An inventory of the moths of the major habitats around Lough Carra, Co. Mayo.

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Summary

Light traps were set on 37 nights in various habitats around the Lough Carra lakeshore in 2002, 2003, 2004, 2005 and 2007. Nine locations were sampled in this way, and a total of 2,252 moths of 173 species were recorded. Several species are of particular interest either because they have been recorded infrequently in this region previously (or not at all), or because they are habitat specialists dependent on the protected habitats of this cSAC.

As expected, the moth fauna of Lough Carra is species-rich and shows variation between habitat types.

Introduction

Little is known of the moths of Lough Carra. Shackleton produced a brief species list in 1975 (with just 15 species) after some casual light trapping as part of a vegetation survey. In recent years, light trapping has been carried out at several locations around the lake, including Partry House Estate (two locations), Kilkeeran, Cloonee and Church Island, with the result that an initial species inventory had been assembled (c. 150 species). Some of the species recorded are listed as rare or uncommon in this area, or even not previously recorded. In addition, there are species present with life cycles dependent on aquatic or wetland vegetation, as might be expected on the lakeshore.

There is a wide variety of habitats around the lakeshore and this suggests that the moth population of the whole area might be very rich in species. Since a substantial area of land around the lakeshore is included within the cSAC and contains habitats of considerable conservation interest and value, a knowledge of the moths contributes to a better understanding of the significance of these habitats.

Objectives

The objectives of this project were:

- To assemble a comprehensive species list of moths for the Lough Carra cSAC
- To provide species lists of moths for each of four major habitat types and for six locations on the lakeshore

Methods

Two light traps were employed at various locations around the shore of Lough Carra. One Skinner trap with a mercury vapour bulb was used at five sites (using direct mains electricity supply or a small generator), and a portable plastic bucket Heath trap with an actinic bulb, powered by a 12 volt battery, was used at five sites.

In 2007, light trapping was carried out at six locations on the lakeshore, representing four major habitat types: woodland (at Partry House Estate and the Doon peninsula)), fen with reed and great fen sedge swamp (at Castleburke and Kilkeeran), limestone scrub (at Church Island) and grassland/farmland (at Partry House Estate). Each of these six locations was sampled on three occasions between May and July 2007. In addition, four of them were also sampled in August 2007.

In the years 2002 to 2005, light trapping was carried out at five locations, including two sites sampled in 2007 (grassland/farmland at Partry House Estate and limestone scrub at Church Island) and three sites elsewhere: mixed habitats at Famine Causeway, Cloonee and Kilkeeran.

Records were kept of all species identified (including numbers trapped) using Skinner (1998) throughout and Waring and Townsend (2003) after 2002.

Thus, data were collected from a total of nine locations representing a total of 37 trap nights. Grid references and brief habitat descriptions for each site are as follows, with the approximate locations marked on the attached map:

Site 1 Castleburke Fen M 165-775

Habitats include fen, *Cladium* fen, reedswamp, marsh and grassland with some nearby scrub and hedgerow.

Site 2 Kilkeeran Fen M 168-713

Habitats include fen, Cladium fen and grassland.

Site 3 Famine Causeway M 169-695

Mixed habitats of woodland, fen, *Cladium* fen and reedswamp.

Site 4 Doon Woodland M 165-757

Mixed deciduous woodland.

Site 5 Moynish Woodland M 170-695

Mixed deciduous woodland.

Site 6 Church Island Scrub M 157-762

Limestone scrub and some limestone grassland.

Site 7 Kilkeeran M 164-726

Mixed habitats including grassland, reedswamp, gardens, scrub and woodland.

Site 8 Bridge Park M 166-691

Mixed farmland habitats including grassland, woodland and reedswamp.

Site 9 Cloonee M 180-690

Mixed habitats including grassland, woodland, hedgerow and garden.

Results

The data collected from all trapping at all sites, from 2002 to 2007, include a total of 2,252 individual moths of 172 species. Annex 1 contains a complete species list from this work (using the "Moths Ireland" national species list), with totals for each species, for each site. This table also contains total numbers for each species at all sites combined.

It should be noted that the trapping effort (number of trap nights) varied between sites and that the weather conditions were also different. Therefore, it is not possible to interpret the data in any detail. Furthermore, 2007 seems to have been a "poor" year for moths generally and numbers trapped were fewer than might have been expected on the basis of the results from previous years.

However, it is possible to make the following comments:

As expected, the sites with mixed habitats (i.e. Sites 8 and 9) and the limestone scrub site (Site 6) appear to harbour the greatest variety of species and also the greatest number of individuals.

The two fen sites (Sites 1 and 2) were relatively species-poor, but produced species that are fen or wetland specialists.

In addition to these records, there are a few other records of moth species from the lakeshore:

169	Zygaena filipenduli	Six-spot Burnet (seen quite frequently by day)
1638	Macrothylacia rubi	Fox Moth (2005 data from Ken Bond)
1653	Habrosyne pyritoides	Buff Arches (2005 data from Ken Bond)
1708	Idaea dimidiata	Single-dotted Wave (2005 data from Ken Bond)
1982	Hemaris tityus	Narrow-bordered bee hawkmoth (several records May/June 2008)
2155	Melanchra persicariae	Dot Moth (2005 data from Ken Bond)
	Lacanobia contigua	Beautiful Brocade (2005 data from Ken Bond)
2441	Autographa gamma	Silver Y (2005 data from Ken Bond)

2449	Abrostola triplasia	Dark Spectacle (2005 data from Ken Bond)
1728	Xanthorhoe fluctuata	Garden Carpet (2006 data from Ken Bond)
1846	Eupithecia nanata	Narrow-winged Pug (2006 data from Ken Bond)
2462	Callistege mi	Mother Shipton (seen quite frequently by day)
2463	Euclidia glyphica	Burnet Companion (seen frequently by day)

And the following species were recorded in 1975 (Anon., undated) that were not recorded during the period 2002 to 2007:

2133	Xestia sexstrigata	Six-striped Rustic
2267	Agrochola lychnidis	Beaded Chestnut
2373	Archanara sparganii	Webb's Wainscot

These additional records bring the species list for Lough Carra to 189.

Discussion

The great majority of species recorded are considered to be common and widespread in Ireland. However, the following species have not been recorded commonly, or are fenland specialists, or are of interest for some reason:

Transparent Burnet

This is not a common species in Ireland, but is known to be relatively widespread in the Burren. Since the limestone habitats around Lough Carra are, in effect, an extension of the Burren, the occurrence of this species here is not surprising. It was recorded at Site 8 (Bridge Park), where it has also been recorded by day. It should also be noted that it has been recorded by day in a few other locations around the lake where suitable habitat occurs. In June 2008, at least fifty or sixty were present on the eastern shoreline of Derrinrush.

Lesser Cream Wave

This is a species of damp meadows and marshes and was recorded at Site 7.

Plain Wave

A "woodland and heathland" species considered as "local and far from common" by Skinner (1998) and recorded at Site 6 (four specimens).

Oblique Carpet

A fenland and marsh specialist, recorded in large numbers (34) at Site 1 (Castleburke Fen) and also at Site 2 (Kilkeeran Fen) and Site 6 (where there is fen and marsh nearby).

Chestnut-coloured Carpet

A species of interest because the larval food plant is juniper. One specimen recorded at each of Sites 2 and 8 (where juniper occurs).

<u>Tissue</u>

A species of interest because the larval food plants are buckthorn and alder buckthorn, both of which are widespread around the lakeshore and on islands in the lake. One specimen recorded at Site 2.

Barred Carpet

An uncommon species of which just one specimen was recorded (at Site 9).

Barred Rivulet

A species of interest because the larval food plant is red bartsia which occurs in limestone grassland around the lakeshore. One specimen recorded at each of Sites 8 and 9.

Pretty Pinion

A species of interest because the larval food plant is eyebright which occurs in limestone grassland around the lakeshore. Two specimens recorded at Site 8.

Scorched Carpet

Infrequently recorded in Ireland. Larval food plant is spindle, which is widespread around the lakeshore. A total of six specimens recorded at Sites 4 and 5 (both woodland habitats).

Brindled Beauty

Reported by Skinner (1998) to be "rare and local" in Ireland, with apparently no records from Co. Mayo. Thus, this might be a first record for the county.

Engrailed

Possibly an uncommon species in Ireland. Three specimens recorded at Sites 4 and 5 (both woodland habitats).

Scarce Prominent

Skinner (1998) lists records from Cos. Kerry, Cork, Tipperary, Fermanagh, Wicklow and Tyrone, so the two specimens at Site 4 may be the first for Co. Mayo.

Pale Tussock

Reported (by Skinner, 1998) to be common on Burren limestone in Cos. Clare and Galway, but possibly not yet recorded in Co. Mayo. One specimen at each of Sites 3 and 8.

