Ex) – no records since about 1900

Rare (R) – only a few modern records

Scarce (Sc) – known from only about ten modern localities

Uncommon (Un) – known from many counties, some with many records

Widespread (Wi) – known from most counties and plenty of records; only the year of records are provided for the most widely recorded species

Common & Widespread (Cm) – only VC distribution provided

Established introduction (Est) – species believed to have been brought into Ireland incidentally through commerce; a few have first been found only very recently

Casual Introduction (Ca) – an occasional record only, no established populations known

Recent arrival (Re) – believed to have arrived naturally

Doubtful (Do) – only a single report but no evidence of a resident population

Unclear (Ucl) – too little information for meaningful assessment of status

The recorder for all individual records is given, usually as an acronym to save space (see Appendix 1), followed by any literature references (usually bracketed). All records employed in this review (and

many paraphrased as vice-county records for common species) have been uploaded to the Recorder database held by CEDar LRC, Ulster Museum and to the National Biodiversity Data Centre (NBDC), Waterford.

A full list of references is appended.

Species accounts

FAMILY HISTERIDAE *Hister Beetles*

Predatory, especially on larvae of other deadwood inhabiting insects, also on mites and springtails. The following species is the only Irish one found associated with wood decay, but others are occasionally found in this situation although more strongly associated with other habitat types.

***Abraeus perpusillus* (Marsham, 1812) syn. *globosus* (Hoffman, J., 1803) – Rare**

In moist rotten wood of various broad-leaved trees; usually within ancient woodland, wood pasture, or historic parkland in Britain. A curious distribution in Ireland – in the central eastern counties, but perhaps favouring the relatively warmer and drier districts.

H19 Kildare: Louisa Bridge, Royal Canal, in *Polyporus squamosus* on poplar, viii.1942, AWS (O'Mahony, 1943b).

H21 Dublin: St. Annes Park (O2037), rot hole in beech, 19.v.1994, JAO (Owen, 1997).

H38 Down: Hollymount NNR, under bark on beech by *Ganoderma* bracket, 25.iii.2012, RA.

FAMILY PTILIIDAE *Feather-winged Beetles*

Mould-feeders, living between the bark and sapwood of dead trees or in rot-holes, where conditions are slightly moist and mouldy.

***Nossidium pilosellum* (Marsham, 1802) – Extinct**

Develops in decaying wood, particularly rotten stumps and damp, rotten, fungus-colonised timber, and especially elm and beech in Britain. Ireland: 'very rare, on rotten stumps (Haliday, 1855)' (Johnson & Halbert, 1902) – no details provided.

***Ptenidium laevigatum* Erichson, 1845 – Rare**

Possibly not a true saproxylic.

H2 North Kerry: Kenmare Demesne (V99), a few specimens taken together in a damp, decaying tree stump, between 18 & 25 July 1913, OEJ (Janson, 1914).

***Ptinella aptera* (Guérin-Méneville, 1839) – Rare old growth species**

Under bark of decaying oak and beech wood.

H2 North Kerry: Killarney, EFB (Bullock, 1928).

***Ptinella cavelli* (Broun, 1893) – Established introduction**

Under tight bark of dead broad-leaves and conifers; native to New Zealand, widespread in Britain and the north of Ireland where first found in 1975 (Nash, Anderson & O'Connor, 1997).

***Ptinella denticollis* (Fairmaire, 1858) – Rare old growth species**

Under tight bark of dead broad-leaved timber. Only a single record reported.

H2 North Kerry: Killarney, EFB (O'Mahony, 1929a).

***Ptinella errabunda* Johnson, 1975 – Established introduction**

Under tight bark of most species of dead trees; probably native to New Zealand. Found abundantly by RA in decaying wood in several parkland sites west of Belfast (Nash, Anderson & O'Connor, 1997).

H38 Down: Lagan Meadows, under bark of Scots pine, 27.xi.1992, RA.

H39 Antrim: Newforge, R. Lagan, under bark of rotting Japanese larch with fruiting decay fungus *Coniophora puteana*, 20.x.1992, RA (Nash, Anderson & O'Connor, 1997); Ballyskeagh, Belfast, under beech bark, 8.xii.1992, RA.

***Ptinella limbata* (Heer, 1841) – Rare old growth species**

Under bark of various dead broad-leaved trees and conifers; old forest areas. This record may possibly be an early observation of the tiny yellowish Antipodean species *P. errabunda* which RA finds occasionally under pine bark in Northern Ireland but which is otherwise unreported from the south.

H21 Dublin: Tolka Valley, under bark on pine logs, JNH (Halbert, 1924).

***Ptinella taylorae* Johnson, 1977 – Established introduction**

Under tight bark of dead trees; native to New Zealand; not uncommon in W. England & Ireland (Johnson 1977).

H39 Antrim: Rea's Wood, Antrim, under alder bark, 21.x.2006, RA.

***Pteryx suturalis* (Heer, 1841) – Rare**

Under bark and in rotten wood of dead broad-leaved trees, rarely in conifer.

H2 North Kerry: near Killarney, EFB (Bullock, 1928) (O'Mahony, 1929a).

H39 Antrim: Rea's Wood, Antrim, 17.iv.1974, AGI, det CJ.

FAMILY LEIODIDAE

All species of *Anisotoma* have an obligate association with slime fungi, with adults and larvae feeding on the spores. Species of *Agathidium* are most likely primarily associated with slime fungi but the evidence is less clear – not all species appear to be associated with decaying wood. The species appear typical of shady woodlands rather than more open situations.

***Anisotoma humeralis* (Fabricius, 1792) – Uncommon old growth species**

Modern sites almost invariably ancient woodlands and ancient wood pastures.

H1 South Kerry: Kenmare, JRH (in Halbert, 1898c) (Johnson & Halbert, 1902); Rossbehy, 1902, HSJD (Donisthorpe, 1902).

H2 North Kerry: nr. Killarney, 1910-1914, EFB; Ross Castle, Killarney, 22.v.1995, PJH.

H16 West Galway: Connemara National Park (L75), 1994, MCDS (Speight, 2004).

H18 Offaly: Charleville Wood (N315226), v. 2003, RA (Regan & Anderson, 2004)

H20 Wicklow: (Halbert, 1898c, in A.H. Haliday collection, Dublin Museum); Powerscourt Deerpark (O1912), swept along R. Dargle, 9.vi.1919, JNH (Halbert, 1922); 19.vi.1993, KNAA; Clara, iv.1929, AWS (O'Mahony, 1929b); Devil's Glen, 9.vi.1934, EO (O'Mahony, 1934).

H23 Westmeath: Lough Derravaragh, JNH (Johnson & Halbert, 1902).

H25 Roscommon: St John's Wood (M9956 & N0055), 6.viii. & 8.x.2010, KNAA.

H29 Leitrim: Acres Lake (G966100), two knocked from dead *Pinus*, 23.iv.2011, MC.

H30 Cavan: Cloverhill, vi.1916, GWN (Nicholson, 1917).

H33 Fermanagh: Reilly Wood, Crom (H32), 28.v.1992, KNAA; Inisherik, Crom, FIT, 1.vii.1992-7.vii.1992, APF; Florencecourt, 24.viii.2010, RA.

H36 Tyrone: Brookend NR, Lough Neagh, 8.v.2007, RA.

H38 Down: Stormont, Belfast, 17.ix.1994, RA; Tollymore Forest Park, 27.vi.1998, RA.

H39 Antrim: Shane's Castle, vi.1902, CWB (Halbert, 1910b); 1.vii.2010, RA; Great Deer Park, Glenarm (D2911), 20.v.2006, KNAA.

H40 Londonderry: Banagher Glen (C6704), FIT, 8.vii.2007, KNAA.

***Anisotoma orbicularis* (Herbst, 1792) – Rare old growth species**

Only known from two of Ireland's richest areas for saproxylics.

H20 Wicklow: Powerscourt, 15.viii.1927, AWS (O'Mahony, 1927).

H33 Fermanagh: Inisherik, Crom, 1.vi.1992, 7.vii.1992, 5.viii.1992, 4.ix.1992; Inishfendra, Crom, 15-16.vii.1993, FIT samples, APF.

***Amphicyllis globus* (Fabricius, 1792) – Extinct**

In decaying timber, mostly in ancient woodland areas in Britain. No modern reports.

H11 Kilkenny: Thomastown, one swept "in a marshy place on the banks of the Nore, July, 1901", JNH (Johnson & Halbert, 1902).

***Agathidium confusum* Brisout, 1863 – Rare old growth species**

First noted in Ireland in 1993 but regarded as an overlooked native.

H33 Fermanagh: Inishfendra Island, Crom, FIT, 16.vi.1993 – 15.vii.1993, APF.

H39 Antrim: Great Deer Park, Glenarm (D2911), in numbers from the twigs of a fallen large oak branch, 20.v.2006, KNAA (Alexander, 2008a).

***Agathidium nigripenne* (Fabricius, 1792) – Scarce**

Only reported across the more northern counties; not northern in Britain.

H15 South-east Galway: Coole Park (M433043), several swept, 22.v.2010, PJH.

H25 Roscommon: St John's Wood (M9956), various dates in 2010, KNAA.

H27 West Mayo: Westport, JJW (Fowler, 1891).

H33 Fermanagh: Inisherik Island, Crom, FIT, 1.vi.1992 – 7.vii. 1992, APF.

H34 East Donegal: Rathmullan, JJW (Fowler, 1891) (Johnson & Halbert, 1902); Foyle district, 1900, CWB.

H37 Armagh: Armagh, WFJ (Johnson & Halbert, 1902); Annagarraiff NR, Peatlands Park, 29.v.2000, RA (Anderson, Simms & Nelson, 2000).

H38 Down: Stormont, 7.v.1994, 13.v.1994, RA; Belvoir Forest, 23.iv.1998, RA; Hillsborough, 9.viii.2000, RA; Shooter's Island, Quoile (J494470), 23.ii.2012, MDB.

H39 Antrim: Farr's Bay, Randalstown, 4.vii.1986, RCW (Welch, 1986); Belfast Castle, 11.vii.2004, 9.iii.2008, RA.

H40 Londonderry: Ness Wood (C528118), 19.v.2007, KNAA.

***Agathidium rotundatum* (Gyllenhal, 1827) – Extinct**

H33 Fermanagh: Belleisle (Porter, 1898) (Johnson & Halbert, 1902).

H37 Armagh: Palace Demesne, in moss, WFJ (Johnson, 1892a); Coney Island, Lough Neagh, WFJ (Johnson & Halbert, 1902).

H39 Antrim: Murlough, GWC, det. JNH (Johnson & Halbert, 1902).

***Agathidium seminulum* (Linnaeus, 1758) – Rare**

H2 North Kerry: near Killarney, pre-1914, EFB (Bullock, 1914).

H33 Fermanagh: Munnilly Bridge, Old Ulster Canal, 19.vii.2011, RA.

H39 Antrim: Cranmore Park, Belfast, 18.iv.2005, RA.

***Agathidium varians* Beck, 1817 – Scarce**

H20 Dublin: The Dingle (Waterstown Park), v. 1935, JNH (1937).

H33 Fermanagh: Inisherik, Crom, FIT, 1.vi.1992 – 7.vii.1992, APF; Castle Coole Park (H2643), FIT, viii-14.ix.2007, KNAA.

H38 Down: Belvoir Forest, Belfast, 24.ii.1999, RA.

H39 Antrim: Shane's Castle, CWB, 1902, det. JNH (Johnson & Halbert, 1902: Suppl. List); Rea's Wood, Antrim, 3.xii.1994, RA; Great Deer Park, Glenarm (D2911), FIT, vii-19.viii.2007, KNAA.

H40 Londonderry: Drenagh Estate (C6923), FIT, viii-15.ix.2007, KNAA.

FAMILY SCYDMAENIDAE *Stone Beetles*

Predatory on mites, in moist situations; a few frequent decaying wood.

***Stenichnus bicolor* (Denny, 1825) – Rare old growth species**

Under bark and in moist crumbly decaying timber of various dead trees; widespread in moister areas of Britain; mostly in ancient wood pastures.

H2 North Kerry: near Killarney, pre 1914, EFB, det GCC.

H3 West Cork: Glandore (W23), one under a stone close to the shore, JNH, det GCC (Johnson & Halbert, 1902).

H25 Roscommon: St John's Wood (N0055), FIT, v-7.vi.2010, KNAA.

FAMILY STAPHYLINIDAE *Rove Beetles*

A small number are restricted to decaying wood, but many are associated with fungal fruiting bodies and the degree of association with wood-decay fungi is often unclear.

STAPHYLINIDAE SUBFAMILY OMALIINAE

***Phyllo drepoidea crenata* (Ganglbauer, 1895) – Rare old growth species**

Adults and larvae occur under bark of relatively freshly dead trees or branches, usually broad-leaved trees in England, pines in the relict pine forest of Scotland; they feed on fungal decay. A speciality of the hill country of the N and W of Britain, presumably also submontane in Ireland. Hammond (1980) refers to the Killarney population and the date of the first report but does not comment on whether or not there have been any subsequent records.

H2 North Kerry: Killarney district, “fairly common in decaying fungi on trees in woods throughout the whole district, occurring frequently in the late Autumn months”, Bullock (1928); *Deliphrum crenatum* in O’Mahony (1929a).

***Coryphium angusticolle* Stephens, 1834 – Rare old growth species**

Lives beneath bark of dead oak and other trees, and in red-rotten oak, mostly in wooded areas, possibly only ancient sites; widespread in Britain.

H2 North Kerry: Killarney (Bullock 1914).

H37 Armagh: Derryadd Lough, Peatlands Park, 16.iii.2002, RA.

H38 Down: Holywood, sea coast (Haliday, 1841, 1855; in a rotten stump, Haliday ms.) (Johnson & Halbert, 1902); Belvoir Forest, Belfast, 12.iv.1995 & 17.iii.1998, RA.

H40 Londonderry: Culmore, CWB (Buckle, 1900) (Johnson & Halbert, 1902).

***Acrulia inflata* (Gyllenhal, 1813) – Rare old growth species**

Adults and larvae under fungoid bark on sound timber of various dead broad-leaved trees, where moist interface; general scavengers, feeding on insect material; adults also feed on fungal spores. In Britain confined to hill country of N and W; similarly submontane in Ireland.

H2 North Kerry: Killarney, EFB (Bullock 1914), ‘the single Irish record’ (Hammond, 1980).

H40 Londonderry: Banagher Glen, a pair among fruiting bodies of fungus *Hymenoscyphus calyculus* on oak branch, 6.xi.1999, RA.

Genus *Dropephylla*

Adults and larvae are found under the bark of dead wood, although the adults of some (perhaps all) are attracted to blossom in early summer. Adults and larvae are cannibalistic and feed on small insects or other arthropods living under bark.

***Dropephylla devillei* Bernhauer, 1902 syn. *grandiloqua* Luze, 1910 – Scarce old growth species**

Under bark of broadleaves and conifers in old forest areas in Britain; widespread but rare in Europe as a whole. Hammond (1980) regards the species as having spread into England recently from Scotland – the evidence for such mobility does not bear close scrutiny however. Most Irish records are from the classic saproxylic sites.

H18 Offaly: Charleville Wood (N315226), v. 2003 (Regan & Anderson, 2004)

H19 Kildare: Curragh Camp (H774118), Scots pine bark, 17.iii.2012, RA.

H33 Fermanagh: Castle Coole Park, 17.viii.2006, KNAA.

H36 Tyrone: Baronscourt Park, 15.vi. & 12.ix.2006, KNAA.

H37 Armagh: Peatlands Country Park, 17.iii.1993, 23.x.1993, RA; Slieve Gullion Forest (J039197), conifer bark, 8.iii.2012, RA.

H39 Antrim: Cave Hill, in numbers under bark of Scots pine, RA (Hammond, 1980); Great Deer Park, Glenarm, 13.vi., 19.viii. & 16.ix.2006, KNAA.

***Dropephylla gracilicornis* (Fairmaire & Laboulbène, 1856) – Scarce**

Under bark and in rotten wood of dead branches of broad-leaved trees, especially oak.

H2 North Kerry: Killarney (Bullock, 1930).

H9 Clare: specimens seen (Hammond, 1980).

H21 Dublin: Lucan Demesne, under bark, coll. JNH, det. D. Sharp (Johnson & Halbert, 1902: "*Omalium brevicorne*" probably refers to this species).

H36 Tyrone: Baronscourt Park, 15.vi.2006, KNAA.

H38 Down: specimens seen (Hammond, 1980); Donard Park, Newcastle, 31.xii.2011, RA.

H39 Antrim: Lady Dixon Park, Belfast, 21.v.1980, RA; Great Deer Park, Glenarm, 19.viii.2006, KNAA.

***Dropephylla ioptera* (Stephens, 1832) – Scarce**

Occasional under bark of dead branchwood; broad-leaved trees; adults visit flowers of rowan, etc; widespread in Britain, "probably very local" in Ireland (Hammond, 1980).

H2 North Kerry: near Killarney, pre 1914, EFB (Bullock, 1914); Ballyseedy Wood, xi.2001, JAG.

H18 Offaly: Charleville Wood (N315226), v. 2003, RA (Regan & Anderson, 2004).

H19 Kildare: Liffey bank at Celbridge, AWS.

H22 Meath: Balrath, ix.1910, GWN (Nicholson, 1911).

H25 Roscommon: Mote Park (Halbert, 1898a, as *Omalium iopterum*).

H33 Fermanagh: Castle Coole Park, 17.viii.2006, KNAA; Garrison, Lough Melvin, 30.v.2007, DAL; Knockninny Hill, 1.vi.2007, RA; Filbert Hill, Castle Coole, 15.viii.2010, RA; Old Crom Castle (H364239), 24.v.2012, MDB.

H36 Tyrone: Baronscourt Park, 24.x.2006, KNAA; Wood Lough (H759602), 24.v.2012, RA.

H37 Armagh: Peatlands Park, 29.v.2000, RA.

H38 Down: Hillsborough Forest, 20.vi.1995, RA; Morelands Meadow, Belvoir, 22.v.2004, RA. Donard Park, 31.xii.2011, RA.

H39 Antrim: Lady Dixon Park, 21.v.1980, RA; Barnett's Park, 19.v.1994, RA; Dungonnell dam, 21.vi.1995, RA; Great Deer Park, Glenarm, 22.v.2007, KNAA.

H40 Londonderry: Ness Wood, 19.v.2007, KNAA.

***Dropephylla koltzei* Jászay & Hlavac, 2006 nec *vilis* (Erichson, 1840) – Scarce**

Under bark of dead broad-leaved trees and conifers; widespread in Britain, "probably local" in Ireland (Hammond, 1980).

H22 Meath: Balrath, 26.ix.1913, GWN (Nicholson, 1914).

H30 Cavan: Cloverhill, ix.1913, GWN (Nicholson, 1914).

H33 Fermanagh: Trory, Lower Lough Erne (H225483), under bark on dead sallow, 23.v.1995, KNAA.

H36 Tyrone: Ballybriest, Lough Fea, 5.vi.1994, RA.

H37 Armagh: Moyrourkan Lough, 18.x.1980, RA; Derryadd Lough (H914604), 11.v.2012, RA.

H38 Down: Donard Demesne, Newcastle, under bark of felled beech, vi.1923, OEJ (Janson, 1924); Leitrim Lodge, Mournes, 1.iii.1980, RA; Morelands Meadow, Belvoir, 15.iv.2004, RA.

H39 Antrim: Carr's Glen, CWB (Johnson & Halbert, 1902); Belfast Castle, 26.i.1980, RA; Barnett's Park, 19.v.1994, RA.

***Hapalaraea pygmaea* (Paykull, 1800) – Rare old growth species**

Largely confined to areas of mature woodland, where it is found in bracket fungi, bird nests and squirrel dreys in the tree canopy, rotten wood, etc.; probably not an obligate wood-decay species.

H2 North Kerry: Kenmare Demesne (V98), '*Bolitophagus pygmaeus*' in decaying tree stumps, 18-25.vii.1913, OEJ (Janson, 1914).

H33 Fermanagh: Rossyvullan Hill, Castle Coole, one in *Polyporus squamosus* on dead standing sycamore, 20.vii.2010, RA.

H37 Armagh: Tynan Abbey, three in *Polyporus squamosus* on elder, 26.vii.2011, RA/MDB.

H39 Antrim: near Belfast, R. Templeton (Johnson, 1889), 'now in collection of Belfast Nat. Hist. & Philosophical Society' (Johnson & Halbert, 1902); Hammond (1980) regards this record as unconfirmed.

***Phloeonomus punctipennis* Thomson, C.G., 1867 – Common & Widespread**

Adults and larvae under bark of various dead broad-leaved wood; a fungal feeder; under-recorded due to past confusion with *P. pusillus*; "probably widely distributed.... generally distributed" in Ireland H2, H4, H13, H21, H25, H30, H36, H33, H37, H38, H39 (Hammond, 1980).

***Phloeonomus pusillus* (Gravenhorst, 1806) – Common & Widespread**

Adults and larvae live under bark, mostly of dead conifer wood; widespread in Britain; "apparently less generally distributed in Ireland than *P. punctipennis*" H1, H2, H15, H17, H19, H20, H34, H36, H37, H38, H40 (Hammond, 1980).

***Phloeostiba plana* (Paykull, 1792) – Rare old growth species**

Adults attracted to fresh sap of broad-leaved trees – they feed on the sap; larvae develop under dead bark, feeding on sap as well as insects; mostly in areas of ancient woodland.

H1 South Kerry: Glencar, vii.1924, OEJ (Janson & Bonaparte-Wyse, 1924).

H2 North Kerry: Flesk and Killarney, "seen specimens" (Hammond, 1980).

H20 Wicklow: Ballard Wood (T1495), 14.vi.1993, KNAA.

H22 Meath: Balrath, vi.1916, GWN (Nicholson, 1917).

H36 Tyrone: Baronscourt Park (H3682), 12.ix.2006, KNAA.

***Xylostiba monilicornis* (Gyllenhal, 1810) – Rare**

Confined in Britain to ancient broad-leaved woodland and pasture woodland, mainly in the midlands and north. Found in gill fungi and in *Piptoporus betulinus* on birch, also reported from oak, beech and pine. Appears during winter and in early spring. Only recently found in Ireland but presumed to be an overlooked native.

H37 Armagh: Slieve Gullion Forest Park (J038193), under bark on dead standing silver fir, 8.iii.2012, RA.

H38 Down: Donard Demesne, Newcastle (J373301), 1 pair under fungoid bark of veteran beech on the ground, 9.i.2012, RA; Leitrim Lodge (J223256), 1 under bark of dead standing Scots pine, 29.ii.2012, RA.

STAPHYLINIDAE SUBFAMILY PSELAPHINAE *Short-Winged Mould Beetles*

Predatory, particularly on mites; a number associated with deadwood.

***Euplectus bescidicus* Reitter, 1881 – Rare**

Lives amongst insect borings and frass in old trees.

H2 North Kerry: near Killarney, in burrows of wood-wasp *Sirex* in an old tree, v.1928, EFB (O'Mahony, 1929a).

***Euplectus infirmus* Raffray, 1910 – Rare**

In rotten wood and under bark, especially willow. Ireland (Pearce, 1957).

H6 Waterford: Waterford, JAP (Power, 1878).

H33 Fermanagh: Castle Coole Park (H2643), from FIT in hollow horse chestnut, 14.ix.2006, KNAA.

H38 Down: Hillsborough Estate (J243576), 1 in pitfall in parkland, 5.vi.1992, RA.

***Euplectus karstenii* (Reichenbach, 1816) – Rare**

H20 Wicklow: Ashford, ARF (Johnson & Halbert, 1902).

H21 Dublin: Dublin unlocalised, ARH det. AHH (Hogan, 1854); Dundrum, FHB det. JNH (Johnson & Halbert, 1902).

H33 Fermanagh: Castle Coole Park (H2643), from FIT in hollow horse chestnut, 14.ix.2006, KNAA.

***Euplectus mutator* Fauvel, 1895 syn. *fauveli* Guillebeau, 1888 – Rare**

In bird nests, under dead bark and in rotten wood; oak and beech. Ireland (Pearce, 1957).

H2 North Kerry: Bullock's house at Flesk, Killarney, EFB (O'Mahony, 1929a).

***Euplectus piceus* Motschulsky, 1835 – Rare old growth species**

Under bark of oak and beech, and in red-rotten heartwood decay in oak.

H2 North Kerry: near Killarney, EFB (Bullock, 1914).

H25 Roscommon: St John's Wood (M9956), under bark on fallen oak branch, 14.iv.2010, KNAA.

***Euplectus punctatus* Mulsant, 1861 – Extinct**

In moist crumbly rotten wood; primarily a relict species of old growth forest; Ireland (Pearce, 1957).

H2 North Kerry: 'Kerry', JAP (Power, 1878).

***Bibloporus bicolor* (Denny, 1825) – Rare old growth species**

Under bark and in rotten wood of a wide variety of trees, broad-leaves and conifers.

H2 North Kerry: Killarney, Bullock (1914).

H20 Wicklow: Powerscourt, Heasler (O'Mahony, 1929a).

H33 Fermanagh: Inishfendra, Crom, FIT, 16.vi-15.vii.1993, APF.

STAPHYLINIDAE SUBFAMILY PHLOEOCHARINAE

***Phloeocharis subtilissima* Mannerheim, 1830 – Scarce**

Amongst debris under beech bark, in moss on trees, on bracket fungi especially *Daedaleopsis confragrosa* on *Salix*, etc.

H1 South Kerry: Valentia Island (V47), taken commonly by Miss M.J. Delap, in decaying *Fuchsia* sticks and in moss (Halbert 1898b) (Johnson & Halbert, 1902).

H2 North Kerry: Kenmare Demesne (V99), in some numbers beneath the bark of dead firs, between 18 & 25 July 1913, OEJ (Janson, 1914).

H9 Clare: Kilrush, v.1914, EFB.

H34 East Donegal: Milford, ix.1906, Halbert (1937).

H37 Armagh: Peatlands Park (H904606), 23.v.2007, RA; Derryadd Lough (H911606), in *Piptoporus* on birch, 11.v.2012, RA.

H38 Down: Rostrevor, 15.iv.1974, CAMR; Rostrevor Oakwood, 2000 (Anderson, Simms & Nelson, 2000); Tollymore Park, 6.iv.2011, MDB; Donard Park (J372298), 9.i.2012, RA.

H39 Antrim: Shane's Castle, Sept 1902, C.W. Buckle (Halbert 1910); under bark of fallen firs, June 1923, O.E. Janson (1924); Rea's Wood, Antrim, 17.iv.1974, CAMR.

STAPHYLINIDAE SUBFAMILY TACHYPORINAE

***Sepedophilus littoreus* (Linnaeus, 1758) – Scarce**

Mycetophagous species, feeding on fungal hyphae not fruiting bodies - rarely away from dead and decaying wood of some kind; occasionally found amongst leaf and other vegetable litter. Generally distributed in Britain, largely in ancient woodlands. Although not known prior to 1977, it seems probable that the species is an old woodland relict in Ireland (Anderson, 1978).

H6 Waterford: Dunkitt Castle meadow, pitfall in riverine grassland, v.-vi, 1999, JAG.

H19 Kildare: Pollardstown Fen, pitfall in fen, vi.1998, v.-vii.2002, JAG.

H33 Fermanagh: near Inishteige, Upper Lough Macnean (H0242), female from roadside grass cuttings bordering freshly felled scrub woodland, 12.iv.1977, RA (Anderson, 1978); Inisherik, Crom, FIT, vi.-vii.1992, APF.

H34 East Donegal: Dunkineely, from *Polyporus squamosus* on stump, 6.vi.1999, KNAA.

H38 Down: Tollymore Forest, under piled up Douglas fir bark, 9.iv.1993, RA.

H39 Antrim: near Portmore Lough (J119686), pair from under bark around fruiting fungus *Phlebia merismoides* on a rotting alder log in marginal old alder woodland, 24.xi.1984, RA (Anderson, 1985); Bucklebrook House, Upper Ballinderry, 31.iii.2011, MDB.

H40 Londonderry: by Toneduff Bridge, R. Faughan (C5107), male in basidiomycete fungi on beech logs, 31.x.1977, RA (Anderson, 1978).

STAPHYLINIDAE Subfamily ALEOCHARINAE

***Alaobia pallidicornis* (Thomson, C.G., 1856) – Uncommon**

At sap, bracket fungi, and under fungoid bark in forest trees. Local and mainly south-eastern in Britain, but more generally distributed in Ireland. Possibly not an obligate saproxylic.

H18 Offaly: Charleville Wood, Tullamore, in bracket fungus on horse chestnut, 24.v.2003, RCW (Regan & Anderson, 2003).

H19 Kildare: Louisa Bridge, Royal Canal, in '*Polyporus*' on poplar, viii.1942, EO (O'Mahony, 1943).

H30 Cavan: Cloverhill, at sap of damaged oak, vi.1916, GWN (Nicholson, 1920).

H33 Fermanagh: Rossvullan Hill, Castle Coole, under fungoid bark on oak limb, 28.v.2010, RA.

H37 Armagh: Tynan Abbey Estate, in *Polyporus squamosus* on birch, 26.vii.2011, RA; Tynan Abbey, in *Trametes* on ash, 17.viii.2011, RA.

H38 Down: Hydebank Woods, under fungoid bark of sycamore log, 25.x.2007, RA; Mount Stewart, in *Russula* under beech, 11.viii.2010, RA; Dundrum Castle (J406371), a pair in fungi on dead wood, 14.iii.2012, MDB.

H39 Antrim: Glenarm Nature Reserve, in *Piptoporus* on birch, 8.vi.2011, RA.

***Atheta basicornis* (Mulsant & Rey, 1852) – Scarce**

Under bark on periodically inundated dead branches and trunks along fast-flowing rivers; feeds on fungal material.

H15 South-east Galway: Lough Coy Turlough, Ardrahan, pitfall, 6.v.1996, JAG.

H18 Offaly: Bullock Island, Shannon, under willow bark, 24.v.2003, RCW (Regan & Anderson, 2003).

H30 Cavan: Cloverhill, under pine bark, vi.1916, GWN (Nicholson, 1920).

H33 Fermanagh: Rossvullan Hill, Castle Coole, under fungoid bark on oak, 28.v.2010; Munilly Bridge, Old Ulster Canal, under willow bark, 19.vii.2011, RA.

H37 Armagh: Oxford Island (J047621), in fungus on willow, 25.iii.2012, MDB

H38 Down: Murlough NNR, in *Agaricus campestris*, dunes, 23.ix.2006, RA.

H39 Antrim: Portmore Lough, under bark of willow and alder, 19.vi.2009, 26.vi.2009, RA.

***Atheta pilicornis* (Thomson, 1852) – Rare**

Chiefly subcortical, often with scolytids; adults also reported from wood-decay and terricolous fungi, moss and among dead leaves, but larval habits not known; damp woodlands.

H2 North Kerry: near Killarney, in dead leaves, vi.1932, EFB det. Ste. Claire Deville (Bullock, 1932).

H38 Down: Belvoir Forest (J339696), 1 male in bolete *Xerocomus chrysenteron* under oak, 11.ix.1997, RA; Dundrum Castle woods, 1 female on *Polyporus squamosus* on horse chestnut, 20.vii.2009, RA.

***Bessobia fungivora* (Thomson, 1867) – Rare**

In rotting fungi or on fungoid wood in forests; probably not an obligate saproxylic. Historically known only from a record of R.E. Dillon for Clonbrock, a specimen having been determined by J.N. Halbert (Johnson & Halbert, 1902). Dillon has become notorious for some of the outlandish records claimed for Clonbrock which, but for a modern record, would have made the species doubtfully Irish.

H16 North-east Galway: Clonbrock, RED, det. JNH (Johnson & Halbert, 1902).

H38 Down: Hollymount NNR (J465440), in *Stereum* bracket fungi on beech logs, 18.i.2011, RA (Anderson, 2011).

***Dadobia immersa* (Erichson, 1837) – Rare**

Under bark, usually pine, but also reported from decaying alder trunks and *Nothofagus*.

H1 South Kerry: Glencar (V78), several shaken from the chippings of felled trees, 8.vii.1924, OEJ (Janson & Bonaparte-Wyse, 1924).

***Dinaraea aequata* (Erichson, 1837) – Common & Widespread**

Under bark of various trees, usually near fungoid growths. H2, H4, H5, H15, H18, H19, H20, H23, H33, H36, H37, H39, H40.

***Dinaraea linearis* (Gravenhorst, 1802) – Rare old growth species**

Under bark.

H2 North Kerry: Killarney, Bullock (1914) and collection specimens, EFB (Good, 1990); Ballyseedy Wood, xi.2001, JAG.

H4 Mid Cork: Curraghabinny Wood, near Crosshaven, in frass on oak log, 20.vii.2000, RA.

H37 Armagh: Derryadd Lough (H911606), in *Piptoporus* on birch, 11.v.2012, RA; Loughgall Country Park (H909513), under bark, dead alder, MDB.

***Traumoecia picipes* (Thomson, 1856) – Uncommon**

In fruit bodies of wood-decay fungi such as *Piptoporus betulinus*, *Meripilus giganteus* & *Hypholoma*; overwintering in tussocks, moss, compost, etc. Identified as an indicator species of “well-developed woodland habitat” (Good & Butler, 1995).

H2 North Kerry: Ballyseedy Wood, xi.2001, JAG; Muckcross Woods, 2.ix.2011, RA.

H6 Waterford: Lismore, 13.iii.2011, RA.

H12 Wexford: Johnstown Castle, 14.viii.2009, SM.

H20 Wicklow: Powerscourt Demesne, Sept/Oct, 1990, JAG (Good & Butler, 1995).

H31 Louth: Bellurgan Foresty (J095099), 22.iii.2012, RA.

H33 Fermanagh: Inisherik Island, 31.iii.1997, RA; Florencecourt, 16.iii.2011, RA.

H36 Tyrone: Baronscourt Estate, 16.v.2006, RA.

H37 Armagh: Tynan Abbey, 26.vii.2011, 17.viii.2011, RA; Slieve Gullion Forest (J037194), 8.iii.2012, RA.

H38 Down: Belvoir Forest, 16.iv.2004; Mount Stewart, 13.ix.2003, 17.x.2009, 13.viii.2010, RA; Killynether Wood, 11.viii.2007, RA; Helen's Tower, 26.vii.2008, 10.ii.2011, RA; Rostrevor Oakwood NNR, 7.iii.2011, MDB.

H39 Antrim: near Lough Neagh (O'Mahony, 1929a); Shane's Castle, vi.1902, CWB (Halbert, 1910b); Barnett's Park, 2.x.1996, RA; Belfast Castle, 11.vii.2004, RA.

***Thamiaraea hospita* (Märkel, 1844) – Rare**

At exuding sap on tree trunks, especially oak.

H21 Dublin: Lucan Demesne, in borings of the goat moth on oak, 1909, JNH (Halbert, 1910a).

***Bolitochara lucida* (Gravenhorst, 1802) – Rare**

In fleshy fungus on old stumps.

H21 Dublin: Glencullen, AWS (Stelfox, 1924) (O'Mahony, 1929a).

H39 Antrim: Fair Head & Murlough Bay, 15.vi.1992, KNAA.

***Bolitochara obliqua* Erichson, 1837 – Common & Widespread**

Under bark of dead wood of various deciduous trees, especially associated with the small bracket fungus *Trametes versicolor*; adult is a fungal feeder, larvae also feeding on phloem and dead larvae. Common in Britain and Ireland: H9, H18, H19, H20, H21, H22, H28, H32, H33, H34, H36, H37, H38, H39.

***Leptusa fumida* (Erichson, 1839) – Common & Widespread**

Under bark on dead wood of various trees, also in rot holes; feed mostly on detritus and fungi, but will eat insect larvae and eggs. Widespread in Ireland: H1, H2, H4, H13, H18, H19, H20, H21, H30, H33, H36, H37, H38, H39, H40.

***Leptusa norvegica* Strand, A., 1941 – Established Introduction**

Lives under bark in the runs of ambrosia beetles, etc, on conifer logs.

H39 Antrim: Portglenone Forest, in *Tomicus* burrows, Scots pine, SC (Anderson & Clawson, 2004).

H38 Down: Donard Park, under loose bark of silver fir, 31.xii.2011, RA.

***Leptusa pulchella* (Mannerheim, 1830) – Status unclear**

Under dead bark on a wide variety of tree species. Mainly in ancient woodlands in Britain, especially where wet. '*Leptusa analis*' in Johnson & Halbert (1902). Only reported from the northernmost counties, where widespread.

H33 Fermanagh: Florencecourt, under bark, beech log, 16.iii.2011, RA.

H36 Tyrone: Caledon Deer Park (H7543), 16.viii.2006, KNAA.

H38 Down: Rostrevor Oakwood, under bark of oak logs, 13.v.2000 (Anderson, Simms & Nelson, 2000); Murlough NNR, under dying elm bark, 15.xi.2010; Hollymount Wood NNR, in *Trametes versicolor*, ash log, 18.i.2011, RA; The Drinns, Tollymore Forest, under bark, 6.iv.2011, MDB; Mallard plantation, Castleward, under bark of *Pseudotsuga* log, 21.viii.2010, RA; Shooter's Island, Quoile (J494470), 1 in deer dung(!), 23.ii.2012, MDB; Tullyframe Wood (J264169), under bark on beech, 27.iii.2012, RA.

H39 Antrim: Murlough Bay, one under bark, ix.1901, GWC det. JNH; Great Deer Park, Glenarm (D2911), 20.v.2006, KNAA; Glenarm Nature Reserve, under bark of oak log, 8.vi.2011, 14.vi.2011, in *Piptoporus* on birch, both RA.

H40 Londonderry: Altnaheglish Forest, Banagher, Sitka spruce stump, 6.viii.2005, RA.

***Leptusa ruficollis* (Erichson, 1839) – Recent arrival**

Under bark on deadwood; favours thin fibrous-barked woody plants notably *Tilia* & frequently *Clematis*; ancient woodlands in Britain, but appears to be a recent arrival in Ireland.

H38 Down: Mount Stewart House, 1 in rotting *Russula* under beech, 13.viii.2010, RA; Temple of the Winds, Mount Stewart, 1 under fresh bark on fallen beech bough, 5.x.2010, RA.

Gyrophaenini are associated with fungal fruiting bodies, generally wood decay fungi but not exclusively so; larvae spore-feeding.

***Agaricochara latissima* (Stephens, 1832) – Uncommon**

H2 North Kerry: Killarney, Bullock (1914) (O'Mahony 1929); Ballyseedy Wood, ix.2001, JAG.

H30 Cavan: Cloverhill, 13.ix.1913, GWN (Nicholson, 1920; O'Mahony 1929).

H36 Tyrone: Baronscourt Park, 15.vi.2006, KNAA, det. RA.

H37 Armagh: Address House, 25.ii.2011, RA.

H38 Down: Dane's Wood, Clandeboye, 21.x.1973, CAMR; Stormont, 18.ix.2004, RA; Castle Espie, 19.viii.2007, RA; Belvoir Forest, 22.xi.2007, RA; Murlough NNR, 15.ix.2010, RA; Hollymount NNR, 18.i.2011, RA.

H39 Antrim: Ballycastle, GWC (Johnson & Halbert, 1902); Barnett's Park, 29.ix.1993, RA; Portmore Churchyard, 29.ix.2009, RA; Belfast Castle, 23.i.2011, RA; Glenarm Nature Reserve, 1.xi.2011, RA.

***Gyrophaena affinis* Mannerheim, 1830 – Uncommon**

H16 North-east Galway: Clonbrock (M7439), in fungi on trees (Halbert, 1896; Johnson & Halbert, 1902).

H20 Wicklow: Powerscourt Deerpark, 20.vi.1928, EO (O'Mahony, 1929a).

H23 Westmeath: Shurock House, pitfall, vi.2007, P. O'Connell.

H25 Roscommon: St John's Wood (M9956 & N0055), *Armillaria* on oak roots, 1.ix.2010 & frequent in FITs, 2.xi.2010, KNAA.

H32 Monaghan: Castle Leslie, Glaslough, 18.vii.2009, RA.

H36 Tyrone: Gortin Glen Forest (H484819), 21.vii.2012, RA.

H38 Down: Barnett's Park, 29.ix.1993, RA; Hillsborough Forest, 28.iv.1995, RA; Tollymore Forest, 27.vi.1998, RA; Stormont Estate, 18.ix.2004, RA; Castle Espie, 19.viii.2007, RA; Newforge, Belfast, 23.vii.2008, RA; Helen's Tower, Clondeboye, 26.vii.2008, RA; Killynether Wood (J475722), 29.vi.2012, RA.

H39 Antrim: Shane's Castle Demesne, Lough Neagh, "only recorded from Galway in the Irish list", vi.1923, OEJ (Janson, 1924); Rea's Wood, Antrim, 3.xii.1994, RA; Portglenone Forest, 28.viii.2004, RA; Glenarm Nature Reserve, 14.vi.2011, RA.

***Gyrophaena bihamata* Thomson, C.G., 1867 – Rare**

H2 North Kerry: near Killarney, EFB (Bullock, 1928; O'Mahony, 1929a).

H32 Monaghan: Castle Leslie, Glaslough, in *Polyporus squamosus* on ash, 18.vii.2009, RA.

H39 Antrim: Rea's Wood, in *Clitocybe* under spruce, 30.vi.1986, RCW (Welch, 1986); in *Hirneola auricula-judae* on sycamore, 3.vii.2004, RA.

***Gyrophaena fasciata* (Marsham, 1802) – Common & Widespread**

H2,H6,H9,H17,H20,H24,H25,H30,H32,H33,H36,H37,H38,H39.

***Gyrophaena gentilis* Erichson, 1839 – Uncommon**

H20 Wicklow: Powerscourt Demesne, 1 with *Daedalea quercina* on an oak stump, ix-x.1990, Good & Butler (1995).

H34/40: Foyle district, CWB (Buckle, 1900; Johnson & Halbert, 1902. Suppl. List).

H32 Monaghan: Castle Leslie, Glaslough, 18.vii.2009, RA.

H33 Fermanagh: Lough Fadda, Blessingbourne, 27.vii.2011, RA.

H38 Down: Belvoir Forest, 27.x.1993, 9.ix.1995, 28.ix.1996, RA; Hollymount NNR, 5.x.1996, RA; Shane's Castle, 3.vii.2004, RA; Belfast Castle, 11.vii.2004, RA; Killynether Wood (J475722), in *Polyporus squamosus* on sycamore, 29.vi.2012, RA.

H39 Antrim: Ballycastle, in fungi, "obtained commonly in woods near Ballycastle by G.W. Chaster" (Johnson & Halbert, 1902); Shane's Castle, vi.1902, CWB (Halbert 1910); Rea's Wood, 12.ix.2007, RA.

***Gyrophana manca* Erichson, 1839 syn. *angustata* (Stephens, 1832) – Rare**

Larvae feed especially on spores of *Polyporus squamosus*. A Palearctic species, widespread in Europe, but very local in Britain and rare in Ireland.

H15 South-east Galway: near Aughrim (M825268), 3m & 10f in bracket fungus *Polyporus squamosus* on cut mature ash stump in a hedge in an area of esker ridge scrub, old pasture and hedgerows, JAG (Good, 1997).

