



ARTIMELIA

LEPIDOPTERA IBÉRICA

Biannual Scientific Journal dedicated to research and scientific studies on the Lepidoptera of the Iberian Peninsula.



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Lepidoptera Ibérica

Volume 1, Part 1, April 2025

ISSN 3051-6781

Biannual scientific journal dedicated to research and scientific studies on the Lepidoptera of the Iberian Peninsula.

Published on-line by Rede de Estações de Borboletas Noturnas.

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Front page photo: *Idaea nigrolineata* (Chrétien, 1911), São Lourenço, Carrazeda de Ansiães, 14-VII-2017 (© J. Nunes).

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Editorial

Artimelia is a new journal devoted to moths of the Iberian Peninsula published on-line with no paper version, under the umbrella of REBN (Rede de Estações de Borboletas Noturnas). Two issues are planned each year, issue 2 is scheduled to appear in October.

Publishing on-line allows flexibility of content – there is no limit or quota of pages. This in turn means that the longest delay in publishing an accepted paper will be six months. Some journals have delays of 12 months or more. The journal is free access so there are no charges to authors and no subscription costs. The downside is that taxonomic acts (description of new species or genera, new synonymies) cannot be published as there is no paper version of the journal. Some taxonomic papers can be included, such as the description of the previously unknown female of a species or a revision of a previously confused group of species.

Artimelia particularly welcomes faunistic papers – lists of species from a particular locality. These can be difficult to publish elsewhere because of their length. Also welcome are shorter articles on new species for a country, on the biology of moths including behaviour, larval host-plants etc. Articles can also be about lepidopterists, such as accounts of field trips, incidents, memories and obituaries. Book reviews, letters and opinions may also be included in the journal.

This first issue is heavily weighted towards Portuguese moths. It is very much hoped that future issues will have more content from Spain.

If you have an idea for an article, but you are unsure if it is suitable for publication in *Artimelia*, please contact the editor.

The Lepidoptera of the Tua Valley, Portugal 2006–2014

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Abstract

The Lepidoptera of the Tua Valley in northern Portugal were sampled by the author on a number of visits from July 2006 to December 2013. Some additional records are included from other recorders up to 2014. 827 species were recorded. This was prior to the completion of the hydroelectric dam at Foz Tua that came into operation in 2017.

Key Words: Baseline survey, Hydroelectric dam.

Resumo

Os lepidópteros do Vale do Tua, no norte de Portugal, foram amostrados pelo autor em diversas visitas entre julho de 2006 e dezembro de 2013. Estão incluídos alguns registos adicionais de outros observadores até 2014. No total, foram registadas 827 espécies. Este estudo decorreu antes da conclusão da barragem hidroelétrica de Foz Tua, que entrou em funcionamento em 2017.

Palavras chave: Levantamento de base, Barragem hidroelétrica.

Preliminary Remarks

This paper was written in 2013, but for various reasons was not completed or submitted for publication. At that time the dam at Foz Tua was still under construction. The lower part of the Tua Valley was subsequently flooded as the dam became fully operational in 2017. While some aspects of the paper, particularly the nomenclature, have been updated, it essentially remains as it was written in 2013.

Introduction

In 2005 I learned that there was a proposal to dam the Rio Tua, which runs into the Rio Douro in the middle of northern Portugal. The Lepidoptera of the port wine producing areas of the Rio Douro had been studied by Cruz & Gonçalves (1974), but they only recorded macrolepidoptera and they had not recorded in the Tua valley. Their work was by then some 30 years old and furthermore included a significant number of misidentifications (Corley, 2008). There had been very little subsequent study of Lepidoptera in the area. At the time I had only very briefly visited two localities in the nearby parts of the Douro Valley. For these reasons I decided that a significant recording effort in the Tua valley would be of considerable interest.

The Rio Tua is formed by the confluence of the Rio Rabaçal and Rio Tuela at Mirandela. It flows some 45 kilometres in a mainly south-west direction to Foz Tua where it enters the Rio Douro. At Mirandela it lies at 215 metres altitude, falling to about 80 metres at Foz Tua. In the southern part of its course it cuts through hills which ascend to over 600 m, whereas in the northern part the surrounding higher ground consisting mainly of schists only reaches 300 m. This gives the northern half of the river an open character with some wide gravelly shallows. Very

much in contrast, the southern half lies in a deep ravine cut through granite hills.

The Douro and Tua valleys have a strongly Mediterranean climate with hot dry summers and mainly mild wet winters. A few Portuguese species such as *Gegenes nostradamus* and *Horisme scorteata* with an otherwise southern distribution in Portugal have their most northerly Portuguese records in the Tua valley.

Between the bridge at Foz Tua and the bridge at Brunheda, there is no crossing point over the river, which can only be reached by car on tracks that are sometimes very steep. Only from Vilarinho das Azenhas to Mirandela is there a road running along the valley. However there is a railway line running the whole length of the river from Foz Tua all the way to Mirandela. This was little used and went completely out of use following an accident in 2007. The southern part of this line will be under water after the dam is completed. The tourist potential of this line was considerable but was never developed. The proposal for the dam is that it should be 108 m high, which will flood the valley to a point between Abreiro and Ribeirinha.

Methods

Night collecting was primarily with the use of a generator running three 125 watt mercury vapour bulbs fixed above white sheets spread on the ground, or occasionally adjacent to a white sheet hung vertically. Egg trays placed on the sheet around the light allowed moths to settle away from the direct rays of the bulb. Individual lights were placed in such a way that they increased the possible catch. Available wiring allowed a separation of about 200 metres between the outer lights, and use of the topography enabled the closer lights not to be in direct competition. The use of several lights allows exploitation of different microhabitats, and unquestionably increases the overall diversity of species recorded. On almost every occasion a few wine ropes were employed. These are short lengths of clothes line cord steeped in a mixture of red wine and sugar, which is attractive to moths. The efficacy of wine ropes is very variable and indeed highly unpredictable, but they generally attract a few species that do not visit the lights. 65 species were attracted to wine ropes, of which three were not recorded by any other method. On 21.x.2010 at Abreiro station, flowers of *Hedera* L. growing on a wall by the station buildings were searched by torchlight for feeding moths. Twelve species were observed by this method.

Light trapping sessions began at dusk and continued until such time as few new moths were appearing, but never quite continued all night. Species seen were recorded in a notebook. This system of working the lights at night has some advantages over any form of trapping, particularly for microlepidoptera, which can be reduced to an unidentifiable dust in a busy trap. The biggest disadvantage is that precise numbers cannot be counted as there are always some moths on the move. If a species could not be identified, either because it was unfamiliar or because several species are similar, it was collected in a tube or other container. Collected specimens were killed in a freezer and subsequently pinned for later identification. After the session, usually the following morning, an estimate was made for the numbers seen of each species. I have used this method for many years. Although it does not produce precise numbers, it is a viable empirical method. Sometimes, in order to check the viability of the system, I have made such an estimate of one or two species during the night and then attempted a more precise count. From this I have

found that estimates for moths in low numbers (under about five) are very accurate, while estimated numbers for moths in larger numbers are almost invariably lower than actual counts. This is not entirely satisfactory, but it should be remembered that counts of moths from single survey events are not very meaningful. A very abundant species surveyed at the beginning or end of its flight period may only appear in small numbers, giving a false impression that it is scarce. Only regular and frequent recording throughout a season can give clear indications of abundance.

In addition to night work, I always tried to do some daytime fieldwork. Mornings were usually largely taken up with dealing with the previous night's catch. In the afternoon, I would either go to the locality planned for the night work, or visit another site first. Day-flying Papilionoidea were observed at this time as well as dayflying Heterocera, particularly microlepidoptera. 46 species were only recorded by day. Because relatively little effort was put into catching Papilionoidea they are not particularly well recorded. The same can be said of the family Psychidae and the various families with leaf-mining larvae, such as Nepticulidae, Gracillariidae and Elachistidae. Some families that are mainly day-flying, such as Adelidae and Zygaenidae were not seen.