Round-winged Muslin

A fenland and marsh specialist considered "local" in Ireland with "thinly scattered records" (Skinner, 1998). A total of six specimens recorded at the two fen sites (Sites 1 and 2).

Red-necked Footman

A "local" species of which just one specimen was recorded at Site 3.

Four-spotted Footman

This species is both resident and an immigrant, but not considered common. It may not have been recorded previously in Co. Mayo, so the total of 181 specimens from Sites 5, 7, 8 and 9 (with 151 at Site 9) is of considerable interest.

Striped wainscot

Skinner (1998) lists records from Cos. Tipperary, Kildare, Galway, Kerry and Cork, so the 23 specimens from Site 3 are of interest. The larval food plant is the common reed (and some grasses).

Centre-barred Sallow

A local and uncommon species (Skinner, 1998) which was recorded once at Site 8.

Light Knot Grass

A local and uncommon species (Skinner, 1998) which was recorded at Site 2 (one specimen) and Site 9 (two specimens).

Coronet

A local species recorded previously in Cos. Clare and Galway (Skinner, 1998). The records at Site 3 (three specimens) and Site 9 (one specimen) may, therefore, be the first for Co. Mayo.

Clouded Brindle

A scarce species in Ireland. Two specimens recorded at Site 3.

Least Minor

A "Burren" species whose food plant is glaucous sedge. Three specimens recorded at Site 3.

Crescent

A fenland and marsh specialist, with yellow iris and great fen sedge as larval food plants. A total of 33 specimens recorded from three sites (Sites 2, 6 and 8).

Rush Wainscot

Skinner (1998) notes records from Cos. Galway, Clare and Kildare, so the single record from Site 8 may be the first for Co. Mayo, although this species was previously reported from Lough Carra in 1975 (Anon., Undated). The larval food plants include *Scirpus lacustris*, reedmace and yellow iris.

Marbled White Spot

The 22 specimens from Site 3 may be the first records from Co. Mayo as Skinner (1998) reports this species as local in Cos. Down, Kerry and Cork.

Straw Dot

A fenland and marsh specialist, recorded at Sites 1, 2, 4, 6, 8 and 9.

In general, it is clear that the very wide variety of habitats and potential larval food plants produces a very rich diversity of moth species. For example, within a short distance of the trapping sites there exists conifer woodland, deciduous woodland, scrub, grassland, marsh, fen, reedswamp, heath and bog. Continued trapping is likely to increase the species inventory substantially (it is known, for example, that many species not yet recorded around the lakeshore do occur within a few kilometres since regular trapping has taken place at Carrajames [map reference M 18-82] since 2002 and, more recently, at Aghinish [map reference M 15-67]).

References

Anon. Undated (ca.1980). An Interim Report on the State of Knowledge of the Natural History of an Area in South Mayo. Unpublished report (held in NPWS).

Skinner, B. 1998. Colour Identification Guide to Moths of the British Isles (Macrolepidoptera). Viking, London.

Waring, P. and M. Townsend. 2003. Field Guide to the Moths of Great Britain and Ireland. British Wildlife Publishing, Hook.

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Annex 1

			SITE 1	SITE 2	SITE 3	SITE 4	SITE 5	SITE 6	SITE 7	SITE 8	SITE 9	TOTAL
14	Hepialus humuli	Ghost Moth	1	0	0	0	0	0	1	2	0	4
16	Hepialus hecta	Gold Swift	0	0	0	0	2	0	0	0	0	2
17	Hepialus lupulinus	Common Swift	0	0	0	0	0	0	0	3	0	3
18	Hepialus fusconebulosa	Map-winged Swift	3	0	0	42	9	13	0	0	0	67
161	Zeuzera pyrina	Leopard Moth	0	0	0	0	0	0	0	0	0	0
162	Cossus cossus	Goat Moth	0	0	0	0	0	0	0	0	0	0
163	Adscita statices	Forester	0	0	0	0	0	0	0	0	0	0
169	Zygaena filipendulae	Six-spot Burnet	0	0	0	0	0	0	0	0	0	0
171	Zygaena lonicerae	Narrow-bordered Five-spot Burnet	0	0	0	0	0	0	0	0	0	0
172	Zygaena purpuralis	Transparent Burnet	0	0	0	0	0	0	0	3	0	3
370	Sesia apiformis	Hornet Moth	0	0	0	0	0	0	0	0	0	0
371	Sesia bembeciformis	Lunar Hornet Moth	0	0	0	0	0	0	0	0	0	0
373	Synanthedon tipuliformis	Currant Clearwing	0	0	0	0	0	0	0	0	0	0
376	Synanthedon scoliaeformis	Welsh Clearwing	0	0	0	0	0	0	0	0	0	0
380	Synanthedon formicaeformis	Red-tipped Clearwing	0	0	0	0	0	0	0	0	0	0
383	Bembecia muscaeformis	Thrift Clearwing	0	0	0	0	0	0	0	0	0	0
1631	Poecilocampa populi	December Moth	0	0	0	0	0	0	0	0	0	0
1632	Trichiura crataegi	Pale Eggar	0	0	0	0	0	0	0	0	0	0
1633	Eriogaster lanestris	Small Eggar	0	0	0	0	0	0	0	0	0	0
1634	Malacosoma neustria	Lackey	0	0	0	0	0	0	0	0	0	0
1637	Lasiocampa quercus	Northern/Oak Eggar	0	0	0	0	0	0	0	1	0	1
1638	Macrothylacia rubi	Fox Moth	0	0	0	0	0	0	0	0	0	0
1640	Euthrix potatoria	Drinker	0	0	24	0	1	1	4	5	2	37
1643	Pavonia pavonia	Emperor	0	0	0	0	0	0	0	0	0	0
1645	Falcaria lacertinaria	Scalloped Hook-tip	0	0	0	0	0	0	0	0	0	0
1647	Drepana cultraria	Barred Hook-tip	0	0	0	0	0	0	0	0	0	0
1648	Drepana falcataria	Pebble Hook-tip	0	0	0	0	0	0	0	0	0	0
1651	Cilix glaucata	Chinese Character	0	0	0	0	0	6	0	0	2	8
1652	Thyatira batis	Peach Blossom	0	0	0	1	0	0	0	0	0	1
1653	Habrosyne pyritoides	Buff Arches	0	0	0	0	0	0	0	0	0	0
1655	Tethea or	Poplar Lutestring	0	0	0	0	0	0	0	0	0	0

1656	Tetheella fluctuosa	Satin Lutestring	0	0	0	0	0	0	0	0	0	0
1657	Ochropacha duplaris	Common Lutestring	0	0	0	0	0	1	0	0	0	1
1659	Achlya flavicornis	Yellow Horned	0	0	0	0	0	0	0	0	0	0
1663	Alsophila aescularia	March Moth	0	0	0	0	0	0	0	0	0	0
1665	Pseudoterpna pruinata	Grass Emerald	2	1	0	0	0	0	0	0	1	4
1666	Geometra papilionaria	Large Emerald	0	0	0	0	0	1	1	1	1	4
1669	Hemithea aestivaria	Common Emerald	0	0	0	0	0	0	0	0	0	0
1673	Hemistola chrysoprasaria	Small Emerald	0	0	0	0	0	0	0	0	0	0
	Jodis lactearia	Little Emerald	0	0	0	0	1	1	0	0	0	2
1677	Cyclophora albipunctata	Birch Mocha	0	0	0	0	0	0	0	0	0	0
	Cyclophora puppillaria	Blair's Mocha	0	0	0	0	0	0	0	0	0	0
	Cyclophora punctaria	Maiden's Blush	0	0	0	0	0	0	0	0	0	0
1681	Cyclophora linearia	Clay Triple-lines	0	0	0	0	0	0	0	0	0	0
1682	Timandra comae	Blood-vein	0	0	0	0	0	0	0	0	0	0
1689	Scopula marginepunctata	Mullein Wave	0	0	0	0	0	0	0	0	0	0
1690	Scopula imitaria	Small Blood-vein	0	0	0	0	0	0	0	0	0	0
	Scopula emutaria	Rosy Wave	0	0	0	0	0	0	0	0	0	0
1692	Scopula immutata	Lesser Cream Wave	0	0	0	0	0	0	1	0	0	1
	Scopula floslactata	Cream Wave	0	0	0	0	0	0	0	0	0	0
1694	Scopula ternata	Smoky Wave	0	0	0	0	0	0	0	0	0	0
	Idaea muricata	Purple-bordered Gold	0	0	0	0	0	0	0	0	0	0
1702	Idaea biselata	Small Fan-footed Wave	0	0	0	2	2	0	0	0	0	4
1708	Idaea dimidiata	Single-dotted Wave	0	0	0	0	0	0	0	0	0	0
1709	Idaea subsericeata	Satin Wave	0	0	0	0	0	0	0	0	0	0
1713	Idaea aversata	Riband Wave	0	0	0	4	0	1	0	10	6	21
1715	Idaea straminata	Plain Wave	0	0	0	0	0	4	0	0	0	4
1716	Rhodometra sacraria	Vestal	0	0	0	0	0	0	0	0	0	0
1719	Orthonama vittata	Oblique Carpet	34	1	0	0	0	2	0	0	0	37
1720	Orthonama obstipata	Gem	0	0	0	0	0	0	0	0	0	0
1722	Xanthorhoe designata	Flame Carpet	0	0	0	1	0	7	0	0	0	8
	Xanthorhoe decoloraria	Red Carpet	0	0	0	0	0	0	0	0	0	0
1724	Xanthorhoe spadicearia	Red Twin-spot Carpet	0	0	0	0	0	0	0	0	0	0