H37 Armagh: Tynan Abbey Estate (H715414), abundant in *Polyporus squamosus* on elder, 26.vii.2011, RA/MDB.

H38 Down: Killynether Wood (J475722), in *Polyporus squamosus* on sycamore, 29.vi.2012, RA.

***Gyrophana minima* Erichson, 1837 – Rare**

H28 Sligo: Glencar, GWC, det. GCC (Johnson & Halbert, 1902).

H38 Down: Belvoir Forest, 5 from *Stereum hirsutum* on a *Prunus laurocerasus* log, 1.ix.1997, RA.

H39 Antrim: Ballycastle, GWC, det. JNH (Johnson & Halbert, 1902).

***Gyrophana nana* (Paykull, 1800) – Rare**

H22 Meath: Balrath, new to Irish list, ix.1910, GWN (Nicholson, 1911) (O'Mahony, 1929a)

***Gyrophana poweri* Crotch, 1867 – Rare**

H2 North Kerry: Ross Castle Lakeside, Killarney, in fungi, EFB (Bullock, 1935).

***Gyrophana pulchella* Heer, 1839 – Rare**

H2 North Kerry: Killarney, Bullock (O'Mahony, 1929a).

H22 Meath: Balrath, new to Irish list, 26.ix.1913, GWN (Nicholson, 1914) (O'Mahony, 1929a).

H36 Tyrone: Drum Manor, a pair in fungi, 18.x.2010, MDB det. RA.

H38 Down: Belvoir Forest, 6 in fresh fungus *Clitocybe geotropa* under beech, 27.x.1993, RA (Anderson, Simms & Nelson, 2000).

***Gyrophana strictula* Erichson, 1839 – Rare old growth species**

Characteristically associated with the bracket fungus *Daedalea quercina* but occasionally reported with other fungi; this bracket fungus is itself very localised in Ireland and known from only seven sites in four vice-counties (Muskett & Malone, 1980). The beetle has been identified as an indicator species of

“well-developed woodland habitat” (Good & Butler, 1995); widely distributed and not uncommon in N Europe.

H20 Wicklow: Powerscourt Demesne (O221172), 8m, 3f, in *Daedalea quercina* on oak stump, ix-x.1990, JAG (Good, 1991a; Good & Butler, 1995).

***Anomognathus cuspidatus* (Erichson, 1839) – Scarce**

Under fungoid bark of dead beech, oak, etc.

H2 North Kerry: near Killarney, 1914, EFB (Bullock, 1914).

H15 South-east Galway: Ardfry, under bark, vi.1921, JNH (Halbert, 1937).

H20 Wicklow: Ballyward Bridge, under bark, vi.1921, JNH (Halbert, 1937).

H21 Dublin: Grand Canal bank, near Lucan, under bark of felled elms, larvae extremely abundant but adults rather scarce, May, JNH (Johnson & Halbert, 1902. Suppl. List).

H37 Armagh: Tynan Abbey Estate, 21.vi.2011, RA.

H38 Down: Morelands Meadow, Belvoir, 18.xi.1992, 15.iv.2004, RA; Stormont Estate, 7.v.1994, 13.v.1994, RA; Hydebank Woods, 25.x.2007, RA; Mount Stewart, 16.viii.2010, RA; Temple of the Winds, 5.x.2010, RA.

H39 Antrim: Lagan Meadows, Belfast (J334699), decaying *Bjerkandera adusta* bracket fungi on a sycamore stump, 11.iv.1993, Anderson (1995); Portmore Lough, RSPB Reserve, 19.vi.2009, RA; Moss Plantation, Randalstown, 16.vii.2010, RA.

***Homalota plana* (Gyllenhal, 1810) – Uncommon**

Under bark on dead beech etc; adult feeds on detritus and fungi.

H2 North Kerry: Deer Park, Killarney, one under bark, EFB (Bullock, 1935).

H25 Roscommon: St John’s Wood (M9956), 14.iv. & 12.v.2010, KNAA.

H37 Armagh: Annagarraiff NNR (H902616), sycamore bark, 9.v.2000, RA; Peatlands Park, 2000 (Anderson, Simms & Nelson, 2000); Tynan Abbey Estate (H755414), bark, beech, 26.vii.2011, RA.

H38 Down: Morelands Meadow (J337697), beech logs, 18.xi.1992, RA; Belvoir Forest (J341695), bark Scots pine, 11.iv.1995, RA; Hydebank woods (J342677), bark, sycamore, 25.x.2007, RA; Mount Stewart (J550699), in rotting *Russula*, 11.viii.2010, RA; Castle Ward (J572502), bark, ash, 19.iii.2011, RA; Shooter’s Island, Quoile (J494471), under sycamore bark, 23.ii.2012, RA.

H39 Antrim: Farr’s Bay NNR (J089870), bark, *Picea* log, 4.vii.1986, RCW (Welch, 1986); Belfast Castle (J327793), fungoid bark on beech, 11.vii.2004, RA; Moss Plantation, Shane’s Castle (J094893), bark, oak, 20.viii.2010, RA.

***Cypha seminulum* (Erichson, 1839) – Extinct**

In rotting wood, fungi, under bark and in moss; elm and sycamore. Ireland (Haliday collection).

H34/40: Foyle District, CWB (Buckle, 1900; Johnson & Halbert, 1902).

***Oligota apicata* (Erichson, 1837) – Rare**

Occurs in bracket fungi on trees: reported from *Stereum hirsutum*, *Polyporus squamosus*, *Trametes versicolor*; possibly preys on *Cis* beetle larvae; also recorded in leaf litter inside a hollow oak, under beech bark, etc.

H15 South-east Galway: Coole Park (M433043), 22.v.2010, PJH.

H38 Down: Helen's Tower, Clondeboye, in rotting *Trametes/Bjerkandera* on beech logs, 10.ii.2011, RA.

H39 Antrim: Shane's Castle Demesne, Lough Neagh, two sifted from debris, vi.1923, OEJ (Janson, 1924).

***Ischnoglossa prolixa* (Gravenhorst, 1802,) – Rare**

Found beneath bark on freshly dead timber; widespread on the Continent.

H15 South-east Galway: Ardfry, under bark, vi.1921, JNH (Halbert, 1937).

H16 North-east Galway: Clonbrock (M7439), collected by R.E. Dillon, det JNH (Johnson & Halbert, 1902).

H19 Kildare: Curragh camp (M774118), 2 under bark of Scots pine, 17.iii.2012, RA.

H20 Wicklow: Ballyward Bridge, under bark, vi.1921, JNH (Halbert, 1937); Powerscourt Demesne, 16 under *Pseudotsuga* bark, Sept/Oct, 1990, JAG (Good & Butler, 1995).

H21 Dublin: Dundrum, 1900, EFB (Halbert, 1900; Johnson & Halbert, 1902).

H37 Armagh: Slieve Gullion Forest Park (J037194), 1 under bark of dead standing Scots pine, 8.iii.2012, RA; Loughgall (H909513), under bark of dead alder, 3.v.2012, MDB.

H38 Down: Belvoir Forest (J342694), in *Bjerkandera adusta* on oak stump, 23.iv.2004, RA; Leitrim Lodge (J223256), under bark of dead standing *Pinus contorta*, 29.ii.2012, RA.

***Phloeopora testacea* (Mannerheim, 1830) – Uncommon**

Predatory, beneath bark on deadwood of various broad-leaved trees. *Phloeopora reptans* (syn.) reported from Ireland by Haliday and there are Irish-taken specimens in his collection (Johnson & Halbert, 1902).

H2 North Kerry: near Killarney, 1914, EFB (Bullock, 1914); Kenmare Demesne, Killarney, *P. reptans* in some numbers under bark of recently felled pines, 25.vi.-30.vi.1919, OEJ (Janson, 1920).

H19 Kildare: Curragh camp (N774118), 17.iii.2012, RA.

H20 Wicklow: Powerscourt Deerpark, 18.ii.2007, RA.

H21 Dublin: Clontarf, date unknown, OE (O'Mahony, 1938).

H33 Fermanagh: Florencecourt, 31.vii.2010, RA.

H37 Armagh: Annagarraiff NNR, 29.v.2000, RA.

H38 Down: Belvoir Forest, 28.ix.1993, 12.iv.1995, RA; Redburn Country Park, 6.ix.2006, RA; Hydebank Woods, 25.x.2007, RA; Castle Espie, 26.viii.2009, RA.

H39 Antrim: Barnett's Park, 19.v.1994, RA; Belfast Castle, 11.vii.2004, RA; Ram's Island, L. Neagh, 4.vi.2005, RA; Shane's Castle Estate, 1.vii.2010, RA; Moss Plantation, Randalstown, 16.vii.2010, RA.

H40 Londonderry: Leganannon Pot, 4.iv.1999, RA.

STAPHYLINIDAE SUBFAMILY SCAPHIDIINAE – shining fungus beetles

***Scaphisoma agaricinum* (Linnaeus, 1758) – Uncommon**

Amongst decaying wood and at fungal fruit bodies.

H14 Laois: Glendine Valley, Slieve Bloom, 1907, JNH (Halbert, 1907a).

H15-17 Galway: Woodford, JNH (Johnson & Halbert, 1902); Derryclare Wood (L8249), in birch polypore, 20.v.1988, KNAA.

H20 Wicklow: Powerscourt Deer Park (O1912), 19.vi.1993, KNAA.

H21 Dublin: 1878, JAP (Power, 1878); Woodlands, JNH (Halbert, 1894; Johnson & Halbert, 1902).

H23 Westmeath: Derravaragh, JNH (Johnson & Halbert, 1902).

H30 Cavan: Cloverhill, vi.1916, GWN (Nicholson, 1917).

H33 Fermanagh: Inishfendra, Crom, FIT, 15.vii.1993-24.viii.1993, APF; Molly Mountain, 23.vi.1995, RA; Castle Coole Park, 2.vi.1992 & 18.v.2006, KNAA.

H36 Tyrone: Caledon Park, 16.viii.2006, KNAA; Brookend NR, L. Neagh, 8.v.2007, RA.

H37 Armagh: Lowry's Lough, sweeping gorse, WFJ (Johnson, 1892a) (Johnson Halbert, 1902); Derryadd Lough (H914609), in old *Piptoporus*, 11.v.2012, MDB.

H38 Down: Dundrum Castle (J406371), in fungi on dead wood, 14.iii.2012, MDB.

H39 Antrim: Shane's Castle Demesne, Lough Neagh, June 1923, OEJ (Janson, 1924). Great Deer Park, Glenarm, 28.vii. & 19.viii.2006, KNAA.

***Scaphisoma boleti* (Panzer, 1793) – Scarce**

H2: North Kerry: Ardagh (W9788), near Killarney, vii.1927, JNH (Halbert, 1937).

H16 North-east Galway: Clonbrock (M7439), coll R.E. Dillon, det. JNH, (Johnson & Halbert, 1902); Ardfry, vi.1916, JNH (Halbert, 1937).

H21 Dublin: Dundrum, JNH (Halbert, 1895b) (Johnson & Halbert, 1902).

H33 Fermanagh: Summerhill Lough, xii.1905, WFJ (Johnson, 1906); Florencecourt, 21.vi.2010, RA; Filbert Hill, Castle Coole, 26.vi.2010, RA.

H34 East Donegal: St. Ernan's island (G9278), 30.vi.1908, WFJ (Johnson, 1909).

H37 Armagh: Tynan Abbey, 1.vii.2011, RA.

H39 Antrim: Rea's Wood, Antrim, 30.vi.1986, RCW (Welch, 1986).

STAPHYLINIDAE SUBFAMILY PIESTINAE

***Siagonium quadricorne* Kirby, 1815 – Scarce**

Saprophagous beneath moist sappy bark on the freshly dead wood of various broad-leaved trees, especially elm. Old records from southern counties, where still present; recently appeared in north.

H5 East Cork: Fota Wildlife Park, 1 adult, 1 larva under bark of Scots pine, 11.vii.2001, RA.

H13 Carlow: Borris, under bark of moist decaying ash stump, iv.1895, JNH (Halbert, 1895e) (Johnson & Halbert, 1902)

H19 Kildare: Leixlip, "seen specimens taken in August 1942" (Hammond, 1980).

H37 Armagh: Tynan Abbey, in *Polyporus squamosus* on elder, 26.vii.2011, RA; under oak bark among lumber, 29.ix.2011, RA.

H38 Down: Hydebank Woods, Belfast, under bark of sycamore log with *Quedius lyszkowskii*, 25.x.2007, RA; Murlough NNR, under bark of dead elm, 15.xi.2010, RA; Temple Water, Castleward, under ash bark, 19.iii.2011, RA; Shooter's Island (J580493), under bark of dead standing sycamore (32 on a single tree), 23.ii.2012, RA.



Figure 11: *Siagonium quadricorne* © Roy Anderson

STAPHYLINIDAE SUBFAMILY STAPHYLININAE

***Atrecus affinis* (Paykull, 1789) – Common & Widespread**

Under dead bark and in rotten wood of various trees, conifers & broad-leaved trees. Widespread and locally common throughout Ireland. *Baptolinus alternans* in Johnson & Halbert (1902). H1,H2,H4,H5,H15,H20,H27,H29,H32,H33,H35,H36,H37,H38,H39,H40.

***Gabrius splendidulus* (Gravenhorst, 1802) – Status unclear**

Under dead bark, especially of beech. The Furlong record below is from very atypical habitat and may be due to a misidentification. The Mount Stewart record has been verified and suggests a recent arrival in the north.

H1 South Kerry: Glenbeigh (V69), sea weed, ARF (Johnson & Halbert, 1902).

H38 Down: Mount Stewart, 19.v.1992, APF.

***Quedius brevicornis* (Thomson, 1860) – Rare**

Lives within nests of birds inside tree cavities; also found in tree rot holes and fungi.

H6 Waterford: Waterford, JAP (Power, 1878) (Johnson & Halbert, 1902).

H39 Antrim: Collin Glen (J270720), 6.ix.2002, KNAA.

***Quedius lyszkowskii* Lott, 2010 – Rare**

A recently described species, previously overlooked within *Q. aetolicus* Kraatz by modern workers and historically with *Q. puncticollis* in Irish collections (Lott, 2010). So far known only from Scotland and Ireland; may be endemic to the British Isles. Of the historical Irish records of '*Q. puncticollis*' only material from Killarney and Portmarnock have so far been examined. Summer and autumn records are typically associated with decaying wood, but one winter record is from atypical habitat and may have been a dispersing individual.

H2 North Kerry: Killarney, 22.vi.1927, LHBW (BMNH) (Lott, 2010).

H21 Dublin: Portmarnock, 7.vi.1905, collector unknown (BMNH) (Lott, 2010).

H36 Tyrone: Baronscourt Park (H3682), under dead bark on veteran beech, 12.ix.2006, KNAA.

H38 Down: Hydebank Woods, under fungoid sycamore bark, 25.x.2007, RA.

H39 Antrim: Barnett's Park, under sycamore bark, 12.xii.1979, RA; Belfast Castle, under fungoid bark on beech, 11.vii.2004, RA; Bucklebrook House, Upper Ballinderry, in hen litter, 6.xi.2010, MDB.

H40 Londonderry: Roe Valley Country Park, under bark of stacked conifer logs, 16.vii.2011, RA.

***Quedius plagiatus* Mannerheim, 1843 syn. *laevigatus* Gyllenhal, 1810 – Rare old growth species**

Lives beneath loose bark and amongst moist well-rotted timber; broad-leaved trees & conifers.

H1 South Kerry: Lickeen Wood, Glencar (V78), one in an oak stump, July 1924, OE Janson (Janson & Bonaparte-Wyse 1924)

H2 North Kerry: Rossbeigh Dunes, no date, EFB (O'Mahony, 1929a); near the base of Torc Mountain (V98), 2 in a much decayed fir-log, vi.1919, OEJ (Janson, 1920); Derrycunihy Wood (V9181), 18.viii.1990, KNAA; Muckcross Woods, 2.ix.2011, 4.ix.2011, RA.

H20 Wicklow: Powerscourt Demesne, 2 under *Pseudotsuga* bark, Sept/Oct, 1990, Good & Butler (1995); Ballard Wood, Glendalough (T1495), 14.vi.1993, KNAA.

H21 Dublin: Glendhu, Heasler (O'Mahony, 1929a).

H30 Cavan: Cloverhill, Nicholson (O'Mahony, 1929a).

***Quedius truncicola* Fairmaire & Laboulbène, 1856 syn. *ventralis* (Aragona, 1830) – Rare**

In wet, very rotten timber, often with dense, clay-like blackish mould, in tree holes and hollow trunks, generally beneath bird nests; also reported from rotten fungi and at sap.

H21 Dublin: Portmarnock, var *rufipennis*, two, 21.ix.1925, E. O'Mahony, det. PMH (Nash, Anderson & O'Connor, 1997).

FAMILY LUCANIDAE *Stag Beetles*

***Sinodendron cylindricum* (Linnaeus, 1758) Rhinoceros Beetle – Widespread**

Bores in decaying heartwood of large broad-leaved trees, and also pine, including stumps. Irish hosts include alder, birch, oak and sweet chestnut (Speight, 1985). Has been reported from floating timber in both freshwater and seawater.

H1 Kerry South: remains in ash stump in large pine wood near Glenbeigh (V69), vi.1902 (Donisthorpe, 1903) (Bouskell, 1904).

H2 North Kerry: Muckross Demesne, June 1924, OE Janson (Janson & Bonaparte-Wyse 1924); Reenadinna (V9586), 28.iv.2002, MC.

H10 North Tipperary: Ballyvillane (R8681), 24.iv.2002, MC.

H14 Laois: Abbeyleix, 1901, JMB (Johnson & Halbert, 1902).

H15 South-east Galway: Clarinbridge (M4119), 20.x.1996, MC; Garryland Wood, 24.ix.2007, RA.

H20 Wicklow: Bray, GCC; Powerscourt, 1900, JSS (Johnson & Halbert, 1902); Powerscourt Deerpark (O1912), in decayed trees, 9.vi.1919, Halbert (1922); 15-19.vi.1993, KNAA.

H21 Dublin: Dollymount, 1900, JSS (Johnson & Halbert 1902); Killiney Hill, pair, 23.v.1983, leg. R Mulcahy, det JAG (Good, 2002); Waterstown Park, 21.v.2011, RA.

H23 Westmeath: Hare Island in Lough Ree, Halbert (1900) (Johnson & Halbert 1902); Crookedwood (N4662), 25.iv.1996, MC.

H25 Roscommon: Mote Park (M86), on willow, Halbert (1898a; Johnson & Halbert, 1902); Rindoon Wood (N05), adults & larvae in moist rotten wood in dead trunks of alder and ash, JAG (Good, 2002); galleries in dead ash, 14.iv.2010, KNAA. St John's Wood (M9956), many dates, 2010, KNAA.

H28 Sligo: Rathcarrick (G6334), 18.ii.1993, MC; Templehouse (G6218), remains in faeces (?pine marten), 23.vi.1993, MC; Union Wood (G680285), 14.vi.1999, KNAA.

H29 Leitrim: Curraun (H103006), vi.2004, TG.

H30 Cavan: Lough Oughter, 1893, WFJ (Johnson, Halbert & Carpenter, 1894).

H33 Fermanagh: Tempo, C Langham (Langham, 1897; Johnson & Halbert 1902); Marble Arch, 24.vi.1988, DAL; Inishfendra, Corlatt Wood, Reilly Wood, etc, Crom Castle Estate (H32), 1992, KNAA & APF, 4.xi.2002 & 6.vii.2007, KNAA; Castle Coole Estate (H2643), 2.vi.1992, KNAA; many dates, 2006, KNAA; Filbert Hill, Castle Coole, 26.vi.2010, RA; Rossyvullan Hil, Castle Coole, 28.v.2010, RA; Florencecourt, 21.vi.2010, RA.

H36 Tyrone: Caledon Deer Park (H7543), many dates, 2006, KNAA.

H37 Armagh: Tynan Abbey Estate, 21.vi.2011, 1.vii.2011, 26.vii.2011, RA.

H39 Antrim: Portmore Lough, 8.x.2009, RA; Shane's Castle, 1.vii.2010, RA.



Figure 12: *Sinodendron cylindricum* © Keith Alexander

FAMILY CLAMBIDAE

***Clambus pallidulus* Reitter, 1911 – Rare**

Has been reported in Britain from a hollow apple tree, in debris in a rotten elm stump, and from moss among rotten logs, implying a saproxylic association.

H2 North Kerry: Killarney district, identified at the time as *Clambus minutus*, male & female, ii.1918; male, Flesk, iv.1939, EFB (Johnson, 1997).

FAMILY SCIRTIDAE

***Prionocyphon serricornis* (Müller, P.W.J., 1821) – Uncommon**

Develops in water-logged hollows in old trees, especially beech, and including external hollows amongst roots; larvae aquatic, feed on detritus from dead leaves; adults active fliers, short-lived. 'Appears to be common on beech trees just about everywhere here but has been completely overlooked (by me) until now. I have now looked in six locations and found it in five.' (RA, Jan. 2008). These latter finds (also below) refer to larvae only, although adults are relatively easy to rear. Assessed as Data Deficient in Foster *et al.* (2009).



Figure 13: *Prionocyphon serricornis* larva © Roy Anderson

H20 Wicklow: Powerscourt Deerpark, a male, viii.1927, AWS (O'Mahony, 1927, 1928a); two larvae & some exuvial fragments in tree holes of mature beeches beside the new club-house of the golf course, 5.xii.2007, GNF & JD Reynolds (Foster & Reynolds, 2008).

H33 Fermanagh: Finlane, Florencecourt, 6.iii.2011, pools on stand of beeches, BN, GNF, MDB, RA.

H36 Tyrone: Drum Manor (H757776), larvae on beech, 19.i.2008, RA (Anderson, 2008a).

H37 Armagh: Slieve Gullion Forest (J039195), 8.iii.2012, MDB/RA.

H38 Down: Minnowburn Beeches (J326686), larvae plus numerous exuviae in several pools on beech root bases, 10.xii.2007, RA, (Anderson, 2008a); Killynether Wood, 2.ii.2008, RA; Temple of the Winds, Mount Stewart, 8.iii.2008, RA; Donard Demesne (J373302), 31.xii.2011, RA.

H39 Antrim: Barnett's Park (J323686), one small colony on a large beech, 16.xii.2007, RA (Anderson, 2008a); Donard Demesne, 31.xii.2011; Lady Dixon Park, Belfast, 17.i.2008, RA.

H40 Londonderry: Springhill Estate (H866824), several colonies on mature beech, 17.xii.2007, RA (Anderson, 2008a).

FAMILY EUCNEMIDAE *False Click Beetles*

***Melasis buprestoides* (Linnaeus, 1761) – Rare old growth species**

Develops in rather hard dead timber, especially boughs, of a wide variety of broad-leaved trees; in standing & fallen timber. SW Ireland only, although more widespread in Britain where scarcest in the west.

H1 South Kerry: Lickeen Wood, Glencar (V78), one female on a dead portion of a standing oak, 9.vii.1924, Janson & Bonaparte-Wyse (1924).

H3 West Cork: Glengarriff Woods (V920565), one on bracken under an oak near Lady Bantry's Lookout, 12.vii.1985, JPOC. & MAOC (O'Connor & O'Connor 1987).

FAMILY ELATERIDAE *Click Beetles*

***Calambus bipustulatus* (Linnaeus, 1767) – Extinct**

Larvae a predator, living in relatively soft rotten wood in stumps, trunks and hanging boughs of oak & other broadleaves; adult reported nectaring at blackthorn and hogweed in daylight.

H6 Waterford: H. Tempest took it near Waterford; specimen in NMI (Johnson & Halbert, 1902).

***Denticollis linearis* (Linnaeus, 1758) – Common & Widespread**

Larvae develop under bark on dead wood and in decaying heartwood; broad-leaved trees and pine; omnivorous, feeding on live larvae as well as dead phloem tissues, etc. Also develops on moorlands, where larvae are active in the upper peat and moss layers. 'Very local' in Ireland (Johnson & Halbert, 1902) although more widespread than then appreciated once the larvae are recognised. H1, H2, H3, H9, H20, H25, H33, H34, H36, H38, H39, H40.



Figure 14: *Denticollis linearis* © Roy Anderson

***Ampedus balteatus* (Linnaeus, 1758) – Doubtful**

Develops in red-rotten heartwood of stumps and boughs of various trees. The Rathlin record lacks credibility as many other records on Hardy's list have also been rejected. The Kerry specimens have

not been seen by a competent authority apart from Hardy. It seems unlikely that such a distinctive species could have been overlooked for so long.

H1/2 Kerry: J.R. Hardy, *in litt.* (Halbert & Johnson, 1902).

H39 Antrim: Rathlin Island, at roots of broom, JRH (Hardy, 1897) (Halbert & Johnson 1902).]

***Ampedus pomonae* (Stephens, 1830) – Rare**

Primarily known from the Glencar area of Co. Kerry, where it has been found developing in soft red-rotten heartwood of birch on peatland. Its recent discovery in County Clare suggests that it may be more widespread than was once supposed.

H1 South Kerry: Glencar, several taken, vi.1902 (Donisthorpe, 1903); '*Ampedus praeustus* specimens' on a road, HSJD (Donisthorpe, 1917); 29.vi.1934, AWS, det. MCDS, confirmed J. Chassain. (Speight, 1989b); Caragh Lough (V7190), 1989 (Mendel, 1990; Mendel & Clarke, 1996); adult and three larvae in birch logs, bog and fens at south end, 18.v.1994, JAO (Owen, 1997).

H9 Clare: Ballyogan Lough (R370912), rich fen, v.vi.2007, & Fir Lough (R630832), reedswamp by area cutover bog, vii.viii.2007, in Malaise traps, TG.

***Ampedus pomorum* (Herbst, 1784) – Uncommon**

Larvae develop in decayed timber of oak, birch, pine & probably other trees; primarily associated with birches around peatlands, but also in areas of ancient wood pasture.

H9 Clare: bog near Finlough, coll. F. Neale (Halbert, 1896; Johnson & Halbert, 1902).

H10 North Tipperary: near Rathcabban (N0007), dry peat bog with birch trees, 9.vii.1996, JAO (Owen, 1997).

H13 Carlow: Borris, PF (Johnson & Halbert, 1902).

H14 Laois: Abbeyleix, JMB (Browne, 1901; Johnson & Halbert, 1902).

H15 South-east Galway: Portumna Bay, The Quay, Park, etc (M841032), v. 2003 (Regan & Anderson, 2004).

H16 North-east Galway: Clonbrock (M7439), JNH (Halbert, 1896; Johnson & Halbert, 1902).

H18 Offaly: Seagull Bog, near Tullamore, JNH (Halbert, 1895c; Johnson & Halbert, 1902); All Saints Bog, 1988, MCDS (Speight, 1990).

H19 Kildare: Prosperous Bog, 1935, EO (O'Mahony, 1935b).

H20 Wicklow: Powerscourt "*Elater sanguineus*" "among peat earth, in rotten branch of oak tree, 17.ii.1849, ARF (Haliday ms list) (Johnson & Halbert, 1902); Powerscourt Deerpark, two "*Elater*

praeustus” dug out of an old alder stump by River Dargle, JNH (Halbert, 1922) – the museum specimen at NMI is *A. pomorum* (Speight, 1989b).

H22 Meath: Balrath, vi.1916, GWN (Nicholson, 1917); Carlanstown, vi.1916, GWN (Nicholson, 1917).

H30 Cavan: Cloverhill, v.1914, GWN (Nicholson, 1915).

H34/40 East Donegal & Londonderry: Kilderry, CWB (Buckle, 1900; Johnson & Halbert, 1902).

H37 Armagh: Churchill, 1887, WFJ (Johnson, 1888a; Johnson & Halbert, 1902); Derryadd, Peatlands Park, 18.v.1992, 21.v.2007, 15.iv.2010, RA; Peatlands Park, 21.v.2007, RA; Argory Moss (H877575), 26.iv.2012, MDB.

H39 Antrim: Garry Bog (9328/30), two off willow bush at edge raised bog, 7.vi.1992; Great Deer Park, Glenarm (D2911), in dead oak branch, 20.v. & 13.vi.2006, KNAA.

H40 Londonderry: Iniscarn Forest, Moyola Park, 17.v.1985, RA; Kennedy’s Quarry, Macosquin, 6.vi.1992, RA; Ballynahone More Bog, 28.v.2007, RA.



Figure 15: *Ampedus pomorum* © Roy Anderson

***Melanotus castanipes* (Paykull, 1800) – Common & Widespread**

Larvae most frequently develop in red-rotted heartwood, but also in decaying wood generally. The adult flies after dark and is attracted to light. Included within *M. villosus* (Fourcroy, 1785) in Britain and Ireland until separated by Mendel (2004) who comments he has *M. castanipes* from the west of

Ireland while *M. villosus* predominates in SE England. H1, H2, H13, H15, H16, H18, H20, H25, H30, H31, H33, H34, H36, H37, H38, H38, H39, H40.



Figure 16: *Melanotus castanipes* © Roy Anderson

FAMILY LYCIDAE *Net-winged Beetles*

***Pyropterus nigroruber* (De Geer, 1774) – Rare old growth species**

Larvae develop in well-decayed red-rotten heartwood of various trees, especially birch and beech; adults attracted to blossom and often found sunning in woodland glades. Vulnerable in Ireland (Speight, 1990). Montane and northern in continental Europe.

H2 North Kerry: Killarney, summer 1866 JRH (Rye, 1867); several taken by beating birch trees and by sweeping, July 1898, JRH & GWC (Halbert, 1898c); Ross Castle, Killarney, swept off birch, GWC (Johnson & Halbert, 1902); Flesk, Killarney, 6.x.1930, EFB; Muckross, ix.1953, EFB (Speight, 1990) – both very late dates; Muckross Peninsula (V9586), larvae collected from red-rotted beech log in ash/oak woods on sandstone, ii.1989, hatched 5-15.v.1989, MCDS (Speight, 1990); Cromaglan, 1907, AWS (Halbert, 1907a).

H28 Sligo: Slish Wood (G7432), one beaten from vegetation along lakeshore, 16.vii.1992, MC (Cawley, 2005).

FAMILY CANTHARIDAE *Soldier Beetles*

Larvae of Malthininae are thought to develop in decaying branchwood or heartwood, although the larvae of some *Malthodes* have been found as active predators over branch and trunk surfaces of living trees.

***Malthinus balteatus* Suffrian, 1851 – Rare, requires confirmation as a native**

Associated with poorly-drained broad-leaved woodland, particularly wooded streamsides, but also along base of wooded limestone escarpments. Strangely just a single report from Ireland, which may suggest a misidentification. Current recording activity suggests that it is absent from Ireland.

H2 North Kerry: Muckcross Demesne, one beaten from whitethorn near the lake shore, 29.vi.1924, OEJ (Janson & Bonaparte-Wyse, 1924).

***Malthinus flaveolus* (Herbst, 1786) – Widespread**

Widespread in broad-leaved woodland and hedgerows. The lack of records from the southern counties is peculiar, but it does appear much more localised than it does in Britain.

H20 Wicklow: Glen of the Downs (O2611), 19.vi.1993, KNAA.

H21 Dublin: Barnacullia, vi.1892, HKGC (Cuthbert, 1892a).

H25 Roscommon: St John's Wood (M9956), 9.vi.2010, KNAA.

H27 West Mayo: Belclare, 1910-1912, JNH (Johnson & Halbert, 1912).

H33 Fermanagh: Portora, Enniskillen, 19.v.1946, UM (coll. unknown). Castle Coole Park (H2643), 17.vi.2006, KNAA.

H37 Armagh: Mullinure, Armagh, WFJ (Johnson, 1892a); Argory Moss (H881578), 1.vii.1992, KNAA.

H38 Down: Greencastle Td., 31.viii.1946, UM (coll. unknown); Belvoir Forest, 5.vii.1993, RA; Shimna R., Newcastle, 29.vii.1995, RA; Rostrevor Oakwood NNR (J186173), two swept, 11.vii.2007, KNAA; Castle Ward Park (J5649), 20.viii.2006, KNAA.

H39 Antrim: Farr's Bay NR, Randalstown, 4.vii.1986, RCW (Welch, 1986); Newforge, Belfast, 15.vi.1994, RA; Breen Wood NNR, 13.vii.2005, RA; Shane's Castle, 1.vii.2010, RA.

H40 Londonderry: The Umbra NR, Magilligan, 5.vii.2005, RA. Ness Wood ASSI (C528118), 7.vii.2007, KNAA.

***Malthinus seriepunctatus* Kiesenwetter, 1852 – Uncommon**

Common in the south-east of Ireland (Johnson & Halbert, 1902), and widespread but local elsewhere; becomes more coastal in distribution in the north, as it does in Britain.

H3 West Cork: Glandore (W23), JNH (Johnson & Halbert, 1902).

H4 Mid Cork: Shippool Woods, Bandon River (W5757), 23.v.1994; Rock Castle Woods, Bandon River (W5653), 6.vi.1994; Rineen Wood (W190338), 12.vi.1996, KNAA.

H6 Waterford: Glenshelane Valley & Lismore, JNH (Johnson & Halbert, 1902); Ballyeelinan (X2181), 10.viii.1990, KNAA.

H11 Kilkenny: Thomastown, JNH (Johnson & Halbert, 1902).

H12 Wexford: Wexford district, JNH (Johnson & Halbert, 1902).

H20 Wicklow: Bray, 1904, WFJ; Vale of Clara, vii.1919, JNH (Halbert, 1937); Glen of the Downs, 14-19.vi.1993; Deputy's Pass (T2390), 17.vi.1993; Powerscourt Deerpark (O1912), 15.19.vi.1993, KNAA.

H31 Louth: south, JNH (Halbert, 1900b) (Johnson & Halbert, 1902).

H33 Fermanagh: Correl Glen, 5.viii.1993, RA.

H38 Down: Rostrevor Oakwood NNR (J186173), swept in numbers, 11.vii.2007, KNAA; Dundrum Coastal Path, 30.vi.2009, RA; Mount Stewart, 11.viii.2010, RA.

H39 Antrim: Glenarm NR, 14.vi.2011, RA.

***Malthodes dispar* (Germar, 1824) – Rare**

A species of wet woodlands and shaded riverbanks.

H2 North Kerry: Torc Wood, GWC, det. JNH (Johnson & Halbert, 1902).

H6 Waterford: Lismore (X09), 5.vii.1922, OEJ (Janson *et al.*, 1923; O'Meara, 2008).

***Malthodes flavoguttatus* Kiesenwetter – Uncommon**

Most frequent in acidic oak and birch woodlands of hill country districts.

H1 South Kerry: Cloonee Loughs, Kenmare, JNH (Halbert, 1898c) (Johnson & Halbert, 1902); Tomies Wood, Lough Leane (V9188), 26.v.1994, KNAA.

H2 North Kerry: Killarney, vii.1927, JNH (Halbert, 1937).

H3 West Cork: Glengarriff Woods (V918570), vii.1924, JNH (Halbert, 1937); 24.v.1994 & 13.vi.1996, KNAA.

H4 Cork Mid: Inchy Bridge & Ummera (W466457), 14 & 15.vi.1996, KNAA.

H6 Waterford: Glenshelane Valley near Cappoquin, JNH (Johnson & Halbert, 1902).

H20 Wicklow: Clara Oak Wood, emerged from oak sticks collected by AWS, 22.iv.1934, by 4.vi.1934; teste P. Harwood; very local and new to Co. Wicklow (O'Mahony, 1935a); Glendalough Oakwood (T1296), 13.vi.1993, KNAA.

H27 West Mayo: Croagh Patrick, 1910-1912, JNH (Johnson & Halbert, 1912).

H28 Leitrim: Truskmore, 19.vii.2008, RA.

H33 Fermanagh: Carrickreagh Bay, Lough Erne, 11.vi.1941, anon., UM.

H34 East Donegal: Ardnamona Wood, Lough Eske (G9684), 10.vi.1999, KNAA.

H35 West Donegal: Lough Gartan (C0616), 13.vi.1992, KNAA.

H38 Down: Slieve Donard (J3529), 8.vii.1992, KNAA; Altataggart Mountain, 9.vii.2005, RA.

H39 Antrim: Carr's Glen, CWB det. JNH (Johnson & Halbert, 1902); Murlough Bay (D1941), 15.vi.1992, KNAA.

***Malthodes fuscus* (Waltl, 1838) – Uncommon**

Most frequent in acidic oak and birch woodlands in hill country districts. '*Malthodes pellucidus*' in Johnson & Halbert (1902).

H1 South Kerry: Kenmare, 1898, JNH (Halbert, 1898c).

H2 North Kerry: Derrycunihy Wood, GWC det. JNH (Johnson & Halbert, 1902); Torc Woods, Killarney (V968850), 6.vi.1994, KNAA.

H4 Mid Cork: Shippool Woods, Bandon River (W5757), 23.v. & Rock Castle Woods, Bandon River (W5653), 6.vi.1994, KNAA.

H6 Waterford: Glenshelane Valley, JNH (Johnson & Halbert, 1902).

H11 Kilkenny: Woodstock, JNH (Johnson & Halbert, 1902).

H20 Wicklow: Devil's Glen (T2499), 17.vi.1993, KNAA; Deputy's Pass (T2390), 17.vi.1993, KNAA; Glendalough Oakwood (T1296), 13.vi.1993, KNAA.

H27 Mayo West: Belclare, 1910-1912, JNH (Johnson & Halbert, 1912).

H28 Sligo: Slish Wood (G740317), 12-17.vi.1999; Union Wood (G680285), 14.vi.1999, KNAA; Sriff Wood (G793341), 17.vi.1999, KNAA.

H33 Fermanagh: Florencecourt, 21.vi.2010, RA.

H34 East Donegal: Ballyarr Wood (C1820), 14.vi.1992, KNAA.

H38 Down: Rostrevor Oakwood NNR (J1817), 11.vii.2007, KNAA.

H39 Antrim: Carr's Glen, CWB, det. JNH (Johnson & Halbert, 1902); Clare Forest, Ballycastle, 1.vii.1986, RCW; Breen Wood (D1233), 7.vi.1992 & 9.vii.2007, KNAA; Fair Head (D1843), 11.vi.1992, KNAA; Murlough Bay (D1941), 16.vi.1992, KNAA; Collin Glen, vii.1992, RA.

H40 Londonderry: Ness Wood ASSI (C528118), 7 & 8.vii.2007, KNAA.

***Malthodes guttifer* Kiesenwetter, 1852 – Uncommon**

First recorded in Ireland by Johnson & Halbert (1902) as *M. mysticus* (see Halbert, 1937) then later by O'Mahony (1935a); now known to be relatively widespread. In damp woodland situations.

H2 North Kerry: Killarney, vii.1927, JNH (Halbert, 1937). Torc Woods (V968850), 6.vi.1994, KNAA.

H3 West Cork: Glengarriff Castle Estate (V9455), in Malaise trap, 2005, TG det. KNAA.

H7 South Tipperary: Clonmel, vii.1928, JNH (Halbert, 1937).

H15 South-east Galway: Coole & Garryland (M4304), 4.vi.1994, KNAA.

H20 Wicklow: Arklow, vii.1926, JNH (1937); Clara Oak Wood, collected by AWS on 22.iv.1934, emerged from oak sticks by 4.vi.1934; det. KGB (O'Mahony, 1935a).

H23 Westmeath: Belclare, *M. mysticus*, JNH (Clare Island Report, part 28; O'Mahony, 1929a) re-det. as *M. guttifer* (Halbert, 1937).

H25 Roscommon: St John's Wood (N0056), 6.viii.2010, KNAA.

H27 Mayo West: Belclare, recorded as *M. mysticus* (Halbert, 1937).

H28 Sligo: Hazelwood, L. Gill, 20.vii.2008, RA.

H33 Fermanagh: Brougher Mountain, 9.vi.2006, RA; Correl Glen NNR (H074546), RA; 5.vii.2007, KNAA; Rossyvullan Hill, Castle Coole, 28.v.2010, RA.

H38 Down: Slieve Donard, lower slopes (J3529), 9.vii.1992, KNAA; Belvoir Park, 4.vii.1993, RA; Rostrevor Oakwood NNR (J186173), 11.vii.2007, KNAA.

H39 Antrim; Shane's Castle, 3.vi.1995, RA; Farr's Bay NNR, 4.vii.1986, RCW (Welch, 1986); Breen Wood (D123336), 13.vii.2005, RA & 9.vii.2007, KNAA; Glenarm Great Deer Park (D2911), 29.vii.2006, KNAA; Glenarm NR, 14.vi.2011, RA.

H40 Londonderry: Banagher Glen (C670045), 14.vii.2005, RA & 8.vii.2007, KNAA; Ness Wood ASSI (C528118), 8.vii.2007, KNAA; The Umbra, 1.vi.2011, RA.

***Malthodes marginatus* (Latreille, 1806) – Common & Widespread**

Larvae develop in decaying wood or beneath bark on dead timber; mainly predatory on insect larvae including dead ones, but will also feed on decaying timber to some extent. Common in Ireland

(Johnson & Halbert, 1902): Ulster, Connaught, Leinster, Munster; H1, H2, H3, H4, H9, H15, H16, H18, H20, H21, H23, H24, H25, H27, H28, H33, H34, H35, H37, H38, H39, H40.

***Malthodes minimus* (Linnaeus, 1758) – Doubtful**

Irish status unclear: “these records require verification, as there may have been some confusion with...” *M. pumilus* (Johnson & Halbert, 1902). Anderson *et al.* (1997) list *M. minimus* without comment; no authenticated Irish specimens. No modern reports.

H2 North Kerry: Killarney, old Kenmare Road, Furlong ms. (Johnson & Halbert, 1902).

H21 Dublin: taken by Mr Tardy (Halbert 1854) (Johnson & Halbert, 1902).

H38 Down: near Belfast, Halbert (1885) (Johnson & Halbert, 1902).]

***Malthodes pumilus* (Brébisson, 1835) – Uncommon**

Usually found by sweeping tall grasses beneath mature and older trees, in open parkland as well as closed canopy high forest. *M. atomus* (Johnson & Halbert, 1902).

H2 North Kerry: Muckcross Demesne, June 1924, OEJ (Janson & Bonaparte-Wyse, 1924).

H9 Clare: Cratloe (Johnson & Halbert, 1902).

H11 Kilkenny: (Johnson & Halbert, 1902).

H12 Wexford: (Johnson & Halbert, 1902).

H20 Wicklow: (Johnson & Halbert, 1902).

H21 Dublin: Santry, JNH (Halbert, 1894); Lambay Island, vi-x.1906, JNH (Halbert, 1907b).

H27 Mayo West: Westport, 1910-1912, JNH (Johnson & Halbert, 1912).

H28 Sligo: Slish Wood (G740317), swept in numbers along wooded lakeside, 12-17.vi.1999, KNAA.

H30 Cavan: Cloverhill, vi.1916, GWN (Nicholson, 1917).

H33 Fermanagh: Inishfendra, Crom, FIT, 1992, APF. Castle Coole Park (H2643), 17.vi.2006, KNAA.

H34/40: Foyle District (Buckle, 1900) (Johnson & Halbert, 1902).

H36 Tyrone: Baronscourt Park (H3682), 15.vi.2006, KNAA.

H38 Down: (Johnson & Halbert, 1902); Ballymacormick Point, 21.v.2007, MGT.