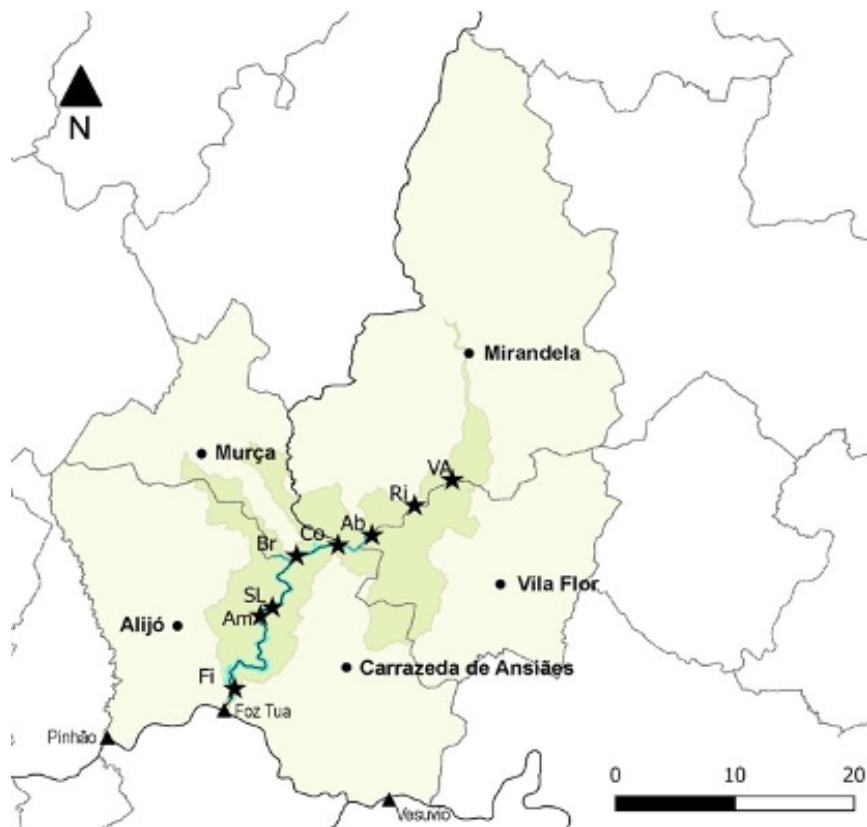
Some time was generally spent looking for larvae, particularly of those groups of microlepidoptera that are more easily found in the larval stage than at light. Some collected larvae were taken for rearing, which allowed subsequent identification. 35 species were only recorded as larvae or from larval signs such as characteristic leafmines or spinnings.

Between July 2006 and December 2013 I visited the valley 14 times. The final visit was made on 30 November to 1 December 2013 under very clear conditions resulting in rapidly falling temperatures. The night session at Abreiro station produced no moths. In all a total of 32 nights was spent doing fieldwork, including, on different visits in different years, two nights in March, three nights in May, four nights in June, nine nights in July, two nights in August, four nights in September, five nights in October, two nights in November and one in December. Most visits were for two nights only, but the initial visit in July 2006 was for seven nights. As there is a succession of moth species over the whole year it would have been ideal to visit the area throughout the year, but this was not practicable. In winter the number of species is small, but most only fly at this time, so there can be no doubt that several species were not recorded that are likely to have been present between the early December visit and the mid-March visit. There was also a significant gap between the mid-March visit and the early May visit, which is likely to have resulted in failure to record a number of species. Another gap between late July and the end of August is less likely to have resulted in missing many species, as most of the species flying at this time either have long flight periods or have more than one brood during the year, allowing them to be recorded at other seasons, nevertheless there may have been a few such omissions. Because recording sessions did not continue until dawn, it is also possible that a few species may have been missed if they only fly towards the end of the night. Comparison with the results of Cruz & Gonçalves (1974) should indicate if many species were missed, see the Appendix.

In addition to my own records, Jorge Rosete visited Amieiro on 1.vii.2013 and Aleš and Zdenek Laštůvka (Laštůvka & Laštůvka, 2014) added several species to this list including the only Sesiidae species recorded, when they visited Abreiro on 17.vi.2014. Their records have been added to the numbers and localities in this paper and species they added are acknowledged.

Each night of the July 2006 trip was at a different locality several kilometres apart, at least in part determined by access possibilities. From south to north the sites were Fiolhal; Amieiro; São Lourenço; Brunheda; Abreiro Station; Ribeirinha; Vilarinho das Azenhas. On subsequent visits Fiolhal and São Lourenço were omitted due to difficulties of access and Brunheda and Ribeirinha were dropped because the available habitat and overall results appeared to be less rewarding. One additional night visit to Vilarinho was made in September 2006, but the following spring, with high river levels it became difficult to work and was also dropped for night work, although I continued to visit this site and Brunheda by day. On later visits only Amieiro and Abreiro Station were used for night work. The valley is very different in character in these two sites, but rich in species at each, so they could be considered as representative of the two main types of topography, ravine and open valley. On the May 2013 visit, one additional access point was investigated briefly by day at Codeçais, between Abreiro Station and Ribeirinha.

Map showing part of R. Douro and recording localities on R. Tua



Abbreviations of sites

Ab	Abreiro station
Am	Amieiro
Br	Brunheda
Co	Codeçais
Fi	Fiolhal
Ri	Ribeirinha
SL	São Lourenço
VA	Vilarinho das Azenhas

Other abbreviations

agg.	aggregate
conf.	confirmed by
det.	determined by
f	female
GP	genitalia preparation
m	male

Sites

The seven sites used for night work on my first visit in July 2006 are briefly described. For each site the municipality is given in brackets followed by the altitude of the main collecting sites. The proposed dam at Foz Tua is to be 108 m high, eventually giving a water level behind the dam of approximately 170 m a.s.l. Any sites below 170 m will therefore be inundated. The dates on which night visits were made are given in calendar order, not in order of years.

Fiolhal (Carrazeda de Ansiães). The recording site was by the railway line below Quinta da Ribeira, at UTM 1 km square 29TPF3265. Altitude 130 m. The ravine below the line is steep and wooded, with a variety of trees including *Fraxinus angustifolia* Vahl and *Quercus rotundifolia* Lam. The riverbed is boulder strewn and the banks have *Alnus glutinosa* (L.) Gaertn. and *Salix salviifolia* Brot. Above the line the slopes are gentler with vines and olive trees growing on terraces, and patches of Mediterranean scrub including such shrubs as *Pistacia terebinthus* L. and *Lonicera implexa* Aiton. The gradient of the track we used to get to the trapping site near the railway line was too much for our Berlingo van. When we left the site we were obliged to abandon it and walk about 3 km past Fiolhal village to the road from Foz Tua to Castanheiro do Norte to be rescued by taxi at 04.00 a.m. The site was not used again. Night session on 26.vii.2006.

Amieiro (Alijó). The recording site at 29TPF3471 was a track leading down into the ravine past the village. The track ends at altitude 150 m, beside a cable car which could be used to access the Santa Luzia railway station on the opposite bank of the river. Below the cable the narrow deep river runs at the bottom of a near vertical sided gorge. One light was always placed at a bend in the track at about 170 m. The slope on the Santa Luzia side has rather open *Quercus rotundifolia* Lam. woodland. The Abreiro side also has some oaks, but is occupied by a patchwork of tiny orchard and garden terraces wherever there is any space between granite cliffs and boulders. The trackside vegetation is a rich and varied selection of herbs and shrubs, while rock crevices are filled with *Sedum* L. species and *Dianthus lusitanus* Brot. This site was always noticeably warmer than other sites at night and now has the highest number of recorded species of Lepidoptera of any site in Portugal. Numbers of moths were also high here, in spite of the attentions of numerous large bats which worked the lights. The productivity of the site and its relatively easy access made it an obvious choice for regular visits. 12 night sessions: 19.iii.2011, 6.v.2007, 19.v.2009, 2.vi.2008, 22.vi.2010, 23.vii.2006, 28.viii.2013, 10.ix.2006, 30.ix.2008, 14.x.2011, 20.x.2010, 1.xii.2013.



Figure 1. Tua valley looking north to Amieiro and beyond.



Figure 2. Rio Tua below Amieiro.

São Lourenço (Carrazeda de Ansiães). The recording site at 29TPF3672 was beside the railway line about 500 m south of the village at altitude 160 m. Here the steep wooded ravine probably has the least disturbed vegetation of any site along the river. The vegetation is similar to that below the railway line at Fiolhal, but continues on slightly less steep slopes above the line. The site was only used once, in spite of being productive, but vehicle access was only as far as the village; a steep hill between the village and the station below and a relatively long distance along the line to the best ground made this site a less convenient place to visit than Amieiro. Night session on 20.vii.2006.



Figure 3. Tua valley looking south to *São Lourenço* and beyond.

Brunheda (Carrazeda de Ansiães). The recording site was just north of the station at 29TPF3776 at 160 m. There is some flat ground on both sides of the river at this point. Marginal trees are *Salix* L., *Alnus glutinosa* (L.) Gaertn. and *Populus nigra* L. On the only night this site was trapped lights were placed on the river gravel patches, but at some times of year these are submerged. The other bank of the river (in Murça municipality) was regularly visited by day on later visits. A wide grassy area here has abundant *Gratiola officinalis* L. Night session on 21.vii.2006.



Figure 4. Tua valley at Brunheda.

Codeçais (Carrazeda de Ansiães). A track runs down from the village to the station through orchards and olive groves. Below the station at 29TPF4177 at about 175 m, a track with weedy margins runs close to the river beneath *Populus nigra* L. and *Alnus glutinosa* (L.) Gaertn. trees. The site was only visited once and was never used at night.