1725	Xanthorhoe ferrugata	Dark-barred Twin-spot Carpet	0	0	0	0	0	2	0	0	0	2
1727	Xanthorhoe montanata	Silver-ground Carpet	0	0	1	1	0	1	0	0	0	3
1728	Xanthorhoe fluctuata	Garden Carpet	0	0	0	0	0	0	0	0	0	0
1732	Scotopteryx chenopodiata	Shaded Broad-bar	3	0	0	0	0	3	0	5	2	13
1733	Scotopteryx mucronata	Lead Belle	0	0	0	0	1	0	0	0	0	1
1734	Scotopteryx luridata	July Belle	0	0	0	0	0	0	0	0	0	0
1736	Catarhoe cuculata	Royal Mantle	0	0	0	0	0	0	0	0	0	0
1737	Epirrhoe tristata	Small Argent and Sable	0	0	0	0	0	0	0	0	0	0
1738	Epirrhoe alternata	Common Carpet	2	0	0	0	0	5	1	2	0	10
1740	Epirrhoe galiata	Galium Carpet	0	0	0	0	0	0	0	3	0	3
1742	Camptogramma bilineata	Yellow Shell	0	0	0	0	0	0	0	0	0	0
1743	Entephria flavicinctata	Yellow-ringed Carpet	0	0	0	0	0	0	0	0	0	0
1744	Entephria caesiata	Grey Mountain Moth	0	0	0	0	0	0	0	0	0	0
1745	Larentia clavaria	Mallow	0	0	0	0	0	0	0	0	0	0
1746	Anticlea badiata	Shoulder Stripe	0	0	0	0	0	0	0	0	0	0
1747	Anticlea derivata	Streamer	0	0	0	0	0	0	0	0	0	0
1748	Mesoleuca albicillata	Beautiful Carpet	0	0	0	0	0	0	0	0	0	0
1749	Pelurga comitata	Dark Spinach	0	0	0	0	0	0	0	0	0	0
1750	Lampropteryx suffumata	Water Carpet	0	0	0	1	0	0	0	0	0	1
1752	Cosmorhoe ocellata	Purple Bar	0	0	0	0	0	5	0	1	0	6
1753	Nebula salicata	Striped Twin-spot Carpet	0	0	9	0	0	0	0	0	0	9
1754	Eulithis prunata	Phoenix	0	0	0	0	0	0	0	0	0	0
1755	Eulithis testata	Chevron	0	20	0	0	0	0	0	2	0	22
1756	Eulithis populata	Northern Spinach	0	0	0	0	0	0	0	0	0	0
1757	Eulithis mellinata	Spinach	0	0	0	0	0	0	0	0	0	0
1758	Eulithis pyraliata	Barred Straw	0	0	0	0	0	0	1	0	0	1
1759	Ecliptopera silaceata	Small Phoenix	0	0	0	1	0	3	0	0	0	4
1760	Chloroclysta siterata	Red-green Carpet	0	0	0	0	0	0	0	0	0	0
1761	Chloroclysta miata	Autumn Green Carpet	0	0	0	0	0	0	0	0	0	0
1762	Chloroclysta citrata	Dark Marbled Carpet	0	0	0	0	0	7	0	0	0	7
1764	Chloroclysta truncata	Common Marbled Carpet	0	0	0	0	0	0	0	1	0	1
1765	Cidaria fulvata	Barred Yellow	0	0	0	0	0	0	0	0	0	0

1766 P	Plemyria rubiginata	Blue-bordered Carpet	0	0	0	0	0	0	0	0	0	0
1767 T	hera firmata	Pine Carpet	0	0	0	0	0	1	0	0	0	1
1768 T	Thera obeliscata	Grey Pine Carpet	0	0	8	0	4	0	1	0	2	15
1769 T	hera britannica	Spruce Carpet	0	0	0	0	0	0	0	0	0	0
1770 T	Thera cognata	Chestnut-coloured Carpet	0	1	0	0	0	0	0	1	0	2
1771 T	hera juniperata	Juniper Carpet	0	0	0	0	0	0	0	0	0	0
1773 <i>E</i>	Electrophaes corylata	Broken-barred Carpet	0	0	0	0	0	0	0	0	0	0
1774 C	Colostygia olivata	Beech-green Carpet	0	0	0	0	0	0	0	0	0	0
1775 C	Colostygia multistrigaria	Mottled Grey	0	0	0	0	0	0	0	0	0	0
1776 C	Colostygia pectinataria	Green Carpet	0	0	0	3	0	17	0	2	0	22
1777 H	Iydriomena furcata	July Highflyer	2	0	0	66	23	25	1	13	4	134
1778 <i>H</i>	Iydriomena impluviata	May Highflyer	0	0	0	0	0	0	0	0	0	0
1779 <i>H</i>	Iydriomena ruberata	Ruddy Highflyer	0	0	0	0	0	0	0	0	0	0
1780 C	Coenocalpe lapidata	Slender-striped Rufous	0	0	0	0	0	0	0	0	0	0
1781 <i>H</i>	Iorisme vitalbata	Small Waved Umber	0	0	0	0	0	0	0	0	0	0
1782 <i>H</i>	Iorisme tersata	Fern	0	0	0	0	0	0	0	0	0	0
1785 P	Pareulype berberata	Barberry Carpet	0	0	0	0	0	0	0	0	0	0
1787 R	Rheumaptera hastata	Argent and Sable	0	0	0	0	0	0	0	0	0	0
1789 <i>R</i>	Pheumaptera undulata	Scallop Shell	0	0	0	0	0	0	0	0	0	0
1790 T	riphosa dubitata	Tissue	0	1	0	0	0	0	0	0	0	1
1791 P	Philereme vetulata	Brown Scallop	0	0	0	0	0	0	0	0	0	0
1792 <i>P</i>	Philereme transversata	Dark Umber	0	0	0	0	0	0	0	0	0	0
1793 <i>E</i>	Suphyia biangulata	Cloaked Carpet	0	0	0	0	0	0	0	0	0	0
1794 <i>E</i>	Euphyia unangulata	Sharp-angled Carpet	1	0	0	0	0	0	0	0	0	1
1795 E	Epirrita dilutata	November Moth	0	0	0	0	0	0	0	0	0	0
1796 <i>E</i>	Epirrita christyi	Pale November Moth	0	0	0	0	0	0	0	0	0	0
1797 <i>E</i>	pirrita autumnata	Autumnal Moth	0	0	0	0	0	0	0	0	0	0
1798 <i>E</i>	Epirrita filigrammaria	Small Autumnal Moth	0	0	0	0	0	0	0	0	0	0
1799 <i>0</i>	Operophtera brumata	Winter Moth	0	0	0	0	0	0	0	0	0	0
1800 <i>0</i>)perophtera fagata	Northern Winter Moth	0	0	0	0	0	0	0	0	0	0
1801 P	Perizoma taeniata	Barred Carpet	0	0	0	0	0	0	0	0	1	1
1802 P	Perizoma affinitata	Rivulet	0	0	0	0	0	0	0	0	0	0