H39 Antrim: (Johnson & Halbert, 1902); Great Deer Park, Glenarm (D2911), one swept from shady woodland along river, 13.vi.2006, KNAA.

H40 Londonderry: Drenagh Estate (C6923), 14.vi.2006, KNAA.

FAMILY BOSTRICHIDAE *False Powder-post Beetles*

Develop in dead hard timber continuously until interior reduced to powder.

***Lyctus linearis* (Goeze, 1777) – Rare**

Usually found on fresh oak palings; it develops in dead sapwood of oak, beech & ash. Subfossil remains have been found in Viking Dublin (Reilly, 2003)

H1 South Kerry: Kenmare, *Lyctus canaliculatus* swept amongst herbage by JRH, (Halbert, 1898c; Johnson & Halbert, 1902).

FAMILY ANOBIIDAE

***Hedobia imperialis* (Linnaeus, 1767) – Rare**

Has been reared from dead stems of *Rosa* and hawthorn.

H1 South Kerry: Kenmare, in a thorn fence at Carrigacappeen, JRH (Halbert, 1898; Johnson & Halbert, 1902).

H15 South-east Galway: Portuma Forest Park, 1 in *Piptoporus* on birch, 23.v.2003, G.M. Orledge, det. M. Barclay.

***Ptinus subpilosus* Sturm, 1837 – Rare old growth species**

A spider beetle, living in old hollow trees and under loose flaking dead bark on tree trunks, mainly of oak, but also old pines in Scottish Highlands; also occasionally found as a scavenger in bird nests. Relict old forest species in Britain; in Ireland it may be a relict old forest species surviving in a few historic demesnes.

H39 Down: Belvoir Park Forest (J336695), a female from under flaking bark of an old sycamore, 25.xi.1992, RA; same locality, 2 males 2 females on 2.iii and 5.iii.2007, RA (Anderson, 1994); same locality, 10 in dry crevices with spiders webs, 7.ii.2012, MDB/RA.



Figure 17: *Ptinus subpilosus* © Roy Anderson

***Grynobius planus* (Fabricius, 1787) – Common & Widespread**

Develops in dead heartwood of various broad-leaved trees. Locally common in old trees: H1, H2, H3, H6, H9, H20, H21, H25, H26, H27, H28, H33, H35, H36, H37, H38, H39, H40.



Figure 18: *Grynobius planus* © Roy Anderson

***Dryophilus pusillus* (Gyllenhal, 1808) – Established introduction**

In wood and debris of pine and larch; locally common on conifers and evidently extending its range in Ireland (Halbert, 1937a). H6, H13, H19, H20, H21, H22, H30, H33, H37, H38, H39.

***Ochina ptinoides* (Marsham, 1802) – Uncommon**

Develops in dead thick stems of ivy on trees. *Ochina hederæ* in Donegal, Antrim, Down, Armagh, Galway, Meath, Dublin, Wicklow, Kilkenny, Waterford, Kerry (Johnson & Halbert, 1902).

H2 North Kerry: near the base of Torc Mountain (V98), in plenty by beating holly and ivy, 1919, OEJ (Janson, 1920).

H4 Mid Cork: Charleville (R5322), from *Taxus* in graveyard, 8.ix.2005, MC.

H7 South Tipperary: Clonmel (S200224), from *Taxus* in graveyard, 7.vi.2007, MC.

H18 Offaly: Charleville Castle Park (N3123), 16.vi.1993, KNAA.

H21 Dublin: Clontarf, 1928. EO (O'Mahony, 1928b).

H22 Meath: Laytown sandhills, 16.vi.1894, GHC, det. JNH (Halbert, 1895b).

H25 Roscommon: St John's Wood (M9956 & N0056), 6.viii.2010, KNAA.

H33: Fermanagh: Castle Coole Park (H2643), 17.vi.2006; Inisherik, Crom Castle, 6.vii.2007, KNAA.

H37 Armagh: Loughgall Demesne, sweeping, WFJ (Johnson, 1892a).

H38 Down: Cairnshill, Belfast, 23.vii.1987; Newforge, Belfast, 15.vi.2004, RA; Rostrevor Oakwood NNR (J186173), 9.vii.2005, RA & 11.vii.2007, KNAA.

H39 Antrim: Farr's Bay NNR, 4.vii.1986, RCW (Welch, 1986).

H40 Londonderry: Drenagh Estate (C6923), 14.vi.2006, KNAA.

***Xestobium rufovillosum* (De Geer, 1774) Deathwatch Beetle – Established Introduction**

Bores in hard dead heartwood of several hardwood species where damp and fungal decay is present - in building timbers one fungus in particular *Donkioporia expansa* may be especially important; larval period anything between 1 and 13 years, usually 3-7; wings well-developed, but flight very rarely recorded, and unlikely to colonise buildings naturally. Flight occurs only when temperatures exceed 17°C and flying beetles are attracted to light. Very rare in Ireland (Hickin, 1953) and only known from building timbers.

H7 South Tipperary: Knocklofty, evidence of this beetle attacking timber behind plaster in a house, 25.ii.1953, L. Brooks (Hickin, 1953).

H38 Down: Cregagh, Belfast, 31.iii.1994, in the wooden handle of a corkscrew originally from Germany, "the loud ticking was, as might be imagined, mysterious", Robert Nash, UM.

***Ernobius mollis* (Linnaeus, 1758) – Established Introduction**

Develops in dead branches of softwoods, larvae consuming the bark but scoring sapwood, i.e. a cambium feeder. Indigenous to north Temperate regions, being common in northern Europe, especially in Scandinavia; widespread in Britain & Ireland; introduction in many parts of World.

H1/2 Kerry: Furlong ms. (Johnson & Halbert, 1902).

H21 Dublin: Clontarf, 1928, vi.1935, EO (O'Mahony, 1928, 1935).

H7 South Tipperary: Thomastown Plantation, 4.vii.2008, RM det. RA.

H38 Down: Altataggart Mountain, Mournes, on Scots Pine, 9.vii.2005, RA.

H39 Antrim: Greenmount Agricultural College, in dying *Picea abies* by pond, 30.vi.1986, RCW (Welch, 1986).

H40 Londonderry: The Umbra, swept off *Pinus nigra*, 5.vii.2005, RA.

***Anobium inexpectatum* Lohse, 1954 – Rare, possibly overlooked**

Develops in dead ivy stems. Very similar to *A. punctatum* but the aedeagus and ovipositor styles differ – only recently distinguished. One recent Irish record - suggests an overlooked native.

H1 South Kerry: Uragh Wood, Inchiquin Lough (V829632), 1 male fogged from oakwood, RM det. RA.

***Anobium punctatum* (De Geer, 1774) Furniture Beetle – Widespread**

Eggs laid in a crack or groove in exposed dead sapwood of living and dead trees, larvae bore primarily within sapwood, and pupate just beneath outer surface. *Anobium domesticum* is 'common in old houses: Ulster, Connaught, Leinster, Munster' (Johnson & Halbert, 1902) – few reports of wild-living beetles. Subfossil remains have been found in Viking Dublin (Reilly 2003)

H6 Waterford: in buildings at two locations (O'Meara, 2008).

H9 Clare: Inishmaan, Aran Islands, in domestic dwelling, 28.v.1997, RA.

H10 North Tipperary: Castlelough (R7483), loughside vegetation, 10.vii.1996, JAO (Owen, 1997).

H33 Fermanagh: Castle Coole Park (H2643), 2.vi.1992 & 26.vii.2006, KNAA.

H35 West Donegal: Ardara, WFJ (Johnson, 1893).

H36 Tyrone: Baronscourt Park (H3682), 25.vii.2006; Caledon Deer Park (H7543), 26.vii. & 16.viii.2006, KNAA.

H37 Armagh: Tynan Abbey Estate, under fungoid bark on beech, RA.

H38 Down: Belfast Docks, corn stores, 1942-46, AFO (O'Farrell & Butler, 1948); Copeland Bird Observatory Island, 1971-1973, CAMR; Derrymore House Park, Bessbrook (J0528), 6.vii.1992, KNAA; Terrace Hill, Ballynahatty, swept off winter barley, 7.viii.2006, RA; Hillsborough Forest, swept off Douglas fir, 3.viii.2006, RA; Castle Ward Park (J5649), 30.vii. & 20.viii.2006, KNAA.

H39 Antrim: Whitepark Bay ASSI, on walls of hostel, 27.vi.2007, MGT.

H40 Londonderry: Drenagh Estate (C6923), 28.vii.2006, KNAA.

***Ptilinus pectinicornis* (Linnaeus, 1758) – Uncommon**

Bores in exposed dry heartwood of old broad-leaved trees, making small pinholes; especially in beech, but also in most other species.

H1 South Kerry: Tomies Wood (V9089), 26.v.1994, KNAA.

H7 South Tipperary: Thomastown Plantation (S214209), 4.vii.2008, RM det. RA; Shanbally Castle Estate (R977165), 17.iii.2012, RA.

H14 Laois: Emo Park, vi.1938, AWS (O'Mahony, 1938).

H21 Dublin: College Park, ARH (Hogan, 1854); Artane, in an old tree stump, G.P. Farran (Halbert, 1900b; Johnson & Halbert, 1902); St Annes, 1924, EO (O'Mahony, 1924); Clontarf, Raheny, Sutton, 1928, EO (O'Mahony, 1928b).

H25 Roscommon: St John's Wood (M9956), 6.viii.2010, KNAA.

H33 Fermanagh: Tempo, C. Langham (Langham, 1897) (Johnson & Halbert, 1902). Castle Coole Park (H2643), 17.vi & 27.vii.2006, KNAA.

H36 Tyrone: Baronscourt Park (H3682), on dead beech, various dates, 2006; Caledon Deer Park (H7543), vi. & vii.2006, KNAA.

H37 Armagh: Tynan Abbey Estate, dead beech, 1.vii.2011, RA.

H38 Down: Belvoir Forest, on beech trunk, 19.vi.1984, RA; Portulla Wood, Quoile, on beech trunk, 20.vi.1984, RA; Derrymore House Park, Bessbrook (J0528), 6.vii.1992, KNAA; Mount Stewart Estate, 19.v.1992, APF.

H39 Antrim: Deerpark Hotel, Antrim, on scarred oak, 30.vi.1986; Farr's Bay NNR, in partially dead beech, 4.vii.1986, RCW (Welch, 1986); Shane's Castle, at *Tilia* flowers, 1.vii.2010, RA; Mount Stewart, galleries in beech, 13.viii.2010, RA.

H40 Londonderry: Drenagh Estate (C6923), on dead beech, 14.vi.2006, KNAA.

***Dorcatoma dresdensis* Herbst, 1792 – Rare old growth species**

In Ireland has only been found developing in the dead, persistent annual brackets of *Inonotus dryadeus* on veteran oak trees and *I. radiatus* on dead alder stems, but in Britain it favours dead hard perennial bracket fungi on broad-leaved trees, incl. *Ganoderma* and *Phellinus* spp. Although discovered very recently it is most likely an overlooked native. Alexander (2009) notes emergence holes in *I. dryadeus* almost certainly of this species at a number of historic parkland sites across Northern Ireland, but with confirmation from only Crom.

H6 Waterford: Lismore Castle (X049988), reared from *I. radiatus* on old dead alder stems by R. Blackwater, 14.iv.2012, RA.

H25 Roscommon: St John's Wood (M9956), occupied brackets of *I. radiatus* on old dead alder stems, 7.x.2010, confirmed by rearing, KNAA (Alexander, 2011).

H28 Sligo: Doorly Park (G707354), emerged 22.v.2011 from old bracket fungi on *Alnus* in carr woodland, collected 11.v.2011, MC.

H29 Leitrim: Lough Allen (G964110), in old bracket fungus on *Alnus*, 28.v.2011, MC.

H33 Fermanagh: Inisherik, Crom Castle Estate (H357248), occupied *I. dryadeus* bracket on old parkland oak, 6.vii.2007, confirmed by rearing, KNAA (Alexander, 2009), also 6.vii.2010, MDB.



Figure 19: *Dorcatoma dresdensis* © Roy Anderson

FAMILY LYMEXYLIDAE

***Hylecoetus dermestoides* (Linnaeus, 1761) – Rare old growth species**

Develops in freshly dead timber and stumps of hardwoods and softwoods; adult stage very short, only a few days, from early April to early July; adult beetle bores vertically into the heartwood and establishes networks of galleries, unbranched and curved, in which eggs are laid and the larvae develop; the bore dust is ejected creating distinctive piles of dust; the larvae feed on ambrosia fungus

growing on walls of the galleries. Primarily SW in Ireland and modern records only from a single site protected as a SAC under European legislation.

H1 South Kerry: Glencar Valley, taken out of birch and in flight, vi.1902, HSJD (Donisthorpe, 1902 & 1903; Bouskell, 1904).

H2 North Kerry: Killarney, EFB (O'Mahony, 1929a).

H3 West Cork: Glengarriff Castle Demesne (V9455), male & female in malaise trap, 2005, coll. T. Gittings, det. KNAA (Alexander, 2010a).

H20 Wicklow: Powerscourt Deerpark, AWS (O'Mahony, 1929a); taken in numbers on 30.v.1933, EO (O'Mahony, 1934).

H21 Dublin: Glendhu, R. Heasler (O'Mahony, 1929a).

FAMILY PHLOIOPHILIDAE

***Phloiophilus edwardsii* Stephens, 1830 – Rare old growth species**

Develops in the fungus *Peniophora quercina* which fruits on the aerial dead lower boughs of various mature open-grown broad-leaved trees and shrubs, but especially oak; generally in old wood pasture and parkland situations; adults active in autumn only.

H2 North Kerry: Killarney, by sweeping, ix, TVW (note on cover of Haliday's ms *List of Irish Insects* (O'Mahony, 1929).

H19 Kildare: Liffey bank at Celbridge, one on grass under an oak tree, x.1929, JNH (Halbert, 1937).

H33 Fermanagh: Castle Coole Park (H2643), from dead branches on two mature parkland oaks in Front Park, 14.ix. & 30.x.2006, KNAA (Alexander, 2010a).

H36 Tyrone: Baronscourt Park (H3682), one in FIT hung on veteran parkland oak, 2006, KNAA (Alexander, 2010a).

FAMILY TROGOSSITIDAE *Flat Beetles*

***Thymalus limbatus* (Fabricius, 1787) – Doubtful**

Larvae and adults live beneath loose bark on decaying broad-leaved wood, especially oak, and in the later stages of white-rot decay, when the heartwood is dry and soft. The reliability of this record seems questionable – it is not normally difficult to find when present and yet extensive searches have failed to find any.

H1 South Kerry: Kenmare, 'taken in numbers amongst a mass of leaves and fungi', JRH, vii.1898 (Halbert, 1898c; Johnson & Halbert, 1902).

FAMILY CLERIDAE *Checkered Beetles*

***Tillus elongatus* (Linnaeus, 1758) – Doubtful**

A predator of other beetles developing in the dead heartwood of old broad-leaved trees, especially larvae of the anobiid *Ptilinus pectinicornis*. The larvae hunt nocturnally under bark and on the outside of the tree. The single Irish record has not been confirmed in recent years.

H1 South Kerry: Kenmare, June, Furlong ms. (Johnson & Halbert, 1902).

***Thanasimus formicarius* (Linnaeus, 1758) – Rare old growth species**

Larvae and adults feed on the larvae of wood-boring beetles. Rare in Ireland, where primarily associated with Holly Weevil *Rhopalomesites tardyi* (qv).

H1 South Kerry: Bealalaw Bridge, Glencar (V78), a pair *in cop.* on old holly stump riddled with *Rhopalomesites* galleries, a short way downstream 7.v.2010, KNAA.

H2 North Kerry: Innisfallen, Lough Leane (V98), in old hollies, between 18 & 25 July 1913, OE Janson (1914); Muckcross Demesne, on the trunks of some very decrepit holly trees, June 1919, OE Janson (1920); Muckcross Demesne, June 1924, OE Janson (Janson & Bonaparte-Wyse, 1924); Killarney, larva in BMNH coll. (Emden 1943); Upper Lake (V9081), deciduous woodland, 16.v.1994, Owen (1997).

H9 Clare: Derrygeeha Lough (R150564), Malaise trap, vi.vii.2007, TG.

H20 Wicklow: Powerscourt Deerpark, in a decayed holly, Furlong coll. (Johnson & Halbert, 1902); one swept from bracken & another sunning on old holly tree, 9.vi.1919, JNH (Halbert, 1922); a specimen on a log, EO (O'Mahony, 1929b).

H21 Dublin: "on the seashore" by Mr Bulwer (Curtis, 1839); Grand Canal Docks, JNH (Halbert, 1900) (Johnson & Halbert, 1902).

H28 Sligo: Slish Wood (G740318) & mixed woodland, Dooney Rock (G722323), 3.vi.2011, MC.

H35 Donegal: Ballyboyle, adult with *Rhopalomesites* in white-rotten heartwood of open-grown sycamore on eroded seaward side of drumlin, 18.xi.2009, KNAA (Alexander, 2010b).



Figure 20: *Thanasimus formicarius* © Keith Alexander

FAMILY DASYTIDAE

***Dasytes aeratus* Stephens, 1830 – Unclear**

Favours open woodland situations, especially on neutral to base-rich soils: adults usually found at blossom, especially on hawthorns; the larvae are carnivorous over and under bark on live trunks as well as deadwood, feeding on dead invertebrates - has been reared in numbers from decaying oak wood. A curious distribution in Ireland; easy to find when present in England, and so the lack of Irish records does appear real; potentially a casual introduction.

H1 South Kerry: Kenmare, JNH (Halbert, 1898c; Johnson & Halbert, 1902).

H11 Kilkenny: Brownstown Wood (S656299), canopy fogging, 10.vi.2008, RM det. RA.

H19 Kildare: Maynooth, HKGC & GHC (Cuthbert & Carpenter, 1894; Johnson & Halbert, 1902).

H21 Dublin: Santry, JNH (Halbert, 1893; Johnson & Halbert, 1902).

FAMILY MALACHIIDAE *Malachite Beetles*

***Malachius bipustulatus* (Linnaeus, 1758) – Scarce**

Larvae partly predatory in galleries of wood-borers, partly feeding on their excreta and larval skins; adults sun-loving and feed on pollen, also seen to attack and eat the beetle *Dasytes aeratus* in Britain. Very local in Ireland (Johnson & Halbert, 1902); mainly southern – southern and eastern in Britain. The Rathlin record of Hardy is highly suspect.

H1 South Kerry: Cloonee Loughs, Kenmare, JNH (Halbert, 1898) (Johnson & Halbert, 1902).

H6 Waterford: Curraghmore, as *Malachius viridis*, LHBW (Bonaparte-Wyse, 1897).

H14 Laois: Abbeyleix, 1901, abundant on hawthorn blossom, JMB (Johnson & Halbert, 1902).

H18 Offaly: All Saints Bog (N0010), several in birch woodland, 1988, MCDS (Speight, 1990).

H21 Dublin: in a demesne near Lucan, JNH (Halbert, 1892); Waterstown Park (The Dingle, O088357), abundant over a wide area with 7 or 8 in an average sweep in pasture by the R. Liffey, 21.v.2011, RA.

H30 Cavan: Castle Saunderson (H4119), female ovipositing on poroid bracket fungus, 14.vi.2004, M. McMullan, det. Howard Fox.

H39 Antrim: Rathlin, JRH (Hardy, 1897; Johnson & Halbert, 1902).



Figure 21: *Malachius bipustulatus* © Roy Anderson

***Anthocomus fasciatus* (Linnaeus, 1758) – Extinct**

Larvae probably predatory in borings of anobiid beetles in deadwood; adults usually found by sweep-netting beneath trees or at umbel flowers. The single Irish record would be doubtful if it were not for the voucher specimen.

H20 Wicklow: ‘Mr Furlong’s specimen is now in Dublin Museum’ (Johnson & Halbert, 1902).

FAMILY ASPIDIPHORIDAE

All of the known Aspidiphoridae breed exclusively in slime fungus spore bodies.

***Aspidiphorus orbiculatus* (Gyllenhal, 1808) – Rare old growth species**

H3 West Cork: Glengarriff Castle Demesne, in Malaise trap samples, 2005, TG, det IM.

H6 Waterford: Glenshelane Valley, JNH (Johnson & Halbert, 1902).

H12 Wexford: Forth Hills, JNH (Johnson & Halbert, 1902).

H20 Wicklow: Powerscourt Demesne, vi.1926, JNH (Halbert, 1937).

FAMILY NITIDULIDAE *Sap or Blossom Beetles*

A number of species are attracted to sap flows, especially during fermentation; at freshly cut stumps, dying trees attracting the attention of bark beetles and the ambrosia beetle *Hylecoetus*, as well as exudations caused by the wood-boring larva of the Goat Moth *Cossus*. Dispersing adults may also feed casually on other moist decaying organic matter.

***Epuraea aestiva* (Linnaeus, 1758) – Common & Widespread**

Adults at flowers of trees and shrubs, e.g. rowan and gorse; larval habits unknown but assumed to be sap beetles. Common in Ireland: Ulster, Connaught, Leinster, Munster (Johnson & Halbert, 1902). H1, H2, H5, H9, H19, H20, H21, H27, H33, H37, H38, H39, H40.

***Epuraea angustula* Sturm, 1844 – Rare old growth species**

Associated with the borings of *Trypodendron* bark beetles in freshly dead trunks and boughs, especially of birch, oak and beech.

H21 Dublin: Clontarf, in fungi, 1928, OE (O'Mahony, 1928b).

H33 Fermanagh: Portora, Enniskillen, 3 specimens, 1.vi.1941, anon., UM.

H35 Donegal: Glentogher, "three in the borings of *Trypodendron domesticum* in a fallen beech tree" CWB (Buckle, 1900) (Johnson & Halbert, 1902).

H39 Antrim: Deramore (J332696), 1 male under bark on wind-thrown oak bough, 6.iii.1996, RA.

***Epuraea biguttata* (Thunberg, 1784) syn. *unicolor* (Olivier, 1790) – Uncommon**

At sappy birch and oak stumps, and bracket fungi; also may develop in compost where conditions suitable.

H2 North Kerry: Muckcross, vi.1919, OEJ (Janson, 1920); Muckcross, in slivers of oak lumber, yard, 2.ix.2011, RA.

H20 Wicklow: Powerscourt Demesne, *E. obsoleta*, iv.1925, JNH (Halbert, 1937).

H22 Meath: Balrath, 26.ix.1913, GWN (Nicholson, 1914).

H30 Cavan: Cloverhill, v.1914, in runs of *Hylurgops*, GWN (Nicholson, 1915).

H32 Monaghan: Castle Leslie, 1 female in *Polyporus squamosus* on ash, 18.vii.2009, RA.

H33 Fermanagh: Rossvullan Hill, Castle Coole, in *Polyporus squamosus* on sycamore, 20.vii.2010, RA.

H34 East Donegal: Kilderry, *E. obsoleta* by beating ivy, CWB (Buckle, 1900) (Johnson & Halbert, 1902).

H36 Tyrone: Baronscourt Park (H3682), beneath bark on sappy fallen branch, 12.ix.2006, KNAA.

H38 Down: Castlewellan, as *E. obsoleta* (Patterson, 1885) (Johnson & Halbert, 1902); Inch Abbey, swept off haw blossom, hedge, 22.v.1995, RA; Killynether Wood (J475722), in *Polyporus squamosus* on fallen sycamore, 29.vi.2012, MDB/RA.

H39 Antrim: Shane's Castle, *E. obsoleta*, vi.1902, JNH (Halbert, 1910b); Langford Lodge (J088749), under sappy bark on windthrown oak bough, 28.v.2012, RA.

H40 Londonderry: Ness Wood ASSSI (C528118), beneath sappy bark of fallen & sawn oak trunk, 8.vii.2007, KNAA.

***Epuraea distincta* (Grimmer, 1841) – Recent arrival**

Associated with fruit bodies of the bracket fungus *Daedaleopsis confragosa* which decays dead stems of willow and birch. First noted in 2007 and now widely known across north-east.

H36 Tyrone: Coalisland Canal, Cranebrook, 24.iv.2010, MDB det. RA.

H37 Armagh: Derryadd Lough (H917603), 21.v.2007, RA (Anderson, 2007a); Brackagh Moss, 14.iv.2010, MDB, det. RA.

H38 Down: Rostrevor Oakwood NNR (J1817), one in FIT, 11.vii.2007, KNAA.

H39 Antrim: Portmore L. RSPB Reserve, 10.vii.2009, RA.

***Epuraea longula* Erichson, 1845 – Scarce**

Adults have been found at Goat Moth *Cossus* burrows, but are more regularly found at woodland flowers; also reported from rotten elm; larval habitat not known.

H4 Mid Cork: Courtaparteen, on meadowsweet, streambank, 16.vii.2000, RA

H16 North-east Galway: Clonbrock (M7439), RED, det. JNH (Johnson & Halbert, 1902).

H22 Meath: Balrath, vi.1916, GWN (Nicholson, 1917).

H31 Louth: Bellurgan Forest (J095099), under sappy bark on fresh beech log, 22.iii.2012, RA.

H33 Fermanagh: Inisherik, Crom, in *Inonotus dryadeus* on oak, 31.iii.1997, RA.

H34/40: Foyle District, CWB (Buckle, 1900; Johnson & Halbert, 1902).

H37 Armagh: Loughgall Country Park, in *Polyporus squamosus* on veteran ash, 26.viii.2008, RA.

H38 Down: Tollymore Forest, under piled up Douglas fir bark, 9.x.1993, RA.

***Epuraea marseuli* Reitter, 1872 syn. *pusilla* (Illiger, 1798) – Uncommon**

Feed on the eggs and larvae of scolytid bark beetles under sappy bark, although also considered by some authors to be fungivores or scavengers; colonise freshly dead wood once colonised by scolytids - attracted by scolytid pheromones; conifers and broadleaves. Adults also found at blossom and in tree fungi. Under fir bark (Johnson & Halbert, 1902).

H2 North Kerry: Flesk, 1914, EFB (Bullock, 1914); Muckcross Demesne, vi.1919, OEJ (Janson, 1920)

H3 West Cork: Spanish Island, Roaringwater Bay, vi-vii.2010, T. Daguerre det. RA.

H4 Mid Cork: Blarney Castle, under oak bark, 10.vii.2000, RA.

H17 North-east Galway: Tuam, JNH (Johnson & Halbert, 1902).

H21 Dublin: Dublin, ARH (Hogan, 1854) (Johnson & Halbert, 1902).

H22 Meath: Balrath, vii.1912, GWN (Nicholson, 1913).

H34/40: Foyle District, CWB (Buckle, 1900) (Johnson & Halbert, 1902).

H35 West Donegal: Corravaddy, bark of Sitka spruce, 11.vi.1998, RA.

H36 Tyrone: Caledon Deer Park (H7543), off oak foliage, 17.v.2006; Baronscourt Park (H3682), under bark on sappy fallen branch 12.ix.2006, KNAA.

H37 Armagh: Peatlands Park, 29.v.2000, RA (Anderson, Simms & Nelson, 2000).

H38 Down: Tollymore Forest, Douglas fir bark, 9.x.1993, RA.

H39 Antrim: Shane's Castle Demesne, Lough Neagh, under bark of fallen firs, vi.1923, OEJ (Janson, 1924).

***Epuraea melanocephala* (Marsham, 1802) – Common & Widespread**

Larval habits unknown; adults found at flowers of trees and shrubs, and amongst foliage; overwinter in leaf litter. Added to the Irish list by Irwin (1975). – but see O'Mahony 1934. Probably widespread but overlooked. H3, H4, H18, H21, H25, H37, H38, H39.

***Epuraea melina* Erichson, 1843 – Rare**

Adults usually found at flowers; larval habitat unknown. A curious miscellany of reports, all old, & not reported since 1946.

H 5 East Cork: Cobh (Queenstown), JJW (Walker, 1895; Johnson & Halbert, 1902).

H6 Waterford: JAP (Power, 1878; Johnson & Halbert, 1902).

H33 Fermanagh: Portora, 17.v.1946, anon., det. T. Delaney, UM; Farnamullan, 19.v.1946, anon., det. T. Delaney, UM.

H38 Down: Conlig, near Bangor, JJW (Walker, 1895; Johnson & Halbert, 1902); Greencastle, Carlingford Lough, 8.vi.1945, anon., det. T. Delaney.

***Epuraea pallescens* (Stephens, 1835) syn. *florea* Erichson, 1845 – Widespread**

At flowers and tree-sap; also in fungi. 'Probably common, but there are few records' - H6, H12, H21, H31, H33, H34/35, H37, H38, H39 (Johnson & Halbert, 1902).

H4 Mid Cork: Cobh, iv-v.1995, JJW (Walker, 1895).

H22 Meath: Balrath, vi.1916, GWN (Nicholson, 1917).

H27 West Mayo: Mullaranny, 1910-1912, JNH (Johnson & Halbert, 1912).

H31 Louth: Carlingford, 1893, WFJ (Johnson, Halbert & Carpenter, 1894).

H34 East Donegal: Coolmore (Rossnowlagh), 1893, WFJ (Johnson, Halbert & Carpenter, 1894).

H36 Tyrone: Baronscourt Park (H3682), knocked from aerial dead branches on common lime, 2.vii.2006, KNAA.

H37 Armagh: Mullinure, Armagh, WFJ (Johnson, 1992a).

H39 Antrim: Ballycastle, ix.1901, GWC (Chaster & Tomlin, 1902); Langford lodge (J088749), sappy bark of windthrown oak bough, 28.v.2012, RA.

***Epuraea rufomarginata* (Stephens, 1830) – Rare**

Amongst borings of the beetle *Trypodendron domesticus* in a cut bough; also under dead spruce bark and in oak faggots; and in *Daldinia* fungus on ash.

H2 North Kerry: Killarney district, *Epuraea parvula* "crawling about on freshly cut logs", EFB (Bullock, 1928).

H31 Louth: Bellurgan Forest (J095099), under sappy bark on fresh beech log, 22.iii.2012, RA.

H38 Down: Stormont, under bark of *Acer platanoides* faggots, 7.v.1994, RA.

H39 Antrim: Moss Plantation, Shane's Castle, under bark of freshly thrown oak branch, 16.vii.2010, RA.

***Epuraea silacea* (Herbst, 1783) syn. *deleta* Sturm, 1844 – Widespread**

At flowers, under sappy bark on dead wood, and in bracket fungi. Very rare in mid-Europe. Bullock (1930) is credited with the first Irish record in Anderson *et al.* (1997). Locally common in fungi (Johnson & Halbert, 1902).

H2 North Kerry: Killarney, one specimen by sweeping...within a few miles of Killarney, EFB (Bullock, 1930).

H3 West Cork: Trafraska, SE of Baltimore (W0525), 2.vi.1996, KNAA.

H4 Mid Cork: Mount Desert, 19.ii.2006, MC.

H6 Waterford: JAP (Power, 1878) *E. deleta* (Johnson & Halbert, 1902).

H8 Limerick: JNH as *E. deleta* (Johnson & Halbert, 1902).

H9 Clare: JNH as *E. deleta* (Johnson & Halbert, 1902).

H17 North-east Galway: Clonbrock (M7439), JNH (Halbert, 1896) *E. deleta* (Johnson & Halbert, 1902).

H20 Wicklow: Ballard Wood, Glendalough (T1495), 14.vi.1993; Devil's Glen, 17.vi.1993, KNAA.

H21 Dublin: *E. silacea* Hogan (1854) but queried by Haliday (Johnson & Halbert, 1902). Dublin, JNH (Halbert, 1900b) *E. deleta* (Johnson & Halbert, 1902); Clontarf, in fungi, EO (O'Mahony, 1928b).

H22 Meath: Balrath, ix.1910, GWN (Nicholson, 1911).

H23 Westmeath: Mullingar district, JNH as *E. deleta* (Johnson & Halbert, 1902).

H25 Roscommon: Mote Park, JNH (Halbert, 1895d) *E. deleta* (Johnson & Halbert, 1902).

H27 West Mayo: Westport Demesne, JNH (Johnson & Halbert, 1912).

H33 Fermanagh: Correl Glen, 17.vii.2007, KNAA.

H37 Armagh: Armagh City, WFJ, *E. deleta* (Johnson & Halbert, 1902); Tynan Abbey estate, 26.vii.2011, RA.

H38 Down: Comber, CWB *E. deleta* (Johnson & Halbert, 1902); Murlough Dunes (J410350), 20.v.1992, KNAA; Drumlea, Quoile, on haw flowers, 22.v.1995, RA.

H40 Londonderry: Drenagh Estate (C6923), 14.vi.2006; Banagher Glen (C670045), under bark, 20.v.2007, KNAA.

***Epuraea terminalis* (Mannerheim, 1843) syn. *adumbrata* Mannerheim, 1852 – Rare old growth species**

Under bark of sappy dead oak, birch and pine timber.

H2 North Kerry: Killarney district, *Epuraea immunda*, “a few taken on flowers of Umbelliferae”, Bullock (1928).

H39 Antrim: Moss Plantation, Shane’s Castle (J092893), 2 males of splintered, fresh-thrown oak branch, 16.vii.2010, RA.

***Epuraea thoracica* Tournier, 1872 – Established Introduction**

Under bark on deadwood and on resinous stumps and planks of conifers; generally with scolytids; mainly Scottish in Britain, but appears to have spread with conifer forestry.

H15 South-east Galway: Pollnacknockaun Wood (M740014), v. 2003 (Regan & Anderson, 2004).

H21 Dublin: ARH (Hogan, 1854; Johnson & Halbert, 1902).

H34/40: Foyle District, *Epuraea oblonga*, CWB (Buckle, 1900; Johnson & Halbert, 1902).

H39 Antrim: Victoria College grounds, Cranmore, 1 under bark of large conifer stump, 18.iv.2005, RA.

***Soronia grisea* (Linnaeus, 1758) – Uncommon**

Develop in sap-flows from injured broadleaved trees of many species; widespread in the oak-wood areas of Scotland although Speight (1989a) suggests primarily associated with ash in Ireland.

H2 North Kerry: Killarney, vii.1919, EFB; Deerpark, Killarney, 27.iv.1931, EFB (Speight, 1989a).

H11 Kilkenny: Inistioge, 8-16.viii.1902, H.J. Turner (Turner, 1903).

H13 Carlow: Kilcarr Br., 5.viii.1929, AWS (Speight, 1989a).

H15 South-east Galway: Coole Park (M433043), 22.v.2012, PJH.

H16 Galway: Galway, JJW (Johnson & Halbert, 1902); Knockboy (L7735), beaten from ash in mixed woods, 24.v.1974, MCDS (Speight, 1989a).

H18 Offaly: Mongan Bog (N0230), in pitfall trap on raised bog, 24.viii.1983, JAG (Speight, 1989a).

H20 Wicklow: Kilruddery, etc, on bones, ARH (Hogan, 1854) (Johnson & Halbert, 1902).

H21 Dublin: Dundrum, FHB (Johnson & Halbert, 1902); St Anne’s, Clontarf (O2137), xii.1924, EO (Speight, 1989a); Phoenix Park (O0935), beaten from hawthorn & ash, 17.iv.1982, JPOC (Speight, 1989a).

H33 Fermanagh: Inisherik, Crom, FIT 4.ix-5.x.1992, APF.

H38 Down: near Belfast, JNH (Halbert, 1885); Ballintogher, Downpatrick, 1 swept in grain field, 17.viii.2006, RA.

H39 Antrim: Cranmore, Belfast, R. Templeton (Johnson & Halbert, 1902); Ballycastle, BT (Johnson & Halbert, 1902, Supplementary List); Lough Neagh (near Gawley's gate?), 1 only, 3-4.ix.1935, EO (Crawford & O'Mahony, 1935; Speight, 1989a); Rea's Wood, 1 on ash trunk during flood, 10.xii.1999, RA; Great Deer Park, Glenarm (D2911), three from soggy bracket of *Fistulina* on old oak, 16.ix.2006, KNAA.

***Soronia punctatissima* (Illiger, 1794) – Rare**

Develop in sap-flows from injured broadleaved trees of many species; widespread in the oak-wood areas of Scotland but associated more with ash in Ireland (Speight, 1989a). 'An Irish-taken specimen in Dublin Museum, which had been for many years in the Trinity College collection' (Johnson & Halbert, 1902).

H2 North Kerry: Muckross Demesne, one beneath a boletus on an oak, June 1919, OE Janson (1920); Muckross, male, vii.1935, EFB; Muckross (V9585), male under loose bark over fungus-infested sap-run on large living ash in deciduous woods, 20.v.1988, MCDS (Speight, 1989a).

H11 Kilkenny: Inistioge (S6337), in Goat Moth *Cossus* infected tree, H.J. Turner (Turner, 1903).

H12 Wexford: Kilcarrig Bridge, 5.viii.1929, AWS (Speight, 1989a).

H30 Cavan: Cloverhill (H4115), 2 at sap on damaged oak, GWN (Nicholson, 1917).

H33 Fermanagh: Inisherik, Crom (H357243), 1 in FIT 1.vi.-7.vii.1992, APF.

***Glischrochilus quadripunctatus* (Linnaeus, 1758) – Casual Introduction?**

On conifers. Just a few isolated records, suggesting possibly introductions.

H2 North Kerry: near Killarney, EFB (O'Mahony, 1929a).

H19 Kildare: Athy, beside R. Barrow (S6893), 30.viii.1980, D.Murphy (Speight, 1989a).

H36 Tyrone: Dungannon, *Ips quadripustulata*, Holiday ms (Johnson & Halbert, 1902).

***Glischrochilus hortensis* (Geoffroy in Fourcroy, 1785) – Uncommon**

Adults usually at sappy stumps, in fungi, or amongst chippings from broad-leaved trees or conifers; attracted to a wide range of decaying substrates and also known as a pest of soft fruits. Adults & larvae have been found inside decaying *Fistulina* bracket and beneath sappy bark on oak stump (KNAA, pers obs). *G. quadripunctata* Herbst in O'Mahony (1929).

H2 North Kerry: Cruagh, Killarney, 17.vii.1930, EFB (O'Mahony, 1929a; Speight, 1989a).

H4 Mid Cork: Rock Castle Woods (W5653), 6.vi.1994 & Shippool Woods (W5757), Bandon River, 23.v.1994, KNAA; River Blackwater, near Mallow, 14.x.2001, S. Gregory (KNAA); Crosshaven (W7761), 7.v.1995, Ballyphehane, Cork City (W6869), i.vi.1998 & Mount Desert (W628720), 19.ii.2006, MC (Cawley, 2011a).

H5 East Cork: near Tallow (W9993), in numbers inside raspberries and tomatoes in polytunnel; also reported causing similar damage from near Cobh, D. Berridge (O'Connor, 2005); Ballyannan Wood (W875720), Malaise trap, 2003 & Ballylanders (W949623), netted, 23.viii.2011, TG.

H6 Waterford: near Lismore, reported causing damage to soft fruit, D. Berridge (O'Connor, 2005); Kilbarry Bog, 3.ix. & 9.ix.2001 (O'Meara, 2008); Rincrew (X0880), 30.ix.2004, MC (Cawley, 2011a).

H11 Kilkenny: Kilkenny, 24.iv.1925, R.A. Phillips (Speight, 1989a).

H12 Wexford: New Ross, 24.v.1994, PJH; woodland bordering River Barrow, Mountgarrett (S7229), 13.iv.1998, MC (Cawley, 2011a).

H14 Laois: Abbeyleix Wood (S4284), 16.iii.2003, MC (Cawley, 2011a).

H19 Kildare: Sallins, 5.v.1935, AWS (Speight, 1989a); Moore Abbey Wood (N635089), 27.iv.2007 & banks of Grand Canal, Barrettstown (N874235), 9.viii.2008, MC (Cawley, 2011a).

H21 Wicklow: Three Lakes, Table Mountain, pitfall 5.vi.-28.viii.1998, MN det. RA/SM.

H22 Meath: Balrath, 26.ix.1913, vi.1916, GWN (Nicholson, 1914, 1917)

H25 Roscommon: St John's Wood (M9956), alighting on stack of freshly cut poles, 13.iv.2010, KNAA.

H30 Cavan: Cloverhill, v.1914, GWN (Nicholson, 1915).

H37 Armagh: Loughgall Country Park, 26.viii.2008, RA.

***Glischrochilus quadriguttatus* (Fabricius, 1777) – Rare**

As above; feeds on fermenting sap; associated with ash in Ireland (Speight, 1989a).

H2 North Kerry: Cahirnane, Killarney, vi.1908; Killarney, viii.1915, EFB (Speight, 1989a); Killarney, 1928, "two specimens from under bark" (Bullock, 1928); Muckcross (V9585), under loose bark on fungus-infested sap run on large, living ash, 10.v.1988, MCDS (Speight, 1989a).

H21 Dublin: Glendhu, at sap, v.1928, H. Heasler (O'Mahony 1929; Speight, 1989a).

H30 Cavan: Cloverhill, Nicholson (1915).

H31 Louth: Bellurgan Forest (J095099), 3 under bark of fallen sycamore, 22.iii.2012, RA/MDB.

***Pityophagus ferrugineus* (Linnaeus, 1758) – Established Introduction**

Under bark on dead pine; adults have also been reported from plant roots in arable land in Britain.

H2 North Kerry: Muckcross, coll. Furlong, in Haliday ms (Johnson & Halbert, 1902).

H17 Galway: Tuam, GHC (Carpenter, 1895) (Johnson & Halbert, 1902).

H22 Meath: Laytown Sandhills, 1894 (DNFC, 1894) (Johnson & Halbert, 1902); Balrath (N7173), 5 under bark of felled pine, vi.1916, GWN (Nicholson, 1917).

H36 Tyrone: Ballyard, Trillick (H339587), on silver fir, 3.vi.1998, SC.

FAMILY MONOTOMIDAE

Larvae feed on larvae of other small beetles, including certain scolytid bark beetles; in damp conditions where there is mould or sap, especially beneath bark on freshly dead wood.

***Rhizophagus bipustulatus* (Fabricius, 1793) – Casual introduction?**

Adults and larvae under dead bark of most species of broad-leaved trees; feed on fungal hyphae and will also eat dead scolytid bark beetle larvae. Not included (in error) in Anderson *et al.* (1997), but it is a ubiquitous species in Britain and the near Continent, and it might be expected to be either common in Ireland or entirely absent. A single isolated old record suggests a possible casual introduction.

H2 North Kerry: Near Killarney, pre 1914, EFB (Bullock, 1914).

***Rhizophagus cribratus* Gyllenhal, 1827 – Scarce**

Usually found around tree roots in litter, etc, especially oaks. Under bark, but not common (Johnson & Halbert, 1902). No modern records.

H2 North Kerry: near Killarney, EFB (Bullock, 1914).

H4 Mid Cork: Castle Cor near Mallow, TVW (Wollaston, 1847).

H16 West Galway: Galway, Fowler (1891) (Johnson & Halbert, 1902).

H21 Dublin: Little Dargle, JNH (Halbert, 1900b; Johnson & Halbert, 1902).

H22 Meath: Balrath, vii.1912, GWN (Nicholson, 1913).

H27 West Mayo: Achill, 1910-1912, JNH (Johnson & Halbert, 1912); Westport Demesne, 1910-1912, JNH (Johnson & Halbert, 1912).