Abreiro (Vila Flor). The trapping site was beside a track at 29TPF4478, at about 170 m, a few hundred metres south of Abreiro station. Abreiro village is about two km to the west on the other side of the river in Mirandela municipality. The river here is wide and shallow with gravelly flats. Some rocky outcrops near the bank of the river have *Bufonia macropetala* Willk., a rare plant in Portugal. There is plentiful *Salix salviifolia* Brot. and some *Populus nigra* L. and *Platanus hispanica* Mill. ex Münchh. by the river. One section of the track is bordered by a rich selection of small trees and shrubs including *Prunus spinosa* L., *Crataegus monogyna* Jacq., *Acer monspessulanum* L., *Quercus rotundifolia* Lam., *Ulmus minor* Mill., *Cytisus* Desf., *Rosa* L., *Rubus* L., *Ruscus aculeatus* L. and *Clematis campaniflora* Brot. The embankment of the railway track is however heavily infested with the exotic *Ailanthus altissima* (Mill.) Swingle. The attractive situation, relative ease of access, and rich variety of plants made this a natural choice for a second site for regular visits, both by day and by night. The wide river with the trapping sites near river level give this site a much more humid environment than at Amieiro and produced consistently lower numbers of moths. 13 night sessions: 20.iii.2011, 7.v.2007, 17.v.2013, 3.vi.2008, 21.vi.2010, 7.vii.2009, 22.vii.2006, 29.viii.2013, 11.ix.2006, 1.x.2008, 15.x.2011, 21.x.2010, 30.xi.2013.



Figure 5. Tua valley at Abreiro station (Zdenek Laštůvka)

Ribeirinha (Vila Flor). Trapping was on the edge of the village beside the river at 29TPF4781 at 185 m. The river here is very wide and shallow with extensive gravel shoals. There are marginal *Populus nigra* L. and *Fraxinus angustifolia* Vahl. The site was the least productive of the seven chosen on my first visit and was not used again. Night session on 24.vii.2006.

Vilarinho das Azenhas (Vila Flor). The site was immediately upstream of the road bridge about one kilometre north-east of the village, at 29TPF5083, at altitude 195 m. The river here is fairly wide, with an artificial pool created by a weir. The river banks have abundant *Alnus glutinosa* (L.) Gaertn. and *Salix salviifolia* Brot. and near the banks are some *Populus nigra* L., *Ulmus minor* Mill., *Crataegus monogyna* Jacq. and a few *Celtis australis* L. Climbing the trees and shrubs are *Humulus lupulus* L., *Calystegia sepium* (L.) R. Br. and *Solanum dulcamara* L. The narrow strip between the river and the railway widens a little after a few hundred metres into a grassy area containing some vines. Night sessions on 26.vii.2006 and 12.ix.2006.



Figure 6. Tua valley looking north from bridge near Vilarinho das Azenhas.

Results

827 species were recorded in the Tua sites. Of these 25 were new records for Portugal. These records have been previously published elsewhere (Corley et al., 2007, 2009, 2014; Laštůvka & Laštůvka, 2014). The nomenclature and order of species follows Corley (2015) except for a few subsequent name changes.

For each species the localities in which adults were recorded, either at night or by day, are given in abbreviated form (see list of abbreviations above) followed by the months in which it was recorded in italics and roman numerals (vii for July etc.) and finally the total number of individuals recorded. Actual dates of individual records are available from Corley & Afonso (2021). Where one of the records was the first for that species in Portugal, the name is preceded by an asterisk (*) and a reference to the published record is given at the end of the entry. For species recorded as larvae (successfully reared or not) or from larval signs the locality is given, but not the date or number of individuals. The use of larval signs is a reliable method of identification for a number of species, particularly microlepidoptera, whereby the combination of hostplant and the method of feeding or other feature such as style of silk spinning or form of cocoon provides diagnostic characters which allow safe identification, usually even when the larva is no longer present.

There are several species that were recorded in the years 2007 to 2013 which have since been found, often as a result of DNA barcoding, to include a second species. In some of these cases the currently known distributions of the two species give a clear indication that the original identification was incorrect, but in other cases the distributions are either insufficiently known, or show a degree of overlap, leaving the Tua records without definite identity. All these were species where identification was not considered problematic, so specimens were not retained. Such species are discussed in the list that follows.

MICROPTERIGIDAE

Micropterix ibericella Caradja, 1920. Am. v. 1.

NEPTICULIDAE

* *Simplimorpha promissa* (Staudinger, 1871). Leaf mines on *Pistacia terebinthus* L., Ab, VA. Det. van Nieukerken. (Corley et al., 2007).

Stigmella alnetella (Stainton, 1856). Ab, Br, (GP2602 m), VA. vi, vii, ix. 8. Also leaf mines on *Alnus glutinosa* (L.) Gaertn., Ab, VA.

Stigmella ulmivora (Fologne, 1860). Leaf mines on *Ulmus minor* Mill., Ab, Br, VA.

Stigmella paradoxa (Frey, 1858). Leaf mines on *Crataegus* L., Ab, VA.

Stigmella hybnerella (Hübner, 1796). Leaf mines on *Crataegus* L., Ab.

Stigmella salicis (Stainton, 1854) agg. Leaf mines on *Salix salviifolia* Brot., Br, Fi, SL, VA.

Stigmella trimaculella (Haworth, 1828). Ab. vii. 2. Also leaf mines on *Populus nigra* L., Ab, Ri, VA.

Stigmella plagicolella (Stainton, 1854). Leaf mines on *Prunus spinosa* L., Ab.

Stigmella aurella (Fabricius, 1775). Leaf mines on *Rubus* L., VA.

Stigmella perpygmaeella (Doubleday, 1859). Leaf mines on *Crataegus* L., Ab.

* *Stigmella speciosa* (Frey, 1858). Leaf mines on *Acer monspessulanum* L., Ab. Det. van Nieukerken. (Corley *et al.*, 2007).

Stigmella suberivora (Stainton, 1869). Ab, Am (GP 2612 f), Br, SL. v, vii. 8.

Acalypttris platani (Müller-Rutz, 1934). Leaf mines on *Platanus hispanica* Mill. ex Münchh., Ab.

Trifurcula eurema (Tutt, 1899). Am (GP 2966 m). vi. 1.

Trifurcula immundella (Zeller, 1939). Ab (GP 2963 f). vi. 2.

Trifurcula squamatella Stainton, 1849. Ab, Am. ix, x. 7. Det. van Nieukerken.

Ectoedemia caradjai (Groschke, 1944). Ab. vi. 1. (Laštůvka & Laštůvka, 2014).

Ectoedemia suberis (Stainton, 1869). Ab (GP 3441 m), Am (GP 2693 m). vi, ix. 6.

Ectoedemia phaeolepis Van Nieukerken, A. Laštůvka & Z. Laštůvka, 2010. Ab, vi. 1. (Laštůvka & Laštůvka, 2014).

OPOSTEGIDAE

Opostegoides menthinella (Mann, 1855). Am. v. 2.

Opostega salaciella (Treitschke, 1833). Ab, Am. v, vi. 2.

TISCHERIIDAE

Coptotriche marginea (Haworth, 1828). Ab, Br, VA. v, vii, viii. 5. Also leaf mines on *Rubus ulmifolius* Schott, VA.

Coptotriche berberella (De Prins, 1984). Am. v. 1.

Coptotriche angusticollella (Duponchel, 1843). Leaf mines on *Rosa* L., Ab.

PSYCHIDAE

Dissoctena granigerella Staudinger, 1859. Am. viii. 1.

Luffia lapidella (Goeze, 1783). Larval cases on lichens on rocks, Am.

Apterona helicoidella (Vallot, 1827). Am. vi. 1. Conf. Arnscheid.

Eumasia parietariella (Heydenreich, 1851). Ab, Am, Br, VA (GP2614 m). v, vi, vii, viii, ix. 22.

TINEIDAE

Infurcitinea marcunella (Rebel, 1901). Am. v. 1.

Infurcitinea atrifasciella (Staudinger, 1871). Ab, Am, SL, VA. v, vi, vii, viii, ix, x. 170.

Novotinea muricolella (Fuchs, 1879). Am (GP2673 f). v, ix. 2.

Nemapogon nevadella (Caradja, 1920). Ab, Am, VA. v, vii, ix. 4.

Nemapogon agenjoi Petersen, 1959. Ab. vii. 2.

Neurothaumasia ankerella (Mann, 1867). SL. vii. 1.

Anomalotinea liguriella (Millière, 1879). Ab, Am, Ri, SL. vii. 13.

Cephimallota crassiflavella Bruand, 1851. Ab. vii. 1.

Reisserita zernyi Petersen, 1957. Ab, Am (GP J. Rosete 702 m), Ri, SL, VA. vi, vii. 28.

* *Reisserita flavofimbriella* (Chrétien, 1925). Ab, Am (GP2643 f), SL. vii. 8. (Corley *et al.*, 2007, as *Tinea flavofimbriella* (Chrétien, 1925)). The male of this species is unknown.

Trichophaga bipartitella (Ragonot, 1892). Ab, Am, VA. viii, ix, x. 13.

Tinea basifasciella Ragonot, 1895. Am. vi. 1.

Monopis nigricantella (Millière, 1872). Am (GP3162 m). ix. 1.

Monopis imella (Hübner, 1813). Am. x. 1.

Crassicornella agenjoi Petersen, 1957. Ab, Am, Br, Fi, SL. v, vi, vii. 34.

BUCCULATRICIDAE

Bucculatrix bechsteinella (Scharfenberg, 1805). Larval signs on *Crataegus* L., VA.