1803	Perizoma alchemillata	Small Rivulet	0	0	0	0	0	0	0	0	0	0
1804	Perizoma bifaciata	Barred Rivulet	0	0	0	0	0	0	0	1	1	2
1805	Perizoma minorata	Heath Rivulet	0	0	0	0	0	0	0	0	0	0
1806	Perizoma blandiata	Pretty Pinion	0	0	0	0	0	0	0	2	0	2
1807	Perizoma albulata	Grass Rivulet	0	0	0	0	0	0	0	0	0	0
1808	Perizoma flavofasciata	Sandy Carpet	0	0	0	0	0	0	0	0	0	0
1809	Perizoma didymata	Twin-spot Carpet	0	0	0	0	0	0	0	0	0	0
1811	Eupithecia tenuiata	Slender Pug	0	0	0	0	0	0	0	0	0	0
1813	Eupithecia haworthiata	Haworth's Pug	0	0	0	0	0	0	0	0	0	0
1814	Eupithecia plumbeolata	Lead-coloured Pug	0	0	0	0	0	0	0	0	0	0
1815	Eupithecia abietaria	Cloaked Pug	0	0	0	0	0	0	0	0	0	0
1816	Eupithecia linariata	Toadflax Pug	0	0	0	0	0	0	0	0	0	0
1817	Eupithecia pulchellata	Foxglove Pug	0	0	0	0	0	0	0	0	0	0
1819	Eupithecia exiguata	Mottled Pug	0	0	0	0	0	0	0	0	0	0
1821	Eupithecia valerianata	Valerian Pug	0	0	0	0	0	0	0	0	0	0
1822	Eupithecia pygmaeata	Marsh Pug	0	0	0	0	0	0	0	0	0	0
1823	Eupithecia venosata	Netted Pug	0	0	0	0	0	0	0	0	0	0
1825	Eupithecia centaureata	Lime-speck Pug	0	0	0	0	0	0	0	0	0	0
1826	Eupithecia trisignaria	Triple-spotted Pug	0	0	0	0	0	0	0	0	0	0
1827	Eupithecia intricata	Freyer's Pug	0	0	0	0	0	0	0	0	0	0
1828	Eupithecia satyrata	Satyr Pug	0	0	0	0	0	0	0	0	0	0
1830	Eupithecia absinthiata	Wormwood Pug	0	0	0	0	0	0	0	0	0	0
1831	Eupithecia goossensiata	Ling Pug	0	0	0	0	0	0	0	0	0	0
1832	Eupithecia assimilata	Currant Pug	0	0	0	0	0	0	0	0	0	0
1833	Eupithecia expallidata	Bleached Pug	0	0	0	0	0	0	0	0	0	0
1834	Eupithecia vulgata	Common Pug	0	0	0	0	0	0	0	0	0	0
1835	Eupithecia tripunctaria	White-spotted Pug	0	0	0	0	0	0	0	0	0	0
1836	Eupithecia denotata	Campanula Pug	0	0	0	0	0	0	0	0	0	0
1837	Eupithecia subfuscata	Grey Pug	0	0	0	0	0	0	0	0	0	0
1838	Eupithecia icterata	Tawny-speckled Pug	0	0	0	0	0	0	0	0	0	0
1839	Eupithecia succenturiata	Bordered Pug	0	0	0	0	0	0	0	0	0	0
1840	Eupithecia subumbrata	Shaded Pug	0	0	0	0	0	0	0	0	0	0

1040			1 1	<u> </u>			<u> </u>	i				i
	Eupithecia simpliciata	Plain Pug	0	0	0	0	0	0	0	0	0	0
	Eupithecia distinctaria	Thyme Pug	0	0	0	0	0	0	0	0	0	0
	Eupithecia indigata	Ochreous Pug	0	0	0	0	0	0	0	0	0	0
	Eupithecia pimpinellata	Pimpinel Pug	0	0	0	0	0	0	0	0	0	0
1846	Eupithecia nanata	Narrow-winged Pug	0	0	0	0	0	0	0	0	0	0
	Eupithecia innotata	Angle-barred Pug	0	0	0	0	0	0	0	0	0	0
1849	Eupithecia fraxinata	Ash Pug	0	0	0	0	0	0	0	0	0	0
1851	Eupithecia virgaureata	Golden-rod Pug	0	0	0	0	0	0	0	0	0	0
1852	Eupithecia abbreviata	Brindled Pug	0	0	0	0	0	0	0	0	0	0
1853	Eupithecia dodoneata	Oak-tree Pug	0	0	0	0	0	0	0	0	0	0
1854	Eupithecia pusillata	Juniper Pug	0	0	0	0	0	0	0	0	0	0
1855	Eupithecia phoeniceata	Cypress Pug	0	0	0	0	0	0	0	0	0	0
1856	Eupithecia lariciata	Larch Pug	0	0	0	0	0	0	0	0	0	0
1857	Eupithecia tantillaria	Dwarf Pug	0	0	0	0	0	0	0	0	0	0
1858	Chloroclystis v-ata	V-Pug	0	0	0	0	0	0	0	0	0	0
1860	Chloroclystis rectangulata	Green Pug	0	0	0	0	0	0	0	0	0	0
1861	Chloroclystis debiliata	Bilberry Pug	0	0	0	0	0	0	0	0	0	0
1862	Gymnoscelis rufifasciata	Double-striped Pug	0	0	0	0	0	0	0	0	0	0
1864	Chesias legatella	Streak	0	0	0	0	0	0	0	0	0	0
1865	Chesias rufata	Broom-tip	0	0	0	0	0	0	0	0	0	0
1866	Carsia sororiata	Manchester Treble-bar	0	0	0	0	0	0	0	0	0	0
1867	Aplocera plagiata	Treble Bar	0	0	0	0	0	0	0	0	0	0
1870	Odezia atrata	Chimney Sweeper	0	0	0	0	0	0	0	0	0	0
1873	Venusia cambrica	Welsh Wave	0	0	0	0	0	0	0	0	0	0
1875	Asthena albulata	Small White Wave	0	0	0	0	1	1	0	0	0	2
1876	Hydrelia flammeolaria	Small Yellow Wave	0	0	0	0	0	0	0	0	0	0
1877	Hydrelia sylvata	Waved Carpet	0	0	0	0	0	0	0	0	0	0
	Lobophora halterata	Seraphim	0	0	0	0	0	0	0	0	0	0
1881	Trichopteryx carpinata	Early Tooth-striped	0	0	0	0	0	0	0	0	0	0
1882	Pterapherapteryx sexalata	Small Seraphim	0	0	0	0	0	0	0	0	0	0
1883	Acasis viretata	Yellow-barred Brindle	0	0	0	0	0	1	0	0	0	1
1884	Abraxas grossulariata	Magpie Moth	1	0	0	0	1	2	0	7	1	12

1885	Abraxas sylvata	Clouded Magpie	0	0	0	0	0	0	0	0	0	0
	Lomaspilis marginata	Clouded Border	0	0	2	0	0	0	6	0	1	a
	Ligdia adustata	Scorched Carpet		0	0	1	5	0	0	0	0	6
	Macaria notata	Peacock Moth	0	0	0	0	0	0	0	0	0	0
1890	Macaria alternaria	Sharp-angled Peacock	0	0	0	0	0	0	0	0	0	0
1893	Macaria liturata	Tawny-barred Angle	0	0	0	0	0	0	0	0	0	0
	Macaria clathrata	Latticed Heath	0	0	0	0	0	0	0	0	0	0
1897	Macaria wauaria	V-Moth	0	0	0	0	0	0	0	0	0	0
1901	Cepphis advenaria	Little Thorn	0	0	0	0	0	0	0	0	0	0
1902	Petrophora chlorosata	Brown Silver-line	0	0	0	0	0	2	0	0	0	2
1903	Plagodis pulveraria	Barred Umber	0	0	0	0	0	1	0	0	0	1
1904	Plagodis dolabraria	Scorched Wing	0	0	0	2	0	0	0	0	0	2
1906	Opisthograptis luteolata	Brimstone Moth	1	0	6	2	1	7	2	7	6	32
1907	Epione repandaria	Bordered Beauty	0	0	0	0	0	0	0	0	0	0
1909	Pseudopanthera macularia	Speckled Yellow	0	0	0	0	0	0	0	0	0	0
1910	Apeira syringaria	Lilac Beauty	0	0	0	0	0	1	0	0	0	1
1911	Ennomos autumnaria	Large Thorn	0	0	0	0	0	0	0	0	0	0
1912	Ennomos quercinaria	August Thorn	0	1	0	4	0	0	0	6	0	11
1913	Ennomos alniaria	Canary-shouldered Thorn	0	0	0	0	0	0	0	2	0	2
1915	Ennomos erosaria	September Thorn	0	0	0	0	0	0	0	0	0	0
1917	Selenia dentaria	Early Thorn	0	0	0	6	0	9	1	3	0	19
1918	Selenia lunularia	Lunar Thorn	0	0	0	0	0	0	0	0	0	0
1920	Odontopera bidentata	Scalloped Hazel	0	0	0	4	1	0	0	1	0	6
1921	Crocallis elinguaria	Scalloped Oak	4	0	0	1	0	5	0	4	0	14
1922	Ourapteryx sambucaria	Swallow-tailed Moth	0	0	0	0	0	0	2	2	0	4
1923	Colotois pennaria	Feathered Thorn	0	0	0	0	0	0	0	0	0	0
1924	Angerona prunaria	Orange Moth	0	0	0	0	0	0	0	0	0	0
1926	Phigalia pilosaria	Pale Brindled Beauty	0	0	0	0	0	0	0	3	0	3
	Lycia hirtaria	Brindled Beauty	0	0	0	1	0	0	0	1	0	2
	Lycia zonaria	Belted Beauty	0	0	0	0	0	0	0	0	0	0
	Biston strataria	Oak Beauty	0	0	0	0	0	0	0	0	0	0
1931	Biston betularia	Peppered Moth	0	0	3	0	0	2	0	3	0	8