H30 Cavan: Cloverhill, vi.1916, GWN (Nicholson, 1917).

H36 Tyrone: Caledon Forest, WFJ (Johnson, 1896).

H37 Armagh: Armagh City, WFJ (Johnson, 1891); Palace Grounds, in moss, WFJ (Johnson, 1892a); Loughgilly, WFJ (Johnson & Halbert, 1902).

***Rhizophagus depressus* (Fabricius, 1793) – Established Introduction**

Under bark of dead pine.

H2 North Kerry: Kenmare Demesne, Killarney in some numbers under bark of recently felled pines, 25.vi-30.vi.1919, OEJ (Janson, 1920); Rossbeigh dunes, vii.1902, HSJD (Donisthorpe, 1902).

H17 North-east Galway: Tuam, GHC (Carpenter, 1895).

H18 Offaly: Clonad Wood, JNH (Halbert, 1895c) (Johnson & Halbert, 1902).

H21 Dublin: Clontarf, EO (O'Mahony, 1928b).

H33 Fermanagh: Ballyard, Trillick, 3.vi.1998, SC.

H34/40: Foyle district, CWB (Buckle, 1900; Johnson & Halbert, 1902).

H37 Armagh: Poyntzpass, WFJ (Johnson, 1900; Johnson & Halbert, 1902); Peatlands Park, under Scots pine bark, abundant, 29.v.2000 RA (Anderson, Simms & Nelson, 2000).

H39 Antrim: Shane's Castle Demesne, Lough Neagh, under bark of fallen firs, June 1923, OEJ (Janson, 1924); Portgenone Forest, 10.vi.2004, SC det. RA.

***Rhizophagus dispar* (Paykull, 1800) – Common & Widespread**

Under bark of most dead broad-leaved trees, and in bracket fungi, also on plantation conifers. Common, often abundant in Ireland: H1, H2, H4, H6, H9, H16, H17, H18, H20, H21, H25, H26, H27, H28, H33, H34, H35, H36, H37, H38, H39, H40.

***Rhizophagus ferrugineus* (Paykull, 1800) – Scarce**

Under bark on deadwood and in heart-rot; also at heartwood of sawn logs where in contact with soil.

H2 North Kerry: Kenmare Demesne (V99), in some numbers under bark of recently felled pines, between June 25 & 30, 1919, O.E. Janson (1920).

H4 Mid Cork: Castle Cor, TVW (Wollaston, 1847).

H15-17 Galway: Tuam, under fir bark (Carpenter, 1895; Johnson & Halbert, 1902).

H21 Dublin: Merrion Demesne, 1854 (Hogan, 1854).

H22 Meath: Balrath, vii.1912, GWN (Nicholson, 1913).

H33: Fermanagh: Inisherik (H357248), Crom Castle Estate, one in flight trap in shoreline carr woodland, vii.2007, KNAA.

H36 Tyrone: Davagh Bridge, Davagh Forest, 2.vi.1998, SC.

H34 Donegal: Foyle district, CWB (Buckle, 1900; Johnson & Halbert, 1902).

H38 Down: Hillsborough Forest, 28.viii.1993, RA; Audley's Castle, 20.ii.2008, RA; Leitrim Lodge (J223256), 29.ii.2012, RA.

H39 Antrim: Breen Wood NNR (D123336), 13.vii.2005, RA, 9.vii.2007, KNAA.

***Rhizophagus parallellocollis* Gyllenhal, 1827 – Established Introduction**

Present as a native saproxylic in Britain, under bark on dead wood, but only known from synanthropic situations in Ireland.

H21 Dublin: Finglas, on vegetable refuse, xi.1924, JNH (Halbert, 1937).

H37 Armagh: Cathedral Grammar School, one in room, WFJ (Johnson, 1892a).

H39 Antrim: Armoy Churchyard, in numbers on tombstones, ix.1901, GWC (Chaster & Tomlin, 1902).

***Rhizophagus perforatus* Erichson, 1845 – Rare**

Under bark on dead broad-leaved trees. Adults may occasionally be taken away from larval habitat, including town gardens.

H2 North Kerry: near Killarney, EFB (Bullock, 1914).

H15-17 Galway: Galway, JJW (Fowler, 1891) (Johnson & Halbert, 1902).

H21 Dublin: local, JNH (Halbert, 1900b); Clontarf, EO (O'Mahony, 1928b).

H22 Meath: Balrath, in bracket on an ash stump, 26.ix.1913, GWN (Nicholson, 1914).

H30 Cavan: Cabra Castle, under bark, vii.1912, GWN (Nicholson, 1913).

H37 Armagh: Palace Demesne, in moss, WFJ (Johnson, 1892a).

H38 Down: Rostrevor Oakwood, under bark on oak logs, 13.v.2000, RA (Anderson, Simms & Nelson, 2000)

H39 Antrim: Ballycastle, BT (Johnson & Halbert, 1902, Supplementary List).

FAMILY LAEMOPHLOEIDAE

***Cryptolestes ferrugineus* (Stephens, 1831) – Established Introduction**

In Britain, under bark on beech, especially where still sappy; also on oak, horse chestnut, etc; also in granaries. Irish records have all been from synanthropic situations. Ireland, Haliday coll. (Johnson & Halbert, 1902).

H21 Dublin: Clontarf, from a city corn store, EO (O'Mahony, 1927).

H31 Louth: south, HKGC (Halbert, 1900b; Johnson & Halbert, 1902).

FAMILY CRYPTOPHAGIDAE *Silken Fungus Beetles*

CRYPTOPHAGIDAE SUBFAMILY CRYPTOPHAGINAE

***Henoticus serratus* (Gyllenhal, 1808) – Rare**

Under bark on mouldy decaying wood, especially birch & beech, but also oak, spruce, pine, etc; larvae possibly in fungal mycelium; adults attracted to *Salix* catkins, hawthorn blossom, sugary exudates, bracket fungi. Added to the Irish list in 1923, but not reported since.

H38 Down: Donard Demesne, Newcastle, two under bark of felled beech, vi.1923, OEJ (Janson, 1924).

***Cryptophagus* spp.** These small beetles are usually fungal or detritus feeders.

***Cryptophagus dentatus* (Herbst, 1793) – Common & Widespread**

In bracket fungi, decaying twigs & leaves; bird nests in tree branches; with mouldy materials in buildings; larvae will feed on dead or dying insect larvae. Not a true saproxylic but almost invariably present in decaying wood. Common: Ulster, Connaught, Leinster, Munster (Johnson & Halbert, 1902); H1, H4, H19, H21, H25, H27, H33, H36, H37, H38, H39, H40.

***Cryptophagus intermedius* Bruce, 1934 – Rare**

Known from borings of the bark beetle *Hylesinus varius* under ash bark and at sycamore sap.

H38 Down: Deramore, 2 in abandoned grass bale, 26.iv.1995, (Anderson, Simms & Nelson, 2000).

***Cryptophagus denticulatus* Heer, 1841 – Rare**

Known in Ireland from gathered hay and under fungoid bark on trees; ecology poorly understood and only distinguished from amongst *C. dentatus* in the 1950s.

H9 Clare: Cragroe Castle, 3 sieving hay on barn floor, 26.v.2003, RCW (Regan & Anderson, 2003).

H38 Down: Morelands Meadow, 1 under bark on slender part of a fallen beech branch in parkland, 18.xi.1992, RA.

H39 Antrim: Shane's Castle, 1 under fungoid bark of a large oak log, 1.vii.2010, RA.

***Cryptophagus ruficornis* Stephens, 1830 – Recent Arrival**

Associated with the fungus *Daldinia concentrica* fruiting on deadwood of ash, and *D. loculata* on burnt birch. Added to the Irish list only in 1992; conceivably an overlooked native, but more likely a recent colonist from Scotland, especially in view of *Daldinia* being most frequent in Ireland in the eastern and south-eastern counties and the only reports of the beetle are from the north-east.

H37 Armagh: Loughgall Country Park, frequent in *Polyporus squamosus* on veteran ash, 26.viii.2008, RA.

H38 Down: Belvoir Forest, in rotted *Fistulina* on veteran oak, 12.x.2003, RA; Hillsborough Forest, in pitfall under Douglas fir, 29.vi.2005, RA; Mount Stewart, Sea Plantation, in fungoid bark on beech, 13.ix.2003, RA.

H39 Antrim: Ballyskeagh (J280671), one under loose dry bark of a splintered, burnt ash stump, 8.xii.1992, RA (Nash, Anderson & O'Connor, 1997); Mountsandel Wood, Coleraine, in old chaffinch nest in tree hole, 9.ii.2008, RA.

H40 Londonderry: Drenagh Estate (C6923), plentiful on old sycamore in avenue with burnt out hollow base and *Daldinia* fruiting, 14.vi.2006, KNAA.

CRYPTOPHAGIDAE SUBFAMILY ATOMARIINAE

Adults and larvae of most species probably feed on fungal hyphae and moulds. With the present state of knowledge, individual species are particularly difficult to allocate to the decaying wood category with confidence when individuals have been found in leaf litter or flood refuse (both including decaying twigs), as well as more distinct decaying wood habitats.

Atomaria pulchra Erichson, 1846 – Established Introduction?

Has been found in all kinds of decaying conifer wood: heaps of bark shavings, burnt wood, sawn logs and stacked timber.

H38 Down: Rostrevor Forest (J189184), one male in *Ips typographus* pheromone trap in Sitka spruce stand, 27.vii.2006, SC det. RA (Anderson & Clawson, 2006).

Atomaria umbrina (Gyllenhal, 1827) – Rare

Associated with the fruiting bodies of wood-rotting fungi, especially the gill fungi *Armillaria mellea* and *Pholiota* spp, fruiting from decaying wood in woodlands. Adults also taken in grass heaps.

H1 South Kerry: Lickeen Wood, Glencar, vi.1924, OEJ (Janson & Bonaparte-Wyse, 1924).

H2 North Kerry: near Killarney, EFB (Bullock, 1914).

H21 Dublin: Finglas, x.1924, JNH (Halbert, 1924).

H37 Armagh: Armagh, WFJ det. C. Johnson; Mullinure, Loughry's Lough, WFJ (Johnson, 1892a).

FAMILY EROTYLIDAE

***Dacne bipustulata* (Thunberg, 1781) – Scarce**

Adults normally frequent fruiting brackets of the softer polypore fungi on trunks of broad-leaved trees; has been reared from *Laetiporus sulphureus*, *Piptoporus betulinus* and *Pleurotus ostreatus*. Widespread in northern counties, but surprisingly just one report from the south.

H19 Kildare: a quarter mile east of Landenstown House, swept from beech in a small plantation, 9.v.1948, AWS (Stelfox, 1952).

H33 Fermanagh: Castle Coole Park (H2643), from *Bjerkandera adusta* on beech, 18.v. & 27.vii.2006, KNAA; Crom Castle Park (H3624), at very fresh *Laetiporus sulphureus* on standing dead oak, 18.v.2007, KNAA; Rossyvullan Hill, Castle Coole, in *Polyporus squamosus* on sycamore, 20.vii.2010, RA.

H36 Tyrone: Caledon Deer Park (H7543), one at *Bjerkandera adusta* on old sycamore, 16.vi.2006, & teneral on *P squamosus*, 16.viii.2006, KNAA.

H37 Armagh: Loughgall Country Park, abundant in *Polyporus squamosus* on veteran ash, including several entirely pale (rufous) specimens, 26.viii.2008, RA; Tynan Abbey Estate, in *Polyporus squamosus* on elder, 26.vii.2011, RA.

H38 Down: Hillsborough Forest, *Bjerkandera* on beech logs, 24.iii.2003, RA.

H39 Antrim: Lagan Meadows, Belfast, several from decaying *Bjerkandera adusta* on a sycamore stump, 9.iii.1993, RA (Anderson, 1995); Newforge Lane, Belfast, in *Gymnopilus* on Scots pine, 9.vii.2008, RA; Shane's Castle, in *Bjerkandera* on beech log, 1.vii.2010, RA.

H40 Londonderry: Springhill House (H8683), mixed woodland, 25.vi.1992, KNAA (Anderson, 1995).

***Triplax aenea* (Schaller, 1783) – Doubtful**

Usually associated with the fungus *Pleurotus ostreatus* growing on trunks of broad-leaved trees. "Certainly Irish" in Haliday's ms list; one of J Tardy's captures, but specimens cannot be traced (Johnson & Halbert, 1902); not included in Anderson *et al.* (1997). A distinctive species and one unlikely to be overlooked.

FAMILY CERYLONIDAE

Feed on fungal hyphae and spores.

***Cerylon fagi* Brisout de Barneville, 1867 – Rare old growth species**

Lives under bark of deadwood and within decaying heartwood, especially oak, and especially in the later stages of decay; also found in beech and ash. Very localised in Europe. [Records for Coole Park and Charleville Wood in Regan & Anderson (2004) refer to *C. ferrugineum*].

H2 North Kerry: Killarney district, crawling on log, EFB (Bullock, 1928).

H15 South-east Galway: Garryland wood, under fungoid bark on beech, 24.ix.2007, RA.

***Cerylon ferrugineum* Stephens, 1830 – Scarce old growth species**

Develops beneath bark on dead broad-leaved timber in the early stages of decay; feeds on fungal hyphae and spores. Mostly in ancient woodland and wood pasture; widespread through northern and central Europe.

H1 South Kerry: Tomies Wood (V9089), under bark on dead oak, 14.v.1988, 17.viii.1990, 7.xi.2002KNAA; Uragh Wood (V8362), 25.v.1994, KNAA.

H2 North Kerry: nr. Killarney, EFB (Bullock, 1914); Derrycunihy Wood (V8981 & V9080), 17.viii.1990 & 13.x.2001; Knockrear Park, Killarney, 7.xi.2002, KNAA.

H15 South-east Galway: Punchbowl, Gort (M4500), 24.v.1988, KNAA.

H18 Offaly: Charleville Wood (N315226), in *Laetiporus*, v. 2003 (Regan & Anderson, 2004).

H21 Dublin: The Millenium Park, Blanchardstown (O066387), emerged from bracket fungi on a rotting log in mixed planted woodland verge in this suburban park, 5.iii.2012, MC.

H25 Roscommon: St John's Wood (M9956 & N0055), 7.vi. & 6.viii.2010, KNAA.

H28 Sligo: Union Wood (G680285), 14.vi.1999, KNAA.

H33 Fermanagh: Knocknabrass, 26.v.1992; Corlatt Wood, 27.v.1992; Reilly Wood, 28.v.1992; Killy Upper, 7.vii.1992, all Crom Castle Estate, KNAA; Castle Coole Park (H2643), 2.vi.1992, 18.v. & 17.viii.2006, KNAA; Castle Archdale, under bark of fallen oak branch, 11.v.1997, RA; Florencecourt, under bark on oak, 21.vi.2010, RA; Rosyvullan Hill, Castle Coole, fungoid oak bark, 26.vi.2010, RA; Wattle Bridge, under bark on hedgerow ash, 11.viii.2011.

H35 West Donegal: Hollymount, Rathmullan (C279271), 22.ii.2012, MDB.

H36 Tyrone: Baronscourt Park (H3682), beneath bark on fallen oak branches, 16.v.2006, RA & KNAA; 25.vii & 12.ix.2006, KNAA.

H37 Armagh: Peatlands Park, under bark on dead birch, 23.x.1993, RA; Tynan Abbey Estate, under fungoid bark on oak, 21.vi.2011, RA.

***Cerylon histeroides* (Fabricius, 1793) – Scarce old growth species**

Develops beneath bark on dead broad-leaved timber, generally at later stage in succession when cavities moist; feed on fungal hyphae and spores.

H2 North Kerry: Killarney, JNH (Halbert, 1898c; Johnson & Halbert, 1902).

H4 Mid Cork: Blarney Castle, 10.vii.2000, RA.

H19 Kildare: Celbridge, ix.1936, JNH (Halbert, 1937).

H25 Roscommon: St John's Wood (M9956 & N0056), 5.6.viii & 7.x.2010, KNAA.

H33 Fermanagh: Castle Coole Park (H2643), 17.vi.2006, KNAA; Knockninny ASSI, 1.vi.2007, RA; Rossyvullan Hill, Castle Coole, 20.vii.2010, RA.

H36 Tyrone: Caledon Park (H7543), 17.v.2006, KNAA; Brookend ASSI, 8.v.2007, RA.

H37 Armagh: Peatlands Park, 23.x.1993, RA (Anderson, Simms & Nelson, 2000); Annagarriff NNR, in *Formica* nest, 3.iv.2007, RA; The Argory, 29.iii.2011, RA; Tynan Abbey Estate, 21.vi.2011, RA.

H38 Down: Minnowburn Beeches, 29.i.1994; Rostrevor Oakwood NNR, 13.v.2000, RA (Anderson, Simms & Nelson, 2000).

H39 Antrim: Belvoir Park, RS (Johnson & Halbert, 1902); Deramore, 11.xi.1992, RA; Rea's Wood, Antrim, 20.iv.1995, RA; Farr's Bay NNR, 4.vii.1986, RA; Moss Plantation, Shane's Castle, 16.vii.2010.

H40 Londonderry: Magilligan, CWB (Johnson & Halbert, 1902); Scab Island, Lough Beg, 6.xii.1975, RA.

FAMILY ENDOMYCHIDAE *False Ladybirds*

***Endomychus coccineus* (Linnaeus, 1758) – Recent arrival**

Lives gregariously with its larvae on or around fungoid growth under bark of dead timber; especially in beech, but also in apple, crack willow, horse chestnut and birch. Sites tend to be low-lying marshy areas along floodplains, or close by. First noted in Ireland in 1976 and spreading steadily in north-east (RA).

H33 Fermanagh: Rossyvullan Hill, Castle Coole, 24.viii.2010, RA.

H36 Tyrone: Brantry Lough (H748534), under bark of dead standing beech, 26.i.2012, MDB/RA.

H37 Armagh: Derrycarne Road, Portadown (J008576), seen on several occasions between 1990 and 2012 in rural garden/orchard, most recently 12.v.2012, BN; Tynan Abbey Estate, 26.vii.2011, RA.

H38 Down: Morelands Meadow, Belvoir, 1.xi.1992, RA; Belvoir Forest, 1.ix.1997, RA; Killynether Wood, 2.ii.2008, RA; Newtownbreda Village, urban garden, Belfast, 30.iii.2008; Shooter's Island (J494470), under bark of dead standing sycamore, 23.ii.2012, MDB/RA.

H39 Antrim: Rea's Wood, Antrim, 1st record - seven clinging to dry bark under a pile of fresh wind-felled willow boughs in native alder woodland, on juvenile fruiting bodies of *Trametes*, 2.x.1976, RA (Anderson, 1977); Rea's Wood, 3.xii.1994, RA; Clement Wilson Park, Lagan Valley (J325695), 8.i.1992, RA (Anderson, 1992); Lady Dixon Park, Belfast, 28.ii.2005, RA; Belfast Castle, 12.ii.2007, RA; Toome Weir, Lough Neagh, 3.v.2007; Quarterland, Dundrod, rural garden, 5.xi.2011, RA.

H40 Londonderry: Springhill House, 26.iv.2003, RA; The Umbra, 2.i.2004, RA.



Figure 22: *Endomychus coccineus* © Roy Anderson

FAMILY CORYLOPHIDAE

Orthoperus nigrescens Stephens, 1829 syn. *mundus* Matthews, A., 1885 – Rare

Under fungoid bark.

H19 Kildare: Louisa Bridge on Royal Canal, Leixlip, one, 11.ix.1942, AWS det. PMH (Nash, Anderson & O'Connor, 1997).

FAMILY LATRIDIIDAE *Brown Scavenger or Plaster Beetles*

Most feed on mould.

***Enicmus testaceus* (Stephens, 1830) – Rare**

In ripe slime fungus on beech and other trunks; *Reticularia lycoperdon* the main host.

H9 Clare: Lough Gash (R3967), one on silt by lough, vi.1989 (Lott & Bilton, 1991).

H33 Fermanagh: Molly Mountain (H233282), one from *Inonotus radiatus* brackets on sycamore in open pastureland, 23.vi.1995, RA (Anderson, 1998; Anderson *et al.*, 2000).

H38 Down: Hollymount NNR (J459432), in grass clippings, 31.v.2011, MDB det. RA.

FAMILY MYCETOPHAGIDAE *Hairy Fungus Beetles*.

Associated with decaying bark and wood.

***Litargus connexus* (Geoffroy in Fourcroy, 1785) – Recent arrival**

Develops in Pyrenomycetes (*Diatrype*, *Hypoxylon*, *Daldinia*). Adult beetles feed on wood-decay fungi more generally (*Pleurotus*, *Fomes*, *Piptoporus*, *Polyporus*) and may also be found under dead bark. Only recently discovered in Northern Ireland (Anderson, 1993). The fungus found on birch locally is *Daldinia loculata*, after recent revisions of the species concept in *Daldinia*.

H37 Armagh: Derryadd Lough (H915604), 3 under loose bark in fire-damaged birch stumps which were extensively affected by a red heart rot, on cutover peat, 18.v.1992, RA (Anderson, 1993); Derryadd (H911606), 1 in *Piptoporus* on birch, 11.v.2012, MDB/RA.

***Mycetophagus multipunctatus* Fabricius, 1793 – Recent arrival**

With bracket fungi on ash and other broad-leaved trees, and especially along alluvial floodplain situations.

H38 Antrim: Rea's Wood (J143583), 8 adults & 4 larvae in *Polyporus* on *Salix fragilis*, 12.iv.2007, RA (Anderson, 2007b); Portmore Lough, RSPB Reserve (J122688), 3 in *Daedaleopsis confragosa* on willow carr, 8.x.2009, RA/MDB; Shane's Castle (J115885), 1 dead under fungoid bark on oak, 1.vii.2010, RA.



Figure 23: *Mycetophagus multipunctatus* © Roy Anderson

FAMILY CIIDAE Minute Tree Fungus Beetles

Develop in bracket and other fungi in and on dead and decaying timber. While the larvae appear to have restricted fungal associations, adults may feed on wood-decay fungi more widely.

***Octotemnus glabriculus* (Gyllenhal, 1827) – Common & Widespread**

Develop chiefly in young, expanding brackets of *Trametes versicolor*; also in *Pseudotrametes gibbosa*; particularly characteristic of beech *Fagus*, but also found in association with other broad-leaved tree species. 'Common where it occurs' (Johnson & Halbert, 1902). H4, H5, H6, H15, H16, H18, H19, H21, H25, H27, H29, H33, H37, H39, H40.

***Orthocis alni* (Gyllenhal, 1813) – Scarce**

Reputedly associated with Jew's Ear Fungus *Auricularia auricula-judae*, mainly on dead stems of elder, but also regularly knocked from aerial dead branches on open-grown oak trees; larvae develop in the soft fungoid sapwood of the colonised dead host tissues. The record for Phoenix Park (Halbert, 1893) is to be deleted (Johnson & Halbert, 1902). For many years only known from a few old records, but recently shown to be more widespread on veteran open-grown parkland trees in historic demesnes.

H1 South Kerry: Glencar (V78), vii.1924, OEJ (Jansen & Wyse, 1924).

H2 North Kerry: Muckcross Demesne, a few beneath a 'boletus' (i.e. a polypore) on an oak, vi.1919, OEJ (Janson, 1920)

H25 Roscommon: Mote Park, JNH (Halbert, 1898a).

H33 Fermanagh: Castle Coole Park (H260430), aerial dead branches on oak, 2.vi.1992 & 17.vi.2006, KNAA; Crom Castle, beaten from *Ganoderma* on oak, 21.viii.2004, RA

H36 Tyrone: Baronscourt Park (H3682), beaten from aerial dead branches on parkland oak, 12.ix.2006, KNAA.

H37 Armagh: Loughgall Country Park, in *Polyporus squamosus* on sycamore, 26.viii.2008, RA; Tynan Abbey Estate, in *Inonotus dryadeus* on oak, 1.vii.2011, RA.

H39 Antrim: Ballycastle, Tomlin coll., NMW, Cardiff (G. Orledge pers.comm.); Barnett's Park, Belfast, in *Inonotus radiatus* on alder with larvae, 11.i.2011, *Polyporus squamosus* on elder, 26.vii.2011, RA.

***Cis bidentatus* (Olivier, 1790) – Common & Widespread**

Most regularly develops in the brackets of *Piptoporus betulinus* and *Laetiporus sulphureus*, but also reported from *Pleurotus*, *Polyporus squamosus*, and *Ganoderma* spp. Locally abundant (Johnson & Halbert, 1902). H15, H18, H19, H20, H21, H33, H36, H37, H38, H39, H40.

***Cis bilamellatus* Wood, 1884 – Established Introduction**

An Australian species which has been accidentally introduced into Britain and Ireland. Develops in soft bracket fungi. First noted in Ireland in 2003.

H3 West Cork: Glengarriff Woods, on birch polypore, v.2003, GMO.

H38 Down: Belvoir Forest, 15.iv, 23.iv.2004, RA; Rostrevor Oakwood (J186173), from *Stereum gausapatum* on fallen oak bough 23.v.2007, KNAA; Helen's Tower, Clandeboye, 10.ii.2011, RA; Portaferry House, 30.xi.2011, RA; Leitrim Lodge (J223256), under bark on dead *Pinus contorta*, 29.ii.2012.

H39 Antrim: Portmore Lough, RSPB Reserve, 8.x.2009, RA; Barnett's Park, Belfast, 11.i.2011, RA.

***Cis boleti* (Scopoli, 1763) – Common & Widespread**

Develop in the fully expanded fruit bodies of the fungus *Trametes versicolor*, although adults may also be found feeding at other fungi. This is the most frequent species of the family. Common: Ulster, Connaught, Leinster, Munster (Johnson & Halbert, 1902). H3, H4, H5, H9, H12, H13, H15, H16, H18, H25, H29, H33, H36, H37, H38, H39, H40.

***Cis fagi* Waltl, 1839 – Rare old growth species**

Primarily develops in the mycelium of *Laetiporus sulphureus* in cubical red-rotten oak heartwood; larvae have also reported from subcortical mycelial sheets of *Armillaria* sp; adults reported widely, feeding at a wide variety of wood-decay fungi.

H2 North Kerry: Killarney district, *Cis fuscatus* “in dry fungi on rotten wood”, EFB (Bullock, 1928).

H18 Offaly: Charleville Wood (N320227), 24. v. 2003, RCW (Regan & Anderson, 2004).

***Cis festivus* (Panzer, 1793) – Uncommon**

In fungal brackets, particularly *Stereum* spp., on decaying timber.

H2 North Kerry: near Killarney, EFB (Bullock, 1914).

H5 East Cork: Cobh (Queenstown), under beech bark, iv-v.1895, JJW (Walker, 1895; Johnson & Halbert, 1902).

H13 Carlow: Borris, JNH (Johnson & Halbert, 1902).

H15 South-east Galway: Coole Park (M430042), 25.v. 2003, GMO; Pollnacknockaun Wood (M740014), 23.v. 2003, GMO; Portumna Forest, 23.v.2003, GMO (all - Regan & Anderson, 2004).

H18 Offaly: Charleville Wood (N315226), 24.v. 2003, RA (Regan & Anderson, 2004)

H25 Roscommon: St John’s Wood (M9956 & N0056), knocked from dead hazel pole, 6.x.2010; reared from old bracket fungus *Inonotus radiatus* collected 7.x.2010, KNAA.

H33 Fermanagh: Inisherik, Crom, 27.vi.2000, RA; Castle Coole Park (H2643), aerial dead branch on oak, 17.vi.2006, KNAA.

H36 Tyrone: Baronscourt Park (H3682), 15.vi.2006, KNAA.

H37 Armagh: Peatlands Park, 12.viii.2000, RA.

H38 Down: Rostrevor Oakwood, 13.v.2000, RA (Anderson, Simms & Nelson, 2000); Morelands Meadow, 15.iv.2004, RA; Castle Ward Park (J5649), aerial dead branches on parkland oaks, 20.viii.2006 & 28.x.2006, KNAA; Shooter’s Island (J494470), in *Stereum hirsutum* on oak, 23.ii.2012, RA.

H39 Antrim: Newforge Plots, 11.xi.1992, RA; Great Deer Park, Glenarm (D2911), 22.v. & 24.x.2007, KNAA; Glenarm Nature Reserve, 1.xi.2011, RA.

H40 Londonderry: Banagher Glen (C670045), aerial dead branch with *Stereum rugosum* on hazel, 25.v.2007, KNAA.

***Cis hispidus* (Paykull, 1798) – Rare**

Develop in the brackets of the fungi *Trametes hirsutus* and *T. versicolor*; possibly favours open wood pasture situations.

H14 Laois: Maryborough, WES (Johnson & Halbert, 1902).

***Cis nitidus* (Fabricius, 1792) – Widespread**

Develops in the brackets of *Ganoderma australe* in particular; the larvae have particularly heavily developed mandibles for chewing this exceptionally woody fungus; can also develop in *Piptoporus betulinus*. Most often found in old parklands or wood pastures.

H2 North Kerry: near the base of Torc Mountain (V98), in a 'boletus' (ie a polypore), vi.1919, OEJ (Janson, 1920); Muckcross, in birch bracket, 11.v. onwards, 1938 (Donisthorpe, 1938).

H5 East Cork: Fota Wildlife Park, 13.iv.2011, RA.

H9 Clare: Lough Graney (R559949), 25.v. 2003, GMO (Regan & Anderson, 2004).

H11 Kilkenny: Thomastown, JNH (Johnson & Halbert, 1902).

H12 Wexford: Killurin, JNH (Johnson & Halbert, 1902).

H13 Carlow: Borris, JNH (Halbert, 1895e; Johnson & Halbert, 1902).

H15 South-east Galway: Portumna Bay, The Quay, Park, etc (M841032), v. 2003; Derrycrag Wood (R738994), 23.v. 2003 (all - Regan & Anderson, 2004).

H16 West Galway: Galway, JJW (Johnson & Halbert, 1902).

H18 Offaly: Charleville Wood (N315226), 24.v. 2003, GMO/RCW (Regan & Anderson, 2004)

H21 Dublin: Dublin (Hogan, 1854); Phoenix Park, JNH (Halbert, 1893) (Johnson & Halbert, 1902).

H23 Westmeath: Athlone district, JNH (Johnson & Halbert, 1902).

H25 Roscommon: Mote Park, vi.1897, JNH (Halbert, 1898a) (Johnson & Halbert, 1902).

H31 Louth: Bellurgan Forest (J096098), 22.iii.2012, RA/MDB.

H32 Cavan: Cloverhill, ix.1913, GWN (Nicholson, 1914).

H33 Fermanagh: Castle Coole Park (H2643), *G australe*, 2.vi.1992, 18.v & 27.vii.2006; Crom Castle Park (H32), 7.vii.1992, KNAA.

H36 Tyrone: Baronscourt Park (H3682), *G australe*, 25.vii.2006; Caledon Park (H7543), 17.v.2006, KNAA.

H37 Armagh: Slieve Gullion Forest (J037194), 8.iii.2012, RA.

H38 Down: near Belfast, AHH (Haliday, 1885; Johnson & Halbert, 1902); Castle Ward Park (J5649), 9.vii.1992 & 14.vi.2006, KNAA; Mount Stewart (J5570), 27.vi.1992, KNAA; 11.viii.2010, RA; Stormont Estate, 20.v.1994, RA; Belvoir Forest, 16.xii.1993, 15.iv.2004, RA; Murlough NNR, 15.xi.2010, RA; Portaferry Estate, 30.xi.2011, RA.

H39 Antrim: Barnett's Park, 16.xi.1993, RA; Collin Glen (J270720), 6.ix.2002, KNAA; Great Deer Park, Glenarm (D2911), iii.2006, KNAA; Moss Plantation, Shane's Castle, 16.vii.2010, RA; Langford Lodge (J088749), 28.v.2012, RA.

H40 Londonderry: Springhill Estate (H8683), 25.vi.1992, KNAA; Drenagh Estate (C6923), *G australe*, 14.vi.2006, KNAA; Roe Valley Country Park, 16.vii.2011, RA.

***Cis vestitus* Mellié, 1849 – Scarce**

Mainly on aerial dead branches on open-grown oak trees, generally with the fungus *Peniophora quercina*; also reported from polypore fungi. For many years only known from the Bullock record from Killarney, but recently shown to be widespread on veteran open-grown parkland trees in historic demesnes.

H2 North Kerry: Killarney area, in fungi in woods, EFB (Bullock, 1935); Gortracuisane Oakwood, Killarney (V9484), aerial dead branch on oak, 13.x.2001, KNAA.

H3 West Cork: Glengarriff Castle Demesne (V9455) & Big Meadow (V918570), Glengarriff Woods, 6.xi.2004, KNAA.

H33 Fermanagh: Castle Coole Park (H2643), aerial dead branches on parkland oaks, v-x.2006, KNAA; Crom Castle Park (H3624), aerial dead branches on parkland oaks, 6.vii.2007, KNAA.

H36 Tyrone: Baronscourt Park (H3682), v-x.2006, Caledon Deer Park (H7543), vi. vii. & ix. 2006, KNAA.

H38 Down: Castle Ward Park (J5649), aerial dead branches on parkland oaks and common lime, v-ix.2006; also from *Laetiporus sulphureus*, 17.ix.2006, KNAA.

H39 Antrim: Great Deer Park, Glenarm (D2911), vi-xii.2006 & 22.v.2007, KNAA; Langford Lodge (J088749), in crevices in splintered oak bough, 28.v.2012, RA.

H40 Londonderry: Drenagh Estate (C6923), oak and common lime, 16.vii, 26.vii, 13.xi.2006, KNAA; Banagher Glen (C670045), aerial dead branch with *Stereum rugosum* on hazel, 8.vii.2007, KNAA.

***Cis villosulus* (Marsham, 1802) syn. *setiger* Mellié, 1849 – Rare**

Larvae develop under fungoid bark colonised by *Trametes versicolor*. Adults feed on hyphae of a wider variety of wood-decay fungi.

H2 North Kerry: Killarney district, "in an old stump", EFB (Bullock, 1928).

***Ennearthron cornutum* (Gyllenhal, 1827) – Rare**

Larvae develop in the fruiting bodies of various bracket fungi.

H2 North Kerry: Killarney district, "in fungi on rotten wood", EFB (Bullock, 1928).

FAMILY TETRATOMIDAE

Associated with bracket fungi.

***Hallomenus binotatus* (Quensel, 1790) – Rare**

Develops in the fruiting bodies of large polypore fungi in ancient wood pastures, particularly in *Laetiporus sulphureus*. Ireland (O'Mahony, 1941). The single Irish record is curious and may actually suggest a casual introduction

H21 Dublin: Clontarf, in *Polyporus squamosus* on a dead elm, vi.1941, EO (O'Mahony, 1941).

***Tetratoma ancora* Fabricius, 1791 – Rare old growth species**

Larvae under encrusting fungal fruiting bodies on dead and decaying standing stems of hazel and other broadleaved trees, generally in deep shade; ancient woodlands. First reported in Ireland in 1939, but recently demonstrated to be more widespread than previously appreciated – 4 sites now identified. A reliable marker of old growth (Crowson 1987).

H25 Roscommon: St. John's Wood, 23.vi.2009, RM det. RA; M9956 & N0056, FITs, 6.viii. & 8.x.2010, KNAA.

H38 Down: Rostrevor, one under bark of a dead Scots pine, viii.1939, CTG (Gimingham, 1942); Rostrevor Oakwood NNR (J186173), two knocked from aerial dead hazel poles, 11.vii.2007, KNAA.

H40 Londonderry: Ness Wood ASSI (C5211), one in flight trap, 7.vii.2007, KNAA. Banagher Glen (C670045), two knocked from aerial dead hazel poles, 8.vii.2007, KNAA.

***Tetratoma fungorum* Fabricius, 1790 – Recent Arrival**

This species develops successfully, and most commonly, in fruiting bodies of *Piptoporus betulinus* on birch *Betula*; and has been found in Britain developing in *Pleurotus cornucopiae*, *P. ostreatus*, *Flammulina velutipes*, *Fistulina hepatica* and *Paxillus panuoides*; adults have also been taken on *Inonotus cuticularis*, *Bjerkandera adusta* and *Polyporus squamosus*. The first Irish record was in 1992, but it has been found a number of times since, suggesting an expanding population.

H36 Tyrone: Brantry Lough (H748534), in fallen *Piptoporus* under birch, 26.i.2012, MDB/RA.

H37 Armagh: Peatlands Park, 2 + several larvae in *Piptoporus betulinus* on dead birch, 15.iv.2010, RA; Ballymoyer Wood (H974311) larvae in *Piptoporus* on birch, 2.ii.2012, MDB/RA.

H38 Down: Carrowdore Castle (J584732), teneral in *Hericium cirrhatum* on beech stump, 23.x.2002; Belvoir Forest, three in decaying *Bjerkandera adusta* on oak stump, 23.iv.2004, RA (Anderson, 2006);

Murlough NNR, 2 under bark in dead elm, 15.xi.2010, RA; Shooter's Island (J494471), in *Flammulina velutipes* on sycamore, 23.ii.2012, MDB/RA.

H39 Antrim: Murlough Bay (D189425), off birch polypore in birch woodland, 16.vi.1992, KNAA (Alexander & Foster, 1995); Belfast Castle (J326794), adults & larvae in *Flammulina velutipes* on wych elm, 13.iii.2005, RA (Anderson, 2006); Belfast Castle, 8 larvae in *Pleurotus cornucopiae* on dead wych elm, 9.iii.2008, RA.



Figure 24: *Tetratoma fungorum* © Roy Anderson

FAMILY MELANDRYIDAE *False Darkling Beetles*

***Orchesia micans* (Panzer, 1793) – Rare old growth species**

Develops in a variety of large polypore fungi: in lowland Britain especially *Inonotus hispidus* fruiting from standing live mature and older ash trees, but in the west primarily in *I. radiatus* on standing dead alder and birch stems; has also been reported from *Fistulina hepatica* on live oak; mainly but possibly not exclusively in ancient woodland and wood pasture. All Irish records come from *I. radiatus* brackets.

H1 South Kerry: Kenmare, reared in numbers from a fungus found growing on birch, 1898, JNH (Halbert, 1898c; Johnson & Halbert, 1902) – presumably *Inonotus radiatus*.

H33 Fermanagh: Correl Glen NNR (H074546), adult knocked from old *I. radiatus* on alder snag by Sillees River, 5.vii.2007, KNAA; Florencecourt (H178344), several reared from *I. radiatus* on alder, 16.iii.2011, MDB det. RA; Finlane, upper Florencecourt (H171325), 2 in *I. radiatus* on alder, hedgerow, 20.vii.2012, RA.

H36 Tyrone: Round Lough (H444483), frequent in *I. radiatus* on alder, 22.vii.2011, RA; Cullentra Lough (H474475), in *I. radiatus* on alder, MDB.

H39 Antrim: Great Deer Park, Glenarm (D2911), adult and larvae with old *I. radiatus* brackets on alder, 20.v.2006; Glenarm Woods ASSI (D3010), reared from larvae collected 22.v.2007, parasitic wasps hatched as well, KNAA.



Figure 25: *Orchesia micans* © Roy Anderson

***Orchesia minor* Walker, 1836 – Rare old growth species**

Develops in the fruiting bodies of a variety of wood-decay polypore fungi and possibly certain Ascomycetes, mainly on aerial dead branches; especially in permanently damp woodlands, in carr or gorge situations. Most often found in ancient woodland and wood pasture. Long only known in Ireland from Co. Kerry, but recently shown to be more widespread.

H2 North Kerry: Muckcross Demesne, three specimens of '*Clinocara tetratoma*' in a fungoid growth under the bark of a dead holly, vi.1919, OEJ (Janson, 1920).

H33 Fermanagh: Correl Glen NNR (H074537), one knocked from dead boughs of up-ended hazel stool, 17.v.2007, KNAA.

H38 Down: Rostrevor Oakwood NNR (J186173), two knocked from aerial dead hazel poles and another swept from *Luzula*, 11.vii.2007, KNAA.

H39 Antrim: Great Deer Park, Glenarm (D2911), 1 knocked from dead branch in lower canopy of old open-grown oak, 27.x.2006, & 1 from FIT on edge of hazel thicket; Glenarm Woods, ASSI (D3011), 2 knocked from aerial dead hazel poles, 10.vii.2007, KNAA.

***Orchesia undulata* Kraatz, 1853 – Uncommon**

Develops in decaying aerial dead branches of oak trees; also reported from other broad-leaved trees to some extent. Adults are relatively mobile and occasionally turn up in association with the dead wood of a wider variety of tree species outside of the period June/July, and these may have been attracted to fruiting wood-decay fungi for feeding (particularly in May) or be merely sheltering between periods of activity, especially while over-wintering. Adults are occasionally found at hawthorn and umbel blossom. Rare and threatened in central Europe.

H1 South Kerry: Kenmare, one found in a "mass of fungus-grown leaves", 1898, JRH (Halbert, 1898c; Johnson & Halbert, 1902); Glencar Valley, beaten off birch, vi.1902, HSJD (Donisthorpe, 1902, Bouskell, 1904); Tomies Wood, Lough Leane (V9088), elytron beneath loose bark on fallen oak branch, 3.vi.1994, KNAA (Alexander, 1997b).

H2 North Kerry: near Killarney, EFB (Bullock, 1914); Muckcross Demesne, a few found in a fungoid growth under bark of a dead holly, June 1919, OEJ (Janson, 1920); vi.1924, OEJ (Janson & Bonaparte-Wyse, 1924). Open-grown oak in field by Reenadinna Wood (V9586), 4.ix.1998, KNAA.

H4 Mid Cork: Glinny, Riverstick, under oak bark, 17.vii.2000, RA.

H9 Clare: Mooghaun Lough (R412715), in Malaise trap, vi.2006, TG.

H16 West Galway: Ballynahinch Woods (L7648), beneath loose bark on fallen oak branch, 3.vi.1994, KNAA (Alexander, 1997b).

H20 Wicklow: Altidore Glen, one swept, vii.1929, JNH (Halbert, 1937); Powerscourt Deerpark, on fungi on a felled log, AWS (O'Mahony, 1929b).

H25 Roscommon: St John's Wood (N0055 & 0056), two knocked from aerial dead hazel stems in old coppices, 8.viii.2010, KNAA.

H28 Leitrim: Killegar House, under bark of polar logs, 23.x.2010, RA.

H33 Fermanagh: Inisherck, Crom (H353244), one in FIT within ancient woodland, 7.vii. – 4.ix.1992, APF (Alexander, 1997b); Culliagh Wood, Crom, in *Stereum hirsutum* on oak, 21.viii.2004, RA; Castle Coole Park (H2643), 17.viii. & 14.ix.2006, KNAA; Rossvullan Hill, Castle Coole (H266429), under bark on beech log, 24.viii.2010, RA.

H35 West Donegal: Glenveagh Oakwood (C010190), adult at rest on underside of rowan branch, 14.vi.1992, KNAA (Alexander, 1997b).

H36 Tyrone: Baronscourt Park (H3682), 2 dead beneath bark on fallen bough beneath open-grown parkland oak, 16.v.2006; one swept under ancient oak, 15.vi.2006, KNAA. Caledon Deer Park (H7543), vi., vii., & viii.2006, KNAA.

H37 Armagh: Tynan Abbey Estate, 2 under tight beech bark, 1 under *Castanea* bark, 1.vii.2011, RA.