* *Bucculatrix albedinella* (Zeller, 1839). Ab. vi. 2. (Laštůvka & Laštůvka, 2014).

GRACILLARIIDAE

Parectopa ononidis (Zeller, 1839). Ab. vi, vii. 7.

Caloptilia loriolella (Frey, 1881). Larval signs on *Fraxinus angustifolia* Vahl, Am, VA. Originally identified as *C. cuculipennella*, but see Corley *et al.* (2013).

Caloptilia fribergensis (Fritzche, 1871). Ab, SL. vi, vii. 2. Also larval signs on *Acer monspessulanum* L., Ab, SL.

Caloptilia alchimiella (Scopoli, 1763). VA (GP2613 f). vii. 1.

Caloptilia stigmatella (Fabricius, 1781). Ab, VA. vii. 2.

Caloptilia falconipennella (Hübner, 1813). Larval signs on *Alnus glutinosa* (L.) Gaertn., VA.

* *Caloptilia fidella* (Reutti, 1853). Larvae, pupae and larval signs on *Humulus lupulus* L., *Ulmus minor* Mill. and *Celtis australis* L., Br, Ri, VA. (Corley *et al.*, 2007).

Aspilapteryx tringipennella (Zeller, 1839). Ab, Am. vi, ix. 2.

Euspilapteryx auroguttella Stephens, 1835. Ab, Am, Br, SL. v, vi, vii, ix, x. 28.

Calybites phasianipennella (Hübner, 1813). Ab, Br. vii. 2.

Acrocercops brongiardella (Fabricius, 1798). VA. vii. 1.

Dialectica scalarrella (Zeller, 1850). Ab, Am, Br, VA. vi, vii, x. 8. Also larvae on *Echium* Tourn. ex L., Am.

Parornix betulae (Stainton, 1854). Am (GP2796 m). v. 1.

Parornix anglicella (Stainton, 1850). Ab, VA (GP2611 m). vii. 3. Also larval signs on *Crataegus* L., Ab, VA.

Parornix tenella (Rebel, 1919). Ab. vi. 1. A. and Z. Laštůvka.

Parornix torquillella (Zeller, 1850). Larval signs on *Prunus spinosa* L., Ab.

* *Phyllonorycter millierella* (Staudinger, 1871). Empty mines on *Celtis australis* L., Ab, Am. (Corley *et al.*, 2014).

Phyllonorycter messaniella (Zeller, 1846). Am. ix. 1.

Phyllonorycter belotella (Staudinger, 1859). Ab, Am. v. 2.

Phyllonorycter oxyacanthae (Frey, 1856). Leaf mines on *Crataegus* L., Ab, VA.

Phyllonorycter salictella (Zeller, 1846). Am. ix. 1

Phyllonorycter scopariella (Zeller, 1846). Ab, Am. vi, ix, x. 5.

Phyllonorycter estrela Laštůvka & Laštůvka, 2006. Am (GP2840 f). v. 1.

Phyllonorycter tridentatae Laštůvka & Laštůvka, 2006. Ab. vi. 3. A. and Z. Laštůvka.

Phyllonorycter parvifoliella (Ragonot, 1875). Ab. vi. 2. (Laštůvka & Laštůvka, 2014).

Phyllonorycter klemannella (Fabricius, 1781). VA. vii. 2.

Phyllonorycter alnivorella (Ragonot, 1875). VA. vii, ix. 2.

Phyllonorycter trifasciella (Haworth, 1828). Ab. vi. 1. A. and Z. Laštůvka.

* *Phyllonorycter ochreojunctella* (Klimesch, 1942). Ab. vi. 2 (Laštůvka & Laštůvka, 2014). Also leaf mines on *Acer monspessulanum* L., Ab. (Corley *et al.*, 2007, misidentified as *P. monspessulanella* (Fuchs, 1897)).

Phyllonorycter populifoliella (Treitschke, 1833). Ab. vii. 1. Also leaf mines on *Populus nigra* L., Br, Ri.

Triberta helianthemella (Herrich-Schäffer, 1860). Am. ix. 1.

Phyllocnistis unipunctella (Stephens, 1834). Leaf mines on *Populus nigra* L., Ab.

YPONOMEUTIDAE

Yponomeuta evonymella (Linnaeus, 1758). Ab, Ri. vii. 2.

Yponomeuta malinellus Zeller, 1838. Ab, Am. vi, vii. 2.

Kessleria brevicornuta Huemer & Tarmann, 1992. Am. vi, ix, x. 4.

Paraswammerdamia albicapitella (Scharfenberg, 1805). Ab. vi, vii. 3.

Cedestis gysseleniella Zeller, 1839. Am. v. 1.

Cedestis subfasciella (Stephens, 1834). Br. vii. 1.

YPSOLOPHIDAE

Ypsolopha persicella (Fabricius, 1787). Ab. xi. 1.

PLUTELLIDAE

Plutella xylostella (Linnaeus, 1758). Ab, Am, Br, Fi, Ri, SL, VA. v, vi, vii, viii, ix, x, xi. 35.

GLYPHIPTERIGIDAE

Glyphipterix fuscoviridella (Haworth, 1828). SL. v. 1.

Glyphipterix equitella (Scopoli, 1763). Am. v, vi. 1.

Glyphipterix umbilici M. Hering, 1927. Ab, Am, Fi, VA. vii, ix, x. 12.

Glyphipterix simpliciella (Stephens, 1834). Am. v. 1. Also plentiful on flowers by day, Ab.

Acrolepiopsis marcidella (Curtis, 1850). Ab. xi. 1.

LYONETIIDAE

Lyonetia clerkella (Linnaeus, 1758). Am, Br. vii. 2. Also leaf mines on *Crataegus* and *Malus* Mill., Ab, VA.

Phyllobrostis daphneella Staudinger, 1859. Am, Fi. v, vii, ix. 7. Also larvae on *Daphne gnidium* L., Ab, Am.

Leucoptera malifoliella (Costa, 1836). Leaf mines on *Malus* Mill., Ab.

Leucoptera aceris (Fuchs, 1903). Leaf mines on *Acer monspessulanum* L., Ab.

PRAYDIDAE

Prays oleae (Bernard, 1788). Ab, Am. vi, ix, x. 34. Also leaf mines on *Phillyrea angustifolia* L., Am.

BEDELLIIDAE

Bedellia somnulentella (Zeller, 1847). Ab, Am, Br. vii, ix. 5. Also larval signs on *Convolvulus arvensis* L., VA.

DOUGLASIIDAE

Tinagma ocnestomella (Stainton, 1850). Am. v. 1.

AUTOSTICHIDAE

Apatema mediopallidum Walsingham, 1900. Ab, Am, Fi. vii, viii, x. 9. Records were made under this name, although it was clear that at least one other species was involved, but the genus remains unrevised in the Iberian Peninsula, nevertheless it is clear from Nel *et al.* (2024) that the true *A. mediopallidum* is not present.

Apatema parodia (Gozmány, 1988). Am. ix. 4.

Symmoca signatella Herrich-Schäffer, 1854. Ab, Am, SL. vi, vii, viii, ix. 15.

Symmoca revoluta Gozmány, 1985. Ab, Am, Fi (GP2647 f), SL, VA. v, vi, vii, viii, ix, x. 38.

Symmoca serrata Gozmány, 1985. Am. vi, ix. 8.

Symmoca nigromaculella Ragonot, 1875. Ab, Am, SL, VA. v, vi, vii, viii, ix. 32.

Symmoca alhambrella Walsingham, 1911. Ab, VA (GP2721 m). vii, ix. 7.

Symmocoides oxybiella (Millière, 1872). Ab, Am, Fi (GP2638 m), Ri, VA. vi, vii, viii, ix, x. 55.

Catasphalma kautziella (Rebel, 1935). Ab, Am, Fi, SL, VA. v, vi, vii, viii, ix. 25.

Dysspastus fallax (Gozmány, 1961). Am. vi. 1.

Stibaromacha ratella (Herrich-Schäffer, 1854). Fi. vii. 2.

LECITHOCERIDAE

Eurodachtha pallicornella (Staudinger, 1859). Ab, Am. v, vi. 15.

Eurodachtha canigella (Caradja, 1920). Ab, Am, Fi, SL, VA. v, vi, vii, viii, ix, x. 70.

Eurodachtha siculella (Wocke, 1889). Am (GP3471 m). vi. 1.

OECOPHORIDAE

Denisia subaquilea (Stainton, 1849). Ab. v. 1.

Goidanichiana jourdheuillella (Ragonot, 1885). Am. vi. 2.

Batia lambdella (Donovan, 1793). Am, VA. viii, ix. 2.

Batia lunaris (Haworth, 1828). Ab, Am. vi, viii. 8.

Epicallima mercedella (Staudinger, 1859). Ab, Am, Fi, SL, VA. vii. 16.

Epicallima formosella (Denis & Schiffermüller, 1775). Ab. vii. 1.

Pleurota ericella (Duponchel, 1839). Ab, Am, Fi, SL, VA. vi, vii. 12. There are probably some records of *P. andalusica* Back, 1973 included here as these two species were not distinguished at the time, but both are now known to be present in nearby localities.