1932	Agriopis leucophaearia	Spring Usher	0	0	0	0	0	0	0	0	0	0
	Agriopis aurantiaria	Scarce Umber	0	0	0	0	0	0	0	0	0	0
	Agriopis marginaria	Dotted Border	0	0	0	0	0	0	0	0	0	0
	Erannis defoliaria	Mottled Umber	0	0	0	0	0	0	0	0	0	0
1936	Menophra abruptaria	Waved Umber	0	0	0	0	0	0	0	0	0	0
1937	Peribatodes rhomboidaria	Willow Beauty	0	0	5	0	1	0	0	8	2	16
1938	Selidosema brunnearia	Bordered Grey	0	0	0	0	0	0	0	0	0	0
1939	Cleora cinctaria	Ringed Carpet	0	0	0	0	0	0	0	0	0	0
1940	Deileptenia ribeata	Satin Beauty	0	0	0	0	0	0	0	0	0	0
1941	Alcis repandata	Mottled Beauty	0	0	0	13	0	17	2	0	0	32
1942	Alcis jubata	Dotted Carpet	0	0	0	0	0	0	0	0	0	0
1944	Hypomecis punctinalis	Pale Oak Beauty	0	0	0	0	0	0	0	0	0	0
1945	Cleorodes lichenaria	Brussels Lace	0	0	0	0	0	1	1	1	0	3
1947	Ectropis bistortata	Engrailed	0	0	0	2	1	0	0	0	0	3
1948	Ectropis crepuscularia	Small Engrailed	0	0	0	0	3	0	0	0	0	3
1949	Paradarisa consonaria	Square Spot	0	0	0	0	0	0	0	0	0	0
1951	Aethalura punctulata	Grey Birch	0	0	0	0	0	0	0	0	0	0
1952	Ematurga atomaria	Common Heath	0	0	0	0	0	0	0	0	0	0
1954	Bupalus piniaria	Bordered White	0	0	1	0	0	0	0	0	0	1
1955	Cabera pusaria	Common White Wave	0	0	0	3	0	4	0	0	1	8
1956	Cabera exanthemata	Common Wave	0	0	0	0	0	1	0	0	0	1
1957	Lomographa bimaculata	White-pinion Spotted	0	0	0	0	0	0	0	0	0	0
1958	Lomographa temerata	Clouded Silver	0	0	0	0	0	1	0	0	0	1
1960	Theria primaria	Early Moth	0	0	0	0	0	0	0	0	0	0
1961	Campaea margaritata	Light Emerald	0	0	7	0	0	0	1	0	0	8
1962	Hylaea fasciaria	Barred Red	0	0	0	0	2	0	0	0	0	2
	Odonthognophos dumetata hibernica	Irish Annulet	0	0	0	0	0	0	0	0	0	0
1963	Gnophos obfuscata	Scottish Annulet	0	0	0	0	0	0	0	0	0	0
1964	Charissa obscurata	Annulet	0	0	0	0	0	0	0	0	0	0
1967	Aspitates gilvaria	Straw Belle	0	0	0	0	0	0	0	0	0	0
1969	Dyscia fagaria	Grey Scalloped Bar	0	0	0	0	0	1	0	0	0	1

1970 Perconia strigillaria	Grass Wave	0	0	1	0	0	0	0	1	0	2
1972 Agrius convolvuli	Convolvulus Hawk-moth	0	0	0	0	0	0	0	0	0	0
1973 Acherontia atropos	Death's-head Hawk-moth	0	0	0	0	0	0	0	0	0	0
1980 Smerinthus ocellata	Eyed Hawk-moth	0	0	0	0	0	1	0	2	1	4
1981 Laothoe populi	Poplar Hawk-moth	0	2	1	0	2	2	3	5	0	15
1982 Hemaris tityus	Narrow-bordered Bee Hawk	0	0	0	0	0	0	0	0	0	0
1984 Macroglossum stellatarum	Humming-bird Hawk-moth	0	0	0	0	0	0	0	0	0	0
1985 Daphnis nerii	Oleander Hawk-moth	0	0	0	0	0	0	0	0	0	0
1987 Hyles gallii	Bedstraw Hawk-moth	0	0	0	0	0	0	0	0	0	0
1990 Hyles livornica	Striped Hawk-moth	0	0	0	0	0	0	0	0	0	0
1991 Deilephila elpenor	Elephant Hawk-moth	0	0	8	0	0	0	0	6	1	15
1992 Deilephila porcellus	Small Elephant Hawk-moth	0	0	4	0	0	0	0	11	0	15
1993 Hippotion celerio	Silver-striped Hawk-moth	0	0	0	0	0	0	0	0	0	C
1994 Phalera bucephala	Buff-tip	0	0	1	0	0	1	0	1	1	4
1995 Cerura vinula	Puss Moth	0	0	0	0	0	0	0	1	0	1
1996 Furcula bicuspis	Alder Kitten	0	0	0	0	0	0	0	0	0	0
1997 Furcula furcula	Sallow Kitten	0	0	0	0	0	0	0	0	0	0
1998 Furcula bifida	Poplar Kitten	0	0	0	0	0	0	0	0	0	0
1999 Stauropus fagi	Lobster Moth	0	0	0	0	0	0	0	0	0	0
2000 Notodonta dromedarius	Iron Prominent	0	0	0	0	0	1	0	0	0	1
2003 Eligmodonta ziczac	Pebble Prominent	0	0	0	0	0	0	0	5	5	10
2006 Pheosia gnoma	Lesser Swallow Prominent	0	0	0	0	0	1	0	11	2	14
2007 Pheosia tremula	Swallow Prominent	0	0	0	0	0	1	0	2	0	3
2008 Ptilodon capucina	Coxcomb Prominent	0	0	0	2	8	0	0	2	0	12
2010 Odontosia carmelita	Scarce Prominent	0	0	0	2	0	0	0	0	0	2
2011 Pterostoma palpina	Pale Prominent	0	0	0	0	0	0	0	0	0	0
2012 Leucodonta bicoloria	White Prominent	0	0	0	0	0	0	0	0	0	0
2014 Drymonia dodonaea	Marbled Brown	0	0	0	0	0	0	0	0	0	0
2015 Drymonia ruficornis	Lunar Marbled Brown	0	0	0	0	1	0	0	0	0	1
2017 Clostera pigra	Small Chocolate-tip	0	0	0	0	0	0	0	0	0	C
2019 Clostera curtula	Chocolate-tip	0	0	0	0	0	0	0	0	0	C
2020 Diloba caeruleocephala	Figure of Eight	0	0	0	0	0	0	0	0	0	0

20260	Orgyia antiqua	Vapourer	0	0	0	0	0	0	0	0	0	0
	Dicallomera fascelina	Dark Tussock	0	0	0	0	0	0	0	0	0	0
2028 C	Calliteara pudibunda	Pale Tussock	0	0	1	0	0	0	0	1	0	2
2030 E	Euproctis similis	Yellow-tail	0	0	0	0	0	0	0	0	0	- 0
2031 L	Leucoma salicis	White Satin	0	0	0	0	0	0	0	0	0	0
2034 L	Lymantria dispar	Gypsy Moth	0	0	0	0	0	0	0	0	0	0
2035 T	Thumatha senex	Round-winged Muslin	2	4	0	0	0	0	0	0	0	6
2036 S	Setina irrorella	Dew Moth	0	0	0	0	0	0	0	0	0	0
2037 M	Miltochrista miniata	Rosy Footman	0	0	0	0	0	0	0	0	0	0
2038 N	Nudaria mundana	Muslin Footman	0	1	0	0	0	0	1	0	0	2
2039 <i>A</i>	Atolmis rubricollis	Red-necked Footman	0	0	1	0	0	0	0	0	0	1
2040 C	Cybosia mesomella	Four-dotted Footman	0	0	0	0	0	0	0	0	0	0
2044 E	Eilema griseola	Dingy Footman	0	0	0	0	0	0	0	0	0	0
2045 E	Eilema caniola	Hoary Footman	0	0	0	0	0	0	0	0	0	0
2047 E	Eilema complana	Scarce Footman	0	0	0	0	0	0	0	0	0	0
2049 E	Eilema depressa	Buff Footman	0	0	0	0	0	0	0	0	0	0
2050 E	Eilema lurideola	Common Footman	8	1	0	1	0	3	0	9	7	29
2051 L	Lithosia quadra	Four-spotted Footman	0	0	0	0	1	0	1	28	151	181
2054 L	Utetheisa pulchella	Crimson Speckled	0	0	0	0	0	0	0	0	0	0
2056 P	Parasemia plantaginis	Wood Tiger	0	0	0	0	0	0	0	0	0	0
2057 A	Arctia caja	Garden Tiger	2	2	0	0	0	2	0	6	2	14
2059 L	Diacrisia sannio	Clouded Buff	0	0	4	0	0	2	0	1	0	7
2060 S	Spilosoma lubricipeda	White Ermine	4	0	0	0	0	3	13	7	2	29
2061 S	Spilosoma luteum	Buff Ermine	5	0	4	0	0	1	8	13	0	31
	Diaphora mendica	Muslin Moth	3	1	0	1	1	0	0	12	0	18
2064 P	Phragmatobia fuliginosa	Ruby Tiger	0	0	0	0	0	0	0	0	0	0
	Fyria jacobaeae	Cinnabar	0	0	0	0	0	1	0	0	1	2
2074aA	Antichloris eriphia	Banana Stowaway	0	0	0	0	0	0	0	0	0	0
	Nola confusalis	Least Black Arches	0	0	0	0	0	0	0	0	0	0
2080 E	Euxoa obelisca	Square-spot Dart	0	0	0	0	0	0	0	0	0	0
	Euxoa tritici	White-line Dart	0	0	0	0	0	0	0	0	0	0
2082 E	Euxoa nigricans	Garden Dart	0	0	0	0	0	0	0	1	0	1