H38 Down: Belvoir Forest, Belfast (J336696) under bark of fallen bough of veteran oak, 7.ii.2012, MDB/RA; Leitrim Lodge (J223256), 1 under bark of dead upright *Pinus contorta*, 29.ii.2012, MDB.

H39 Antrim: Shane's Castle, under bark of splintered oak, 1.vii.2010, RA.

H40 Londonderry: Drenagh Estate (C6923), aerial dead lime branch with *Peniophora* sp, 5.ix.2006, KNAA.

***Abdera flexuosa* (Paykull, 1799) – Rare old growth species**

Mainly develops in the small brackets of the wood-decay fungus *Inonotus radiatus* which decays dead standing stems of alder, willow and birch. Also found on *I. dryadeus* fruiting on oak *Quercus* in Co. Fermanagh and *Phellinus pini* in Aberdeenshire. The Co. Leitrim records from pine may suggest development in the dead persistent annual brackets of *Phaeolus schweinitzii* which have the same soft fibrous consistency as *Inonotus* spp. Most records are from ancient woodlands and wood pastures. Currently only known in Ireland from Cos Fermanagh (where widespread), Tyrone and Leitrim.



Figure 26: *Abdera flexuosa* © Roy Anderson

H29 Leitrim: Acres Lake (G966100), one emerged 27.v.2011 from a small amount of dead *Pinus*, collected 23.iv.2011, MC; Lough Allen (G964110), in a small amount of dead *Pinus sylvestris*, 28.v.2011, MC.

H33 Fermanagh: Inisherik, Crom (H357243), four on bracket fungus of *Inonotus dryadeus* on parkland oak, 1.vi.1992, APF (Alexander & Foster, 1995); Crom Park (H32), knocked from *I. radiatus* on dead alder stem in open by Lough Nalughoge, 18.v.2007, KNAA; Molly Mountain (H233282), two from *I. radiatus* brackets on sycamore in open pastureland, 23.vi.1995, RA (Anderson, 1998); Castle Coole Park, knocked from *I. radiatus* brackets on alders, 18.v.2006, KNAA; Correl Glen NNR (H074537), knocked from *I. radiatus* brackets on alders, 17.v.2007; one swept, 5.vii.2007, KNAA.

H36 Tyrone: Caledon Deer Park (H7543), numerous on old *I. radiatus* brackets on alder, 16.vi.2006, KNAA; Cullentra Lough (H474475), in *I. radiatus* on alder, 22.vii.2011, MDB det. RA; Brantry Lough (H746534), reared from *I. radiatus* brackets on alder, collected 26.i.2012, MDB/RA; Wood Lough (H762603), 1, climbing upright decorticate alder pole, 24.v.2012, RA.

H39 Antrim: Deramore, Belfast (J333697), reared from *I. radiatus* brackets on alder, collected 7.ii.2012, RA/MDB.

***Melandrya caraboides* (Linnaeus, 1761) – Rare old growth species**

Develops in relatively soft moist white-rotted heartwood of boughs, trunks and stumps; various broad-leaved trees, especially ash and beech; mostly associated with ancient woodlands and wood pastures, including linear sites such as riverside trees. Very local (Johnson & Halbert, 1902).

H20 Wicklow: "Powerscourt Deerpark, June 24, in rotten thorn stump plentifully", Furlong coll. (Johnson & Halbert, 1902); Powerscourt Deerpark, some numbers on logs, 20.vi.1928, AWS/EO (O'Mahony, 1929b).

H21 Dublin: Malahide (O24), ARH (Hogan, 1854; Johnson & Halbert, 1902).

***Conopalpus testaceus* (Olivier, 1790) – Extinct old growth species**

Develops in aerial dead branches, especially of oak, also hazel; adults may occasionally visit flowers, especially umbellifers; associated with ancient wood pastures. Single unlocalised Irish report: two taken by Mr Tardy (*vide* Haliday ms). These are now in the Dublin Museum and Trinity College collections and are marked as having been found in Ireland (Johnson & Halbert, 1902).

FAMILY MORDELLIDAE *Tumbling Flower Beetles*

The larvae of most genera in this family develop in galls or the stems of herbaceous plants, but a few specialise in decaying wood.

***Mordellistena neuwaldeggiana* (Panzer, 1796) – Rare old growth species**

Has been reared in Britain from hornbeam and field maple branch wood in the early stages of decay; adults are attracted to blossom; most records are from relict old forest or wood pasture.

H3 West Cork: Glengarriff, 1924, JNH (O'Mahony, 1929a).

FAMILY COLYDIIDAE *Cylindrical Bark Beetles.*

Mostly predatory.

***Pycnomerus angulatus* (Broun, 1893) – Established introduction.**

Under bark and in soft heartwood of dead, mainly coniferous, wood. An import from New Zealand, not recorded elsewhere in the Northern Hemisphere.

H38 Down: Mount Stewart House (J554695), 1 under bark of *Pinus radiata* logs in carpark, 26.x.2002, RA; Sea Plantation, Mount Stewart (J552695), 17 in white-rot debarked logs of *Picea abies*, 26.vii.2003, RA det. PMH; ditto, 3 under sycamore log, 12.x.2011, RA.

***Pycnomerus fuliginosus* Erichson, 1842 – Established introduction**

Under bark of dead trunks and boughs of broadleaved trees; an Australian import. First noted in Ireland in 1981.

H37 Armagh: Derrymore, Newry (J058277), under bark on dead beech, 6.vii.1992, KNAA; Ballymoyer Wood (National Trust) (H970311), in powdery frass from *Euophryum confine* on upright dead *Picea abies*, 2.ii.2012, MDB/RA; Slieve Gullion Forest (J040196), under bark of ash log, 8.iii.2012, MDB/RA.

H38 Down: Maghera south of Mourne Park, two under bark of a partly decayed alder on a gravelly river bank (J268151), 9.v.1981, RA (O'Connor *et al.*, 1983); Rostrevor Oakwood (J186173), on oak logs, 13.v.2000, RA (Anderson, Simms & Nelson, 2000); on oak, 28.vi.1992, 23.v.2007, KNAA; Derryleckagh Wood ASSI (J121253), in powdery rotten oak wood with *Euophryum confine*, 17.ii.2012, MDB/RA; Tullyframe, Mourne Park (J265168), in soft white-rot ash, 27.iii.2012, MDB/RA.

***Synchita humeralis* (Fabricius, 1792) – Doubtful**

Feed on fungus-colonised sappy bark or timber, of birch, hawthorn, hazel, alder, and especially beech; has been reared from *Daldinia* in long-established birchwoods. Not included as Irish in Anderson *et al.* (1997).

H38 Down: near Belfast, AHH (Haliday, 1885), '*Monotoma juglandis*' in this reference; the specimens cannot be traced (Johnson & Halbert, 1902).

FAMILY TENEBRIONIDAE *Darkling Beetles*

***Tenebrio molitor* Linnaeus, 1758 Mealworm Beetle – Established Introduction**

In stored-products and a domestic pest; also develops in bird nests and in bat roosts where larvae are scavengers; occasionally found in decaying timber. In flour stores and houses (Johnson & Halbert, 1902).

H8 Limerick: Limerick City, EFB (Bullock, 1914).

H21 Dublin: JNH (Halbert, 1900b) (Johnson & Halbert, 1902).

H34 East Donegal: Buncrana, in coastal dunes, C.R. Algeo (Algeo, 1907).

H39 Antrim: Belfast, in timber yard, CWB (Johnson & Halbert, 1902); Belfast docks, 1942-1946, AFO/PMB (O'Farrell & Butler, 1948).

***Palorus ratzeburgi* (Wissmann, 1848) – Established Introduction**

Associated with wood borers (Scolytidae and Bostrychidae) in its natural habitat, but predominantly found in stored cereal products and other commodities in Ireland, particularly in mouldy grain residues previously attacked by grain weevils; occasionally on imports, more frequently in flour and provender mills, grain stores, maltings, etc; widely distributed in Europe. Has been found in decaying wood and bracket fungi in Britain in recent years, perhaps responding to climate change.

H2 North Kerry: golf-links near Ballybunion, *P. melinus* under bark on a paling, HKGC (Cuthbert, 1898; Johnson & Halbert, 1902).

H21 Dublin: Clontarf, viii.1925, EO (O'Mahony, 1926).

H39 Antrim: Belfast docks, 1942-1946, AFO (O'Farrell & Butler, 1948).

***Nalassus laevioctostriatus* (Goeze, 1777) – Common & Widespread**

Develops in decaying timber in ancient woodlands and wood pastures; also in peaty soils of heaths. Larvae feed indiscriminately on organic material. Adults nocturnal, feeding on algae encrusting timber or lichens on heaths. Mostly short-winged, but with occasional reports of flying individuals. *Helops striatus* "common on heather on high ground, and under fir bark", Antrim, Down, Galway, Louth, Dublin, Wicklow, Carlow, Wexford, Waterford, Cork, Kerry (Johnson & Halbert, 1902). H1, H2, H3, H6, H12, H13, H14, H15, H16, H20, H21, H38, H39.

***Gonodera luperus* (Herbst, 1783) – Rare**

Adults usually found by sweep-netting in calcareous woodlands; ecology not known; larvae presumed to be saproxylic but may not be.

H2 North Kerry: Killarney district, "a few by brushing young trees close to Ross Castle", EFB (Bullock, 1928).

H40 Londonderry: Magilligan Sands, one *Cistela luperus* found in a sand-pocket during a strong wind, CWB (Buckle, 1900) (Johnson & Halbert, 1902).

FAMILY OEDEMERIDAE *False Blister Beetles*

This family includes a mix of stem-borers and wood-decay species.

***Nacerdes melanura* (Linnaeus, 1758) Wharf Borer – Established Introduction**

In waterlogged timber, especially at waterline zone of coastal and estuarine areas, in pilings, wharves & timber supporting riverbanks; also in railway sleepers; larvae develop in flooded timber, mainly softwood but occasionally in oak which is damp or wet and in process of fungal decay.

H6 Waterford: Tramore Back Strand (S50), 27.vi.1922, OEJ (Janson *et al.*, 1923); Ballyvoyle (X3894), sandy coastal bank, 9.vii.1998, MC det. KNAA.

H12 Wexford: adults in large numbers in house in June; originated in nearby wooden quays? (O'Connor, 1981); Raven Point (T118232), in large numbers on dead pine, 11.vii.2011, RA.

H21 Dublin: Glasnevin Botanic Gardens, on *Scrophularia* (Hogan, 1854); Dundrum and Phoenix Park, JNH (Johnson & Halbert, 1902); Dublin (O1833), abundant in house near sea, June (O'Connor, 1983); Portmarnock (02541), in pieces of wood in disturbed sand dune foreshore, 30.vi.2011, MC.

H28 Sligo: Sligo Docks (G63), under a stone on disused railway track, 11.vii.1993, MC, det. KNAA.

H34 East Donegal: Foyle district, CWB (Buckle, 1900; Johnson & Halbert, 1902).

H38/39 Down/Antrim: Sand Quay, Belfast, CWB (Johnson & Halbert, 1902, Supplementary List).

***Ischnomera sanguinicollis* (Fabricius, 1787) – Rare old growth species**

Develops in old relatively soft white-rotten wood of wych elms and other broadleaved tree species; adults attracted to blossom of hawthorn, field maple, sycamore, oak, lime, and guelder rose. “Irish examples ... in the collections of the Dublin Museum and Trinity College. According to Haliday’s MS list this species was taken by Mr J Hardy in Ireland” (Johnson & Halbert, 1902). Other references: Stephens (1832); Curtis (1839).

H20 Wicklow: Powerscourt Deerpark, one swept from beside the R. Dargle, v.1926, AWS (O’Mahony, 1929b, & annotated copy of Johnson & Halbert, 1902 in the National Museum, Dublin, acc. Speight, 1985); deciduous woodland along R. Dargle (O2215), in pupal cell in moist rotting wood within top of major split in trunk of large, old, living sycamore, MCDS (Speight, 1985).

FAMILY PYROCHROIDAE *Cardinal Beetles*

***Pyrochroa serraticornis* (Scopoli, 1763) Red-headed Cardinal Beetle – Rare**

Larvae (Figure 1) develop under bark on freshly dead stems of various broad-leaved trees. Rare in Ireland, where known from just a few southern and south-eastern counties – never found repeatedly at any location – so with a curious status. The larvae are very distinctive and yet the authors have never encountered any; it seems feasible that it is merely a casual introduction with imported timber consignments.

H1 South Kerry: Caragh Lake (V79), larvae in some rotten beech wood and an adult on a fern leaf, 1903, F. Bouskell (Johnson & Halbert, 1902; Halbert, 1908)

H5 East Cork: Currabeha (W900 962), 11.vii.2008, TG.

H8 Limerick: Adare Demesne, 1863, Furlong (Haliday Ms.) (Johnson & Halbert, 1902); Mount Coote (R631274), one swept from bluebells under horse chestnut & beech, 15.v.2000, J Walsh det. JPOC (Walsh, 2001).

H9 Clare: Rineanna, 1 swept off bracken, 21.v.2010, PJH.

H7 South Tipperary: Knocknanuss, Horse and Jockey (S1449), several on hogweed, semi-natural woodland, 25.v.2011, photographed, John Fogarty.

H12 Wexford: Oaklands Forest, New Ross (S715255), a female crawling on a herb by a small stream within the forest, 18.vi.1982, JPOC (O'Connor & O'Connor, 1984); Tintern Abbey, two males on nettles and buttercups by an old wall, 15.vi.1990, JPOC (O'Connor & Rigney, 1991); Ballycarney (S9749), roadside vegetation, 20.v.1994, JAO (Owen, 1997); Rosslare, on a house wall near a sycamore wood, 27.v.2005, MC (Cawley, 2009b).

H13 Carlow: Cloughristick Wood, Leighlinbridge (S702697), male from vegetation by river Barrow near the wood, and another on grass on the river bank within the wood, 19.vi.1982, JPOC (O'Connor & O'Connor, 1984); Altamont Gardens, by River Slaney (S8665), adult in flight, 9.vi.1991, MAOC; Bunclody (S887586), domestic garden, on cotoneaster under pine, 18.vi.2012, Brian Power.

H14 Laois: Donaghmore (S264797), 4.v.2010, TG.



Figure 27: Red-headed Cardinal Beetle *Pyrochroa serraticornis* © Keith Alexander

FAMILY SALPINGIDAE *Narrow-waisted Bark Beetles*

Mainly live under bark on deadwood, though some in small branches and twigs, where adult and larva prey on other insects.

***Lissodema denticolle* (Gyllenhal, 1813) syn. *quadripustulata* (Marsham, 1802) – Rare old growth species**

In dead branches of a wide variety of trees, mostly broadleaves but including pine, and generally where still attached to the tree. No reports since 1924.

H1 South Kerry: Caragh Lake, 'common on oak', vii.1906, JNH (Halbert, 1937); Lickeen, Glencar (V7085), vi-vii.1924, OEJ (Janson & Bonaparte-Wyse, 1924).

H2 North Kerry: Killarney, beaten off oak near the Upper Lake, JNH (Halbert, 1898c) (Johnson & Halbert, 1902).

***Rabocerus foveolatus* (Ljungh, 1824) – Rare**

In dead wood; reported from beech and pine. Recorded in Ireland by Halbert (1937a) and not reported since.

H2 Kerry North: Kenmare Demesne, Killarney, one *Sphaeriestes foveolatus* swept, viii.1925, JNH (Halbert, 1937).

***Rabocerus gabrieli* Gerhardt, 1901 – Rare**

In dead wood.

H20 Wicklow: River Dargle near Powerscourt (O2015), sweeping along a streambank, EO (O'Mahony, 1931); Maulin Mountain, Enniskerry (O1813), beaten from birch trees at 100 ft. on east side, AWS (O'Mahony, 1932).

H39 Antrim: Rea's Wood, Antrim (J1385), ix.1936, OE (O'Mahony, 1938).

***Sphaeriestes ater* (Paykull, 1798) – Rare**

In burnt twigs. Status of early records unclear due to confusion in identification of the genus (Anderson, 2009) – 'may prove to be widespread in eastern Ireland'.

H2 North Kerry: Dingle (V4499), two teneral on the shoreline, 30.vi.1971, CAMR det. RA, in UM (Anderson, 2009).

H14 Laois: The Curragh, vi.1938, EO (O'Mahony, 1938).

H21 Dublin: JAP (Power, 1878).

H22 Meath: Balrath, v.1914, GWN (Nicholson, 1915).

H27 West Mayo: Croagh Patrick, JNH (Johnson & Halbert, 1912).

H38 Down: Dundrum Bay, vi.1923, OEJ (Janson, 1924).

***Sphaeriestes castaneus* (Panzer, 1796) – Established Introduction**

On conifers, in dead and dying branches. No modern reports.

H2 North Kerry: Muckcross Demesne, beating dead boughs, vi.1919, OEJ (Janson, 1920).

H4 Mid Cork: Kanturk, TVW (Wollaston, 1847) (Johnson & Halbert, 1902).

H16 North-east Galway: Clonbrock (M7439), JNH (Halbert, 1896) (Johnson & Halbert, 1902).

H21 Dublin: Rush, HKGC (DNFC, 1894); Santry, JNH (Halbert, 1894; Johnson & Halbert, 1902); Clontarf, EO (O'Mahony, 1928b); Howth, EO (O'Mahony, 1928b); St. Annes Park, EO (O'Mahony, 1924).

H34/40: Foyle district, CWB (Buckle, 1900) (Johnson & Halbert, 1902).

H37 Armagh: Little Castledillon, WFJ (mistakenly det. as *S. aeratus*) (Johnson & Halbert, 1902).

***Sphaeriestes reyi* (Abeille, 1874) – Rare**

In burnt twigs. *Salpingus aeratus* in Johnson & Halbert (1902). Status of early records unclear due to confusion in identification of the genus (Anderson, 2009).

H20 Wicklow: Enniskerry, ix.1931, JNH (Halbert, 1937).

H21 Dublin: Royal canal at Blanchardstown, Tibbradden, JNH (Halbert, 1894, 1895b; Johnson & Halbert, 1902); St Annes Park, OE (O'Mahony, 1924); Clontarf, 'not common', OE (O'Mahony, 1928b).

H38 Down: Bloody Bridge, Mourne Mountains (J380272), one swept off burnt Western Gorse, 14.v.2007, RA (Anderson, 2009b).

H39 Antrim: Cave Hill, CWB det. GCC (Johnson & Halbert, 1902).

***Vincenzellus ruficollis* (Panzer, 1794) – Uncommon**

Under bark on various broad-leaved trees, especially hawthorn & beech. Previously known as "*Rhinosimus viridipennis*".

H1 South Kerry: Kenmare, vii.1898, JNH (Halbert, 1898c; Johnson & Halbert, 1902).

H21 Dublin: Santry, on moss on old tree stump, JNH (Halbert, 1894); Dundrum, under elm bark, JNH (Halbert, 1900b) (Johnson & Halbert, 1902); Malahide, EO (O'Mahony, 1928b); Clontarf, 1 under bark, EO (O'Mahony, 1935b).

H25 Roscommon: Mote Park, vi.1897, JNH; Mount Talbot, JNH (Halbert, 1898a; Johnson & Halbert, 1902); St. John's Wood, on ash, canopy fogging, 23.vi.2009, RM.

H30 Cavan: Cloverhill, v.1914, GWN (Nicholson, 1915).

H31 Louth: Bellurgan Forest (J096099), under bark of dead sycamore, 22.iii.2012, MDB/RA.

H33 Fermanagh: Inisherik Island, Crom, FIT 4.ix-5.x.1992, APF.

H34/40: Foyle district, CWB (Buckle, 1900) (Johnson & Halbert, 1902).

H38 Down: Derrymore Park, Bessbrook (J0528), 6.vii.1992, KNAA; Newtownards, 1 swept from saltmarsh grassland, 24.vi.1998, RA; Castle Ward Park (J5649), 21.v.2006, KNAA.

H39 Antrim: Newforge, Lagan Canal, under bark of *Nothofagus*, 20.x.1992, RA; Deramore, in *Stereum hirsutum* on beech log, 11.xi.1992, RA; Lagan Meadows, under fungoid bark of beech logs, 27.xi.1992, RA; Lady Dixon Park, 11 under bark with *Stereum* on beech logs, 11.i.2005, RA.

***Salpingus planirostris* (Fabricius, 1787) – Common & Widespread**

Under bark on various broad-leaved trees in early stages of decay; normally saprophagous, but will also feed on insect larvae. Widespread: Derry, Antrim, Down, Armagh, Galway, Dublin, Wexford, Cork, Kerry (Johnson & Halbert, 1902). Common, at least in the north. H3, H5, H12, H16, H18, H21, H25, H27, H28, H33, H36, H38, H39, H40.

***Salpingus ruficollis* (Linnaeus, 1761) – Widespread**

As above, less common (Johnson & Halbert, 1902). Mainly in the north.

H9 Clare: Blackweir Bridge, Newmarket-on-Fergus (R389715), 26.v. 2003, RCW (Regan & Anderson, 2004)

H16 West Galway: Connemara National Park (L75), 1994 (Speight, 2004).

H21 Dublin: Santry, JNH (Halbert, 1894; Johnson & Halbert, 1902); Clontarf, Howth, EO (O'Mahony, 1928b); St. Annes Park, 29 in tree stump, EO (O'Mahony, 1936).

H22 Meath: Balrath, vi.1916, GWN (Nicholson, 1917).

H25 Roscommon: St John's Wood (N0056), FIT, 6.viii.2010, KNAA.

H27 West Mayo: Westport, JJW (Fowler, 1891) (Johnson & Halbert, 1902)

H33 Fermanagh: Belleisle (Porter, 1898) (Johnson & Halbert, 1902); Inisherik, Crom, FIT 4.ix-5x.1992, APF. Castle Coole Park (H2643), FIT, 25.x.2006, KNAA.

H36 Tyrone: Baronscourt Park (H3682), FITs, various dates, 2006, KNAA.

H37 Armagh: Palace Grounds, Dean's Hill, WFJ (Johnson, 1888b, 1892a) (Johnson & Halbert, 1902).

H38 Down: Tollymore Park (Patterson, 1885); Lough Neagh, Haliday ms. (Johnson & Halbert, 1902); Newforge, HLO det. WFJ (Johnson, 1914); Kircassock, under sycamore bark flakes, 27.xi.1976; Derrymore Park, Bessbrook (J0528), 6.vii.1992, KNAA; Tollymore Forest, in a small *Piptoporus* on birch, 9.x.1993, RA; Ballyskeagh, under bark of *Tilia*, 8.xii.1992, RA; Giant's Ring, Edenderry, under sycamore flakes, 24.x.1992, RA; Castle Ward Park (J5649), 28.x.2006, KNAA; Dundrum Castle, under fungoid bark on horse chestnut, 20.xvii.2009, RA; Shooter's Island (J494470), 23.ii.2012, RA.

H39 Antrim: Ballycastle, BT (Johnson & Halbert, 1902); Newforge Lagan Canal, under bark of *Nothophagus*, 20.x.1992; Belfast Castle, under fungoid beech bark, 11.vii.2004, RA; Lady Dixon Park, Belfast, under fungoid beech bark with *Stereum*, 11.i.2005, RA; Great Deer Park, Glenarm (D2911), 16.ix.2006, KNAA; Breen Wood (D1233), FIT, 9.vii.2007, KNAA.

H40 Londonderry: Drenagh Estate (C6923), 19.v. & 15.ix.2006, KNAA.

FAMILY SCRAPTIIDAE

Most, if not all, develop in dead wood; larvae of some have been found below loose bark; feed largely on wood fibres and fungi, although will take animal food; adults frequent flowers.

***Anaspis fasciata* (Forster, 1771) syn. *humeralis* (Fabricius, 1775) – Rare**

Has been reared in numbers in Britain from dead fallen branchwood of oak, hornbeam and larch; frequently found at hawthorn blossom, also umbelliferous flowers.

H1 South Kerry: Kenmare, '*A. geoffroyi*' found on privet, JRH (Halbert, 1898c).

H33 Fermanagh: Lough Yoan, Castle Coole, 2.vi.1992, KNAA.

***Anaspis frontalis* (Linnaeus, 1758) – Widespread**

Has been reared from deadwood of oak and maple in Sweden; frequently found at hawthorn blossom. Widespread but not common: Ulster, Connaught, Leinster, Munster (Johnson & Halbert, 1902).

H1 South Kerry: Kenmare, vii.1898, JNH (Halbert, 1898c); Lickeen Wood (V7086), 4.v.2010, KNAA.

H2 North Kerry: Cloghereen Wood, Muckross (V9786), cut grass in parkland, 8.vii.1996, JAO (Owen, 1997).

H7 South Tipperary: Mallow (W5298), roadside vegetation, 6.vii.1996, JAO (Owen, 1997).

H9 Clare: Slieve Carron (M3303), 9.v.2010, KNAA.

H18 Offaly: Charleville Wood (N315226), 24.v. 2003, RCW (Regan & Anderson, 2004).

H23 Westmeath: Annagh near Athlone (N093436), 20.v.2012, Oscar Vorst.

H25 Roscommon: St John's Wood (M9956 & N0056), widely, 10.vi.2010, KNAA.

H37 Armagh: Dean's Hill, Armagh, WFJ (Jphnson, 1892a); Peatlands Park, at haw flowers, 29.v.2000, RA (Anderson, Simms & Nelson, 2000); Derryinver, Lough Neagh, sweeping *Filipendula*, 14.viii.1996, RA; Derrymagown, Argory, haw flowers, 4.v.1996, RA; Loughgall Forest NR, on oak foliage, 14.v.2005, RA.

H39 Antrim: Greenmount Agricultural College, beating *Cotoneaster*, Rea's Wood, sweeping, 30.vi.1986, RCW (Welch, 1986); Shane's Castle, at *Tilia* flowers, 1.vii.2010, RA.

H40 Londonderry: Banagher Glen (C670045), on flowers, 20.v.2007, KNAA.

***Anaspis garneysi* Fowler, 1889 – Scarce**

Has been reared from dry wood mould of oak, beech & larch (Levey 2009). The record Dublin (Halbert, 1893) is to be deleted (Johnson & Halbert, 1902). Widely found in Northern Ireland by flight trapping during 2007.

H2 North Kerry: Killarney area, by general sweeping, EFB (Bullock, 1932).

H18 Offaly: Bullock Island, Shannon Callows (N026181), 24.v. 2003, RCW (Regan & Anderson, 2004).

H33 Fermanagh: Crom Castle Park (H3624), hawthorn blossom 18.v., & Inisherik (H357248), FIT, 23.v.2007, KNAA; Old Crom Castle (H364239), swept, 24.v.2012, K.A. Bryan.

H37 Armagh: Loughgall Forest NR, on haw flowers, 14.v.2005, RA.

H38 Down: Rostrevor Oakwood NNR, on sycamore foliage, 21.v.2005, RA; Rostrevor Oakwood NNR (J1817), 23.v., & FIT, 11.vii.2007, KNAA.

H39 Antrim: Great Deer Park, Glenarm (D2911), 13.vi.2007; Glenarm Woods ASSI (D3010), 10.vii.2007, KNAA.

H40 Londonderry: Ness Wood ASSI (C5211), 7.vii.2007; Banagher Glen (C670045), FIT, 8.vii.2007, KNAA.

***Anaspis lurida* Stephens, 1832 – Rare**

Has been reared from dead fallen branchwood of oak, alder, aspen, elm, hazel, larch & from birch polypore; larvae possibly epiphytic rather than saproxylic (Levey, 2009). Adults attracted to blossom, including elder.

H3 West Cork: Glengarriff Castle Demesne (V9455), in Malaise trap, 26.v.2005, coll. TG, det KNAA.

H23 Westmeath: Whinning Wood, Portlick (N0548), 14.v.2010, KNAA.

H39 Antrim: Cullybacky, WFJ (Johnson, 1891) '*A. subtestacea*' (Johnson & Halbert, 1902); Rea's Wood, Antrim, sweeping carr, 30.vi.1986, RCW (Welch, 1986).

***Anaspis maculata* (Geoffroy in Fourcroy, 1785) – Common & Widespread**

Develops in small girth branchwood of a wide variety of broad-leaved trees; frequent at blossom. Common: Ulster, Connaught, Leinster, Munster (Johnson & Halbert, 1902). H1, H2, H4, H5, H6, H9, H15, H18, H21, H23, H33, H34, H35, H36, H37, H38, H39, H40.

***Anaspis regimbarti* Schilsky, 1895 – Common & Widespread**

Has been reared from a larva found in a decaying oak log, and from large girth oak branchwood. '*Anaspis ruficollis*' (syn.) common: Ulster, Connaught, Leinster, Munster (Johnson & Halbert, 1902). H1, H2, H3, H9, H15, H18, H33, H34, H35, H36, H37, H38, H39, H40.

***Anaspis rufilabris* (Gyllenhal, 1827) – Widespread**

Has been reared from large girth oak branchwood in England. 'Only known from Ulster' (Johnson & Halbert, 1902) – this has proved mistaken.

H1 South Kerry: Tomies Wood (V9089), 26.v.1994, KNAA.

H3 West Cork: Lissangle, Skibereen (W1040), 4.vi.1996, KNAA.

H9 Clare: Blackweir Bridge, Newmarket-on-Fergus (R389715), v. 2003 (Regan & Anderson 2004)

H18 Offaly: Charleville Wood (N315226), v. 2003 (Regan & Anderson 2004).

H23 Westmeath: Whinning Wood, Portlick (N0548), 14.v.2010, KNAA.

H25 Roscommon: St John's Wood (M9956 & N0056), 7.vi & 7.viii.2010, KNAA.

H28 Sligo: Sriff Point, Lough Gill (G788339), 17.vi.1999, KNAA.

H33 Fermanagh: Castle Coole Park (H2643), 2.vi.1992, 17.vi.2006 & 18.v.2007; Correl Glen (H074537), 17.v.2007; Crom Castle Park (H3624), 18.v.2007, KNAA.

H35 West Donegal: Rathmullan, CWB det. GCC (Johnson & Halbert, 1902)

H36 Tyrone: Baronscourt Park (H3682), 15.vi. & 25.vii.2006, KNAA; Wood Lough (H762603), 24.v.2012, RA.

H37 Armagh: WFJ det. GCC (Johnson & Halbert, 1902); Peatlands Park (H897613), 11.vi.2012, K.A. Bryan.

H38 Down: Rostrevor Oakwood (VJ1817), 23.v.2007, KNAA.

H39 Antrim: Lagan Canal near Lisburn, coll. CWB det. GCC (Johnson & Halbert, 1902); Great Deer Park, Glenarm (D2911), 13.vi.2006; Glenarm Woods ASSI (D2911), 22.v. & 10.vii. 2007, KNAA; Breen Wood (D1233), 21.v.2007, KNAA.

H40 Londonderry: Springhill Park (H8683), 25.vi.1992; Banagher Glen (C670045), 20.v. & 8.vii.2007; Ness Wood ASSI (C528118), 2.vii.2007, KNAA.

[*Anaspis thoracica* (Linnaeus, 1758)

Ireland (Bullock, 1935, according to Anderson *et al.*, 1997, but this is an error).]

FAMILY CERAMBYCIDAE *Longhorn Beetles*

Many exotic longhorns turn up in timber yards and buildings due to importation of timber. Some have become established. Obvious casuals are not included. Speight (1988) provides some Irish threat statuses.

***Rhagium bifasciatum* Fabricius, 1775 – Common & Widespread**

Develops in the cut stumps of conifers; it probably occurs wherever there are conifer plantations in Ireland. It is also frequent in rotten stumps of various broadleaved trees, including oak and alder; also found living in 2000 year old pine stumps exposed from beneath bogs (Speight, 1988). Common & widespread in Ireland. “Common in fir plantations” (Johnson & Halbert, 1902). H1, H2, H3, H4, H5, H6, H12, H14, H16, H17, H18, H20, H25, H27, H28, H29, H30, H33, H34, H36, H37, H38, H39, H40.



Figure 28: *Rhagium bifasciatum* (left) and *Rhagium mordax* (right) © Roy Anderson

***Rhagium mordax* (De Geer, 1775) – Widespread**

Larvae develop in decaying timber, preferring the cambium and outer sapwood of rotting boles or stumps; most often found in oak, but also in a wide range of other broad-leaved trees. ‘*R. inquisitor*’ “not uncommon on oak, beech and hawthorn, in old woods in the north and west of Ireland, but rare in the east” (Johnson & Halbert, 1902). Widely distributed in Ireland (Speight, 1988). The absence of reports from the south and east appears to hold true.

H1 South Kerry: Tomies Wood (V9089), 1988 & 1990; Uragh Wood (V8362), 1994, KNAA.

H2 North Kerry: nr. Killarney, EFB (Bullock, 1914); W.F. de V. Kane (Fowler, 1891); Waterville, J.W. Yerbury; Muckcross, ARF (Johnson & Halbert, 1902); Muckcross Park, 1998, KNAA; Derrycunihy Wood (V8981 & 9181), 1990, KNAA; Galways River, Upper Lake, 1994, JAO; Galways Bridge (V914803), 1994, KNAA; Killarney National Park (V9490), 22.iv.1999, MC; Muckcross Woods, 2011, RA; Ladies View, 2011, RA.

H3 West Cork: Glengarriff Woods (V918570), J.W. Yerbury (Johnson & Halbert, 1902); 1988 & 1996, KNAA; V912572, beaten off hawthorn, 19.v.2012, BN. Glengarriff Castle Demesne (V946553), 2005, TG.

H7 South Tipperary: Shanbally Castle Estate (R977165), 17.iii.2012, RA.

H9 Clare: Arduan Lough (R485706), v.vi.2006, & Derrygeeha Lough (R150564), v.vi.2007, Malaise traps, TG.

H14 Laois: Abbeyleix, JMB (Browne, 1901) (Johnson & Halbert, 1902).

H15 South-east Galway: Punchbowl, Gort (M4500), Caher Wood, Lough Graney (R5591), & Derrykeel Wood (R5199), 1988, KNAA Portumna Bay, The Quay, Park, etc (M841032), 2003 (Regan & Anderson, 2004); Scarriff Lough (R413935), 2007, TG; Garryland Wood, 2007, RA.

H16 West Galway: Connemara National Park (L75), 1994 (Speight, 2004).

H18 Offaly: Charleville Wood (N315226), 2003, RCW (Regan & Anderson, 2004).

H20 Wicklow: Powerscourt, 1919, JNH (Halbert, 1922); Powerscourt Deer Park (O1912), 1993, KNAA; Powerscourt, 2007, RA. Ballard Woods, Glendalough (T1495), 1993, KNAA.

H23 Westmeath: Hare Island, Lough Ree, JNH (Halbert, 1900a); 1977, MCDS.

H25 Roscommon: Cloonca Wood, JNH (Halbert, 1898a) (Johnson & Halbert, 1902).

H27 West Mayo: Crossmolina, W.F. de V Kane (Fowler, 1891) (Johnson & Halbert, 1902). Barnarinnia Woods, Lough Mask (M0660), 1992, KNAA.

H28 Sligo: W.F. de V. Kane (Fowler, 1891) (Johnson & Halbert, 1902); Killerry (G7732), 23.v.1993, MC; Rathcarrick (G636347), 13.ii.1994, MC; Ardree (G6422), MC; Union Wood (G680285), 1999, KNAA & 5.v.2011, MC.

H29 Leitrim: Glencar Woods (G7543), 1998, KNAA.

H33 Fermanagh: Ballinamallard (Johnson & Halbert, 1902); Correl Glen, 1988, RA; Shane's Castle, 1988, RA; Castle Caldwell FNR (H0260), 1992, KNAA; Crom Castle Estate (H32), 1992, 2002, 2007, KNAA; Isle Namanfin, 1993, RA; Florencecourt, 1997 & 2010, RA; Inisherik Island, 2000, RA; Castle Coole Park (H2643), 2006, KNAA; Rossyvullan, Castle Coole, 2010, RA.

H34 East Donegal: Ardnamona Wood, Lough Eske (G9685), 1992 & 1999, KNAA; Glenveagh Oakwood (C010190), 1992, KNAA.

H35 West Donegal: Rathmullan, JJW (Johnson & Halbert, 1902).

H36 Tyrone: W.F. de V. Kane (Fowler, 1891; Johnson & Halbert, 1902). Caledon Deer Park (H7543), 2006, KNAA.

H37 Armagh: Tynan Abbey Estate, 2011, RA

H38 Down: Tollymore Park, WFJ (Johnson & Halbert, 1902).

H39 Antrim: Great Deer Park, Glenarm (D2911), 2006, KNAA; Glenarm Woods ASSI, 2007, KNAA; Moss Plantation, Shane's Castle, 2010, RA; Glenarm Nature Reserve, 2011, RA.

H40 Londonderry: Walworth Wood, CWB (Buckle, 1900; Johnson & Halbert, 1902). Ness Wood ASSI (C528118), 2007, KNAA.

***Grammoptera abdominalis* (Stephens, 1831) syn. *variegata* (Germar, 1824) – Rare**

Larva feed on the decayed outer sapwood of dead aerial branches of oak, pear and sweet chestnut, boring deeper to pupate; preferred fungal host is *Vuilleminia comedens* (M. Rejzek, in lit.); adults attracted to blossom.

H38 Down: near Belfast, 1885, Haliday – “an Irish specimen [of *G. analis*] in Haliday collection” (Johnson & Halbert, 1902); Murlough NNR (J410352), several on haw flowers, 17.v.2005, RA.

***Grammoptera ruficornis* (Fabricius, 1781) – Common & Widespread**

Larvae in dead twigs and decaying small branches of many broad-leaved trees; adults attracted to blossom. Common in Ireland (Johnson & Halbert, 1902); one of Ireland's most widely distributed and most frequently encountered longhorn beetles (Speight, 1988). H1, H2, H3, H4, H5, H7, H9, H12, H14, H15, H16, H17, H18, H20, H21, H22, H23, H25, H27, H28, H29, H30, H33, H35, H36, H37, H38, H39, H40.

***Grammoptera ustulata* (Schaller, 1783) – Rare old growth species**

Larvae have been reared from dry dead or mouldy lichen-covered twigs of field maple and oak, also known from other broad-leaved trees, where they feed on the outer sapwood; adults at blossom. Discovered in Ireland in 2003 but assumed to be an overlooked native.

H18 Offaly: Charleville Wood (N320227), one swept under beech, 24.v.2003, RCW (Regan & Anderson, 2004).

***Leptura aurulenta* (Fabricius, 1793) Hornet Beetle – Rare**

Larvae develop in the cambial layer of large sections of freshly dead wood, where in open sunny situations; broad-leaved trees, especially of oak. In Ireland largely confined to Counties Kerry, Cork and Wicklow. 'Vulnerable' in Speight (1988).

H1 South Kerry: "This area was visited by a large party of naturalists in July 1898 none of whom reported this beetle, so perhaps it colonised from Glengarriff subsequently" (Stelfox, 1937); Slaheny Bridge, Kilgarvan, one at a stump in the woods, 31.vi.1935, several more, 1.vi.1935, AWS (Stelfox, 1937); near Drumanassig Bridge (V9587), between Kenmare and Glengarriff, commonly at stumps of beech by the roadside, 6.vii.1935, AWS (Stelfox, 1937); Dunkerron Castle, west of Kenmare, on beech stumps, 7.vii.1935, AWS (Stelfox, 1937); Derreen district, southern side of Kenmare Bay, 1935, S.W. Kemp (Stelfox, 1937); Kenmare, vii.1945, EFB (Speight, 1988); Ardtully (V9973), 5.vii.1976, M. de Courcy Williams (Speight, 1988); Cloonee Loughs (V8362), on *Rubus* flowers in clearing in oak woods, 22.vii.1978, MCDS (Speight, 1988).

H2 North Kerry: Dungeel (V8195), near Killorglin, two from felled alder, 22.vii.2001, M. O'Sullivan (O'Sullivan, 2003); Muckcross Woods (V98), 1 at umbel, 20.viii.1992, RN.

H3 West Cork: Glengarriff (V95), "First taken ...many years ago by A. Furlong and E.P. Wright; and recently W.F. deV. Kane captured 2 ... presented to the Dublin Museum" (Johnson & Halbert, 1902); Lord Bantry's Demesne (Kenmare Demesne), W.F. de V. Kane (Fowler, 1891); common at Glengarriff in vii.1924, flying about tree stumps, mostly of oak and birch, and to bramble flowers quite close to the village, Halbert (1937a); extraordinarily abundant around Glengarriff, vii.1935 outnumbered *R. maculata* in the oakwoods about The Lodge (Stelfox, 1937); on Kenmare side of Glengarriff (V95), 1950, & Barley Lake (V85), 1952, H.C. Huggins (Huggins, 1953); not uncommon at Glengarriff; collected a series for the BMNH in 1952; at flowers of purple loosestrife and ragwort, but most taken on an oak stump on the side of the Kenmare Road, H.C. Huggins (Huggins, 1960); Glengarriff (V9157), on *Oenanthe* flowers in clearing in mixed woods, 22.vii.1976, MCDS (Speight, 1988); Glengarriff Castle Demesne (V9455), flying about stumps of oak and birch, vi.1924, JNH (Halbert, 1937); 2005, in Malaise traps, TG; 2012, one photographed in nature reserve, per Clare Heardman.

H6 Waterford: Glenmore, in Blackwater valley, between Lismore and Fermoy, two, 29.vii.1928, AWS (Stelfox, 1937).

H8 Wexford: Vinegar Hill, Enniscorthy (S9840), 16.vii.2012, Lynn Cheeseman, det. RA.

H20 Wicklow: Rathdrum Forest (T18), 1924, EO (O'Mahony, 1924); Shelton Abbey, NW of Arklow, on tree stumps, vii.1926, JNH (Halbert, 1937); Clara Bridge, flying to Angelica, 12.vii.1926, JNH (Halbert, 1937); The Meeting of the Waters, many dead in a beech stump; by no means rare from Rathdrum down the Avonmore valley to near Arklow (Stelfox, 1937); Avondale Forest Park (T1985), mixed woods, 23.vi.1975, MCDS (Speight, 1988).

***Leptura quadrifasciata* (Linnaeus, 1758) Four-banded Longhorn – Rare**

Develops in dead and decaying stumps, especially birch, but also a wide range of other broad-leaved trees, and once reared from spruce; larvae make meandering galleries deep in the sapwood; wood sizes down to 15cm diameter, wet or dry, but dry areas needed for pupation; adults sun-loving and fly on hot sultry days, attracted to blossom. NB *Leptura aurulenta* often mis-determined as this species by people not familiar with it. 'Vulnerable' in Speight (1988).

H2 North Kerry: Galways River at Upper Lake (V9081), Killarney, 16.v.1994, JAO (Owen, 1997).

[**H3 West Cork:** Glengarriff, in Lord Bantry's Demesne, 12 taken in half hour on ragweed, by W.F. de V. Kane (Johnson & Halbert, 1902); Halbert (1937a) comments on his inability to find a trace of this species here; Stelfox (1937) queries the identification since it has not been there since].

H9 Clare: Castletown Lough (R388777), Cragmoher Lough (R293867) & Lough Ardnamurry (R381797), Malaise traps, vi.viii.2006, TG; Ballycar, Newmarket-on-Fergus (R419619), in rural garden, 24.vi.2012, John Murphy det. RA.