Pleurota honorella (Hübner, 1813). Ab, Am. v, vi, vii. 18.

Pleurota planella (Staudinger, 1859). Am. vi. 1.

DEPRESSARIIDAE

Agonopterix purpurea (Haworth, 1811). Larvae on *Daucus muricatus* (L.) L., Ab and *Chaerophyllum temulum* L., VA.

* *Agonopterix curvipunctosa* (Haworth, 1811). Larvae on *Anthriscus caucalis* Bieb., Co. (Corley *et al.*, 2014).

Agonopterix cnicella (Treitschke, 1832). Ab. x. 2.

- Agonopterix assimilella* (Treitschke, 1832). Ab. x. 1.
Agonopterix scopariella (Heinemann, 1870). Ab, Am, Br, SL, VA. iii, vi, vii, x, xi. 22.
Agonopterix rutana (Fabricius, 1794). Larva on *Ruta angustifolia* Pers., Am.
Agonopterix heracliana (Linnaeus, 1758). Larvae on *Oenanthe crocata* L., Co.
Depressaria depressana (Fabricius, 1775). Flying by day, Ab (GP2784 f). v. 1.
Depressaria daucella (Denis & Schiffermüller, 1775). Larvae on *Oenanthe crocata* L., Am, Br, VA.
Ethmia terminella Fletcher, 1938. Ab, Am. v, vi. 12.
Ethmia bipunctella (Fabricius, 1775). Ab, Am, Br, VA. v, vi, vii, ix, x. 46.
Odites kollarella (Costa, 1832). Ab, Am. vii. 9.

CARCINIDAE

- Carcina quercana* (Fabricius, 1775). Ab, Am. vi, ix, x. 6.

COSMOPTERIGIDAE

- Sorhagenia janiszewskae* Riedl, 1962. Am (GP2628 f). vii. 1.
Limnaecia phragmitella Stainton, 1851. Ab. vii. 1.
Cosmopterix pulchrimella Chambers, 1875. Larval signs on *Parietaria* L., Br.
Cosmopterix crassicervicella Chrétien, 1896. Ab, Am, Br. vii, ix. 6.
Pyroderces argyrogrammos (Zeller, 1847). Ab, Am, VA. v, viii, ix. 6.
Eteobalea intermediella (Riedl, 1966). Ab, Am (GP3154 f), VA. vi, vii, viii, ix, x. 16.
Vulcaniella grabowiella (Staudinger, 1859). Ab, Am, vi, vii. 6.
Vulcaniella fiordalisa (Petry, 1904). Am. v. 2.

GELECHIIDAE

- Stomopteryx basalis* Staudinger, 1876. Ab, Am, Br, Fi, Ri, VA. vii. 10.
Stomopteryx remissella (Zeller, 1847). Ab, Am, Fi. v, vi, vii. 19.
Stomopteryx flavipalpella Jäckh, 1959. Ab (GP2619 f), Am, vi, vii. 7.
Stomopteryx lusitaniella Corley & Karsholt, 2014. Ab (GP3308 m), SL (GP2657 f). vi, vii. 4.
(Described in Corley, 2014).
Approaerema azosterella (Herrich-Schäffer, 1854). Am (GP3479 f). vi. 1.
Approaerema captivella (Herrich-Schäffer, 1854). Ab, Am. v, vi. 11.
Approaerema polychromella (Rebel, 1902). Ab, Am, Br, Fi. v, vi. 19.
Approaerema anthyllidella (Hübner, 1813). Ab, Am, Fi, Ri, SL, VA. v, vi, vii, viii, ix, x. 88.
Mesophleps corsicella Herrich-Schäffer, 1856. Ab. ix. 1.
Mesophleps trinotella Herrich-Schäffer, 1856. Ab, Am, Br, Ri, VA. v, vi, vii, ix. 16.
Anarsia spartiella (Schrank, 1802). Ab. v, vi. 3. Also larva on *Cytisus* Desf., Ab.
Nothris congressariella (Bruand, 1858). Ab. vi. 1.
Dichomeris limbipunctellus (Staudinger, 1859). Am. v, ix, x. 4.
Helcystogramma triannulella (Herrich-Schäffer, 1854). VA. vii. 1. Also larvae on *Calystegia sepium* (L.) R. Br., VA.
Helcystogramma lutatella (Herrich-Schäffer, 1854). Ab. vii. 1.
Epidola stigma Staudinger, 1859. Ab, Am, Br, Fi, Ri, SL, VA. vii, viii. 57.
Platyedra subcinerea (Haworth, 1828). VA. vii. 1.

- Sitotroga cerealella* (Olivier, 1789). Ab, Am. xi. 2.
- Chrysoesthia sexguttella* (Thunberg, 1794). Am. v. 1. Also leaf mines on *Chenopodium* spp., Am, Br, SL, VA.
- Palumbina guerinii* (Stainton, 1858). Ab, Am, SL, VA. v, vi, vii, viii, ix. 22.
- Bryotropha domestica* (Haworth, 1828). Am. ix. 3.
- Bryotropha vundermuhlli* Nel & Brusseau, 2003. SL (GP2646 f). vii. 1.
- Bryotropha gallurella* Amsel, 1952. Ab, Am. v, vi, viii. 33.
- Bryotropha pallorella* Amsel, 1952. Ab, Br. vii, x. 2.
- Bryotropha dryadella* (Zeller, 1850). Ab (GP2760 m). ix. 9.
- Bryotropha affinis* (Haworth, 1828). Am. viii. 3.
- Aristotelia decoratella* (Staudinger, 1879). Am, VA (GP2645 m). vii, viii, ix. 5.
- Aristotelia ericinella* (Zeller, 1839). Am, Ab, Fi. vii, viii. 6.
- Aristotelia brizella* (Treitschke, 1833). Ab, SL. vii, viii. 18.
- Isophrictis lineatellus* (Zeller, 1850). Ab, Am, SL. v, vi, vii. 20.
- Isophrictis anthemidella* (Wocke, 1871). Ab, Am. v. 3.
- Metzneria paucipunctella* (Zeller, 1839). Ab, Am. v, vi. 3.
- Metzneria aestivella* (Zeller, 1839). Ab, SL (GP2630 m). vii. 5.
- Metzneria santolinella* (Amsel, 1936). Ab, Fi. vii, ix. 3.
- Ptocheuusa paupella* (Zeller, 1847). Ab (GP2575 m), Br, VA. vii, ix. 9.
- Monochroa cytisella* (Curtis, 1837). Ab. vi. 1.
- Monochroa rumicetella* (O. Hofmann, 1868). Ab, Am (GP3085 m). ix, x. 2.
- * *Monochroa hornigi* (Staudinger, 1883). Ab (GP2634 m), Br. vii. 2. (Corley et al., 2007).
- Monochroa nigromaculella* (Millière, 1872). Am (GP3164 f). ix. 9.
- Oxypteryx immaculatella* (Douglas, 1850). Ab. vi. 3.
- Oxypteryx helotella* (Staudinger, 1859). Ab, Am. v, vi. 94.
- Gladiovalva badidorsella* (Rebel, 1935). Ab, Am. ix, x. 8.
- * *Athrips rancidella* (Herrich-Schäffer, 1854). Larvae on *Crataegus* L., VA. (Corley et al., 2007).
- Neofriseria singula* (Staudinger, 1876). Am (GP2692 m). ix. 1.
- * *Neofriseria hitadoella* Karsholt & Vives, 2014. Ab, Am, Fi, SL (GP2574 f; GP2644 m), VA. vii. 19. (Corley et al., 2007, as *N. baungaardiella* Huemer & Karsholt, 1999).
- Prolita solutella* (Zeller, 1839). Am. viii. 1.
- Sophronia humerella* (Denis & Schiffermüller, 1775). Ab, Am. v, vi. 7.
- Mirificarma eburnella* (Denis & Schiffermüller, 1775). Ab. v, vi. 2.
- Mirificarma lentiginosella* (Zeller, 1839). Ab, Am. ix. 4.
- Mirificarma cytisella* (Treitschke, 1833). Am (GP2691 m). viii, ix, x. 4.
- Mirificarma interrupta* (Curtis, 1827). Ab, Am. v. 4.
- Mirificarma cabezella* (Chrétien, 1925). Am. ix. 1. Also larva on *Adenocarpus* DC., Am.
- Mirificarma ulicinella* (Staudinger, 1859). Ab, Am. ix, x. 4.
- Mirificarma mulinella* (Zeller, 1839). Ab, Am, VA. ix, x. 27.
- Aroga pascuicola* (Staudinger, 1871). Ab. vi, viii. 3.
- * *Gelechia sabinellus* (Zeller, 1839). Br. vii. 1. (Corley et al., 2007).
- Scrobipalpa vasconiella* (Rössler, 1877). Am. x. 2.
- Scrobipalpa phagnalella* (Constant, 1895). Am. x. 1.