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	Euxoa cursoria	Coast Dart	0	0	0	0	0	0	0	0	0	0
	Agrotis cinerea	Light Feathered Rustic	0	0	0	0	0	0	0	0	0	0
	Agrotis vestigialis	Archer's Dart	0	0	0	0	0	0	0	0	0	0
2087	Agrotis segetum	Turnip Moth	0	0	0	0	0	0	0	0	0	0
2088	Agrotis clavis	Heart and Club	0	0	0	0	0	0	0	0	0	0
2089	Agrotis exclamationis	Heart and Dart	5	0	1	0	0	3	1	8	0	18
2090	Agrotis trux	Crescent Dart	0	0	0	0	0	0	0	0	0	0
2091	Agrotis ipsilon	Dark Sword-grass	0	0	0	0	0	0	0	0	0	0
2092	Agrotis puta	Shuttle-shaped Dart	0	0	0	0	0	0	0	0	0	0
2093	Agrotis ripae	Sand Dart	0	0	0	0	0	0	0	0	0	0
2094	Agrotis crassa	Great Dart	0	0	0	0	0	0	0	0	0	0
	Axylia putris	Flame	0	0	0	0	0	0	3	0	0	3
2099	Actebia praecox	Portland Moth	0	0	0	0	0	0	0	0	0	0
	Ochropleura plecta	Flame Shoulder	0	0	7	0	0	7	8	9	2	33
2104	Standfussiana lucernea	Northern Rustic	0	0	0	0	0	0	0	0	0	0
2105	Rhyacia simulans	Dotted Rustic	0	0	0	0	0	0	0	0	0	0
2107	Noctua pronuba	Large Yellow Underwing	2	2	1	0	2	42	1	46	266	362
2109	Noctua comes	Lesser Yellow Underwing	3	2	0	0	0	2	0	6	1	14
	Noctua fimbriata	Broad-bordered Yellow Underwing	0	0	0	0	0	0	0	1	0	1
	Noctua janthe	Lesser Broad-bordered Yellow Underwing	6	0	0	0	0	66	0	17	21	110
2112	Noctua interjecta	Least Yellow Underwing	0	0	0	0	0	0	0	4	0	4
2114	Graphiphora augur	Double Dart	0	0	0	0	0	0	1	0	0	1
	Paradiarsia glareosa	Autumnal Rustic	0	0	0	0	0	0	0	0	0	0
2118	Lycophotia porphyrea	True Lover's Knot	1	26	1	0	0	5	3	7	3	46
2119	Peridroma saucia	Pearly Underwing	0	0	0	0	0	0	0	0	0	0
2120	Diarsia mendica	Ingrailed Clay	2	0	0	0	0	13	0	1	0	16
2121	Diarsia dahlii	Barred Chestnut	0	0	0	0	0	0	0	0	0	0
2122	Diarsia brunnea	Purple Clay	0	0	0	6	0	2	0	0	0	8
2123	Diarsia rubi	Small Square-spot	5	0	0	0	0	0	0	0	3	8
2125	Xestia alpicola	Northern Dart	0	0	0	0	0	0	0	0	0	0
2126	Xestia c-nigrum	Setaceous Hebrew Character	0	0	0	0	0	0	0	0	0	0
2127	Xestia ditrapezium	Triple-spotted Clay	0	0	0	0	0	0	0	0	0	0

2128	Xestia triangulum	Double Square-spot	1	0	0	2	0	0	0	0	0 3
2130	Xestia baja	Dotted Clay	0	0	0	0	0	1	0	1	2 4
2132	Xestia castanea	Neglected Rustic	0	0	0	0	0	0	0	0	0 0
2133	Xestia sexstrigata	Six-striped Rustic	0	0	0	0	0	0	0	2	4 6
2134	Xestia xanthographa	Square-spot Rustic	3	0	0	0	0	0	0	1	1 5
2135	Xestia agathina	Heath Rustic	0	0	0	0	0	0	0	0	0 0
2136	Naenia typica	Gothic	0	0	0	0	0	0	0	0	0 0
2137	Eurois occulta	Great Brocade	0	0	0	0	0	0	0	0	0 0
2138	Anaplectoides prasina	Green Arches	0	0	0	1	0	0	0	0	0 1
2139	Cerastis rubricosa	Red Chestnut	0	0	0	0	0	0	0	1	0 1
2142	Anarta myrtilli	Beautiful Yellow Underwing	0	0	0	0	0	0	0	0	0 0
2145	Discestra trifolii	Nutmeg	0	0	0	0	0	0	0	0	0 0
2147	Hada plebeja	Shears	0	0	2	0	0	2	2	3	0 9
2148	Polia bombycina	Pale Shining Brown	0	0	0	0	0	0	0	0	0 0
2150	Polia nebulosa	Grey Arches	0	0	2	0	0	1	2	2	0 7
2152	Sideridis albicolon	White Colon	0	0	0	0	0	0	0	0	0 0
2153	Heliophobus reticulata	Bordered Gothic	0	0	0	0	0	0	0	0	0 0
2154	Mamestra brassicae	Cabbage Moth	0	0	0	0	0	0	0	0	0 0
2155	Melanchra persicariae	Dot Moth	0	0	0	0	0	0	0	0	0 0
2156	Lacanobia contigua	Beautiful Brocade	0	0	0	0	0	0	0	0	0 0
2158	Lacanobia thalassina	Pale-shouldered Brocade	0	0	0	0	0	0	0	0	0 0
2159	Lacanobia suasa	Dog's Tooth	0	0	0	0	0	0	0	0	0 0
2160	Lacanobia oleracea	Bright-line Brown-eye	0	0	1	0	0	0	4	0	0 5
2162	Papestra biren	Glaucous Shears	0	0	0	0	0	0	0	0	0 0
2163	Ceramica pisi	Broom Moth	0	0	2	0	0	1	0	0	0 3
2164	Hecatera bicolorata	Broad-barred White	0	0	0	0	0	0	0	0	0 0
2166	Hadena rivularis	Campion	0	0	0	0	0	0	0	0	0 0
2167	Hadena perplexa	Pod Lover	0	0	0	0	0	0	0	0	0 0
2169	Hadena luteago	Barrett's Marbled Coronet	0	0	0	0	0	0	0	0	0 0
2171	Hadena confusa	Marbled Coronet	0	0	0	0	0	0	0	0	0 0
2173	Hadena bicruris	Lychnis	0	0	0	0	0	0	0	0	0 0
2174	Hadena caesia	Grey	0	0	0	0	0	0	0	0	0 0