H10 North Tipperary: near Rathcabban (N0007), dry peat bog with birch trees, 9.vii.1996, JAO (Owen, 1997).

H15 South-east Galway: Portumna (M8303), elytron in rotten birch, mixed woods beside lake, 15.ii.1975, MCDS (Speight, 1988).

H18 Offaly: All Saints Bog (N0010), in birch woods, MCDS (Speight, 1988).

H20 Wicklow: Clara Bridge, one flying to *Angelica*, 12.vii.1926, JNH (Halbert, 1937); Lake Park, Lough Dan, 1924, EO (O'Mahony, 1924); repeatedly seen in county on various dates between 12.vii. & 4.viii., either in the Vale of Clara or near Coolballintaggart in the Ow Valley (Stelfox, 1937); west of Kippure House, upper Liffey valley, female egg-laying in crevices of a stump of a beech tree, 16.viii.1939, Mrs Stelfox (Stelfox, 1943).

H35 West Donegal: Ards Forest (C0834), deciduous woodland, 11.viii.1978, M. de Courcy Williams (Speight, 1988); Ards Forest (C0734), 12.viii.1978, RA.

***Anoplodera sexguttata* (Fabricius, 1775) – Rare; old growth species**

Develops in red-rotten oak wood in shade or semi-shade, generally lying logs in moist conditions; adults most often seen nectaring at flowers of plants such as hogweed and water dropwort; often in small glades in dense forests. 'Endangered' (Speight, 1988).

H2 North Kerry: two near Muckross Abbey, 1859, E. Birchall, in J.R. Hardy coll.; Dinish Island, near Muckross, male swept off flowers, summer 1879, JRH (Johnson & Halbert, 1902).

***Alosterna tabacicolor* (De Geer, 1775) – Uncommon**

Larvae develop in old damp rotten stumps of hazel, hornbeam, maple, pine, etc, often boring deeply into sapwood; adults attracted to blossom. Local in Ireland ((Johnson & Halbert, 1902); possibly a relict ancient woodland species (Alexander, 1997a).

H1 South Kerry: from rowan blossom in large pine wood near Glenbeigh (V6690), vi.1902, (Donisthorpe, 1903) (Bouskell, 1904).

H2 North Kerry: Killarney, viii.1912, etc, EFB (Bullock, 1914; Speight, 1988).

H5 East Cork: Owennacurra River (W8576), open areas along wooded riverside, 4.vi.1999, KNAA.

H6 Waterford: Glenshelane Valley, JNH (Johnson & Halbert, 1902).

H11 Kilkenny: Woodstock, JNH (Johnson & Halbert, 1902).

H14 Laois: Abbeyleix, JMB (Browne, 1901) (Johnson & Halbert, 1902); Durrow (S410790), 14.vi.2010, MC.

H20 Wicklow: Delgany, WES (Johnson & Halbert, 1902); Glen of the Downs (O2610), oak woods, 11.vii.1979, D. Dowling (Speight, 1988); (O2215), on umbel flowers in deciduous woods, 14.vi.1975, MCDS (Speight, 1988); Devil's Glen, 14.vii.1986, RA.

H21 Dublin: Glasnevin, etc, ARH (Hogan, 1854); Barnacullia, HKGC (Cuthbert, 1892a) (Johnson & Halbert, 1902).

H25 Roscommon: Mote Park, JNH (Halbert, 1898a) (Johnson & Halbert, 1902); St. John's Wood (M9956), 5.vi.1999 & 7.vi.2010, KNAA.

H28 Sligo: Slish Wood (G740317), 12 & 17.vi.1999, KNAA; 25.vi.2009, MC (Cawley, 2009a).

H33 Fermanagh: Reilly Wood, Crom (H337253), 28.v.1992; Gole Wood, Crom (H333252), 1.vi.1992, KNAA (Alexander, 1997a).

H38 Down: near Belfast, AHH (Haliday, 1885) (Johnson & Halbert, 1902).

H39 Antrim: Great Deer Park, Glenarm (D2911), 13.vi.2006; Glenarm Woods Nature Reserve, 22.v.2007, KNAA & 14.vi.2011, 20.vi.2012, RA.

***Rutpela maculata* (Poda, 1761) – Widespread**

Develops in moist decaying wood of stumps and roots of broad-leaved trees and pine, but particularly birch; adults attracted to blossom. Probably generally distributed in Ireland if somewhat local in certain districts (Stelfox, 1937). '*Strangalia armata*' (Johnson & Halbert, 1902).

H1 South Kerry: Kenmare, vii.1898, JNH (Halbert, 1898c); Waterville, coll. Yerbury (Johnson & Halbert, 1902); Glencar, vii.1902, HSJD (Donisthorpe, 1903); Derrycunihy, vii-viii.1906, LHBW (Bonaparte-Wyse, 1906); Lickeen Wood, Glencar, viii.1910, LHBW (Bonaparte-Wyse, 1911).

H2 North Kerry: Killarney (Hogan, 1855); Upper Lake & Kenmare, JNH (Halbert, 1898c); V9088, oak woods, 20.vi.1975, MCDS; V8362, on *Rubus* flowers, deciduous woods, 27.vii.1976, MCDS; Camillan Wood, Muckcross (V9486), 12.viii.1990, KNAA (Alexander, 1997a).

H3 West Cork: Glengarriff Castle (V948555), Furlong ms & Kane (Johnson & Halbert, 1902); 2005 & 2006, TG; Glengarriff (V9157), 6.v.1975, MCDS; near Ballyoughtera (W0930), 13.vii.1983, MCDS (Speight, 1988); banks of Bandon River (W550556), 24.v.1998, MC; banks of River Sullane, Macroon (W339732), 30.vi.2010, MC.

H5 East Cork: Ballygrunna (X018808), 21.vi.1998, MC.

H6 Waterford: Ballymacmague Fen, 26.vii.2009, RA; Cappagh Loughs, 27.vii.2009, RA.

H9 Clare: St. Senan's Lough (R046542), Malaise trap, vi.vii.2007, TG.

H11 Kilkenny: Thomastown and Woodstock, JNH (Johnson & Halbert, 1902).

H13 Carlow: plentiful in Mr Kavanagh's Demesne near Borris, PF (Johnson & Halbert, 1902).

H16 Galway: Derryclare Wood (L8349), on meadowsweet flowers in oak wood, 30.vii.1975, MCDS (Speight, 1988).

H18 Offaly: Charleville Wood (N3122), oak/ash woods, 5.vii.1984, MCDS (Speight, 1988).

H20 Wicklow: Powerscourt, ARH (Hogan, 1854); Avoca, Furlong ms.; Devil's Glen, AHH (Haliday, 1857); R. Dargle, JNH (Halbert, 1900b); Powerscourt Demesne (O2215), 27.vi.1976, MCDS; Avondale Forest (T1985), 24.viii.1978, MCDS; nr. Kilmacanogue (O2513), alder/willow swamp, 27.vii.1981, MCDS (Speight, 1988); Devil's Glen, 14.vii.1986, RA; Powerscourt (17.viii.1986, RA).

H23 Westmeath: Hare Island, L. Ree, vi.1976, MCDS (Speight, 1977).

H25 Roscommon: N0055, 20.vi.1976, MCDS (Speight, 1988).

H28 Sligo: Rockwood, Lough Gill, 1901, DNFC (DNFC, 1901); Hazelwood (G712360, 27.vi.1995, MC; Killerry (G7733), 9.viii.2009, MC; Union Wood (G682273), 10.viii.2009, MC.

H27 West Mayo: Knockmore, Pontoon, 1907, LHBW (Bonaparte-Wyse, 1907).

H29 Leitrim: Dromahair, vi.1957, CAC (Collingwood, 1959).

H30 Cavan: Gartanoul, 16.iv.1940, RCF (Speight, 1988).

H33 Fermanagh: Inishdivann, L. Erne, 9.viii.1936, anon., UM.

H38 Down: near Belfast, 1885, AHH (Johnson & Halbert, 1902); Tollymore Forest, 9.vii.1976, 16.viii.1985, 6.viii.1986, RA.

***Stenurella melanura* (Linnaeus, 1758) – Doubtful**

Larvae have been found in thin, decayed oak branches and in broom roots; also in other trees. Irish example in Haliday collection, but no locality data (Johnson & Halbert, 1902). It would seem unlikely that a resident population of a large and colourful beetle would be overlooked for so long.

***Asemum striatum* (Linnaeus, 1758) – Established introduction**

Mainly develops in pine stumps and exposed roots of freshly cut trees, but will use larch and spruce; has spread with softwood plantation forestry. First noted in Ireland in 1973 (Speight, 1976).

H14 Laois: Abbeyleix (S4382), in rotten conifer log at edge of young conifer plantation on drained valley bog, 2.vi.1973, MCDS (Speight, 1976).

H20 Wicklow: Glendalough State Forest (T128962), 1 in emergence trap on Sitka spruce stumps, vi.2006, Aoife Dillon.

H40 Londonderry: Umbra NR (C724357), several emerging from *Pinus contorta* roots, 1.vi.2011, RA/MDB.



Figure 29: *Asemum striatum* © Roy Anderson

***Nathrius brevipennis* (Mulsant, 1839) – Casual Introduction**

Larva develops particularly in thin woody stems, such as osier, dog-rose stems, wattle fences and wickerwork.

H2 North Kerry: Killarney, vii.1907, EFB (Bullock, 1914; Speight, 1988).]

***Aromia moschata* (Linnaeus, 1758) Musk Beetle – Rare**

Develops in willows and sallows, *S. cinerea* and *S. alba*, in wetlands and water meadows; larvae and pupae in dead wood of trunks and branches; has also been reported from alder, poplar and other broad-leaved trees; reputedly prefers young healthy growths rather than established trees and so - strictly - not a saproxylic; larvae can endure flooding for many weeks; adults fly in hot sunshine and visit blossom. “Local... headquarters... in the south-west, where it has been taken in some numbers in the Killarney and Glengarriff districts” (Johnson & Halbert, 1902). “Common in parts of Kerry and West Cork, but very rare or absent from most districts in the north and east of Ireland” (Stelfox, 1959). Also turns up as an import. ‘Vulnerable’ in Speight (1988).

H1 South Kerry: ‘Kenmare & Caragh Lake’, J.W. Yerbury (Champion, 1901); Kenmare, 2 on sallows, vii-viii.1906, LWBW (Bonaparte-Wyse, 1906). Ardea East, Tuosist (V790627), 9.viii.2011, F. Moore.

H2 North Kerry: Killarney, E.P. Wright (Johnson & Halbert, 1902); Killarney, viii.1909, 1914, 1917, EFB; Cahirnane, viii.1930, EFB, NMI; Muckross, 4 on umbellifers, vii-viii.1906, LHBW (Bonaparte-Wyse, 1906); Muckross (V9685), on flowers of *Polygonum*, roadside, edge of oak woodland along lake shore, 19.ix.1986, MCDS (Speight, 1988).

H3 West Cork: coll. R. Patterson; Glengarriff, Furlong coll. (Johnson & Halbert, 1902).

H16 North-east Galway: Clonbrock (M7439), on a decaying willow, JNH (Halbert, 1898a), coll. R.E. Dillon (Johnson & Halbert, 1902) – it is unclear if this is a reliable report.

H38 Down: near Belfast, AHH (Haliday, 1885) (Johnson & Halbert, 1902); Seaforde Estate (J4043), female reared from insect bored willow trunk material, coll. 11.viii.1988, emerged 2.ii.1989, RN (Nash, 1989).

***Callidium violaceum* (Linnaeus, 1758) Violet Longhorn – Established Introduction**

In dead birch, pine, oak, etc, but mainly conifers, larvae feeding between bark and sapwood; not on standing timber, but favours milled softwood. Ireland (Bullock, 1914). No modern records, presumed to have died out.

H1 South Kerry: Lickeen Wood, vi.1907, F. Bouskell (Halbert, 1908); Lickeen Wood, Glencar (V78) (Kaufmann, 1948) [these almost certainly refer to the same record].

H2 North Kerry: near Killarney, EFB (Bullock, 1914); Killarney, vi.1915, EFB (Speight, 1988).

***Phymatodes testaceus* (Linnaeus, 1758) – Casual Introduction?**

Develops in and beneath the dying and dead bark of freshly fallen boughs and on the main trunk of living oak trees; also known from other tree species on occasion. Regularly transported outside its native range by the timber trade. Unknown in Ireland until the records given below.

H37 Armagh: Tynan Abbey Estate (H760425), 3 specimens & numerous exit holes, under tight bark on the underside of a sundered oak branch, about 2 m above the ground, veteran parkland oak, 1.vii.2011, MDB/RA (Bryan & Anderson, 2011); 1 specimen in a similar situation plus numerous exit holes at H761415, 26.vii.2011, MDB/RA.



Figure 30: *Phymatodes testaceus* © Roy Anderson

***Clytus arietis* (Linnaeus, 1758) Wasp Beetle – Rare**

Develops in a variety of dead broad-leaved trees, and occasionally in conifers. Very rare in Ireland (Johnson & Halbert, 1902), where also occasionally imported with timber. O'Connor & Nash (1981) comment on the difficulty of discerning specimens derived from imports from any established native population. There is probably a native population in the woods of County Wicklow and possibly in South Kerry. 'Endangered' in Speight (1988).

H1 South Kerry: "taken near Kenmare and another on the Glengariff Road, by Mr Hardy", coll. JRH (Halbert, 1898c), but Edwin Bullock never found it further north at Killarney (O'Connor & Nash, 1981).

H20 Wicklow: Devil's Glen, on flowers of mountain ash at head of glen, 14.vi.1935, AWS (annotation of a museum copy of Johnson & Halbert, 1902) (O'Connor & Nash, 1981); Deputy's Pass (T2390), male on bramble leaf in pathside glade in ancient oak woodland, 17.vi.1993, KNAA (Alexander, 1997a).

H21 Dublin: Iona Road, Drumcondra, one from a garden, vi.1914, NMI (O'Connor & Nash, 1981)

H38 Down: Castlereagh, Belfast, one emerged from timber imported from Scandinavia, 18.iii.1980, T.Hedley (O'Connor & Nash, 1981)

H39 Antrim: Cranmore, Belfast, one in coll. of Belfast Nat Hist & Phil Soc, taken by R. Templeton.

H40 Londonderry: Magherfelt (H8990), emerged into house living space, from (?) furniture or roof timbers, 2.ii.1984, RA.

***Lamia textor* (Linnaeus, 1758) The Weaver Beetle – Status unclear**

Associated with *Salix*, birch and aspen in damp woodland, the larvae developing in living healthy roots or boles of both young trees and moist decaying old boles; adults nocturnal, resting by day on trunks and roots; will nibble leaves of host plant.

H2 Kerry North: (Kaufmann, 1948) – details not known.

***Pogonocherus hispidulus* (Piller & Mitterpacher, 1783) – Rare**

Larvae under bark of recently dead branches or thin stems of broadleaves; especially hazel & apple. Ireland (1885, Haliday). '*P. bidentatus*' in Johnson & Halbert (1902). May be confined to ancient woodlands.

H2 North Kerry: Flesk, Killarney, vi.1957, EFB (Speight, 1988).

H20 Wicklow: Glen of the Downs, one dead dug out of dead branch, vi.1888, JMB (Browne, 1892). Powerscourt, 20.vi.1937, ix.1938, EO (Speight, 1988).

H25 Roscommon: St John's Wood (M9956), FIT, 7.vi. & one on hazel leaf in sunny ride, 5.viii.2010, KNAA.

H37 Armagh: Loughgall Manor, one found in grounds by Mrs Johnson (Johnson, 1892a).

H38 Down: Rostrevor Oakwood (J1817), 1 in moth trap, 8.vi.1999, R. Thompson det. BN (Anderson, Simms & Nelson, 2000)

H39 Antrim: Great Deer Park, Glenarm (D2911), one in FIT in old hazel stand, 6.vi.2006, KNAA.

***Pogonocherus hispidus* (Linnaeus, 1758) – Scarce**

Develops in thin dead branches of a variety of broad-leaved trees; especially in old hedgerows. '*P. dentatus*' rare (Johnson & Halbert, 1902).

H1 South Kerry: Caragh Lake, one swept off nettles at the Hotel end of the lake, vi.1902, (Donisthorpe, 1903; Bouskell, 1904); 23.vii.1928, EFB (Speight, 1988)

H2 North Kerry: Muckcross Demesne, vi.1924, OEJ (Janson & Bonaparte-Wyse, 1924); Ross, Killarney, 26.ix.1931, EFB; Ardagh, Killarney, iii.1934, EFB; Killarney, v.1935, EFB; Flesk, Killarney, ix.1953, EFB (Speight, 1988).

H5 East Cork: Ballyannan Wood (W880719), Malaise trap, iii.iv.2004, TG.

H6 Waterford: Curraghmore House, Portlaw, 1916, LHBW (Bonaparte-Wyse, 1916).

H7 South Tipperary: Doon (R978062), Malaise trap, v.2004, TG.

H9 Clare: Lough Oona (R404976), Malaise trap, v.vi.2007, TG.

H12 Wexford: Slaney Bank near Killurin, JNH (Johnson & Halbert, 1902).

H15 Galway Southeast: Kylebrack, coll. Quirke (Speight, 1988).

H20 Wicklow: Clara, 23.xi.1933, AWS (Speight, 1988); Powerscourt, bred from birch, 1937, EO (O'Mahony, 1938).

H21 Dublin: Dublin, JAP (Power, 1878; Johnson & Halbert, 1902).

H29 Leitrim: Curraun (H103004), Malaise trap, v.vi.2004, TG.

H30 Cavan: Farnham, on ivy, 3.iv.1943, RCF (Speight, 1988).

H33 Fermanagh: Inishfendra, Crom (H3623), 28.v.1992, APF (Alexander, 1997a).

H37 Armagh: Derrycarne Road, Portadown, beaten off apple tree in orchard, 8.ix.1998, BN.

***Leiopus nebulosus* (Linnaeus, 1758) – Uncommon**

Larvae develop in freshly dead hazel branches, 2-6cm in diameter, with rather thin bark; galleries tight under the bark in the cambial layer; in branches with relatively low moisture; also reared from oak, lime and other broadleaved trees. Apparently widely distributed in Ireland, even if only seldom recorded (Speight, 1988). A very similar species, *L. linnei*, has recently been described and is known widely across Europe including southern Britain.

H1 South Kerry: Lickeen Wood, Glencar, vii.1924, OEJ (Janson & Bonaparte-Wyse, 1924).

H2 North Kerry: Killarney, ARH (Hogan, 1855) (Johnson & Halbert, 1902); Muckcross Demesne, vi.1919, OEJ (Janson, 1920); Muckcross Demesne, vi.1924, OEJ (Janson & Bonaparte-Wyse, 1924); Cahirnane, Killarney, iv.1938, EFB; Killarney, vi.1938, EFB; V9088, 16.viii.1978, M. de Courcy Williams (Speight, 1988).

H3 West Cork: Glengarriff Castle Demesne (V946 553), Malaise trap, vii.viii.2005, TG.

H6 Waterford: Lismore, JNH (Halbert, 1895a) (Johnson & Halbert, 1902).

H9 Clare: Cratloe Wood, coll F. Neale (Johnson & Halbert, 1902). Cloonmore fen (R396747), Cragmoher Lough (R293867) & Lickaun Fen (R327823), Malaise traps, vi.vii.2006, TG.

H11 Kilkenny: Woodstock, JNH (Johnson & Halbert, 1902).

H14 Laois: Abbeyleix, JMB (Browne, 1901) (Johnson & Halbert, 1902).

H16 Galway Northeast: Clonbrock (M7439), JNH (Halbert, 1896) (Johnson & Halbert, 1902).

H18 Offaly: Clara Bog (N2429), birch/willow scrub, 4.vii.1984, MCDS; Charleville Wood (N3122), oak woods, 5.vii.1984, MCDS (Speight, 1988).

H20 Wicklow: Powerscourt, 3.vi.1927, EO; Glenmore, 16.vi.1939, EO; Knocksink Wood (O2117), oak woods, 2.viii.1978, MCDS; Lake park (O1602), swept bilberry under oak, 19.ix.1979, MCDS (Speight, 1988).

H21 Dublin: Rathfarnham (Hogan, 1854); Lucan Demesne, on oak, JNH (Halbert, 1900b) (Johnson & Halbert, 1902); Phoenix Park, 18.iv.1945, EO; Dublin, beaten from oak in suburban garden 16.vi.1987, MCDS (Speight, 1988).

H23 Westmeath: Hare Island, Lough Ree (N0446), oak woods on an island, 19.vi.1976, MCDS (Speight, 1988).

H25 Roscommon: Mote Park, JNH (Halbert, 1898a).

H33 Fermanagh: Crom Castle Park (H359246), 1 from aerial twigs of fallen oak branch, 6.vii.2007, KNAA.

H36 Tyrone: Caledon Deer Park (H7543), 26.vii.2006, KNAA.

H37 Armagh: Tandragee Castle, 7.v.1896, WFJ (Johnson, 1896); Tynan Abbey Estate, under bark on dead beech and beaten from *Castanea*, 1.vii.2011, RA.

H38 Down: near Belfast, AHH (Haliday, 1885) (Johnson & Halbert, 1902).



Figure 31: *Leiopus nebulosus* © Roy Anderson

***Tetrops praeustus* (Linnaeus, 1758) – Rare**

Probably develops in dead branches; in old hedgerows, fruit trees, etc. 'Endangered' in Speight (1988).

H13 Carlow: left bank of River Barrow above St. Mullins, one beaten from hawthorn, 16.v.1935, AWS (Stelfox, 1935).

FAMILY ANTHRIBIDAE *Fungus Weevils*

***Choragus sheppardi* Kirby, W., 1819 – Status unclear**

Larvae develop in decaying wood of old ivy, in hedges and woods. Only two old records, so unclear whether an established population.

H21 Dublin: Templeogue, coll. G.P. Farran (Halbert, 1900b; Johnson & Halbert, 1902); Clontarf, EO (O'Mahony, 1928b).

FAMILY CURCULIONIDAE Weevils

***Rhopalomesites tardyi* (Curtis, 1825) Holly Weevil – Common & Widespread**

Develops in the dead heartwood of broad-leaved timber; bores in cambium and xylem, forming random galleries; flight holes 1.57-3.42mm in diameter. Ireland has most of the world population of this species; largely coastal and western in Britain; reported in Germany but status unclear. “Locally abundant in wooded districts throughout Ireland” (Johnson & Halbert, 1902). H1, H2, H3, H5, H12, H15, H16, H20, H21, H23, H27, H28, H31, H33, H34, H35, H36, H38, H39, H40.



Figure 32: *Rhopalomesites tardyi* © Roy Anderson

***Pselactus spadix* (Herbst, 1795) – Status unclear**

In rotten timber, coastal; old groins, driftwood, etc. Only one old Irish record.

H21 Dublin: South Bull, in a piece of drift wood (Halbert, 1900b) (Johnson & Halbert, 1902).

***Pseudophloeophagus aeneopiceus* (Boheman, 1845) – Scarce**

In damp rotten timber of various broad-leaved trees, in coastal woods and other coastal situations; also in driftwood; rare in buildings. *Caulotrypis* (Johnson & Halbert, 1902).

H1 South Kerry: Pointanskoh (V579984), in discarded pallet on roadside bank, 23.ix.2008, MC (Cawley, 2011b).

H3 West Cork: near Rathmore (W0928), 3.iii.1983, MCDS (Morris, 1987); Sherkin Island, R.Moore (Morris, 1987)

H4 or 5 Mid or East Cork: 'found in profusion near Cork' (Stephens, 1832).

H21 Dublin: Portmarnock, common in old ash tree, CWB (Halbert, 1900b); Lambay Island, in elder at the Calico Hole, vi-x.1906, JNH (Halbert, 1907b); North Bull Island (O252834), 12 in large driftwood, dunes, 13.vii.2009, RA; Sutton (O252397), under a piece of wood at HWM in a small saltmarsh, 19.vii.2011, MC.

H28 Sligo: Ballincar (G678382), under processed wood at estuarine HWM, 13.v.2011, MC; Pollnagat (G383387), under a piece of wood, exposed grassy cliff top behind shingle beach, 9.vi.2011, MC.

H38 Down: Killard NNR (J6043), in driftwood, 24.iv.2007, MGT.

***Euophryum confine* (Broun, 1881) – Established introduction**

Immigrant New Zealand species, first recorded in Ireland by Hickin (1952), and the first outdoor records in 1955 (McClenaghan, 1987). Always found associated with timber where damp and decay evident; dense channelled galleries in decayed heartwood. Regularly found in cuboidal red rot of fungus *Laetiporus sulphureus* outdoors, but also in wet rot on timbers in buildings. Anderson (1984) summarised Irish records, while others were added by McClenaghan (1987). H1, H3, H4, H5, H6, H8, H18, H21, H23, H25, H28, H31, H33, H35, H36, H37, H38, H39, H40.

***Euophryum rufum* (Broun, 1880) – Casual Introduction**

Possibly not a distinct species; added to the Irish list on a specimen from Exchequer Street, Dublin, 1976 (O'Connor, 1978) and a second from Flesk, Killarney, in the Bullock collection, misdete. as *Pentarthrum huttoni* (O'Connor, 1978). A secondary pest of timber in buildings. Dublin City (O'Connor 1981, 1984).

***Pentarthrum huttoni* Wollaston, 1854 – Established introduction**

Larvae and adults bore into timber which is damp and colonised by fungus; more often in floorboards, etc; hard- and softwoods, but softer layers of wood eaten away first, leaving harder rings untouched; requires sufficiently damp climate. Possibly a long-established non-native, as all old records are from wooden casks at ports. Irish records summarised by O'Mahony (1950). Ireland (AF O'Farrell & PM Butler, 1948).

[**H2 North Kerry:** Killarney, Bullock, in lit. (O'Mahony, 1929a) – NB specimen of *Euophryum rufum* misdete as *Pentarthrum* in Bullock collection (O'Connor, 1978)]

H20 Wicklow: Newtownmountkennedy, J. Forwood (Morris, 1993a).

H21 Dublin: Clontarf, O'Mahony viii.1925, EO (O'Mahony, 1927) (O'Connor, 1981).

H27 West Mayo: Glas Valley, Ballycurran, ix-x.1984, G.F.B. Pullar (Morris, 1997); infesting hospital with dry rot, 20.xii.1985 (O'Connor *et al.*, 1990).

H39 Antrim: Belfast Docks, 1942-1946, AFO (O'Farrell & Butler, 1948); Larne (D4002), in hardwood panelling in house, 24.xi.1985, RA.

***Macrorhyncolus littoralis* (Broun, 1880) – Casual**

In driftwood. Possibly native to Australia, but well-established in New Zealand, South Africa and the Americas. The only other Palaearctic records appear to be two from Kent, England, in 1987 and 1988.

H12 Wexford: Ballyteige Burrow (S938056), 40 in 2 colonies under driftwood on beach, 27.vi.2006, MGT (Telfer, 2007).

***Cryptorhynchus lapathi* (Linnaeus, 1758) – Scarce**

Burrows in dead trunks of alder, poplar, willow and birch, sometimes even live trees. "Taken on one occasion in some numbers on bark of willows" (Johnson & Halbert, 1902).

H2 North Kerry: near Killarney, EFB (Bullock, 1914); Cloghereen at Muckcross Lake, 3.vi.1919 – 18.vi.1919, OEJ (Janson, 1920).

H6 Waterford: Dunhill (S5304), 29.vi.1988, JPOC (Morris, 1997).

H12 Wexford: on the R. Boura, Furlong ms. (Johnson & Halbert, 1902)

H20 Wicklow: Boulnalea, Furlong ms; Murragh, HKGC (Johnson & Halbert, 1902); Arklow, vii.1926, a number in cop. on trunk of *Salix*, JNH (Halbert, 1937).

H28 Sligo: Gleniff picnic site, 18.vii.2008, RA.

H29 Leitrim: Clooncoe Lough (N1091), 29.v.1985, MCDS (Morris, 1987).

H37 Armagh: Coney Island, Lough Neagh, WFJ (Johnson, 1895; Johnson & Halbert, 1902); Brackagh Moss NNR, 16.vi.1999, R. Key.

H39 Antrim: near Gawley's Gate, Lough Neagh, two beaten from osiers, ix.1935, WMC (Crawford & O'Mahony, 1935); Montiaghs Moss ASSI, 16.vi.1999, A.P. Fowles.

***Acalles misellus* Boheman, 1844 syn *turbatus* nec Boheman, 1844 – Uncommon**

Larvae probably develop in dead twigs and small branches; found in woods, hedgerows and occasionally isolated field trees. More oceanic than *ptinoides*; may be specially associated with ivy. M.G. Morris (pers. comm.) considers it to be overlooked because of its cryptic habits and that it is

actually quite common in Ireland (Morris, 1997; Alexander, 1997c). VCs 1, 2, 19, 21, 34, 39 (Morris, 1993a).

H2 North Kerry: near Killarney, EFB (Bullock, 1914); near the base of Torc Mountain (V98), in plenty by beating holly and ivy, vi.1919, OEJ (Janson, 1920); Muckcross Demesne, vi.1924, OEJ (Janson & Bonaparte-Wyse, 1924).

H3 West Cork: near Inchigeelach (W2467), 12.vii.1996, MGM (Morris, 1997); Courtmacsherry Wood (W524428), 6.ii.2008 & Poulgorm Bridge (W210353), 27.ii.2008, MC (Cawley, 2009c)

H4 Mid Cork: Shippool Woods, Bandon River (W5757), 23.v.1994, KNAA (Alexander, 1997c).

H8 Limerick: Poultallin Point (R239520), 24.viii.2008, MC (Cawley, 2009c).

H9 Clare: Ballyvaughan Harbour (M2307), 6.vi.1995; Ballyeighter Loughs (R3595), 6.vi.1995, MGM (Morris, 1997).

H10 North Tipperary: near Annagh Castle (R8290), 9.vii.1996, MGM (Morris, 1997).

H14 Laois: Grantstown Wood (S3380), 29.v.2007, MC (Cawley, 2009c).

H15 South-east Galway: Garryland Wood, 21.v.1994, RA.

H18 Offaly: Cedar Hill, near Shinrone (S1092), 1.vi.1995, MGM (Morris, 1997).

H19 Kildare: Leixlip Spa (N9936), vii.1991, MGM (Morris, 1992).

H20 Wicklow: Grange near Newcastle (O300025), 31.v.1995, MGM (Morris, 1997).

H21 Dublin: Dundrum (Halbert, 1900b) (Johnson & Halbert, 1902); St Annes Park, 1924, EO (O'Mahony, 1924); Clontarf, EO (O'Mahony, 1928b); Portmarnock Strand, EO (O'Mahony, 1928b); Sutton (O253396), under tiles lying on ivy, 19.vii.2011, MC.

H22 Meath: Hamwood (N987409), 20.x.2008, MC (Cawley, 2009c).

H23 Westmeath: Cappankelly (N058446), 22.iii.2012, MC.

H28 Sligo: Lugnadetra (G6228), 4.vi.1995, Morris (1997).

H29 Leitrim: Milltown Wood (G874404), 16.iv.2009, MC (Cawley, 2009c).

H33 Fermanagh: Inisherik, Crom (H353244), in tray below FIT, 8.viii. – 4.ix.1992, APF (Alexander, 1997c); Crom Castle Park (H359246), 6.vii.2007, KNAA.

H34/40: Foyle district, CWB (Buckle, 1900) (Johnson & Halbert, 1902)

H38 Down: Hillsborough Forest, pitfall, 28.v.1993, RA (Alexander, 1997c); Belvoir Forest, 27.viii.1993, RA; Donard Demesne, 31.xii.2011, RA.

H39 Antrim: Ballycastle, BT (Johnson & Halbert, 1902); Craigagh Wood (D227323), one under bark on fallen beech branch, 17.vi.1992, KNAA (Alexander, 1997c).

***Acalles ptinoides* (Marsham, 1802) – Rare old growth species**

Develops in dead twigs on trees; litter layer of lowland oak woods; ancient woodland and old heathland; a reliable marker of old growth (Crowson 1987). Only three modern localities known.

H1 South Kerry: Glencar, July 1924, OEJ (Janson & Bonaparte-Wyse, 1924).

H2 North Kerry: Muckross Woods, 1923, OEJ (Janson & Bonaparte-Wyse).

H3 West Cork: Glandore, JNH (Johnson & Halbert, 1902).

H12 Wexford: Forth Hills, JNH (Johnson & Halbert, 1902); Curraclloe, vi.1936, JNH (Halbert, 1937); Kelly's Wood, Camlin Hill (S711255), 12.vi.2008, MC (Cawley, 2009c).

H15 South-east Galway: Coole Park (M4304), 22.v.2012, PJH.

H20 Wicklow: Bray Head, JNH (Halbert, 1895b) (Johnson & Halbert, 1902).

H21 Dublin: Dundrum, JNH (Halbert, 1900b; Johnson & Halbert, 1902).

H23 Westmeath: Crookedwood (N464628), 16.v.2008, MC (Cawley, 2009c).

H25 Roscommon: St John's Wood (M9956 & N0056), leaf litter, 10.v & FIT, 6.viii.2010, KNAA.

H31 Louth: Carlingford, WFJ (Johnson & Halbert, 1902).

H34 Donegal: Foyle district (Buckle, 1900) (Johnson & Halbert, 1902).

***Kykliaocalles roboris* (Curtis, 1835) – Rare old growth species**

Develop in small twigs of trees; confined to ancient woodland. Only one modern record.

H1 South Kerry: Rossbehy (V6490), S. Stevens (Stevens, 1871) (Johnson & Halbert, 1902).

H13 Carlow: Kilcarr, 1.v.1929, specimens collected by AWS (Morris, 1987; 1993a).

H20 Wicklow: Enniskerry Glen, 1931, AWS/EO (O'Mahony, 1932).

H25 Roscommon: St John's Wood (M9956), off ivy, 26.vii.2010, & FIT, 24.viii.2010, KNAA.

***Magdalis armigera* (Fourcroy, 1785) – Rare**

Female drills hole in dead elm branch and deposits egg inside; larvae feed on cambium; in hedgerows & scrubby places.

H2 North Kerry: Killarney, three in Bullock collection, vii.1918, EFB (Morris, 1993a).

H3 West Cork: Farrandeligeen, Castlehaven (W1730), beaten from roadside hedge with dead elm, 7.vi.1996, KNAA (Alexander, 1997c);

H6 Waterford: Dromana Forest, near Cappoquin, JNH (Johnson & Halbert, 1902).

H18 Offaly: Cedar Hill, near Shinrone (S1092), 1.vi.1995, MGM (Morris, 1997).

H21 Dublin: Santry, on elms, JNH (Halbert, 1894, 1922) (Johnson & Halbert, 1902). Phoenix Park (O1235), 11.vi.1983, JPOC (Morris, 1997).

H33 Fermanagh: Castle Coole Park (H251429), abundant on re-growth from base of dead elm, 2.vi.1992, KNAA (Alexander, 1997c).

***Magdalis carbonaria* (Linnaeus, 1758) – Rare**

Associated with birch, the larvae developing in dead twigs and branches. Considered an ancient woodland relict species in Britain and this may be true in Ireland as well – all known sites have high quality fauna.

H20 Wicklow: Powerscourt Deerpark, two swept from bracken beneath birch, 9.vi.1919, JNH (Halbert, 1922); Morris (1993a). Glendalough Wood (T1296), one swept from open woodland, 13.vi.1993, KNAA (Alexander, 1997e).

H25 Roscommon: St John's Wood (M9956), 9.vi.2010, KNAA.

H39 Antrim: Glenarm Nature Reserve (D304110), 2 swept off sprouting hazel, RA.

H40 Londonderry: Banagher Glen (C672045), 8.vii.2007, KNAA.



Figure 33: *Magdalis carbonaria* © Roy Anderson

***Magdalis ruficornis* (Linnaeus, 1758) – Status unclear**

Removed from the Irish list by Morris (1993b). Unlocalised material in Haliday collection.

***Hylobius abietis* (Linnaeus, 1758) – Established introduction**

Associated with Scots pine. “Locally common about fir plantations” (Johnson & Halbert, 1902). A common conifer pest (Morris, 1993a, 1997). H1, H3, H6, H7, H9, H10, H12, H13, H14, H20, H21, H25, H28, H31, H33, H34, H36, H37, H38, H39, H40.

***Pissodes castaneus* (De Geer, 1775) – Recent Introduction**

A native of continental Europe, this feeds on the inner bark and cambium of pine species, and although all ages may be attacked, there is a bias towards younger trees so plantation pine may be particularly affected.

H29 Leitrim: Gleniff, Annacoona (G7246), on lodgepole pine, 11.vi.1997, SC (Clawson & Anderson, 2006).

***Pissodes pini* (Linnaeus, 1758) – Recent Introduction**

Feeds on the inner bark and cambium of weakened pine trees in plantations.

H33 Fermanagh: Ely Lodge Forest (H172522), larvae and adults at base of Scots pine, 22.iv.1997, SC (Clawson & Anderson, 2006).



Figure 34: *Pissodes pini* © Roy Anderson

CURCULIONIDAE *Subfamily* SCOLYTINAE Bark Beetles

Species feeding on wood (xylem) and/or phloem are usually restricted to one or a few hosts, whereas those which carry their own symbiotic fungi which break down the xylem (ambrosia beetles) may colonize a larger range of hosts. Many species have been imported in timber and some have become established. A number are more strictly phytophagous, their larvae feeding in the still living inner bark of stressed or moribund stems or branches, but these have been included in the list as they remain present in the dead tissues.

***Scolytus multistriatus* (Marsham, 1802) Small Elm Bark Beetle – Recent Arrival**

In smaller, thinner barked, dying branches of various broad-leaved trees but especially elm. Only discovered in Ireland as recently as 1980.

H8 Limerick: Adare, possible galleries, winter 1979 (O'Callaghan, 1982).

H21 Dublin: Phoenix Park, 48 attracted to pheromone traps, summer 1980, O'Callaghan (1982).

***Scolytus rugulosus* (Müller, P.W.J., 1818) Small Fruit Tree Bark Beetle – Rare**

Mainly on apple trees in orchards; probably overlooked, although possibly a new arrival.

H33 Fermanagh: Inisherik, Crom (H357241), beaten from an old apple tree in an abandoned orchard, 24.v.2009, APF.

***Scolytus scolytus* (Fabricius, 1775) Common Elm Bark Beetle – Widespread**

Mainly in elm, also other broad-leaved trees; adults feed on bark of top living twigs after emerging from thicker dead bark where the larvae develop. First found in Ireland in 1943 (Quirke, 1943) although probably long established and widespread.

H2 North Kerry: Bellview Wood, Kenmare Estate, Killarney, larvae, pupae and adults from an old elm, 1943, Quirke (1943); Flesk, Killarney, 1948, 1949, 1952, 1955, EFB (O'Connor *et al.*, 1991).

H3 West Cork: Lough Hyne House Grounds (W0928), 2.vi.1996; Castlehaven Castle Bay (W175300), 7.vi.1996; KNAA.

H4 Mid Cork: near Riverstick (W6759), viii.1980, JAG (O'Connor *et al.*, 1991).

H6 Waterford: wood near Cappoquin, undated, JNH (O'Meara, 2008); near Dunhill (S5305), 4.vii.1989, JPOC (O'Connor *et al.*, 1991); Ballyeelinan (X2181), 10.viii.1990, KNAA.

H8 Limerick: Curraghchase (R4149), 21.vi.1979, J. Mullin (O'Connor *et al.*, 1991).

H13 Carlow: Carlow City, adults inside house with elm firewood, 8.v.1987, D. Phillips (O'Connor *et al.*, 1991).

H19 Kildare: Donadea (N8332), 8.iii.1987; Milltown (N7617), dead beetles in dead elm on canal bank, 30.iv.1987, JPOC (O'Connor *et al.*, 1991); Leixlip Spa (N9936), vii.1991, MGM (Morris, 1992).

H20 Dublin: Slade of Saggart (O0324), in riverbank elm tree, 18.vii.1982, J.M.O'Connor (O'Connor *et al.*, 1991).

H28 Sligo: Markree Castle Park (G6925), 30.v.1992, KNAA.

H33 Fermanagh: Crom Castle Park (H32), 1.vi.1992; Castle Coole Park (H2643), 2.vi.1992 & 30.iii.2006, KNAA.

H38 Down: Mount Stewart Demesne (J5570), 18.viii.1992; Rowallane Estate (J409575), 22.ix.2004; Castle Ward Park (J5649), 2.iv.2006, KNAA.

H39 Antrim: Collin Glen (J270720), 19.v.1992; Great Deer Park, Glenarm (D2911), galleries widely, 2006, KNAA.

H40 Londonderry: Springhill (H8683), 25.vi.1992, KNAA.

***Pityophthorus pubescens* (Marsham, 1802) – Established introduction**

Pine and spruce; in small dead stems of less than 1cm diameter. Known from Galway, Wicklow, Wexford, Clare and Cork (Johnson & Halbert, 1902); also Cavan, Dublin, Kerry, Meath (O'Connor *et al.* 1991).

***Cryphalus asperatus* (Gyllenhal, 1813) – Established Introduction**

Develops in dead branches of spruce but not a pest species. Known from Kerry and Wicklow (O'Connor *et al.*, 1991).

***Dryocoetes autographus* (Ratzeburg, 1837) – Established introduction**

In dead and dying conifers. Until recently, reported in Ireland only as imports (O'Mahony, 1935b; O'Connor *et al.*, 1991).

H29 Leitrim: Truskmore (G7446), 1 in pitfall on summit, 11.v-16.vi.2004, SM det. RA.

H36 Tyrone: Ballyard, Trillick (H3458), on silver fir, 1.vii.1997, SC; Pomeroy Forest (H7072), on silver fir, 2.vi.1998, SC.

H37 Armagh: Camlough Wood (J0524), under bark at base of *Picea abies*, 7.vi.2004, SC; Slieve Gullion Forest (J038196), bred from *Picea sitchensis* bark, MDB det. RA; Ballymoyer Wood (H974311), reared from *Tsuga heterophylla* wood, 2.ii.2012, MDB det. RA.

H38 Down: Hillsborough Forest (J2558), adults emerging from bark on *Picea abies* thinnings, 11.iv.1995, RA.

H39 Antrim: Farr's Bay NNR (J0887), in *Picea* logs, 4.vii.1986, RCW (Welch, 1986); Randalstown Forest (J0888), on Sitka spruce, 8.ix.1993, SC.

***Dryocoetes villosus* (Fabricius, 1793) – Uncommon**

Develops in relatively thick bark of freshly dead oak boughs and trunks; also known from sweet chestnut, beech and lime.

H2 North Kerry: Killarney, including Cahirnane, Deerpark and Flesk, 1914-1951, EFB (O'Connor *et al.*, 1991); Muckcross Park (V5458), 4.ix.1998, KNAA.

H3 West Cork: Glengarriff Woods (V918573), developing in felled old oaks, 13.vi.1996 (Alexander, 1997d); Big Meadow (V918570), 6.xi.2004, KNAA.