- * *Scrobipalpa hyoscyamella* (Stainton, 1869). VA (GP2621 f; GP2725 m). vii. 1. Also larvae on *Solanum dulcamara* L., VA. (Corley et al., 2007).
- Scrobipalpa ocellatella* (Boyd, 1858). Ab, Am. x. 4.
- Tuta absoluta* (Meyrick, 1917). Am. x. 2.
- Caryocolum marmorea* (Haworth, 1828). Am (GP3080 m). ix. 1.
- Caryocolum jaspidella* (Chrétien, 1908). Ab (GP2576 f), Br (GP2603 m), Ri, VA (GP2615 f). vii, viii. 7.
- Neotelphusa cisti* (Stainton, 1869). Am (GP3501 f). vi, ix. 2.
- Teleiopsis diffinis* (Haworth, 1828) Ab, Am, SL. vi, vii, viii, x. 8.
- Carpatolechia decorella* (Haworth, 1812). SL (GP2637 m). vii. 1. Also larvae on *Pistacia terebinthus* L., VA.
- Pseudotelphusa occidentella* Huemer & Karsholt, 1999. Am, SL. vii. 7.
- * *Altenia scriptella* (Hübner, 1796). Am, SL (GP2641 f). v, vii. 2. (Corley et al., 2007).
- Telphusa cistiflorella* (Constant, 1890). Ab, Am. ix. 5.

ELACHISTIDAE

- Elachista gormella* Nielsen & Traugott-Olsen, 1987. Ab, Am. v, vi. 16.
- Elachista consortella* Stainton, 1851. Ab, Am, Br (GP2605 f), SL. v, vi, vii. 5.
- Haplochrois buvati* (Baldizzone, 1985). Am. ix. 4.

COLEOPHORIDAE

- * *Coleophora adjectella* Herrich-Schäffer, 1861. Larval case on *Prunus spinosa* L., Ab. (Corley et al., 2009).
- Coleophora lusciniaepennella* (Treitschke, 1833). Larval cases on *Salix* L., Ab, VA.
- Coleophora alcyonipennella* (Kollar, 1832). Am (GP2622 f) . vii, viii. 3.
- Coleophora solidaginella* Staudinger, 1859. VA. ix. 1.
- Coleophora genistae* Stainton, 1857. Ab, Am. vi, vii, ix. 6.
- Coleophora amethystinella* Ragonot, 1885. Am (GP3244 m). v. 1.
- Coleophora hieronella* Zeller, 1849. Ab, Am. v, vi. 5.
- Coleophora strigosella* Toll, 1960. Am, VA. ix. 13.
- Coleophora pulchripennella* Baldizzone, 2011. Ab. vii. 1.
- Coleophora argenteonivea* Walsingham, 1907. Ab. vi. 1.
- Coleophora vibicella* (Hübner, 1813). Ri (GP2642 f). vii. 1.
- Coleophora helianthemella* Millière, 1870. Ab, Am. viii, ix. 4.
- Coleophora eupreta* Walsingham, 1907. Ab (GP3008 f). vi. 1.
- Coleophora bilineella* Herrich-Schäffer, 1855. Am. viii. 1.
- Coleophora semicinerea* Staudinger, 1859. Ab (2823 m). v. 1.
- Coleophora brunneosignata* Toll, 1944. Am (GP2812 f). v. 1.
- Coleophora pennella* (Denis & Schiffermüller, 1775). Ab (GP3004 m), Am. v, vi. 6.
- Coleophora lassella* Staudinger, 1859. Ab (GP2730 m). v, ix. 3.
- Coleophora versurella* Zeller, 1849. Ab (3083 m). x. 1.
- * *Coleophora striatipennella* Nylander, 1848. Adults swept from *Stellaria holostea* L. by day, VA (GP2964 f). vi. (Corley et al., 2009).

Coleophora dianthi Herrich-Schäffer, 1855. Ab (GP2633 f), Am, Br (GP2629 f). v, vi, vii. 6.

Coleophora nutantella Mühlig & Frey, 1857. Ab, Am (GP2960 f; GP2991 f). vi. 4.

* *Coleophora saponariella* Heeger, 1848. Larval cases on *Saponaria officinalis* L., Ab, Br, VA. (Corley et al., 2007).

SCYTHRIDIDAE

Scythris parafuscoaenea Bengtsson, 1991. Am, Fi, SA, VA. vii, viii. 28.

Scythris terrenella (Zeller, 1847). Am. viii, ix. 4.

Scythris scopolella (Linnaeus, 1767). Ab, Am, SA. vi, vii. 5.

Scythris limbella (Fabricius, 1775). Am. ix, 1.

Enolmis acanthella (Godart, 1824). Ab, Am, Br, Fi, SL. v, vi, vii, viii. 38.

BLASTOBASIDAE

Blastobasis phycidella (Zeller, 1839). Ab, Am, VA. v, vi, vii, viii, ix, x. 27.

Tecmerium anthophaga (Staudinger, 1870). Am. vi. 1. Also pupa in flowerhead of *Lavandula stoechas* L., Am.

MOMPHIDAE

Mompha miscella (Denis & Schiffermüller, 1775). Ab, Am. vi, vii. 3.

PTEROLONCHIDAE

Pterolonche albescens Zeller, 1847. Br, Ri, SL. vii. 3.

LYPUSIDAE

Agnoea amparoella (Vives, 1986). Am. v. 1.

ALUCITIDAE

Alucita hexadactyla Linnaeus, 1758. Ab, Am (GP2608 f). iii, vi, vii. 4.

PTEROPHORIDAE

Agdistis heydeni (Zeller, 1852). Ab. vii. 1.

Amblyptilia acanthadactyla (Hübner, 1813). Ab, Am. v. 5.

Stenoptilia gallobritannidactyla Gibeaux, 1985. Br (GP2757 f). vii. 1.

* *Stenoptilia eborinodactyla* Zagulajev, 1986. Br (GP2591 m) vii. 5. (Corley et al., 2007, as *S. gratiolae* Gibeaux & Nel, 1990).

Stenoptilia zophodactylus (Duponchel, 1840). Ab. viii. 1.

Cnaemidophorus rhododactyla (Denis & Schiffermüller, 1775). Ab. vi. 1.

Crombrugghia laetus (Zeller, 1847). Ab, Am, Br, VA. v, vi, vii, viii, ix. 24.

Stangeia siceliota (Zeller, 1847). Ab, Am, VA. vii, ix. 3.

Tabulaephorus punctinervis (Constant, 1885). Ab. x. 1.

Merrifieldia leucodactyla (Denis & Schiffermüller, 1775). Ab, Am. v, vi. 4.

Merrifieldia garrigae Bigot & Picard, 1989. Ab. v. 1.

Puerphorus olbiadactylus (Millière, 1859). Am (GP2607 m). v, vi, vii, ix, x. 7.

Hellinsia osteodactylus (Zeller, 1841). Am (GP2808 f). v. 2.

Emmelina monodactyla (Linnaeus, 1758). Ab, Am, Br, VA. v, vi, vii. 7.

EPERMENIIDAE

Epermenia aequidentellus (E. Hofmann, 1867). Ab, Ri (GP2649 m). v, vi, vii. 3.

CHOREUTIDAE

Tebenna micalis (Mann, 1857). Ab, Am, Br, Ri, VA. vi, vii. 19.

Choreutis nemorana (Hübner, 1799). Seen by day and at light. Ab, Am, Br, Ri, SL, VA. vi, vii. 7. Also larvae on *Ficus carica* L., Ab, Am, SL.

TORTRICIDAE

Paramesia alhamana (Schmidt, 1933). Am. v. 2.

Avaria joannisiana (Ragonot, 1888). Ab, Am. x. 2.

Archips rosana (Linnaeus, 1758). Ab, Am. v, vi. 13. Also larvae on *Prunus spinosa* L., *Rubus ulmifolius* Schott and *Quercus rotundifolia* Lam.

Pandemis heparana (Denis & Schiffermüller, 1775). VA. vii, ix. 6.

Lozotaenia cupidinana (Staudinger, 1859). Ab, Am, VA. v, viii, ix. 12.

Cacoecimorpha pronubana (Hübner, 1799). VA. vii. 1.

Clepsis eatoniana (Ragonot, 1881). Ab, Am, VA. v, vi, viii, ix, x. 80. Records were made under the name *C. consimilana* (Hübner, 2017), but Gastón *et al.* (2017) recognised a new south European species *C. razowskii* Gastón, Vives & Revilla, 2017. However they had overlooked the earlier *C. eatoniana* (Ragonot, 1881). Although the true *C. consimilana* does occur in Portugal, all specimens examined from parts of the country with Mediterranean climate have proved to be *C. eatoniana*, so it is assumed that this is the species in the Tua valley.

Clepsis siciliana (Ragonot, 1894). Ab, Am, Fi, Ri, SL, VA. v, vi, vii, viii, ix, x. 30.

Oxypteron schawerdai (Rebel, 1936). Ab (GP3082 f). x. 3.

Eana canescana (Guenée, 1845). SL (GP2635 m). vii. 1.

Cnephasia incertana (Treitschke, 1835). Ab, Am. v, vi. 6. These records were made before the description of *Cnephasia delnoyana* Groenen & Schreurs, 2012. They may belong to that species, but specimens were not retained.