2176	Cerapteryx graminis	Antler	0	0	0	0	0	0	0	1	0	1
2177	Tholera cespitis	Hedge Rustic	0	0	0	0	0	0	0	0	0	0
2178	Tholera decimalis	Feathered Gothic	0	0	0	0	0	0	0	0	0	0
2179	Panolis flammea	Pine Beauty	0	0	0	0	0	0	0	2	0	2
2182	Orthosia cruda	Small Quaker	0	0	0	0	0	0	0	0	0	0
2183	Orthosia miniosa	Blossom Underwing	0	0	0	0	0	0	0	0	0	0
2184	Orthosia opima	Northern Drab	0	0	0	0	0	0	0	0	0	0
2185	Orthosia populeti	Lead-coloured Drab	0	0	0	0	0	0	0	0	0	0
2186	Orthosia gracilis	Powdered Quaker	0	0	0	0	0	0	0	9	0	9
2187	Orthosia cerasi	Common Quaker	0	0	0	0	0	0	0	2	0	2
2188	Orthosia incerta	Clouded Drab	0	0	0	0	0	0	0	5	0	5
2189	Orthosia munda	Twin-spotted Quaker	0	0	0	0	0	0	0	0	0	0
2190	Orthosia gothica	Hebrew Character	0	0	0	0	1	4	0	16	0	21
2192	Mythimna conigera	Brown-line Bright Eye	0	0	0	0	0	0	0	0	0	0
2193	Mythimna ferrago	Clay	0	0	0	0	0	0	0	0	0	0
2194	Mythimna albipuncta	White-point	0	0	0	0	0	0	0	0	0	0
2195	Mythimna vitellina	Delicate	0	0	0	0	0	0	0	0	0	0
2196	Mythimna pudorina	Striped Wainscot	0	0	23	0	0	0	0	0	0	23
2197	Mythimna straminea	Southern Wainscot	0	0	0	0	0	0	0	0	0	0
2198	Mythimna impura	Smoky Wainscot	6	7	0	0	0	15	1	28	1	58
2199	Mythimna pallens	Common Wainscot	0	0	0	0	0	0	0	2	0	2
2201	Mythimna litoralis	Shore Wainscot	0	0	0	0	0	0	0	0	0	0
2203	Mythimna unipuncta	White-speck	0	0	0	0	0	0	0	0	0	0
2205	Mythimna comma	Shoulder-striped Wainscot	0	0	1	0	0	0	0	3	0	4
2208	Mythimna loreyi	Cosmopolitan	0	0	0	0	0	0	0	0	0	0
2211	Cucullia absinthii	Wormwood	0	0	0	0	0	0	0	0	0	0
2214	Cucullia chamomillae	Chamomile Shark	0	0	0	0	0	0	0	0	0	0
2216	Cucullia umbratica	Shark	0	0	0	0	0	1	0	0	1	2
2221	Shargacucullia verbasci	Mullein	0	0	0	0	0	0	0	0	0	0
2225	Brachylomia viminalis	Minor Shoulder-knot	0	0	0	0	0	0	0	0	0	0
2227	Brachionycha sphinx	Sprawler	0	0	0	0	0	0	0	0	0	0
2229	Dasypolia templi	Brindled Ochre	0	0	0	0	0	0	0	0	0	0

2230	Aporophyla australis	Feathered Brindle	0	0	0	0	0	0	0	0	0	0
	Aporophyla lueneburgensis	Northern Deep-brown Dart	0	0	0	0	0	0	0	0	0	0
	Aporophyla nigra		0	0		0	0	0	0	0	0	0
	Lithophane semibrunnea	Black Rustic	Ű	-	0	0	0		0	0	Ű	0
	Lithophane hepatica	Tawny Pinion	0	0	0	0	0	0	0	0	0	0
	Lithophane ornitopus	Pale Pinion	0	0	0	0	0	0	0	0	0	0
		Grey Shoulder-knot	0	0	0	0	0	0	0	0	0	0
	Lithophane leautieri	Blair's Shoulder-knot	0	0	0	0	0	0	0	0	0	0
	Xylena vetusta	Red Sword-grass	0	0	0	0	0	0	0	0	0	0
	Xylena exsoleta	Sword-grass	0	0	0	0	0	0	0	0	0	0
	Xylocampa areola	Early Grey	0	0	0	0	0	0	0	0	0	0
	Allophyes oxyacanthae	Green-brindled Crescent	0	0	0	0	0	0	0	0	0	0
2247	Dichonia aprilina	Merveille du Jour	0	0	0	0	0	0	0	0	0	0
2248	Dryobotodes eremita	Brindled Green	0	0	0	0	0	0	0	0	0	0
2250	Mniotype adusta	Dark Brocade	0	0	0	0	0	0	0	1	0	1
2253	Polymixis xanthomista	Black-banded	0	0	0	0	0	0	0	0	0	0
2254	Antitype chi	Grey Chi	1	0	0	0	0	0	0	0	0	1
2255	Eumichtis lichenea	Feathered Ranunculus	0	0	0	0	0	0	0	0	0	0
2256	Eupsilia transversa	Satellite	0	0	0	0	0	0	0	0	0	0
2258	Conistra vaccinii	Chestnut	0	0	0	0	0	0	0	0	0	0
2259	Conistra ligula	Dark Chestnut	0	0	0	0	0	0	0	0	0	0
2262	Agrochola circellaris	Brick	0	0	0	0	0	0	0	0	0	0
2263	Agrochola lota	Red-line Quaker	0	0	0	0	0	0	0	0	0	0
2264	Agrochola macilenta	Yellow-line Quaker	0	0	0	0	0	0	0	0	0	0
2265	Agrochola helvola	Flounced Chestnut	0	0	0	0	0	0	0	0	0	0
2266	Agrochola litura	Brown-spot Pinion	0	0	0	0	0	0	0	0	0	0
2267	Agrochola lychnidis	Beaded Chestnut	0	0	0	0	0	0	0	0	0	0
2268	Parastichtis suspecta	Suspected	0	0	0	0	0	0	0	0	0	0
2269	Atethmia centrago	Centre-barred Sallow	0	0	0	0	0	0	0	1	0	1
2270	Omphaloscelis lunosa	Lunar Underwing	0	0	0	0	0	0	0	0	0	0
2271	Xanthia citrago	Orange Sallow	0	0	0	0	0	0	0	0	0	0
2273	Xanthia togata	Pink-barred Sallow	0	0	0	0	0	0	0	0	0	0
2274	Xanthia icteritia	Sallow	0	0	0	0	0	0	0	0	0	0

2278	Acronicta megacephala	Poplar Grey	0	0	2	0	0	0	0	0	1	3
2280	Acronicta leporina	Miller	0	0	0	0	0	0	0	0	0	0
2281	Acronicta alni	Alder Moth	0	0	0	0	0	0	0	0	0	0
2284	Acronicta psi	Grey Dagger	0	0	0	0	0	0	0	0	0	0
2286	Acronicta menyanthidis	Light Knot Grass	0	1	0	0	0	0	0	0	2	3
2287	Acronicta auricoma	Scarce Dagger	0	0	0	0	0	0	0	0	0	0
2288	Acronicta euphorbiae	Sweet Gale Moth	0	0	0	0	0	0	0	0	0	0
2289	Acronicta rumicis	Knot Grass	0	0	0	0	0	0	0	0	0	0
2291	Craniophora ligustri	Coronet	0	0	3	0	0	0	0	0	1	4
2293	Cryphia domestica	Marbled Beauty	0	0	0	0	0	0	0	0	0	0
2295	Cryphia muralis	Marbled Green	0	0	0	0	0	0	0	0	0	0
2297	Amphipyra pyramidea	Copper Underwing	0	0	0	2	0	0	0	0	0	2
2299	Amphipyra tragopoginis	Mouse Moth	0	0	0	0	0	0	0	0	0	0
2300	Mormo maura	Old Lady	0	0	0	0	0	0	0	0	0	0
2302	Rusina ferruginea	Brown Rustic	0	0	0	1	0	0	0	1	0	2
2303	Thalpophila matura	Straw Underwing	0	0	0	0	0	0	0	0	0	0
2305	Euplexia lucipara	Small Angle Shades	0	0	0	0	0	0	0	1	0	1
2306	Phlogophora meticulosa	Angle Shades	0	0	0	0	0	0	1	2	0	3
2312	Ipimorpha subtusa	Olive	0	0	0	0	0	0	0	0	0	0
2313	Enargia paleacea	Angle-striped Sallow	0	0	0	0	0	0	0	0	0	0
2314	Enargia ypsillon	Dingy Shears	0	0	0	0	0	0	0	0	0	0
2316	Cosmia affinis	Lesser-spotted Pinion	0	0	0	0	0	0	0	0	0	0
2318	Cosmia trapezina	Dun-bar	0	0	0	0	0	0	0	3	1	4
2320	Hyppa rectilinea	Saxon	0	0	0	0	0	0	0	0	0	0
2321	Apamea monoglypha	Dark Arches	4	1	6	0	0	27	2	24	7	71
2322	Apamea lithoxylaea	Light Arches	0	0	0	0	0	0	0	0	0	0
2323	Apamea sublustris	Reddish Light Arches	0	0	0	0	0	0	0	1	0	1
2325	Apamea oblonga	Crescent Striped	0	0	0	0	0	0	0	0	0	0
2326	Apamea crenata	Clouded-bordered Brindle	0	0	11	0	0	0	1	7	3	22
2327	Apamea epomidion	Clouded Brindle	0	0	2	0	0	0	0	0	0	2
2329	Apamea furva	Confused	0	0	0	0	0	0	0	0	0	0
2330	Apamea remissa	Dusky Brocade	0	0	0	0	0	0	0	0	0	0