H14 Laois: Abbeyleix (S4284), Old Town Oak, 16.vi.1993, KNAA (Alexander, 1997d);

H18 Offaly: Charleville Castle (N3123), 16.vi.1993 KNAA (Alexander, 1997d);

H33 Fermanagh: Reilly Wood, Crom (H3624), in thick bark of live open-grown oak outside wood edge, 28.v.1992 (Alexander, 1997d); Inisherik Island (H353244), FIT, 1.vi.–7.vii.1992, APF (Alexander, 1997d) & FIT, 6.vii.2007, KNAA; Castle Coole Park (H2643), 19.v & 17.vi.2006, KNAA.

H34 East Donegal: Foyle district, CWB (O'Connor *et al.*, 1991).

H36 Tyrone: Caledon Deer Park (H7543), various dates, 2006, KNAA.

H37 Armagh: Slieve Gullion Forest (J038193), on oak, 8.iii.2012, RA;

H38 Down: Rostrevor Oakwood (J1817), 28.vi.1992 & 11.vii.2007, KNAA (Alexander, 1997d); Castle Ward Park (J5649), 23.viii.1998, KNAA; Tullyframe, Mourne Park (J265168), on oak bark, 27.iii.2012, MDB/RA.

H39 Antrim: Great Deer Park, Glenarm (D2911), various dates, 2006, KNAA.

H40 Londonderry: Walworth Wood, July, CWB (Johnson & Halbert, 1902).

***Orthotomicus laricis* (Fabricius, 1792) – Established introduction**

Develops under bark of dead conifers, chiefly pine. First noted by O'Mahony (1934).

H2 North Kerry: Flesk, Killarney, EFB (O'Connor *et al.*, 1991).

H13 Laois: Emo Park (N5406), in pine logs, iv.1934, EO (O'Mahony, 1934).

H21 Dublin: Glenasmole, in poles used as a railing, EO (O'Mahony, 1940).

H33 Fermanagh: Rosslea Wood (H5431), on *Pinus sylvestris*, 15.iii.1993, SC.

***Pityogenes bidentatus* (Herbst, 1783) – Established introduction**

Pine and spruce; in small dead thin-barked branches. Added to the Irish list by Johnson (1892a) and now known from Antrim, Armagh, Dublin, East Cork, North Kerry, Wicklow (O'Connor *et al.*, 1991).

H2 North Kerry: Cahirnane, Flesk, EFB (O'Connor *et al.*, 1991).

H5 East Cork: Ballyhoura (O'Connor *et al.*, 1991).

H20 Wicklow: Kilruddery (O'Connor *et al.*, 1991).

H21 Dublin: St Annes Park, in pines, 1924, EO (O'Mahony, 1924).

H37 Armagh: Armagh, in a garden, WFJ (Johnson, 1892a).

H38 Down: Belvoir Forest (J3469), galleries under bark of dismasted larch, 16.v.1996, RA.

H39 Antrim: Shane's Castle, vi.1902, JNH (Halbert, 1910b); vi.1923, OEJ (Janson, 1924).

***Trypodendron domesticum* (Linnaeus, 1758) – Scarce old growth species**

An ambrosia beetle, developing in the sapwood of a wide range of freshly dead broad-leaved timber including oak, maple, alder, beech, birch and ash. Adults excavate deep galleries in the sappy timber and feed on the fruiting bodies of fungi cultivated therein.

H2 North Kerry: near Killarney, EFB (Bullock, 1914); Muckross Demesne, in decaying wood, vi.1919, OEJ (Janson, 1920)

H4 Mid Cork: Blarney, EFB (Bullock, 1914).

H5 East Cork: Ballyannan Wood (W880719), Malaise trap, iii.iv.2004, TG.

H6 Waterford: Lismore, under bark on beech log, 13.ii.2011, RA.

H20 Wicklow: Avoca, 15.iv.1927, AWS; Powerscourt Deerpark, in decayed alder trunk, 9.vi.1919, JNH (O'Connor *et al.*, 1991).

H25 Roscommon: Cloonca Wood, JNH (Halbert, 1898a; Johnson & Halbert, 1902). St John's Wood (M9956), 13.iv.2010, KNAA.

H27 West Mayo: Westport Demesne, JNH (Johnson & Halbert, 1912).

H33 Fermanagh: Castle Coole Park (H260430), fragments in decaying oak branch, 2.vi.1992, KNAA (Alexander, 1997d); Inisherik, Crom (H353244), two in FIT, 1.vi. – 7.vii.1992 & another 5.viii. – 4.ix.1992, APF (Alexander, 1997d); Correl Glen (H074545), FIT, 5.vii.2007, KNAA.

H35 West Donegal: Glentogher, "borings of *Trypodendron domesticum* in a fallen beech tree" CWB (Buckle, 1900; Johnson & Halbert, 1902).

H38 Down: Morelands Meadow, under bark, beech logs, 18.xi.1992, RA.

H39 Antrim: Great Deer Park, Glenarm, FITs, 20.v.2006, KNAA; Carr's Glen, under bark on hazel, 23.iii.2010, RA; Rea's Wood, under burnt bark of sycamore, RA; Barnett's Park, Belfast, under bark on oak branch, 25.iii.1982, RA.

H40 Londonderry: Drenagh Demesne (C6923), 14.vi.2006, KNAA.

***Trypodendron lineatum* (Olivier, 1795) Conifer Ambrosia Beetle – Established Introduction**

Dead wood of pine, spruce, larch, and fir.

H30 Cavan: Cloverhill, specimen in pine bark, v.1914, GWN (Nicholson, 1915).

H37 Armagh: Slieve Gullion Forest (J040196), hibernating under ash bark (!), 8.iii.2012, RA.

H39 Antrim: Farr's Bay NNR (J089870), attacking *Picea* stumps, 4.vii.1986, RCW (Welch, 1986).

***Hylesinus crenatus* (Fabricius, 1787) Large Ash Bark Beetle – Scarce**

Chiefly in large old dying ash, but also known in other countries from oak, walnut, etc, in rather thick bark of the trunk. No modern records.

H2 North Kerry: Muckcross, 1940, 1946, 1948, EFB (O'Connor *et al.*, 1991).

H7 South Tipperary: Tipperary town, A.C. Forbes (Forbes, 1910; O'Mahony 1929).

H10 North Tipperary: Templemore, 25.v.1927, R.A. Phillips (O'Connor *et al.*, 1991).

H21 Dublin: Tolka Valley, 1912, JNH (O'Mahony, 1929a).

H22 Meath: Athboy, A.C. Forbes (O'Mahony, 1929a).

H33 Fermanagh: Old Crom Castle (H364239), swept near lakeshore, 24.v.2012, K.A. Bryan.

***Hylesinus varius* (Fabricius, 1775) Common Ash Bark Beetle – Widespread**

In ash; in standing and fallen recently dead trunks and boughs; makes short blind hibernation galleries in crotches of live ash trees, where it is associated with bacterial disease ash rose canker. Surprisingly poorly known in Ireland, although probably overlooked.

H2 North Kerry: Ardagh, Killarney, 9.v.1931, EFB; Flesk, Killarney, iv.1953, v.1954, EFB (O'Connor *et al.*, 1991).

H5 East Cork: Glanmire, JNH (Johnson & Halbert, 1902); Cork city (as *Hylesinus fraxini*) in O'Mahony (1924).

H17 Galway: Muckanagh (M7951), 11.iv.2010, KNAA.

H19 Kildare: Landenstown, 13.ix.1942, AWS (O'Connor *et al.*, 1991).

H20 Wicklow: Devil's Glen, 12.ix.1926, AWS (O'Connor *et al.*, 1991).

H21 Dublin: Lucan Demesne, *Hylesinus fraxini*, JNH (Halbert, 1893); Dundrum, GHC (Carpenter, 1894) (Johnson & Halbert, 1902); Raheny, Clontarf (as *Hylesinus fraxini*) in O'Mahony (1924).

H25 Roscommon: Mount Talbot (M8155), 16.iv.2010, KNAA.

H29 Leitrim: Ballinamore, in firewood, ix.1987, D. Quinn (O'Connor *et al.*, 1991).

H33 Fermanagh: Crom Castle Park (H32), 26.v.1992, KNAA.

H36 Tyrone: Caledon Deer Park (H7543), 17.v.2006, KNAA.

H37 Armagh: Jerrettspass, 13.xii.1912, WFJ (Johnson, 1912); Loughgall Country Park, 15.iv.2008, RA.

H38 Down: Belfast, 28.x.1986, Forest Service Collection (O'Connor *et al.*, 1991); Castle Ward Park (J5649), 21.v.2006, KNAA.

H39 Antrim: Moss Plantation, Shane's Castle, 16.vii.2010, RA.

***Pteleobius vittatus* (Fabricius, 1787) – Status unclear**

In recently dead thin-barked elm, and occasionally reported from ash and lime. Johnson and Halbert (1902) cite Ireland for *Hylesinus vittatus* (Haliday coll.) but O'Connor *et al.* (1991) were unable to confirm this as no material appears to have survived. Subfossil remains have been found in Viking Dublin (Reilly 2003)

***Hylastes ater* (Paykull, 1800) – Established Introduction**

Develops in dying pine. All old records of this species are believed to be *H. brunneus* Erichson (O'Connor *et al.*, 1991).

H2 North Kerry: Kenmare Demesne, plenty dug out of the stumps of recently felled pines, between June 25 & 30, 1919, OEJ (Janson, 1920).

H20 Wicklow: Camcor River Bridge (N2104), 16.vi.1993, KNAA; Three Lakes Table Mountain (T034983), pitfall, 5.vi-28.viii.1998, Myles Nolan det. RA.

***Hylastes brunneus* Erichson, 1836 – Established Introduction**

Develops in dying pine, widely across Ireland and long-established. All old Irish records for *H. ater* have proved to be this species (O'Connor *et al.*, 1991). A serious pest of pine afforestation. H2, H3, H5, H6, H7, H17, H20, H21, H30, H34, H36, H37, H38, H40.

***Hylastes opacus* Erichson, 1836 – Established introduction**

Develops in dead pine, but also reported from elm and ash. A serious pest of pine afforestation.

H2 North Kerry: Muckross, EFB (Bullock, 1914); Kenmare Demesne, plenty dug out of the stumps of recently felled pines, 25.vi-30.vi.1919, OEJ (Janson, 1920).

H5 East Cork: Ballyhoura, 25.vi.1975, Forestry Commission Collection (O'Connor *et al.*, 1991).

H7 South Tipperary: Killballyboy Wood (S0113), roadside, 11.v.1994, JAO (Owen, 1997).

H12 Wexford: The Raven (T1126), swept in conifer plantation, 4.vi.1986, JPOC (O'Connor *et al.*, 1991).

H14 Laois: Emo Park, Portarlinton, iv.1934, EO (O'Connor *et al.*, 1991).

H20 Wicklow: Devil's Glen, 16.vi.1934, EO (O'Connor *et al.*, 1991).

H31 Louth: south, HKGC (Cuthbert, 1892b).

***Hylurgops palliatus* (Gyllenhal, 1813) – Established introduction**

Develops under bark of dead conifer timber; common and widespread in Ireland (O'Connor *et al.*, 1991). H1, H2, H5, H14, H17, H18, H20, H21, H29, H30, H33, H34, H36, H37, H38, H39, H40.

***Tomicus piniperda* (Linnaeus, 1758) Pine Shoot Beetle – Established introduction**

Dead conifers, especially *Pinus*; tunnels under bark longitudinally; two broods annually. Widespread in pine plantations in Ireland (O'Connor *et al.*, 1991). H2, H5, H10, H12, H17, H18, H20, H21, H22, H36, H37, H38, H39, H40.

References

- Alexander, K.N.A. (1997a) *Clytus arietis* (L.) rediscovered in Ireland after nearly 100 years, and other significant records of Cerambycidae (Coleoptera). *Irish Naturalists' Journal* **25**: 177-178.
- Alexander, K.N.A. (1997b) The distribution and status of the genus *Orchesia* Latreille (Coleoptera: Melandridae) in Ireland. *Irish Naturalists' Journal* **25**: 379-380.
- Alexander, K.N.A. (1997c) Some records for scarcer Curculionidae (Coleoptera). *Irish Naturalists' Journal* **25**: 449-450.
- Alexander, K.N.A. (1997d) Some records for scarcer Scolytidae (Coleoptera). *Irish Naturalists' Journal* **25**: 451-452.
- Alexander, K.N.A. (1997e) *Magdalis carbonaria* (L.) (Coleoptera: Curculionidae) rediscovered in Co. Wicklow. *Irish Naturalists' Journal* **25**: 453.
- Alexander, K.N.A. (2002) The invertebrates of living & decaying timber in Britain and Ireland – a provisional annotated checklist. *English Nature Research Reports* No. 467, 142pp.
- Alexander, K.N.A. (2004) Revision of the Index of Ecological Continuity as used for saproxylic beetles. *English Nature Research Reports* No. 574, 60pp.
- Alexander, K.N.A. (2008a) *Agathidium confusum* Brisout (Coleoptera: Leiodidae) a fungus beetle new to the Irish list. *Irish Naturalists' Journal* **29**: 45-46.
- Alexander, K.N.A. (2008b) Tree biology and saproxylic Coleoptera: issues of definitions and conservation language. In: V. Vignon & J.-F. Amodé (eds) Proceedings of the 4th Symposium and Workshop on the Conservation of Saproxylic Beetles, held in Vivoin, Sarthe Department – France 27-29 June 2006. *Revue d'Écologie, Supplément* **10**: 9-13.
- Alexander, K.N.A. (2009) *Dorcatoma dresdensis* Herbst (Coleoptera: Anobiidae): a beetle new to the Irish list. *Irish Naturalists' Journal* **30**: 66.
- Alexander, K.N.A. (2010a) The rediscovery of some of Ireland's rarest wood-decay beetles (Coleoptera: Lymexylidae, Phloiophilidae, Ciidae, Tetratomidae, Melandryidae). *Irish Naturalists' Journal* **30**: 130-33.
- Alexander, K.N.A. (2010b) Ant beetle (*Thanasimus formicarius* (L.)) (Coleoptera: Cleridae), new to Co. Donegal. *Irish Naturalists' Journal* **30**: 144.
- Alexander, K.N.A. (2011) An invertebrate survey of Coill Eoin, St John's Wood, Co. Roscommon. *Irish Wildlife Manuals*, No. 57. National Parks and Wildlife Service, Department of the Arts, Heritage and the Gaeltacht, Dublin.
- Alexander, K.N.A. and Foster, A.P. (1995) *Abdera flexuosa* (Paykull) (Melandryidae) and *Tetratoma fungorum* Fabricius (Tetratomidae), beetles new to Ireland from bracket fungi on trees. *Irish Naturalists' Journal* **25**: 27-28.

- Alexander, K.N.A., Hope, J.C.E., Lucas, A., Smith, J.P. & Wright, M.A. (2007) Wood Pasture and Parkland Scoping Study. *Environment and Heritage Service Research and Development Series*. No. 08/01.
- Alexander, K., Smith, M., Stiven, R. & Sanderson, N. (2003) Defining 'old growth' in the UK context. *English Nature Research Reports* No.494, 45pp.
- Algeo, C.R. (1907) Some Coleoptera from the north. *Irish Naturalist* **16**: 181-182.
- Anderson, R. (1977) *Endomychus coccineus* (L.) (Coleoptera: Endomychidae) new to Ireland. *Irish Naturalists' Journal* **19**: 97.
- Anderson, R. (1978) A recent Irish record of *Stenus exiguus* Erichson and *Sepedophilus littoreus* (L.), and *Gnypeta caerulea* (Sahlberg) (Col., Staphylinidae) new to Ireland. *Entomologist's Monthly Magazine*, **113**: 167.
- Anderson, R. (1984) Some recent Irish records of *Euophryum confine* Broun (Col., Curculionidae). *Entomologist's Monthly Magazine* **120**: 216.
- Anderson, R. (1985) A third Irish record of *Sepedophilus littoreus* (L.) (Coleoptera: Staphylinidae). *Irish Naturalists' Journal* **21**: 546.
- Anderson, R. (1992) A second Irish site for *Endomychus coccineus* (L.) (Coleoptera: Endomychidae). *Irish Naturalists' Journal* **24**: 170.
- Anderson, R. (1993) *Litargus connexus* (Fourcroy) (Coleoptera: Mycetophagidae) new to Ireland. *Entomologists' Gazette* **44**: 100.
- Anderson, R. (1994) A first Irish record of *Ptinus subpilosus* Sturm (Col., Ptinidae). *Entomologist's Monthly Magazine* **130**: 136.
- Anderson, R. (1995) *Dacne bipustulata* (Thunberg) (Coleoptera: Erotylidae) in the Lagan Valley, Belfast. *Irish Naturalists' Journal* **25**: 78.
- Anderson, R. (1998) Second Irish sites for *Abdera flexuosa* (Paykull) and *Enicmus testaceus* Joy & Tomlin (Coleoptera: Melandryidae and Latridiidae) in Fermanagh. *Irish Naturalists' Journal* **26**: 56.
- Anderson, R. (2004) *Micrambe bimaculata* (Panzer) (Cryptophagidae) on Lough Neagh, an ecological puzzle. *Coleopterist* **13**: 135-136.
- Anderson, R. (2006) Additional Irish sites for *Tetratoma fungorum* Fabricius (Coleoptera: Tetratomidae). *Irish Naturalists' Journal* **28**: 302.
- Anderson, R. (2007a) *Eपुरaea distincta* (Grimmer) (Nitidulidae) new to Ireland. *Coleopterist* **16**: 130.
- Anderson, R. (2007b) *Mycetophagus multipunctatus* Fabricius (Mycetophagidae) new to Ireland. *Coleopterist* **16**: 100.
- Anderson R (2008a) *Prionocyphon serricornis* (Müller) (Scirtidae) in Northern Ireland. *Coleopterist* **17**: 123-4.
- Anderson, R. (2008b) New records for *Siagonium quadricorne* Kirby and *Atheta fungicola* (Thomson) and *Atheta crassicornis* (Fab.) (Coleoptera: Staphylinidae) added to the Irish list. *Irish Naturalists' Journal* **29**: 134-135.
- Anderson R. (2009a) *Margarinotus merdarius* (Hoffmann) (Histeridae) found in Ireland. *Coleopterist* **18**: 66.

- Anderson R. (2009b) *Sphaeriestes reyi* (Abeille) and *Sphaeriestes ater* (Paykull) (Salpingidae) confirmed as Irish. *Coleopterist* **18**: 80.
- Anderson, R. (2009c) *Autalia longicornis* Scheerpeltz (Staphylinidae) new to Ireland. *Coleopterist* **18**: 165.
- Anderson, R. (2010) *Leptusa ruficollis* (Erichson) (Staphylinidae) new to Ireland. *Coleopterist* **20**: 114.
- Anderson, R. (2011) The status of *Bessobia fungivora* (Thomson) (Staphylinidae: Aleocharinae) in Ireland. *Coleopterist* **20**: 44.
- Anderson, R. & Clawson, S. (2004) *Leptusa norvegica* Strand (Staphylinidae) in Ireland. *Coleopterist* **13**: 161.
- Anderson R. & Clawson S. (2006) *Atomaria pulchra* Erichson (Cryptophagidae) new to Ireland. *Coleopterist* **15**: 100-101.
- Anderson, R. & Foster, A.P. (2011) *Atheta paracrassicornis* Brundin (Staphylinidae) new to Ireland. *Coleopterist* **20**: 75-76.
- Anderson, R., Simms, M. & Nelson, B. (2000) *A Review of Lowland Wood Pasture and Parkland in Northern Ireland*. Report to Environment & Heritage Service, Northern Ireland.
- Bonaparte-Wyse, L.H. (1897) Entomological notes from S.E. Ireland. *Irish Naturalist*. **6**: 220-221.
- Bonaparte-Wyse, L.H. (1906) Entomological notes from S.W. Ireland. *Irish Naturalist* **15**: 234.
- Bonaparte-Wyse, L.H. (1907) Entomological notes from Co. Mayo. *Irish Naturalist* **16**: 368-370.
- Bonaparte-Wyse, L.H. (1911) Coleoptera from South Kerry. *Irish Naturalist* **20**: 55.
- Bonaparte-Wyse, L.H. (1916) New beetle records for Co. Waterford. *Irish Naturalist* **25**: 63.
- Bouskell, F. (1904) Three weeks in the wilds of south Kerry, with notes on the insects and plants. *Transactions of the Leicester Literary & Philosophical Society* **8**: 49-60.
- Browne, J.M. (1892) Some beetles from the Dublin District. *Irish Naturalist* **1**: 189-192.
- Browne, J.M. (1901) Entomological notes from Abbeyleix. *Irish Naturalist* **10**: 92 & 204.
- Bryan, M.D. & Anderson, R. (2011) *Phymatodes testaceus* (Linnaeus) new to Ireland and *Leiopus nebulosus* (Linnaeus) (Cerambycidae) found at Tynan, Co. Armagh. *Coleopterist* **20**: 97.
- Buckle, C.W. (1900) Beetles collected in Lough Foyle district, Cos Donegal and Derry. *Irish Naturalist* **9**: 2-11 (see also p 100).
- Bullock, E. (1914) Coleoptera from the south west of Ireland. *Irish Naturalist* **23**: 105-112.
- Bullock, E. (1928) Coleoptera from the Killarney district of County Kerry, Ireland. *Entomologist's Monthly Magazine* **64**: 102-104.
- Bullock, E. (1930) Some new records of Coleoptera from Ireland. *Entomologist's Monthly Magazine* **66**: 140-141.
- Bullock, E. (1932) Coleoptera from Co. Kerry, Ireland. *Entomologist's Monthly Magazine* **68**: 130.
- Bullock, E. (1935) Coleoptera new to Ireland from Co. Kerry. *Entomologist's Monthly Magazine* **71**: 130-131.

- Carpenter, G.H. (1894) Report on economic entomology for the year 1893. *Report of the Council of the R.D.S., 1893.*
- Carpenter, G.H. (1895) Report on economic entomology for the year 1894. *Report of the Council of the R.D.S., 1894.*
- Cawley, M. (2005) A 1992 record for *Pyropterus nigroruber* (Degeer) (Coleoptera: Lycidae) from Co. Sligo. *Irish Naturalists' Journal* **28**: 131-132.
- Cawley, M. (2009a) *Alosterna tabacicolor* (De Geer) (Cerambycidae) in Co. Sligo. *Coleopterist* **18**: 188.
- Cawley, M. (2009b) *Pyrochroa serraticornis* (Scopoli) (Pyrochroidae) and *Phaleria cadaverina* (Fabricius) (Tenebrionidae) in Co. Wexford. *Coleopterist* **18**: 202.
- Cawley, M. (2009c) Some records for uncommon weevils (Coleoptera: Curculionidae), including *Squamapion atomarium* (Kirby) new to Ireland. *Bulletin of the Irish Biogeographical Society* **33**: 170-173.
- Cawley, M. (2011a) Irish records for *Glischrochilus hortensis* (Fourcroy) (Nitidulidae). *Coleopterist* **20**: 134.
- Cawley, M. (2011b) *Pseudophloeophagus aeneopiceus* (Boheman) (Curculionidae) in Co. Kerry. *Coleopterist* **20**: 143.
- Champion, G.C. (1901) Coleoptera in the south-west of Ireland. *Entomologist's Monthly Magazine* **37**: 270-272.
- Chaster, G.W. & Tomlin, B. (1902) Coleoptera from Ballycastle Co. Antrim. *Irish Naturalist* **11**: 61-65.
- Clawson, S. & Anderson, R. (2006) The banded pine weevils *Pissodes pini* (L.) and *P. castaneus* (DeGeer) (Coleoptera: Curculionidae) established in Ireland. *Entomologists' Gazette* **57**: 269-270.
- Cooter, J. (1996) Annotated keys to the British Leiodinae (Col., Leiodidae). *Entomologists' Monthly Magazine* **132**: 205-232.
- Collingwood, C.A. (1959) Notes on Irish Coleoptera. *Entomologists' Gazette* **10**: 39-42.
- Crawford, W.M. & O'Mahony, E. (1935) On some northern Irish Coleoptera. *Irish Naturalists' Journal* **5**: 310-311.
- Crowson, R.A. (1987) Some records of Coleoptera from Dalmeny Park, West Lothian, Scotland. *Entomologist's Monthly Magazine* **123**: 14.
- Curtis, J. (1839) *British Entomology; being illustrations and descriptions of the genera of insects found in Great Britain and Ireland, &c.* London: I-XVI., 1823-39.
- Cuthbert, H.K.G. (1892a) Coleoptera in Co. Dublin. *Irish Naturalist* **1**: 103.
- Cuthbert, H.K.G. (1892b) The weevils of south Louth. *Irish Naturalist* **1**: 158-161.
- Cuthbert, H.K.G. (1896) Coleoptera taken on the excursion of the DNFC to Lambay Island. *Irish Naturalist* **5**: 186.
- Cuthbert, H.K.G. (1897) Beetles from Ardmore, Co. Waterford. *Irish Naturalist* **6**: 87.
- Cuthbert, H.K.G. (1898) An entomologist at Ballybunion, Co. Kerry. *Irish Naturalist* **7**: 65-68.
- Cuthbert, H.K.G. & Carpenter, G.H. (1894) [Coleoptera taken on the excursion of the DNFC, to Maynooth] *Irish Naturalist* **3**: 160.
- Donisthorpe, H.St.J. (1902) A few notes on Coleoptera in the west coast of Ireland. *Entomologist's Record* **14**: 239-41.
- Donisthorpe, H. St. J. (1903) Three weeks in South Kerry June 1902: Coleoptera. *Irish Naturalist* **12**: 59-65.

- Donisthorpe, H.St.J. (1917) *Elater praeustus*, an Irish beetle. *Irish Naturalist* **26**: 99-100.
- Donisthorpe, H.St.J. (1938) Coleoptera taken at Muckcross, near Killarney, in May. *Entomologist's Record* **50**: 92-94.
- Dublin Naturalists' Field Club (1894) [Coleoptera taken on the excursion to Laytown and Boyne] *Irish Naturalist* **3**: 181.
- Dublin Naturalists' Field Club (1901) [Coleoptera taken on the Sligo Excursion] *Irish Naturalist* **10**: 168-169.
- Duff, A.G. (ed) (2008) *Checklist of the Beetles of the British Isles*. Wells, Somerset (Privately published).
- Emden, F. van (1943) Larvae of British Beetles: IV Various small families. *Entomologist's Monthly Magazine* **79**: 209-233.
- Forbes, A.C. (1910) The economic importance of Scolytidae in Irish forestry. *Irish Naturalist* **19**: 89-91.
- Foster, G.N. & Reynolds, J.D. (2008) Rediscovery of *Prionocyphon serricornis* (Muller) (Coleoptera: Scirtidae) in Ireland. *Irish Naturalists' Journal* **29**: 49.
- Foster, G. N., Nelson, B. H. & O Connor, Á. (2009) *Ireland Red List No. 1 – Water beetles*. National Parks and Wildlife Service, Department of Environment, Heritage and Local Government, Dublin, Ireland.
- Fowler, W.W. (1891) *The Coleoptera of the British Islands*. Vol. V. Reeve, London.
- Fowles, A.P., Alexander, K.N.A & Key, R.S. (1999) The Saproxylic Quality Index: evaluating wooded habitats for the conservation of dead-wood Coleoptera. *Coleopterist* **8**: 121-141.
- Furlong, A.R. (1863) [Notes on Coleoptera] *Annals and Magazine of Natural History* **11**: 331.
- Garland, S.P. (1983) Beetles as primary woodland indicators. *Sorby Record* No. **21**: 3-38.
- Gimingham, C.T. (1942) *Tetratoma ancora* (Col.,Melandryidae) and other beetles in Ireland. *Entomologists' Monthly Magazine* **78**: 51.
- Good, J.A. (1990) *Dinaraea angustula* (Gyllenhal) (Coleoptera: Staphylinidae), a cultivated land beetle confirmed as Irish. *Irish Naturalists' Journal* **23**: 340.
- Good, J.A. (1991a) *Gyrophaena strictula* Erichson (Coleoptera: Staphylinidae), a beetle new to Ireland associated with *Daedalea quercina* (L.) (Hymenomycetes: Polyporaceae). *Irish Naturalists' Journal* **23**: 504.
- Good, J.A. (1991b) *Atheta aeneicollis* (Sharp) (Coleoptera: Staphylinidae), a mycetophilous beetle new to Ireland. *Irish Naturalists' Journal* **23**: 506.
- Good, J.A. (1997) *Gyrophaena angustata* (Stephens) (Coleoptera: Staphylinidae), a beetle new to Ireland associated with *Polyporus squamosus* Huds. ex Fr. (Hymenomycetes: Polyporaceae). *Irish Naturalists' Journal* **25**: 453.
- Good, J.A. & Butler, F.T. (1995) Woodland polypore fungi and other microhabitats of Staphylinidae (Coleoptera) at Lowerscourt Demesne, Co. Wicklow, Ireland. *Bulletin of the Irish Biogeographical Society* **18**: 22-29.
- Good, J.A. & Hume, H. (1991) *Silvanus bidentatus* (F.) (Coleoptera: Silvanidae) imported into Ireland in bark of timber pallets. *Irish Naturalists' Journal* **23**: 463-464.
- Halbert, J.N. (1892) *Malachius bipustulatus*, L., in Ireland. *Irish Naturalist* **1**: 125.

- Halbert, J.N. (1893) Coleoptera in Co. Dublin. *Irish Naturalist* **2**: 229.
- Halbert, J.N. (1894) Coleoptera in Co. Dublin. *Irish Naturalist* **3**: 203-204.
- Halbert, J.N. (1895a) Insects collected in the Fermoy and Blackwater District. *Irish Naturalist* **4**: 45-49 (see also **3**: 182 & 184)
- Halbert, J.N. (1895b) Coleoptera from Co. Dublin. *Irish Naturalist* **4**: 78-79.
- Halbert, J.N. (1895c) Insects collected at Seagull Bog, Tullamore. *Irish Naturalist* **4**: 172-174.
- Halbert, J.N. (1895d) Irish Field Club Union, Galway Conference, Coleoptera. *Irish Naturalist* **4**: 259-262.
- Halbert, J.N. (1895e) Coleoptera collected in Co. Carlow. *Irish Naturalist* **4**: 329-331.
- Halbert, J.N. (1896) Notes on the fauna and flora of Clonbrock, Co. Galway. Coleoptera. *Irish Naturalist* **5**: 230-233.
- Halbert, J.N. (1898a) Beetles collected at Mote Park, Mount Talbot and Clonbrock. *Irish Naturalist* **7**: 90-95.
- Halbert, J.N. (1898b) Coleoptera from Valentia Island. *Irish Naturalist* **7**: 149.
- Halbert, J.N. (1898c) Irish Field Club Union. Report of the second triennial conference and excursion, held at Kenmare, July 7th to 13th, 1898. Coleoptera. *Irish Naturalist* **7**: 211-216.
- Halbert, J.N. (1900a) Coleoptera collected on the excursion of the DNFC to Athlone. *Irish Naturalist* **9**: 19.
- Halbert, J.N. (1900b) Some additions to the Beetles of the Dublin District. *Irish Naturalist* **9**: 278-284.
- Halbert, J.N. (1907a) Irish Field Club Union. Cork Conference. Terrestrial Coleoptera. *Irish Naturalist* **16**: 290-293.
- Halbert, J.N. (1907b) Contributions to the natural history of Lambay. *Irish Naturalist* **16**: 47-52.
- Halbert, J.N. (1908) Review: Stray notes from South Kerry in 1903 by F. Bouskell. *Irish Naturalist* **17**: 19-20.
- Halbert, J.N. (1910a) Notes on new Irish beetles. *Irish Naturalist* **19**: 30-33.
- Halbert, J.N. (1910b) *Cryptophagus bimaculatus*, Panz., and other Coleoptera at Lough Neagh. *Entomologist's Monthly Magazine* **46**: 62-66.
- Halbert, J.N. (1912) [Exhibition of *Hylesinus crenatus*] *Irish Naturalist* **21**: 61.
- Halbert, J.N. (1922) *Magdalis carbonaria* and other insects at Powerscourt. *Irish Naturalist* **31**: 8-10.
- Halbert, J.N. (1924) Coleoptera in the Dublin district. *Irish Naturalist* **33**: 131-134.
- Halbert, J.N. (1937) Records of Irish Coleoptera. *Entomologist's Monthly Magazine* **73**: 82-87.
- Haliday, A.H. (1841) Notes on Staphylinidae. *Entomologist* **1**: 186-188.
- Haliday, A.H. (1855) Entomological remarks. *Natural History Review*, **2**: 116-124.
- Haliday, A.H. (1857) Entomological notes. *Natural History Review* **4**: 31-36.
- Haliday, A.H. (1885) Notes on Irish Coleoptera. *Report & Proceedings of the Belfast Naturalists Field Club. Appendix* **8**.
- Haliday, A.H. (undated) Catalogue of Irish Insects. Ms.

- Hammond, P.M. (1980) Staphylinidae (Coleoptera) in Ireland, 1: Micropeplinae, Proteininae, Omaliinae and Piestinae. *Irish Naturalists' Journal* **20**: 133-140.
- Hardy, J.R. (1897) Coleoptera at Rathlin Island. *Irish Naturalist* **6**: 187-188.
- Hickin, N.E. (1952) *Euophryum confine* Broun, the wood-boring weevil, in Ireland. *Entomologist's Monthly Magazine* **88**: 157.
- Hickin, N.E. (1953) Death watch beetle in Ireland. *Entomologist* **86**: 138.
- Hogan, A.R. (1854) Catalogue of Coleoptera found in the neighbourhood of Dublin. *Zoologist* **12**: 4195-4338.
- Hogan, A.R. (1855) Notes on various insects captured or observed in the neighbourhood of Dingle, Co. Kerry, in July 1854. *Natural History Review* **2**: 50-55.
- Hogan, A.R. (1856) First supplement to the Catalogue of Coleoptera found in the neighbourhood of Dublin. *Natural History Review* **3**: 72.
- Huggins, H.C. (1953) Some notes on *Strangalia aurulenta* Fab. *Entomologists' Record* **65**: 149-150.
- Huggins, H.C. (1960) A naturalist in the kingdom of Kerry. *Proceedings & Transactions of the South London Entomological & Natural History Society* **1959**: 176-183.
- Hyman, P.S. & Parsons, M.S. (1994). A review of the scarce and threatened Coleoptera of Great Britain. Part 1. *UK Nature Conservation*: **3**: 1-484. JNCC.
- Irwin, A.G. (1975) Insects from a deserted bat colony in Co. Down, including a beetle new to Ireland. *Irish Naturalists' Journal* **18**: 226-227.
- Janson, O.E. (1914) Coleoptera at Killarney. *Irish Naturalist* **23**: 38-40.
- Janson, O.E. (1920) Coleoptera in Co. Kerry. *Irish Naturalist* **29**: 1-6.
- Janson, O.E. (1924) Coleoptera at Lough Neagh (Co. Antrim) and Newcastle (Co. Down). *Irish Naturalist* **33**: 69-72.
- Janson, O.E. (1924) *Melasis* at Glencar. *Irish Naturalist*
- Janson, O.E. & Bonaparte-Wyse, L.H. (1923) A fortnight's entomology in Co. Waterford. *Irish Naturalist* **33**: 15-18.
- Janson, O.E. & Bonaparte-Wyse, L.H. (1924) Coleoptera from South Kerry. *Irish Naturalist* **33**: 125-128.
- Johnson, C. (1977) A third immigrant species of *Ptinella* Motschulsky (Col., Ptiliidae) new to the British fauna. *Entomologists' Gazette* **28**: 43-44.
- Johnson, C. (1997) Revision of Bullock's Irish Clambidae, with two species new to Ireland. *Coleopterist* **6**: 53-55.
- Johnson, W.F. (1888a) Coleoptera at Armagh in 1887. *Entomologist's Monthly Magazine* **25**: 193-196.
- Johnson, W.F. (1888b) Coleoptera at Armagh. *Entomologist's Monthly Magazine* **25**: 18.
- Johnson, W.F. (1889) Additions to the list of Irish Coleoptera. *Entomologist's Monthly Magazine* **25**: 285.
- Johnson, W.F. (1891) Notes on the Coleoptera of the north of Ireland. *Entomologist's Monthly Magazine* **27**: 223.

- Johnson, W.F. (1892a) The Coleoptera of the Armagh District. *Irish Naturalist*, **1**: 14-18, 36-38, 57-59, 77-78, 97-99, 120-123, 142-144.
- Johnson, W.F. (1892b) Notes on the Coleoptera of the north of Ireland. *Entomologist's Monthly Magazine* **28**: 213-214.
- Johnson, W.F. (1893) Coleoptera at Ardara, Co. Donegal. *Irish Naturalist* **2**: 53-55.
- Johnson, W.F. (1895) Entomological notes from the north of Ireland. *Entomologist's Monthly Magazine* **31**: 33.
- Johnson, W.F. (1900) Entomological notes from Ulster. *Irish Naturalist* **9**: 183-184.
- Johnson, W.F. (1906) Coleoptera from Co. Fermanagh. *Irish Naturalist* **15**: 139-142.
- Johnson, W.F. (1909) Entomological notes during 1908. *Irish Naturalist* **16**: 69-72.
- Johnson, W.F. (1912) Entomological notes from Ulster. *Irish Naturalist* **21**: 131-133.
- Johnson, W.F. & Halbert, J.N. (1902) A list of the beetles of Ireland. *Proceedings of the Royal Irish Academy* **6B**: 535-827.
- Johnson, W.F. & Halbert, J.N. (1912) Clare Island Survey. Terrestrial Coleoptera. *Proceedings of the Royal Irish Academy* **31**: 1-24.
- Johnson, W.F., Halbert, J.N. & Carpenter, G.H. (1894) Insects collected by the Royal Irish Academy Flora and fauna Committee. *Irish Naturalist* **3**: 122-124.
- Kaufmann, R.R.U. (1948) Notes on the distribution of the British longicorn Coleoptera. *Entomologist's Monthly Magazine* **84**: 66-85.
- Langham, C. (1897) Coleoptera taken at Tempo, Enniskillen. *Irish Naturalist* **6**: 57.
- Lott, D.A. (2010) A new species of *Quedius* subgenus *Microsaurus* Dejean (Coleoptera: Staphylinidae) from Scotland and Ireland. *Coleopterist* **19**: 135-141.
- Lott, D.A. & Bilton, D.T. (1991) Records of Coleoptera from Irish wetland sites in 1989. *Bulletin of the Irish Biogeographical Society* **14**: 60-72.
- McClenaghan, I. (1987) Some not-so-recent Irish records of *Euophryum confine* (Broun) (Col., Curculionidae). *Entomologist's Monthly Magazine* **123**: 178.
- Mendel, H. (1990) The status of *Ampedus pomonae* (Stephens), *A. praeustus* (F.) and *A. quercicola* (du Buysson) (Coleoptera: Elateridae) in the British Isles. *Entomologist's Gazette* **41**: 23-30.
- Mendel, H. (2004) *Melanotus villosus* (Geoffroy in Fourcroy, 1785) and *Melanotus castanipes* (Paykull, 1800) (Elateridae) in Britain. *Coleopterist* **13**: 121-124.
- Mendel, H. & Clarke, R.E. (1996) *Provisional atlas of the click beetles (Coleoptera: Elateridae) of Britain and Ireland*. Ipswich Borough Council Museums, Ipswich.
- Morris, M.G. (1987) New vice-county records of weevils (Coleoptera, Curculionoidea) from Ireland. *Bulletin of the Irish Biogeographical Society* **10**: 124-136.

- Morris, M.G. (1992) New records of weevils (Coleoptera, Curculionoidea) from Kildare, Wicklow, Dublin and Meath. *Irish Naturalists' Journal* **24**: 77-78.
- Morris, M.G. (1993a) A critical review of the weevils (Coleoptera, Curculionoidea) of Ireland and their distribution. *Proceedings of the Royal Irish Academy* **93B**: 69-84.
- Morris, M.G. (1993b) Some species of weevils recorded erroneously from Ireland, and others whose status requires confirmation (Coleoptera: Curculionidae). *Irish Naturalists' Journal* **24**: 325-328.
- Morris, M.G. (1997) New records of Irish weevils (Insecta, Coleoptera, Curculionoidea). *Bulletin of the Irish Biogeographical Society* **20**: 155-178.
- Muskett, A.E. & Malone, J.P. (1980) Catalogue of Irish fungi-II. Hymenomycetes. *Proceedings of the Royal Irish Academy* **80B**: 197-276.
- Nash, R. (1983) A brief summary of the development of entomology in Ireland during the years 1790-1870. *Irish Naturalists' Journal* **21**: 145-150.
- Nash, R. (1989) The musk beetle *Aromia moschata* (L.) (Coleoptera: Cerambycidae) in Co. Down. *Irish Naturalists' Journal* **23**: 153.
- Nash, R. & Anderson R. 2007. *Korynetes caeruleus* (DeGeer) (Coleoptera: Cleridae) and *Gibbium psylloides* (Czempinski) (Coleoptera: Ptinidae), beetles new to Ireland. *Irish Naturalists' Journal* **28**: 418-419.
- Nash, R., Anderson, R. & O'Connor, J.P. (1997) Recent additions to the list of Irish Coleoptera. *Irish Naturalists' Journal* **25**: 319-325.
- Nicholson, G.W. (1911) A second list of Coleoptera from the Co.Meath. *Irish Naturalist* **20**: 139-140.
- Nicholson, G.W. (1913) Some additional records of Irish beetles, chiefly from Co. Meath. *Irish Naturalist* **22**: 49-53.
- Nicholson, G.W. (1914) Coleoptera from Cavan and Meath. *Irish Naturalist* **23**: 68-72.
- Nicholson, G.W. (1915) Some additional Coleoptera from Cavan. *Irish Naturalist* **24**: 5-8.
- Nicholson, G.W. (1917) Additional Coleoptera from Meath and Cavan. *Irish Naturalist* **26**: 28-31.
- O'Callaghan, D.P. (1982) Occurrence of the small elm bark beetle, *Scolytus multistriatus*, in Ireland. *Irish Naturalists' Journal* **20**: 384-385.
- O'Connor, J.P. (1978) Occurrence of *Euophryum rufum* Broun (Col., Curculionidae) in Ireland. *Entomologist's Monthly Magazine* **113**: 56.
- O'Connor, J.P. (1981) Notes on insect pests received for identification by the National Museum of Ireland. *Bulletin of the Irish Biogeographical Society* **5**: 5-14.
- O'Connor, J.P. (1984) Notes on insect pests received for identification by the National Museum of Ireland. A second report. *Bulletin of the Irish Biogeographical Society* **7**: 38-44.
- O'Connor, J.P. (2005) *Glischrochilus hortensis* (Geoffroy) (Nitidulidae) attacking raspberries and tomatoes in Ireland. *Coleopterist* **14**: 6.