Cnephasia communana (Herrich-Schäffer, 1851). Am. vi. 1.

Cnephasia longana (Haworth, 1811). Ab. vi. 1.

Cnephasia hellenica Obratzsov, 1956. Ab (GP3001 m). vi. 1

Cnephasia ecullyana Réal, 1951. Ab, Am. v, vi. 4.

Acleris rhombana (Denis & Schiffermüller, 1775). Ab. x. 1.

Acleris variegana (Denis & Schiffermüller, 1775). Ab, Am. vi, vii, ix. 5.

Acleris hastiana (Linnaeus, 1758). Ab. vi. 1.

Acleris quercinana (Zeller, 1849). Ab. xi. 1.

Phtheochroa simoniana (Staudinger, 1859). Am. iii. 1.

Phtheochroa rugosana (Hübner, 1799). Ab. v. 1.

Cochylimorpha decolorella (Zeller, 1839). Ab, Am. iii. 5.

Cochylimorpha straminea (Haworth, 1811). Ab, Am. ix, x. 4.

- Phalonidia contractana* (Zeller, 1847). Ab, Am. vi, vii, viii. 9.
- Aethes bilbaensis* (Rössler, 1877). Ab, Am. v, vi, vii, ix. 6.
- Brevicornutia pallidana* (Zeller, 1847). Ab, Am. v, vi. 3.
- Lobesia botrana* (Denis & Schiffermüller, 1775). Ab, Am, Fi, VA. v, vi, vii, viii, ix. 24. Also larva on *Daphne gnidium* L., Ab.
- Endothenia gentianaeanae* (Hübner, 1799). Ab, Br, VA. vii, ix. 8.
- Endothenia marginana* (Haworth, 1811). Ab. vi. 7.
- Endothenia nigricostana* (Haworth, 1811). VA. vii. 3.
- Bactra lancealana* (Hübner, 1799). VA. ix. 3.
- Bactra venosana* (Zeller, 1847). Ab. ix. 4.
- Ancylis apicella* (Denis & Schiffermüller, 1775). Am. viii, ix. 2.
- Spilonota ocellana* (Denis & Schiffermüller, 1775). Am, VA. vi, vii. 3.
- Acroclita subsequana* (Herrich-Schäffer, 1851). Ab, Am. ix, x. 23.
- Epinotia festivana* (Hübner, 1799). Am. vi. 1.
- Epinotia immundana* (Fischer von Röslerstamm, 1839). VA. vi, ix. 2. Also larval signs on *Alnus glutinosa* (L.) Gaertn., VA.
- Epinotia thapsiana* (Zeller, 1847). Ab, Am, Br, VA. v, vi, vii, viii. 13.
- Crociosema plebejana* Zeller, 1847. Br, Fi, Ri. vii. 3.
- Phaneta pauperana* (Duponchel, 1842). Ab. iii. 4.
- Eucosma subvittana* (Staudinger, 1892). Ab, Am. v, vi. 4. These were recorded under the name *Eucosma cana* (Haworth, 1811). Zlatkov & Huemer (2023) suggest that all southern European records are likely to belong to *E. subvittana*. This appears to be the case for Portuguese records (Corley *et al.*, 2024).
- Eucosma albidulana* (Herrich-Schäffer, 1851). Am (GP3010 m). v, vi. 24.
- Gypsonoma minutana* (Hübner, 1799). Ab. vi, vii. 2.
- Gypsonoma aceriana* (Duponchel, 1843). Ab, Ri (GP2661 m). vii. 3.
- Notocelia cynosbatella* (Linnaeus, 1758). Ab. v. 1.
- Notocelia mediterranea* (Obraztsov, 1952). Ab, VA. ix, x. 2. These were recorded under the name *N. incarnatana* (Hübner, 1800). Šumpich *et al.* (2023) consider all southern European records of *N. incarnatana* to belong to *N. mediterranea* and this appears to be the case in Portugal (Corley *et al.*, 2024).
- Notocelia trimaculana* (Haworth, 1811). Ab. v. 2.
- Dichrorampha letarfensis* Gibeaux, 1983. Ab (GP2722 m), Br. vi, ix, x. 3.
- Cydia gilviciliana* (Staudinger, 1859). Am (GP3273 f). v. 1.
- Cydia ulicetana* (Haworth, 1811). Ab, Am. v, ix. 4.
- Cydia adenocarpi* (Ragonot, 1875). Am (GP3269 m). v. 1.
- Cydia strigulatana* (Kennel, 1899). Ab, Am. v. 6.
- Cydia interscindana* (Möschler, 1866). Am. v. 1.
- Cydia coniferana* (Saxesen, 1840). Am. ix. 1.
- Cydia pomonella* (Linnaeus, 1758). Ab, Am, Br, Fi. vii, ix. 9.
- Cydia splendana* (Hübner, 1799). Ab, Am, SL. vii, ix. 7.
- Cydia fagiglandana* (Zeller, 1841). Ab, Am, Fi, SL, VA. vi, vii, viii, ix. 88.
- Cydia amplana* (Hübner, 1800). Ab, Am. viii, ix. 13.

- Grapholita gemmiferana* Treitschke, 1835. Am. vi. 1.
Grapholita lunulana (Denis & Schiffermüller, 1775). Am, Br, SL. v. 5.
Grapholita funebrana Treitschke, 1835. Ab. vii. 2.
Grapholita janthinana (Duponchel, 1843). Ab, VA. vi, ix. 4.
Pammene suspectana (Lienig & Zeller, 1846). Br (GP2620 f). vii. 1.

BRACHODIDAE

- Brachodes gaditana* (Rambur, 1866). Ab, Am, Br, Fi, Ri, SL, VA. vi, vii. 73.

COSSIDAE

- Cossus cossus* (Linnaeus, 1758). Ab, Am. v, vi, viii. 9.
Dyspessa ulula (Borkhausen, 1790). Ab. vi. 3.
Zeuzera pyrina (Linnaeus, 1761). Am. vi. 3.

HETEROGYNIDAE

- Heterogynis penella* (Hübner, 1819). Larvae and cocoons on *Cytisus* Desf., Ab. Recent descriptions of new species of *Heterogynis* in the Iberian Peninsula have not been part of a full revision. This leaves the identification of some records of the genus in a state of uncertainty. Probably *H. penella* is not present in Portugal, but this record is retained here until a safe determination can be made.

PAPILIONIDAE

- Zerynthia rumina* (Linnaeus, 1758). Br, VA. v. 2.
Iphiclides podalirius (Linnaeus, 1758) ssp. *feisthamelii* (Duponchel, 1832). Ab, Br, SL. vii, x. 4.
Papilio machaon Linnaeus, 1758. Ab, Br, SL, VA. vii, ix. 9. Also larvae on *Foeniculum* Mill., Am.

HESPERIIDAE

- Carcharodus alceae* (Esper, 1780). Br. vii. 1.
Spialia sertorius (Hoffmannsegg, 1804). Ab, Br, Fi. vii. 4.
Gegenes nostrodamus (Fabricius, 1793). VA. vii, ix. 3.

PIERIDAE

- Leptidea sinapis* (Linnaeus, 1758). Ab, Am, VA. v, vi. 6.
Anthocharis cardamines (Linnaeus, 1758). Ab, Br, VA. iii, v. 16.
Anthocharis euphenoides Staudinger, 1869. VA. v. 3.
Euchloe crameri Butler, 1869. Larva on *Raphanus* L., Ab.
Pieris brassicae (Linnaeus, 1758). Ab, Br, VA. v, vi, vii, x. 6.
Pieris rapae (Linnaeus, 1758). Ab, Am, Br, Fi, Ri, SL, VA. v, vi, vii, viii, ix, x. 112.
Pieris napi (Linnaeus, 1758). Ab, Br, VA. vi, vii, x. 6.
Pontia daplidice (Linnaeus, 1758). Ab. vi, vii. 3.
Colias croceus (Geoffroy, 1785). Ab, Br. v, vi, vii, x. 11.
Gonepteryx rhamni (Linnaeus, 1758). Br, VA. iii, v. 3.

NYMPHALIDAE

- Lasiommata megera* (Linnaeus, 1767). Ab. vii. 2.
Pararge aegeria (Linnaeus, 1758). Ab, Br, SL, VA. v, vi, vii, ix, x. 28.
Coenonympha pamphilus (Linnaeus, 1758). Ab, Am, Br, Co, VA. v, vi, vii. 17.
Maniola jurtina (Linnaeus, 1758). Am, Br, SL, VA. vi, vii, viii, ix, x. 26.
Pyronia tithonus (Linnaeus, 1767). Ab, SL, VA. vii, viii, ix. 9.
Pyronia cecilia (Vallantin, 1894). Ab, Am, SL, VA. vi, vii. 27.
Melanargia ines (Hoffmannsegg, 1804). Am. v. 1.
Brintesia circe (Fabricius, 1775). Br. ix. 1.
Issoria lathonia (Linnaeus, 1758). SL. vii. 1.
Argynnis pandora (Denis & Schiffermüller, 1775). Br, Fi, SL, VA. v, vii, ix. 22.
Limenitis reducta Staudinger, 1901. SL, VA. vii. 6.
Vanessa cardui (Linnaeus, 1758). Br. vii. 1.
Aglais io (Linnaeus, 1758). Larvae on *Urtica dioica* L., Br.
Nymphalis polychloros (Linnaeus, 1758). VA. iii. 1. Also larvae on *Salix atrocinerea* Brot., SL.
Polygonia c-album (Linnaeus, 1758). Ab. viii. 1.
Melitaea didyma (Esper, 1778). Br, VA. vii. 4.