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	Apamea unanimis	Small Clouded Brindle	0	0	0	0	0	0	0	0	0	0
2333	Apamea anceps	Large Nutmeg	0	0	0	0	0	0	0	0	0	0
2334	Apamea sordens	Rustic Shoulder-knot	0	0	0	0	0	3	0	0	0	3
2335	Apamea scolopacina	Slender Brindle	0	0	0	0	0	0	0	0	0	0
2336	Apamea ophiogramma	Double Lobed	0	0	0	0	0	0	0	0	0	0
2337	Oligia strigilis	Marbled Minor	0	0	0	0	0	0	0	0	0	0
2338	Oligia versicolor	Rufous Minor	0	0	0	0	0	0	0	0	0	0
2339	Oligia latruncula	Tawny Marbled Minor	0	0	0	0	0	1	0	0	0	1
2340	Oligia fasciuncula	Middle-barred Minor	0	0	0	0	0	0	0	0	0	0
2341	Mesoligia furuncula	Cloaked Minor	0	0	0	0	0	0	0	0	0	0
2342	Mesoligia literosa	Rosy Minor	0	0	0	0	0	0	0	0	0	0
2343	Mesapamea sp.	Common/Lesser Common Rustic	6	3	0	0	0	5	0	6	13	33
2344	Photedes captiuncula	Least Minor	0	0	3	0	0	0	0	0	0	3
2345	Photedes minima	Small Dotted Buff	0	0	0	0	0	0	0	0	0	0
2350	Chortodes pygmina	Small Wainscot	5	0	0	0	0	0	0	0	0	5
2353	Luperina testacea	Flounced Rustic	0	0	0	0	0	0	0	0	0	0
2354	Luperina nickerlii	Sandhill Rustic	0	0	0	0	0	0	0	0	0	0
2357	Amphipoea lucens	Large Ear	0	0	0	0	0	0	0	1	0	1
2358	Amphipoea fucosa	Saltern Ear	0	0	0	0	0	0	0	0	0	0
2359	Amphipoea crinanensis	Crinan Ear	0	0	0	0	0	0	0	0	0	0
2360	Amphipoea oculea	Ear Moth	0	2	0	0	0	0	0	0	0	2
2361	Hydraecia micacea	Rosy Rustic	4	0	0	0	0	2	0	4	0	10
2364	Gortyna flavago	Frosted Orange	0	0	0	0	0	0	0	0	0	0
2366	Calamia tridens	Burren Green	0	0	0	0	0	0	0	0	0	0
2367	Celaena haworthii	Haworth's Minor	0	0	0	0	0	0	0	0	0	0
2368	Celaena leucostigma	Crescent	0	1	0	0	0	30	0	2	0	33
2369	Nonagria typhae	Bulrush Wainscot	0	0	0	0	0	0	0	0	0	0
2370	Archanara geminipuncta	Twin-spotted Wainscot	0	0	0	0	0	0	0	0	0	0
2371	Archanara dissoluta	Brown-veined Wainscot	0	0	0	0	0	0	0	0	0	0
2373	Archanara sparganii	Webb's Wainscot	0	0	0	0	0	0	0	0	0	0
2374	Archanara algae	Rush Wainscot	0	0	0	0	0	0	0	1	0	1
2375	Rhizedra lutosa	Large Wainscot	0	0	0	0	0	0	0	0	0	0

2379	Coenobia rufa	Small Rufous	0	0	0	0	0	0	0	0	0	0
2380	Charanyca trigrammica	Treble Lines	0	0	0	0	0	0	0	2	0	2
2381	Hoplodrina alsines	Uncertain	0	0	0	0	0	0	0	12	0	12
2382	Hoplodrina blanda	Rustic	0	0	0	0	0	0	0	0	0	0
2384	Hoplodrina ambigua	Vine's Rustic	0	0	0	0	0	0	0	0	0	0
2385	Spodoptera exigua	Small Mottled Willow	0	0	0	0	0	0	0	0	0	0
2387	Caradrina morpheus	Mottled Rustic	0	0	0	0	0	0	0	0	0	0
2389	Paradrina clavipalpis	Pale Mottled Willow	0	0	0	0	0	0	0	0	0	0
2391	Chilodes maritimus	Silky Wainscot	0	0	0	0	0	0	0	0	0	0
2394	Stilbia anomala	Anomalous	0	0	0	0	0	0	0	0	0	0
2397	Panemeria tenebrata	Small Yellow Underwing	0	0	0	0	0	0	0	0	0	0
2399	Pyrrhia umbra	Bordered Sallow	0	0	0	0	0	0	0	0	0	0
2400	Heliothis armigera	Scarce Bordered Straw	0	0	0	0	0	0	0	0	0	0
2403	Heliothis peltigera	Bordered Straw	0	0	0	0	0	0	0	0	0	0
2404	Heliothis nubigera	Eastern Bordered Straw	0	0	0	0	0	0	0	0	0	0
2405	Schinia scutosa	Spotted Clover Moth	0	0	0	0	0	0	0	0	0	0
2407	Eublemma ostrina	Purple Marbled	0	0	0	0	0	0	0	0	0	0
2408	Eublemma parva	Small Marbled	0	0	0	0	0	0	0	0	0	0
	Protodeltote pygarga	Marbled White Spot	0	0	22	0	0	0	0	0	0	22
2412	Deltote uncula	Silver Hook	0	0	0	0	0	0	0	0	0	0
2413	Deltote bankiana	Silver Barred	0	0	0	0	0	0	0	0	0	0
2418	Earias clorana	Cream-bordered Green Pea	0	0	0	0	0	0	0	0	0	0
2422	Pseudoips prasinana	Green Silver-lines	0	0	0	0	0	0	0	0	0	0
2423	Nycteola revayana	Oak Nycteoline	0	0	0	0	0	0	0	0	0	0
2425	Colocasia coryli	Nut-tree Tussock	0	0	0	5	0	0	0	0	1	6
	Trichoplusia ni	Ni Moth	0	0	0	0	0	0	0	0	0	0
	Thysanoplusia orichalcea	Slender Burnished Brass	0	0	0	0	0	0	0	0	0	0
2434	Diachrysia chrysitis	Burnished Brass	0	0	1	0	0	5	2	5	1	14
2437	Polychrysia moneta	Golden Plusia	0	0	0	0	0	0	0	0	0	0
2438	Euchalcia variabilis	Purple-shaded Gem	0	0	0	0	0	0	0	0	0	0
2439	Plusia festucae	Gold Spot	0	0	0	0	0	1	0	2	0	3
2440	Plusia putnami	Lempke's Gold Spot	0	0	0	0	0	0	0	0	0	0

2441	Automatha		1	i i	i				1	i	i	1
	Autographa gamma	Silver Y	0	0	0	0	0	0	0	0	0	0
	Autographa pulchrina	Beautiful Golden Y	0	0	5	0	0	0	4	4	0	13
2443	Autographa jota	Plain Golden Y	0	0	0	0	0	4	0	0	5	9
2444	Autographa bractea	Gold Spangle	0	0	0	0	0	0	0	1	0	1
2447	Syngrapha interrogationis	Scarce Silver Y	0	0	0	0	0	0	0	0	0	0
2449	Abrostola triplasia	Dark Spectacle	0	0	0	0	0	0	0	0	0	0
2450	Abrostola tripartita	Spectacle	0	0	0	0	0	0	2	2	3	7
2451	Catocala fraxini	Clifden Nonpareil	0	0	0	0	0	0	0	0	0	0
2452	Catocala nupta	Red Underwing	0	0	0	0	0	0	0	0	0	0
2456	Minucia lunaris	Lunar Double-stripe	0	0	0	0	0	0	0	0	0	0
2462	Callistege mi	Mother Shipton	0	0	0	0	0	0	0	0	0	0
2463	Euclidia glyphica	Burnet Companion	0	0	0	0	0	0	0	0	0	0
2469	Scoliopteryx libatrix	Herald	0	0	0	0	0	0	0	0	0	0
2470	Phytometra viridaria	Small Purple-barred	0	0	0	0	0	0	0	0	0	0
2474	Rivula sericealis	Straw Dot	2	1	0	1	0	3	0	27	2	36
2476	Hypena crassalis	Beautiful Snout	0	0	0	0	0	0	0	0	0	0
2477	Hypena proboscidalis	Snout	0	0	0	0	0	0	0	0	1	1
2482	Schrankia taenialis	White lined Snout	0	0	0	0	0	0	0	0	0	0
2484	Schrankia costaestrigalis	Pinion-streaked Snout	0	0	0	0	0	0	0	0	0	0
2485	Hypenodes humidalis	Marsh Oblique-barred	0	0	0	0	0	0	0	0	0	0
2488	Pechipogo strigilata	Common Fan-foot	0	0	0	0	0	0	0	0	0	0
2489	Zanclognatha tarsipennalis	Fan-foot	0	0	0	0	0	0	0	2	0	2
2492	Herminia grisealis	Small Fan-foot	0	0	0	0	0	0	0	0	0	0
		TOTAL	134	82	187	185	75	427	90	520	552	2252
		No. of Species Total	33	22	38	32	24	73	36	98	49	173