- O'Connor, J.P., Ashe, P., O'Neill, L., Bond, K.G.M. & Murray, D.A. (1990) Records of some insect pests which recently caused public concern in Ireland. *Bulletin of the Irish Biogeographical Society* **13**: 141-165.
- O'Connor, J.P. & Nash, R. (1981) Notes on five species of insect (Hemiptera: Coleoptera) imported into Ireland. *Irish Naturalists' Journal* **20**: 299-300.
- O'Connor, J.P. & Nash, R. (1984) Insects imported into Ireland 6. Records of Orthoptera, Dermaptera, Lepidoptera and Coleoptera. *Irish Naturalists' Journal* **21**: 351-353.
- O'Connor, J.P., Nash, R. & Anderson, R. (1983) Insects imported into Ireland 4. Records of Dictyoptera, Hemiptera, and Coleoptera (including *Pycnomerus fuliginosus* Erichson). *Irish Naturalists' Journal* **21**: 81-83.
- O'Connor, J.P. & O'Connor, M.A. (1984) Two recent Irish records of *Pyrochroa serraticornis* (Scopoli) (Col., Pyrochroidae). *Entomologist's Monthly Magazine* **120**: 54.
- O'Connor, J.P. & O'Connor, M.A. (1987) A second Irish record of *Melasis buprestoides* (L.) (Col., Eucnemidae). *Entomologist's Monthly Magazine* **123**: 228.
- O'Connor, J.P. & Rigney, S. (1991) A second Wexford record of *Pyrochroa serraticornis* (Scopoli) (Coleoptera). *Irish Naturalists' Journal* **23**: 503.
- O'Connor, J.P., Winter, T.G. & Good, G.A. (1991) A review of the Irish Scolytidae (Insecta: Coleoptera). *Irish Naturalists' Journal* **23**: 403-408.
- O'Farrell, A.F. & Butler, P.M. (1948) Insects and mites associated with the storage and manufacture of foodstuffs in Northern Ireland. *Economic Proceedings of the Royal Dublin Society* **3**: 343-407.
- O'Mahony, E. (1924) *Athous difformis* Lac. and other beetles in County Dublin. *Irish Naturalist* **33**: 121-122.
- O'Mahony, E. (1926) *Antherophagus silaceus* and *Aglenus brunneus* in Ireland. *Entomologist's Monthly Magazine* **62**: 94.
- O'Mahony, E. (1927) Three beetles new to the Irish fauna. *Entomologist's Monthly Magazine* **63**: 234.
- O'Mahony, E. (1927) New Irish beetles. *Irish Naturalists' Journal* **1**: 178.
- O'Mahony, E. (1928a) *Prionocyphon serricornis* Mull., an Irish beetle. *Entomologist's Monthly Magazine* **64**: 101.
- O'Mahony, E. (1928b) Coleoptera in north-east Dublin. *Entomologist's Monthly Magazine* **64**: 150-152.
- O'Mahony, E. (1929a) Coleoptera, pp. 22-36 in: Praeger, R.L. (ed.) Report on recent additions to the Irish fauna and flora (terrestrial and freshwater). *Proceedings of the Royal Irish Academy* **39B**: 1-94.
- O'Mahony, E. (1929b) *Stenus opticus*, *Haltica lythri* and other Irish Coleoptera. *Entomologist's Monthly Magazine* **65**: 110-111.
- O'Mahony, E. (1931) Two new Irish beetles, *Sphaeriestes gabrieli* Gerh. and *Pityogenes chalcographus* L. *Entomologist's Monthly Magazine* **67**: 18-19.
- O'Mahony, E. (1932) Notes on Irish Coleoptera. *Entomologist's Monthly Magazine* **68**: 39-40.

- O'Mahony, E. (1934) New Irish Coleoptera with a description of a new aberration. *Entomologist's Monthly Magazine* **70**: 199.
- O'Mahony, E. (1935a) A new Irish beetle, *Malthodes guttifer* Kies. *Entomologist's Monthly Magazine* **71**: 111.
- O'Mahony, E. (1935b) New, rare and local Irish Coleoptera. *Entomologist's Monthly Magazine* **71**: 236.
- O'Mahony, E. (1936) *Cidnorrhinus quadrimaculatus* L. ab. *rimosus* Germ. and other Irish Coleoptera. *Entomologist's Monthly Magazine* **72**: 178-180.
- O'Mahony, E. (1938) A note on Irish Coleoptera. *Entomologist's Monthly Magazine* **74**: 190-191.
- O'Mahony, E. (1940) Some Irish Coleoptera records. *Entomologist's Monthly Magazine* **76**: 180.
- O'Mahony, E. (1941) *Hallomenus binotatus* Quen. (Col., Melandryidae) in Ireland. *Entomologist's Monthly Magazine* **77**: 171.
- O'Mahony, E. (1943) Some Co. Kildare Coleoptera. *Entomologist's Monthly Magazine* **79**: 61.
- O'Mahony, E. (1949) *Lyctus brunneus* Steph (Col., Lyctidae) and *Heterobostrichus aequalis* Waterh. (Col., Bostrichidae) in Ireland. *Entomologist's Monthly Magazine* **85**: 48.
- O'Meara, M. (2008) The Beetles of Waterford City & County. *Fauna of Waterford Series No. 9*; 34pp.
- O'Sullivan, M. (2003) A record of *Strangalia aurulenta* Fabricius (Col.: Cerambycidae) from Co. Kerry. *Entomologist's Record* **115**: 194-195.
- Owen, J.A. (1997) Beetles (Coleoptera) recorded from various Irish sites in 1993, 1994 and 1996. *Bulletin of the Irish Biogeographical Society* **20**: 136-154.
- Patterson, R. (1885) A list of Irish Coleoptera collected mainly by the late Robert Patterson in the year 1829. *Belfast Naturalists' Field Club Proceedings, Appendix 1884-85*: 317-326.
- Patterson, W.H. & Donnan, W.D. (1892) Coleoptera of the Holywood District. *Irish Naturalist* **1**: 103-104.
- Pearce, E.J. (1957) Coleoptera (Pselaphidae). *Handbooks for the Identification of British Insects* **4(9)**: 1-32. Royal Entomological Society of London.
- Perrin, P.M. & Daly, O.H. (2010) A provisional inventory of ancient and long-established woodland in Ireland. *Irish Wildlife Manuals*, No. 46. National Parks and Wildlife Service, Department of the Arts, Heritage and the Gaeltacht, Dublin.
- Porter, E. (1898) Coleoptera of Upper Lough Erne, Co. Fermanagh. *Irish Naturalist* **7**: 48-49.
- Power, J.A. (1878) A contribution to the entomology of Ireland. *Entomologist* **11**: 2-8.
- Quirke, D.A. (1943) *Eccoctogaster scolytus* F. (Col., Ipidae) in Ireland. *Entomologist's Monthly Magazine* **79**: 198.
- Regan, E.C. & Anderson, R. (2004). Terrestrial Coleoptera recorded in Ireland, May 2003. *Bulletin of the Irish Biogeographical Society* **28**: 85-132.
- Rye, E.C. (1867) *Eros affinis*, Payk., at Killarney. *Entomologists' Monthly Magazine* **4**: 251.
- Simon, B (2005) *A Treasured Landscape – the heritage of Belvoir Park*. The Forest of Belfast.


- Speight, M.C.D. (1972) Ground beetles (Col. Carabidae) from the Bourn Vincent National Park. *Irish Naturalists' Journal* **17**: 226-230.
- Speight, M.C.D. (1976) *Agonum livens*, *Asemum striatum* and *Xylota coeruleiventris*: insects new to Ireland. *Irish Naturalists' Journal* **18**: 274-275.
- Speight, M.C.D. (1977) Notes on three ground beetles (Coleoptera: Carabidae) *Dyschirius luedersi* new to Ireland, *Badister peltatus* and *Chlaenius tristis* reinstated as Irish. *Irish Naturalists' Journal* **19**: 116-118.
- Speight, M.C.D. (1985) Sycamore: a host for *Ischnomera sanguinicollis* (Coleoptera: Oedemeridae) and *Melanotus erythropus* (Coleoptera: Elateridae) in Co. Wicklow *Irish Naturalists' Journal* **21**: 488-490.
- Speight, M.C.D. (1986) Use of invertebrates, as exemplified by certain insect groups, in considering hypotheses about the history of the Irish postglacial fauna. *Bulletin of the Irish Biogeographical Society, Occasional Publication* **1**: 60-66.
- Speight, M.C.D. (1988) The Irish Cerambycid Fauna (Coleoptera: Cerambycidae). *Bulletin of the Irish Biogeographical Society* **11**: 41-58.
- Speight, M.C.D. (1989a) Some Irish records of the genera *Glischrochilus* and *Soronia* (Coleoptera: Nitidulidae). *Bulletin of the Irish Biogeographical Society* **12**: 18-21.
- Speight, M.C.D. (1989b) The Irish elaterid and buprestid fauna (Coleoptera: Elateridae and Buprestidae). *Bulletin of the Irish Biogeographical Society* **12**: 31-62.
- Speight, M.C.D. (1989c) Saproxylic invertebrates and their conservation. *Nature & Environment Series, No. 42*. Strasbourg: Council of Europe. 79pp.
- Speight, M.C.D. (1990) *Pyropterus nigroruber* (Degeer) in Ireland (Coleoptera: Lycidae), with a key to distinguish this beetle from related European species. *Bulletin of the Irish Biogeographical Society* **13**: 166-172.
- Speight, M.C.D. (2004) Insect records from the Connemara (Co. Galway) and Mayo (Co. Mayo) National Parks, Western Ireland. *Bulletin of the Irish Biogeographical Society* **28**: 31-60.
- Stelfox, A.W. (1924) A staphylinid beetle new to Ireland. *Irish Naturalist* **33**: 67.
- Stelfox, A.W. (1935) New Irish beetle from Co. Carlow. *Irish Naturalists' Journal* **5**: 286.
- Stelfox, A.W. (1937) Notes on the distribution in Ireland of the long-horn beetles, *Strangalia aurulenta*, *S. quadrifasciata* and *S. armata*. *Irish Naturalists' Journal* **6**: 156-158.
- Stelfox, A.W. (1943) The longhorn *Strangalia quadrifasciata* in West Wicklow. *Irish Naturalists' Journal* **8**: 84.
- Stelfox, A.W. (1952) *Dacne bipustulata* Thunberg: a new Irish beetle. *Irish Naturalists' Journal* **10**: 300.
- Stelfox, A.W. (1959) Review. Beetles of the British Isles, by E.F. Linssen. *Irish Naturalists' Journal* **13**: 79-80.
- Stephens, J.F. (1832) *Illustrations of British Entomology, &c. Mandibulata*. London.
- Stevens, S. (1871) Entomology in Ireland. *Entomologist* **5**: 360-364.
- Telfer, M.G. (2007) Other finds. Coleoptera. 2006 Annual Exhibition. *British Journal of Entomology & Natural History* **20**: 190.

Turner, H.J. (1903) A week in Kilkenny. *Irish Naturalist* **10**: 181-185.

Walker, J.J. (1895) Captures of Coleoptera during the Spring of 1895. *Irish Naturalist* **4**: 207-212, 289-291.

Walsh, J. (2001) *Pyrochroa serraticornis* (Scopoli) (Coleoptera) rediscovered in Limerick. *Irish Naturalists' Journal* **26**: 382.

Wollaston, T.V. (1847) Notes on the Coleoptera of the south of Ireland. *Zoologist* **5**: 1570-1576.



Appendix 1 Recorders and list of abbreviations

The following are the abbreviations used for recorders in the species accounts

AFO	A.F. O'Farrell	JAP	J.A. Power
AGI	A.G. Irwin	JJW	J.J. Walker
AHH	A.H. Haliday	JMB	J.M. Browne
APF	A.P. Foster	JNH	J.N. Halbert
ARF	A.R. Furlong	JPOC	J.P. O'Connor
ARH	A.R. Hogan	JRH	J.R. Hardy
AWS	A.W. Stelfox	KNAA	K.N.A. Alexander
BN	B. Nelson	LHBW	L.H. Bonaparte-Wyse
BT	B. Tomlin	MAOC	M.A. O'Connor
CAMR	C.A.M. Reid	MC	M. Cawley
CJ	C. Johnson	MCDS	M.C.D. Speight
CTG	C.T. Gimingham	MDB	M.D. Bryan
CWB	C.W. Buckle	MGM	M.G. Morris
DAL	D.A. Lott	MGT	M.G. Telfer
EFB	E.F. Bullock	OEJ	O.E. Janson
EO	E. O'Mahony	PJH	P.J. Hodge
GCC	G.C. Champion	RA	R. Anderson
GHC	G.H. Carpenter	RCF	R.C. Faris
GNF	G.N. Foster	RCW	R.C. Welch
GMO	G.M. Orledge	RM	R. Martin
GWC	G.W. Chaster	RN	R. Nash
GWN	G.W. Nicholson	SC	S. Clawson
HKGC	H.K. Gore Cuthbert	SM	S. McCormack
HSJD	H.St.J. Donisthorpe	TG	T. Gittings
IM	I. McClenaghan	TVW	T.V. Wollaston
JAG	J.A. Good	WES	W.E. Sharp
JAO	J.A. Owen		

Other abbreviations used in the text are as follows

BMNH	British Museum (Natural History)	NMI	National Museum of Ireland
FIT	flight interception trap	UM	Ulster Museum



Appendix II Taxonomic checklist of species

HISTERIDAE Hister Beetles

Abraeus perpusillus (Marsham, 1812)

PTILIIDAE Feather-winged Beetles

Nossidium pilosellum (Marsham, 1802)

Ptenidium laevigatum Erichson, 1845

Ptinella aptera (Guérin-Méneville, 1839)

Ptinella cavelli (Broun, 1893)

Ptinella denticollis (Fairmaire, 1858)

Ptinella errabunda Johnson, 1975

Ptinella limbata (Heer, 1841)

Ptinella taylorae Johnson, 1977

Pteryx suturalis (Heer, 1841)

LEIODIDAE

Anisotoma humeralis (Fabricius, 1792)

Anisotoma orbicularis (Herbst, 1792)

Amphicyllis globus (Fabricius, 1792)

Agathidium confusum Brisout, 1863

Agathidium nigripenne (Fabricius, 1792)

Agathidium rotundatum (Gyllenhal, 1827)

Agathidium seminulum (Linnaeus, 1758)

Agathidium varians Beck, 1817

SCYDMAENIDAE Stone Beetles

Stenichmus bicolor (Denny, 1825)

STAPHYLINIDAE Rove Beetles

Subfamily OMALIINAE

Phyllodrepoidea crenata (Ganglbauer, 1895)

Coryphium angusticolle Stephens, 1834

Acrulia inflata (Gyllenhal, 1813)

Dropephylla devillei Bernhauer, 1902

Dropephylla gracilicornis (Fairmaire & Laboulbène, 1856)

Dropephylla ioptera (Stephens, 1832)

Dropephylla koltzei Jászay & Hlavac, 2006

Hapalaraea pygmaea (Paykull, 1800)

Phloeonomus punctipennis Thomson, C.G., 1867

Phloeonomus pusillus (Gravenhorst, 1806)

Phloeostiba plana (Paykull, 1792)

Xylostiba monilicornis (Gyllenhal, 1810)

Subfamily PSELAPHINAE Short-winged Mould Beetles

Euplectus bescidicus Reitter, 1881

Euplectus infirmus Raffray, 1910

Euplectus karstenii (Reichenbach, 1816)

Euplectus mutator Fauvel, 1895

Euplectus piceus Motschulsky, 1835

Euplectus punctatus Mulsant, 1861

Bibloporus bicolor (Denny, 1825)

Subfamily: PHLOEOCHARINAE

Phloeocharis subtilissima Mannerheim, 1830

Subfamily: TACHYPORINAE

Sepedophilus littoreus (Linnaeus, 1758)

Subfamily: ALEOCHARINAE

Alaobia pallidicornis (Thomson, C.G., 1856)

Atheta basicornis (Mulsant & Rey, 1852)

Atheta pilicornis (Thomson, 1852)

Bessobia fungivora (Thomson, 1867)

Dadobia immersa (Erichson, 1837)

Dinaraea aequata (Erichson, 1837)

Dinaraea linearis (Gravenhorst, 1802)

Traumoecia picipes (Thomson, 1856)
Thamiaraea hospita (Märkel, 1844)
Bolitochara lucida (Gravenhorst, 1802)
Bolitochara obliqua Erichson, 1837
Leptusa fumida (Erichson, 1839)
Leptusa norvegica Strand, A., 1941
Leptusa pulchella (Mannerheim, 1830)
Leptusa ruficollis (Erichson, 1839)
Agaricochara latissima (Stephens, 1832)
Gyrophæna affinis Mannerheim, 1830
Gyrophæna bihamata Thomson, C.G., 1867
Gyrophæna fasciata (Marsham, 1802)
Gyrophæna gentilis Erichson, 1839
Gyrophæna manca Erichson, 1839
Gyrophæna minima Erichson, 1837
Gyrophæna nana (Paykull, 1800)
Gyrophæna poweri Crotch, 1867
Gyrophæna pulchella Heer, 1839
Gyrophæna strictula Erichson, 1839
Anomognathus cuspidatus (Erichson, 1839)
Homalota plana (Gyllenhal, 1810)
Cypha seminulum (Erichson, 1839)
Oligota apicata (Erichson, 1837)
Ischnoglossa prolixa (Gravenhorst, 1802)
Phloeopora testacea (Mannerheim, 1830)

Subfamily: SCAPHIDIINAE Shining Fungus Beetles

Scaphisoma agaricinum (Linnaeus, 1758)
Scaphisoma boleti (Panzer, 1793)

Subfamily: PIESTINAE

Siagonium quadricorne Kirby, 1815

Subfamily: STAPHYLININAE

Atrecus affinis (Paykull, 1789)

Gabrius splendidulus (Gravenhorst, 1802)

Quedius brevicornis (Thomson, 1860)

Quedius lyszkowskii Lott, 2010

Quedius plagiatus Mannerheim, 1843

Quedius truncicola Fairmaire & Laboulbène, 1856

LUCANIDAE Stag Beetles

Sinodendron cylindricum (Linnaeus, 1758) Rhinoceros Beetle

CLAMBIDAE

Clambus pallidulus Reitter, 1911

SCIRTIDAE

Prionocyphon serricornis (Müller, P.W.J., 1821)

EUCNEMIDAE False Click Beetles

Melasis buprestoides (Linnaeus, 1761)

ELATERIDAE Click Beetles

Calambus bipustulatus (Linnaeus, 1767)

Denticollis linearis (Linnaeus, 1758)

Ampedus balteatus (Linnaeus, 1758)

Ampedus pomonae (Stephens, 1830)

Ampedus pomorum (Herbst, 1784)

Melanotus castanipes (Paykull, 1800)

LYCIDAE Net-winged Beetles

Pyropterus nigroruber (De Geer, 1774)

CANTHARIDAE Soldier Beetles

Malthinus balteatus Suffrian, 1851

Malthinus flaveolus (Herbst, 1786)

Malthinus seriepunctatus Kiesenwetter, 1852

Malthodes dispar (Germar, 1824)

Malthodes flavoguttatus Kiesenwetter, 1852

Malthodes fuscus (Waltl, 1838)

Malthodes guttifer Kiesenwetter, 1852

Malthodes marginatus (Latreille, 1806)

Malthodes minimus (Linnaeus, 1758)

Malthodes pumilus (Brébisson, 1835)

BOSTRICHIDAE False Powder-post Beetles

Lyctus linearis (Goeze, 1777)

ANOBIIDAE

Hedobia imperialis (Linnaeus, 1767)

Ptinus subpilosus Sturm, 1837

Grynobius planus (Fabricius, 1787)

Dryophilus pusillus (Gyllenhal, 1808)

Ochina ptinoides (Marsham, 1802)

Xestobium rufovillosum (De Geer, 1774) Deathwatch Beetle

Ernobius mollis (Linnaeus, 1758)

Anobium inexpectatum Lohse, 1954

Anobium punctatum (De Geer, 1774) Furniture Beetle

Ptilinus pectinicornis (Linnaeus, 1758)

Dorcatoma dresdensis Herbst, 1792

LYMEXYLIDAE

Hylecoetus dermestoides (Linnaeus, 1761)

PHLOIOPHILIDAE

Phloiophilus edwardsii Stephens, 1830

TROGOSSITIDAE Flat Beetles

Thymalus limbatus (Fabricius, 1787)

CLERIDAE Checkered Beetles

Tillus elongatus (Linnaeus, 1758)

Thanasimus formicarius (Linnaeus, 1758)

DASYTIDAE

Dasytes aeratus Stephens, 1830

MALACHIIDAE Malachite Beetles

Malachius bipustulatus (Linnaeus, 1758)

Anthocomus fasciatus (Linnaeus, 1758)

ASPIDIPHORIDAE

Aspidiphorus orbiculatus (Gyllenhal, 1808)

NITIDULIDAE Sap or Blossom Beetles

Epuraea aestiva (Linnaeus, 1758)

Epuraea angustula Sturm, 1844

Epuraea biguttata (Thunberg, 1784)

Epuraea distincta (Grimmer, 1841)

Epuraea longula Erichson, 1845

Epuraea marseuli Reitter, 1872

Epuraea melanocephala (Marsham, 1802)

Epuraea melina Erichson, 1843

Epuraea pallescens (Stephens, 1835)

Epuraea rufomarginata (Stephens, 1830)

Epuraea silacea (Herbst, 1783)

Epuraea terminalis (Mannerheim, 1843)

Epuraea thoracica Tournier, 1872

Soronia grisea (Linnaeus, 1758)

Soronia punctatissima (Illiger, 1794)

Glischrochilus quadripunctatus (Linnaeus, 1758)

Glischrochilus hortensis (Geoffroy in Fourcroy, 1785)

Glischrochilus quadriguttatus (Fabricius, 1777)

Pityophagus ferrugineus (Linnaeus, 1758)

MONOTOMIDAE

Rhizophagus bipustulatus (Fabricius, 1793)

Rhizophagus cribratus Gyllenhal, 1827

Rhizophagus depressus (Fabricius, 1793)

Rhizophagus dispar (Paykull, 1800)

Rhizophagus ferrugineus (Paykull, 1800)

Rhizophagus parallelocollis Gyllenhal, 1827

Rhizophagus perforatus Erichson, 1845

LAEMOPHLOEIDAE

Cryptolestes ferrugineus (Stephens, 1831)

CRYPTOPHAGIDAE Silken Fungus Beetles

Subfamily CRYPTOPHAGINAE

Henoticus serratus (Gyllenhal, 1808)

Cryptophagus dentatus (Herbst, 1793)

Cryptophagus intermedius Bruce, 1934

Cryptophagus denticulatus Heer, 1841

Cryptophagus ruficornis Stephens, 1830

Subfamily ATOMARIINAE

Atomaria pulchra Erichson, 1846

Atomaria umbrina (Gyllenhal, 1827)

EROTYLIDAE

Dacne bipustulata (Thunberg, 1781)

Triplax aenea (Schaller, 1783)

CERYLONIDAE

Cerylon fagi Brisout de Barneville, 1867

Cerylon ferrugineum Stephens, 1830

Cerylon histerooides (Fabricius, 1793)

ENDOMYCHIDAE False Ladybirds

Endomychus coccineus (Linnaeus, 1758)

CORYLOPHIDAE

Orthoperus nigrescens Stephens, 1829

LATRIDIIDAE Brown Scavenger or Plaster Beetles

Enicmus testaceus (Stephens, 1830)

MYCETOPHAGIDAE Hairy Fungus Beetles

Litargus connexus (Geoffroy in Fourcroy, 1785)

Mycetophagus multipunctatus Fabricius, 1793

CIIDAE Minute Tree Fungus Beetles

Octotemnus glabriculus (Gyllenhal, 1827)

Orthocis alni (Gyllenhal, 1813)

Cis bidentatus (Olivier, 1790)

Cis bilamellatus Wood, 1884

Cis boleti (Scopoli, 1763)

Cis fagi Waltl, 1839

Cis festivus (Panzer, 1793)

Cis hispidus (Paykull, 1798)

Cis nitidus (Fabricius, 1792)

Cis vestitus Mellié, 1849

Cis villosulus (Marsham, 1802)

Ennearthron cornutum (Gyllenhal, 1827)

TETRATOMIDAE

Hallomenus binotatus (Quensel, 1790)

Tetratoma ancora Fabricius, 1791

Tetratoma fungorum Fabricius, 1790

MELANDRYIDAE False Darkling Beetles

Orchesia micans (Panzer, 1793)

Orchesia minor Walker, 1836

Orchesia undulata Kraatz, 1853

Abdera flexuosa (Paykull, 1799)

Melandrya caraboides (Linnaeus, 1761)

Conopalpus testaceus (Olivier, 1790)

MORDELLIDAE Tumbling Flower Beetles

Mordellistena neuwaldeggiana (Panzer, 1796)

COLYDIIDAE Cylindrical Bark Beetles

Pycnomerus angulatus (Broun, 1893)

Pycnomerus fuliginosus Erichson, 1842

Synchita humeralis (Fabricius, 1792)

TENEBRIONIDAE Darkling Beetles

Tenebrio molitor Linnaeus, 1758 Mealworm Beetle

Palorus ratzeburgi (Wissmann, 1848)

Nalassus laevioctostriatus (Goeze, 1777)

Gonodera luperus (Herbst, 1783)

OEDEMERIDAE False Blister Beetles

Nacertes melanura (Linnaeus, 1758) Wharf Borer

Ischnomera sanguinicollis (Fabricius, 1787)

PYROCHROIDAE Cardinal Beetles

Pyrochroa serraticornis (Scopoli, 1763) Red-headed Cardinal Beetle

SALPINGIDAE Narrow-waisted Bark Beetles

Lissodema denticolle (Gyllenhal, 1813)

Rabocerus foveolatus (Ljungh, 1824)

Rabocerus gabrieli Gerhardt, 1901

Sphaeriestes ater (Paykull, 1798)

Sphaeriestes castaneus (Panzer, 1796)

Sphaeriestes reyi (Abeille, 1874)

Vincenzellus ruficollis (Panzer, 1794)

Salpingus planirostris (Fabricius, 1787)

Salpingus ruficollis (Linnaeus, 1761)

SCRAPTIIDAE

Anaspis fasciata (Forster, 1771)

Anaspis frontalis (Linnaeus, 1758)

Anaspis garneysi Fowler, 1889

Anaspis lurida Stephens, 1832

Anaspis maculata (Geoffroy in Fourcroy, 1785)

Anaspis regimbarti Schilsky, 1895

Anaspis rufilabris (Gyllenhal, 1827)

Anaspis thoracica (Linnaeus, 1758)

CERAMBYCIDAE Longhorn Beetles

- Rhagium bifasciatum* Fabricius, 1775
- Rhagium mordax* (De Geer, 1775)
- Grammoptera abdominalis* (Stephens, 1831)
- Grammoptera ruficornis* (Fabricius, 1781)
- Grammoptera ustulata* (Schaller, 1783)
- Leptura aurulenta* (Fabricius, 1793) Hornet Beetle
- Leptura quadrifasciata* (Linnaeus, 1758) Four-banded Longhorn
- Anoplodera sexguttata* (Fabricius, 1775)
- Alosterna tabacicolor* (De Geer, 1775)
- Rutpela maculata* (Poda, 1761)
- Stenurella melanura* (Linnaeus, 1758)
- Asemum striatum* (Linnaeus, 1758)
- Nathrius brevipennis* (Mulsant, 1839)
- Aromia moschata* (Linnaeus, 1758) Musk Beetle
- Callidium violaceum* (Linnaeus, 1758) Violet Longhorn
- Phymatodes testaceus* (Linnaeus, 1758)
- Clytus arietis* (Linnaeus, 1758) Wasp Beetle
- Lamia textor* (Linnaeus, 1758) The Weaver Beetle
- Pogonocherus hispidulus* (Piller & Mitterpacher, 1783)
- Pogonocherus hispidus* (Linnaeus, 1758)
- Leiopus nebulosus* (Linnaeus, 1758)
- Tetrops praeustus* (Linnaeus, 1758)

ANTHRIBIDAE Fungus Weevils

- Choragus sheppardi* Kirby, W., 1819

CURCULIONIDAE Weevils

- Rhopalomesites tardyi* (Curtis, 1825) Holly Weevil
- Pselactus spadix* (Herbst, 1795)
- Pseudophloeophagus aeneopiceus* (Boheman, 1845)
- Euophryum confine* (Broun, 1881)

Euophryum rufum (Broun, 1880)
Pentarthrum huttoni Wollaston, 1854
Macrorhyncholus littoralis (Broun, 1880)
Cryptorhynchus lapathi (Linnaeus, 1758)
Acalles misellus Boheman, 1844
Acalles ptinoides (Marsham, 1802)
Kyklioacalles roboris (Curtis, 1835)
Magdalis armigera (Fourcroy, 1785)
Magdalis carbonaria (Linnaeus, 1758)
Magdalis ruficornis (Linnaeus, 1758)
Hylobius abietis (Linnaeus, 1758)
Pissodes castaneus (De Geer, 1775)
Pissodes pini (Linnaeus, 1758)

Subfamily SCOLYTINAE Bark Beetles

Scolytus multistriatus (Marsham, 1802) Small Elm Bark Beetle
Scolytus rugulosus (Müller, P.W.J., 1818)
Scolytus scolytus (Fabricius, 1775) Common Elm Bark Beetle
Pityophthorus pubescens (Marsham, 1802)
Cryphalus asperatus (Gyllenhal, 1813)
Dryocoetes autographus (Ratzeburg, 1837)
Dryocoetes villosus (Fabricius, 1793)
Orthotomicus laricis (Fabricius, 1792)
Pityogenes bidentatus (Herbst, 1783)
Trypodendron domesticum (Linnaeus, 1758)
Trypodendron lineatum (Olivier, 1795) Conifer Ambrosia Beetle
Hylesinus crenatus (Fabricius, 1787) Large Ash Bark Beetle
Hylesinus varius (Fabricius, 1775) Common Ash Bark Beetle
Pteleobius vittatus (Fabricius, 1787)
Hylastes ater (Paykull, 1800)
Hylastes brunneus Erichson, 1836

Hylastes opacus Erichson, 1836

Hylurgops palliatus (Gyllenhal, 1813)

Tomicus piniperda (Linnaeus, 1758) Pine Shoot Beetle



Index of beetle species

A

<i>Abdera flexuosa</i>	12, 90, 91, 132, 153
<i>Abraeus perpusillus</i>	17, 146
<i>Acalles misellus</i>	119, 156
<i>Acalles ptinoides</i>	121, 156
<i>Acrulia inflata</i>	22, 147
<i>Agaricochara latissima</i>	32, 148
<i>Agathidium confusum</i>	12, 14, 20, 131, 146
<i>Agathidium nigripenne</i>	20, 146
<i>Agathidium rotundatum</i>	4, 20, 146
<i>Agathidium seminulum</i>	21, 146
<i>Agathidium varians</i>	21, 146
<i>Alaobia pallidicornis</i>	28, 147
<i>Alosterna tabacicolor</i>	107, 134, 155
<i>Ampedus balteatus</i>	44, 149
<i>Ampedus pomonae</i>	9, 11, 45, 138, 149
<i>Ampedus pomorum</i>	45, 46, 149
<i>Amphicyllis globus</i>	4, 20, 146
<i>Anaspis fasciata</i>	100, 154
<i>Anaspis frontalis</i>	100, 154
<i>Anaspis garneysi</i>	101, 154
<i>Anaspis lurida</i>	101, 154
<i>Anaspis maculata</i>	102, 154
<i>Anaspis regimbarti</i>	102, 154
<i>Anaspis rufilabris</i>	102, 154
<i>Anaspis thoracica</i>	103, 154
<i>Anisotoma humeralis</i>	19, 146
<i>Anisotoma orbicularis</i>	10, 12, 19, 146
<i>Anobium inexpectatum</i>	56, 150
<i>Anobium punctatum</i>	56, 150
<i>Anomognathus cuspidatus</i>	35, 148
<i>Anoplodera sexguttata</i>	10, 107, 155
<i>Anthocomus fasciatus</i>	4, 62, 151
<i>Aromia moschata</i>	111, 139, 155
<i>Asemum striatum</i>	110, 142, 155
<i>Aspidiphorus orbiculatus</i>	63, 151
<i>Atheta basicornis</i>	29, 147

<i>Atheta pilicornis</i>	13, 29, 147
<i>Atomaria pulchra</i>	75, 133, 152
<i>Atomaria umbrina</i>	75, 152
<i>Atrecus affinis</i>	39, 149

B

<i>Bessobia fungivora</i>	29, 133, 147
<i>Bibloporus bicolor</i>	12, 27, 147
<i>Bolitochara lucida</i>	31, 148
<i>Bolitochara obliqua</i>	31, 148

C

<i>Calambus bipustulatus</i>	4, 44, 149
<i>Callidium violaceum</i>	111, 155
<i>Cerylon fagi</i>	77, 152
<i>Cerylon ferrugineum</i>	77, 152
<i>Cerylon histeroides</i>	78, 152
<i>Choragus sheppardi</i>	116, 155
<i>Cis bidentatus</i>	82, 153
<i>Cis bilamellatus</i>	82, 153
<i>Cis boleti</i>	82, 153
<i>Cis fagi</i>	82, 153
<i>Cis festivus</i>	83, 153
<i>Cis hispidus</i>	83, 153
<i>Cis nitidus</i>	84, 153
<i>Cis vestitus</i>	85, 153
<i>Cis villosulus</i>	12, 85, 153
<i>Clambus pallidulus</i>	42, 149
<i>Clytus arietis</i>	112, 131, 155
<i>Conopalpus testaceus</i>	4, 92, 153
<i>Coryphium angusticolle</i>	22, 146
<i>Cryphalus asperatus</i>	125, 156
<i>Cryptolestes ferrugineus</i>	73, 152
<i>Cryptophagus dentatus</i>	74, 152
<i>Cryptophagus denticulatus</i>	74, 152
<i>Cryptophagus intermedius</i>	74, 152
<i>Cryptophagus ruficornis</i>	74, 152
<i>Cryptorhynchus lapathi</i>	119, 156

Cypha seminulum 4, 36, 148

D

Dacne bipustulata76, 132, 142, 152
Dadobia immersa 30, 147
Dasytes aeratus..... 61, 150
Denticollis linearis 44, 149
Dinaraea aequata 30, 147
Dinaraea linearis 30, 147
Dorcatoma dresdensis.....12, 13, 57, 58, 131, 150
Dropephylla devillei..... 23, 147
Dropephylla gracilicornis..... 23, 147
Dropephylla ioptera 23, 147
Dropephylla koltzei..... 24, 147
Dryocoetes autographus 125, 156
Dryocoetes villosus 126, 156
Dryophilus pusillus 54, 150

E

Endomychus coccineus78, 79, 132, 152
Enicmus testaceus..... 80, 132, 152
Ennearthron cornutum..... 85, 153
Eपुरaea aestiva..... 63, 151
Eपुरaea angustula 63, 151
Eपुरaea biguttata 63, 151
Eपुरaea distincta 64, 132, 151
Eपुरaea longula 64, 151
Eपुरaea marseuli 65, 151
Eपुरaea melanocephala 65, 151
Eपुरaea melina 66, 151
Eपुरaea pallescens..... 66, 151
Eपुरaea rufomarginata..... 66, 151
Eपुरaea silacea 67, 151
Eपुरaea terminalis 14, 68, 151
Eपुरaea thoracica 68, 151
Ernobius mollis 55, 150
Euophryum confine93, 118, 132, 138, 155
Euophryum rufum 118, 139, 156
Euplectus bescidicus..... 26, 147
Euplectus infirmus..... 26, 147
Euplectus karstenii 26, 147
Euplectus mutator..... 26, 147
Euplectus piceus 13, 26, 147

Euplectus punctatus.....4, 26, 147

G

Gabrius splendidulus.....39, 149
Glischrochilus hortensis69, 134, 140, 151
Glischrochilus quadriguttatus70, 151
Glischrochilus quadripunctatus.....69, 151
Gonodera luperus94, 154
Grammoptera abdominalis.....105, 155
Grammoptera ruficornis105, 155
Grammoptera ustulata 12, 105, 155
Grynobius planus54, 150
Gyrophæna affinis32, 148
Gyrophæna bihamata33, 148
Gyrophæna fasciata.....33, 148
Gyrophæna gentilis.....33, 148
Gyrophæna manca34, 148
Gyrophæna minima34, 148
Gyrophæna nana34, 148
Gyrophæna poweri34, 148
Gyrophæna pulchella34, 148
Gyrophæna strictula34, 135, 148

H

Hallomenus binotatus.....86, 141, 153
Hapalaraea pygmaea14, 24, 147
Hedobia imperialis53, 150
Henoticus serratus74, 152
Homalota plana35, 148
Hylastes ater129, 156
Hylastes brunneus.....129, 156
Hylastes opacus 129, 157
Hylecoetus dermestoides 11, 58, 150
Hylesinus crenatus128, 156
Hylesinus varius 74, 128, 156
Hylobius abietis.....123, 156
Hylurgops palliatus130, 157

I

Ischnoglossa prolixa.....36, 148
Ischnomera sanguinicollis..... 10, 95, 142, 154

K

Kyklioacalles roboris 121, 156

L

Lamia textor 113, 155

Leiopus nebulosus..... 114, 116, 133, 155

Leptura aurulenta 11, 105, 107, 155

Leptura quadrifasciata 107, 155

Leptusa fumida 31, 148

Leptusa norvegica..... 31, 133, 148

Leptusa pulchella 31, 148

Leptusa ruficollis 32, 133, 148

Lissodema denticolle..... 11, 97, 154

Litargus connexus 80, 132, 152

Lyctus linearis 53, 150

M

Macrorhyncholus littoralis 119, 156

Magdalis armigera 121, 156

Magdalis carbonaria..... 122, 131, 156

Magdalis ruficornis 123, 156

Malachius bipustulatus..... 61, 62, 136, 151

Malthinus balteatus..... 48, 149

Malthinus flaveolus 48, 149

Malthinus seriepunctatus 48, 149

Malthodes dispar 4, 49, 149

Malthodes flavoguttatus 49, 149

Malthodes fuscus..... 50, 150

Malthodes guttifer..... 51, 141, 150

Malthodes marginatus 51, 150

Malthodes minimus 52, 150

Malthodes pumilus 52, 150

Melandrya caraboides 10, 91, 153

Melanotus castanipes..... 46, 47, 138, 149

Melasis buprestoides 11, 43, 140, 149

Mordellistena neuwaldeggiana 11, 92, 153

Mycetophagus multipunctatus 80, 81, 132, 153

N

Nacertes melanura 94, 154

Nalassus laevioctostriatus 94, 154

Nathrius brevipennis..... 110, 155

Nossidium pilosellum 4, 17, 146

O

Ochina ptinoides 54, 150

Octotemnus glabriculus 81, 153

Oligota apicata..... 36, 148

Orchesia micans 87, 88, 153

Orchesia minor 88, 153

Orchesia undulata 89, 153

Orthocis alni 81, 153

Orthoperus nigrescens 79, 152

Orthotomicus laricis 126, 156

P

Palorus ratzeburgi..... 93, 154

Pentarthrum huttoni 118, 156

Phloeocharis subtilissima 27, 147

Phloeonomus punctipennis 25, 147

Phloeonomus pusillus..... 25, 147

Phloeopora testacea 36, 148

Phloeostiba plana..... 25, 147

Phloiophilus edwardsii..... 59, 150

Phyllo drepoidea crenata 22, 146

Phymatodes testaceus 111, 112, 133, 155

Pissodes castaneus 123, 156

Pissodes pini 123, 134, 156

Pityogenes bidentatus..... 127, 156

Pityophagus ferrugineus 70, 151

Pityophthorus pubescens 125, 156

Pogonocherus hispidulus..... 113, 155

Pogonocherus hispidus..... 113, 155

Prionocyphon serricornis..... 42, 43, 132, 135, 140, 149

Pselactus spadix 117, 155

Pseudophloeophagus aeneopiceus 117, 134, 155

Pteleobius vittatus..... 129, 156

Ptenidium laevigatum 17, 146

Pteryx suturalis..... 18, 146

Ptilinus pectinicornis 57, 60, 150

Ptinella aptera..... 18, 146

Ptinella cavelli 18, 146

Ptinella denticollis 18, 146

Ptinella errabunda..... 18, 146

Ptinella limbata 18, 146

<i>Ptinella taylorae</i>	18, 146
<i>Ptinus subpilosus</i>	13, 53, 54, 132, 150
<i>Pycnomerus angulatus</i>	92, 153
<i>Pycnomerus fuliginosus</i>	93, 140, 153
<i>Pyrochroa serraticornis</i>	4, 95, 96, 134, 140, 143, 154
<i>Pyropterus nigroruber</i>	10, 14, 47, 134, 142, 149

Q

<i>Quedius brevicornis</i>	39, 149
<i>Quedius lyszkowskii</i>	9, 38, 40, 149
<i>Quedius plagiatus</i>	40, 149
<i>Quedius truncicola</i>	40, 149

R

<i>Rabocerus foveolatus</i>	97, 154
<i>Rabocerus gabrieli</i>	97, 154
<i>Rhagium bifasciatum</i>	103, 155
<i>Rhagium mordax</i>	103, 155
<i>Rhizophagus bipustulatus</i>	71, 151
<i>Rhizophagus cribratus</i>	71, 151
<i>Rhizophagus depressus</i>	72, 151
<i>Rhizophagus dispar</i>	72, 151
<i>Rhizophagus ferrugineus</i>	72, 152
<i>Rhizophagus parallelocollis</i>	73, 152
<i>Rhizophagus perforatus</i>	73, 152
<i>Rhopalomesites tardyi</i>	8, 60, 117, 155
<i>Rutpela maculata</i>	108, 155

S

<i>Salpingus planirostris</i>	99, 154
<i>Salpingus ruficollis</i>	99, 154
<i>Scaphisoma agaricinum</i>	37, 148
<i>Scaphisoma boleti</i>	38, 148
<i>Scolytus multistriatus</i>	124, 139, 156
<i>Scolytus rugulosus</i>	124, 156

<i>Scolytus scolytus</i>	124, 156
<i>Sepedophilus littoreus</i>	28, 132, 147
<i>Siagonium quadricorne</i>	38, 39, 133, 148
<i>Sinodendron cylindricum</i>	1, 5, 41, 42, 149
<i>Soronia grisea</i>	68, 151
<i>Soronia punctatissima</i>	69, 151
<i>Sphaeriestes ater</i>	97, 133, 154
<i>Sphaeriestes castaneus</i>	98, 154
<i>Sphaeriestes reyi</i>	98, 133, 154
<i>Stenichnus bicolor</i>	13, 21, 146
<i>Stenurella melanura</i>	109, 155
<i>Synchita humeralis</i>	93, 154

T

<i>Tenebrio molitor</i>	93, 154
<i>Tetratoma ancora</i>	86, 135, 153
<i>Tetratoma fungorum</i>	86, 87, 132, 153
<i>Tetrops praeustus</i>	116, 155
<i>Thamaraea hospita</i>	31, 148
<i>Thanasimus formicarius</i>	60, 61, 131, 150
<i>Thymalus limbatus</i>	59, 150
<i>Tillus elongatus</i>	60, 150
<i>Tomicus piniperda</i>	130, 157
<i>Traumaecia picipes</i>	30, 148
<i>Triplax aenea</i>	76, 152
<i>Trypodendron domesticum</i>	63, 127, 156
<i>Trypodendron lineatum</i>	128, 156

V

<i>Vincenzellus ruficollis</i>	98, 154
--------------------------------------	---------

X

<i>Xestobium rufovillosum</i>	55, 150
<i>Xylostiba monilicornis</i>	25, 147