LYCAENIDAE

- Lycaena phlaeas* (Linnaeus, 1761). Ab, Am, Br, SL, VA. v, vi, vii, ix, x. 24.
Lycaena bleusei Oberthür, 1884. Br. vii, viii. 2.
Lampides boeticus (Linnaeus, 1767). VA. ix. 2.
Leptotes pirithous (Linnaeus, 1767). Ab, Am, Br, SL, VA. vii, ix, x. 24.
Celastrina argiolus (Linnaeus, 1758). Ab, Am, Br, SL, VA. v, vi, vii. 16.
Aricia cramera (Eschscholtz, 1821). Ab, Am, Br, Fi, SL, VA. v, vi, vii, ix. 26.
Cyaniris semiargus (Rottemburg, 1775). Ab. v. 1.
Polyommatus icarus (Rottemburg, 1775). Ab, Am, Br, VA. v, vi, vii, viii. 15.

PYRALIDAE

- Aphomia sociella* (Linnaeus, 1758). Am. v, vi. 3.
Lamoria anella (Denis & Schiffermüller, 1775). Am. ix. 2.
Endotricha flammealis (Denis & Schiffermüller, 1775). Ab, Am. vi, vii, viii. 8.
Hypsopygia fulvocilialis (Duponchel, 1834). Ab. viii. 1.
Pyralis regalis (Denis & Schiffermüller, 1775). Ab, Am, Fi, SL. vi, vii. 6. Wikström *et al.* (2020) recognised a related species *P. sagarra* Leraut, 2005 as present in Portugal. The record of *P. regalis* from Fiolhal is correct, the other records are unconfirmed but most likely the same as the Fiolhal record.
Bostra obsoletalis (Mann, 1864). Ab, Am, Br, Fi, Ri, SL, VA. v, vi, vii, viii. 47.
Stemmatophora combustalis (Fischer von Röslerstamm, 1842). Ab. vii. 6.
* *Stemmatophora syriacalis* Ragonot, 1895 subsp. *oranal* (Zerny, 1914). Am (GP2654 f). vii. 1. (Corley *et al.*, 2009).
Stemmatophora brunnealis (Treitschke, 1829). Am. ix. 11.
Stemmatophora rungsi (Leraut, 2000). Ab, Am, VA. ix. 9.

- Synaphe punctalis* (Fabricius, 1775). Ab, Am, Br, Fi, Ri, SL, VA. vii, viii. 77.
- Polyocha strigosa* (Staudinger, 1879). Am, Fi. vii, ix. 4.
- Ematheudes punctella* (Treitschke, 1833). Ab, Am, Br, VA. v, vi, vii. 12.
- Alophia combustella* (Herrich-Schäffer, 1855). Ab, Am, Fi, SL. v, vi, vii, viii, ix. 24.
- * *Sciota rhenella* (Zincken, 1818). Ab (GP3021 m ; GP3098 f). vi. 4. (Corley et al., 2009).
- Pempelia palumbella* (Denis & Schiffermüller, 1775). Ab, Am, Br, Fi, SL, VA. v, vi, vii, viii, ix, x. 31.
- Asalebria florella* (Mann, 1862). Ab, Am. ix. 6.
- Phycita roborella* (Denis & Schiffermüller, 1775). Ab (GP2653 f), Am. v, vii, viii, ix. 24.
- Dioryctria mendacella* (Staudinger, 1859). Ab, Am, SL. v, vii, viii, ix, x. 15.
- Etiella zinckenella* (Treitschke, 1832). Ab, Am, Br, Fi, VA. v, vi, vii, viii, ix, x. 21.
- Epischnia asteris* Staudinger, 1870. Br (GP2577 f). vii. 1.
- Elegia fallax* (Staudinger, 1881). Ab, SL, VA. vii, ix. 4. This may refer to *E. atrifasciella* Ragonot, 1887, but unfortunately no specimens were retained.
- Matilella fusca* (Haworth, 1811). Ab, Am, VA. vii, ix. 4.
- Pempeliella ardotiella* (Ragonot, 1887). Ab (GP3007 f; GP3299 f), Am. vi, viii. 2.
- Oxybia transversella* (Duponchel, 1836). Ab, Am, Fi, SL. vii, viii, ix, x. 20.
- Psorosa dahliella* (Treitschke, 1832). Am. ix. 1.
- Psorosa mediterranea* Amsel, 1953. Am, VA. vii, viii. 3.
- Hypochalcia ahenella* (Denis & Schiffermüller, 1775). Ab. v. 1.
- Acrobasis repandana* (Fabricius, 1798). Ab, SL. vii. 3.
- Acrobasis bithynella* Zeller, 1848. Am. x. 12.
- Acrobasis obliqua* (Zeller, 1847). Ab, Am, VA. v, vi, ix, x. 154.
- Acrobasis porphyrella* (Duponchel, 1836). Am. viii, ix. 2.
- Acrobasis sodalella* Zeller, 1848. Ab, Am. viii, x. 4.
- Acrobasis glaucella* Staudinger, 1859. Am, Fi. vii, ix. 3.
- Acrobasis marmorea* (Haworth, 1811). Ab. vi. 5.
- Apomyeloides ceratoniae* (Zeller, 1839). Ab, Am, Fi. vii, viii, x. 7.
- Euzophera pinguis* (Haworth, 1811). Ab, Am, Br, Ri. v, vi, vii. 5.
- Euzopherodes vapidelloides* Labonne, Nel & Varenne, 2021. Recorded as *E. vapidella* (Mann, 1857) before the recognition of *E. vapidelloides* as a distinct species. Ab, Am, VA. viii, ix, x. 4.
- Ancylosis cinnamomella* (Duponchel, 1836). Ab, Am, SL. v, vi, vii, viii. 18.
- Ancylosis oblitella* (Zeller, 1848). Am, VA. vi, vii, ix. 7.
- Homoeosoma sinuella* (Fabricius, 1794). Ab, Am, Ri, SL, VA. v, vi, vii, viii, x. 16.
- Homoeosoma nimbella* (Duponchel, 1837). Ab, Am (GP2997 f), Ri. v, vi, vii, x. 17.
- Phycitodes lacteella* (Rothschild, 1915). Ab. x. 1.
- Phycitodes saxicola* (Vaughan, 1870). Ab, Am (GP3017 m; GP3081 f), VA. v, vi, vii, ix, x. 10.
- Ephestia welseriella* (Zeller, 1848). Ab, Am, Fi. v, vi, vii, viii, x. 9.
- Ephestia disparella* Hampson, 1901. Ab, Am (GP2618 f), Br, Fi, Ri. v, vii, ix. 12.
- Ephestia mistralella* (Millière, 1874). Am. vi, ix. 6.
- Ephestia parasitella* Staudinger, 1859. Ab. vii. 1.
- Ephestia woodiella* Richards & Thompson, 1932. Ab, Am, Br, Fi, VA. v, vi, vii, ix. 22.
- Cadra figulilella* (Gregson, 1871). Ab, Am, Br, Fi, SL. vii, viii, ix. 16.

CRAMBIDAE

- Paracorsia repandalis* (Denis & Schiffermüller, 1775). Am. ix. 1.
Loxostege sticticalis (Linnaeus, 1761). Ab. viii. 1.
Ecpyrrhorrhoe rubiginalis (Hübner, 1796). VA. vii. 1.
Pyrausta sanguinalis (Linnaeus, 1767). Ab, Am, Br, Fi, Ri, SL, VA. vii, viii. 17.
Pyrausta despicata (Scopoli, 1763). Ab, Am, Br, Fi, Ri, VA. vii, viii, ix. 37.
Pyrausta aurata (Scopoli, 1763). Ab, Am, Br, Ri, VA. v, vi, vii, ix, x. 25.
Uresiphita gilvata (Fabricius, 1794). Ab, Am, Ri, SL, VA. vi, vii, viii, ix, x. 34.
Sitochroa palealis (Denis & Schiffermüller, 1775). Ab. vi. 2.
Anania verbascalis (Denis & Schiffermüller, 1775). Am, Br. v, vii, viii. 3.
Ostrinia nubilalis (Hübner, 1796). Ab, Am, Br, VA. vii. 4.
Udea ferrugalis (Hübner, 1796). Ab, Am, Br, Fi, Ri, SL, VA. v, vi, vii, viii, ix, x, xi. 108.
Udea bipunctalis (Herrich-Schäffer, 1851). Ab, Am. v, vi. 4.
Udea numeralis (Hübner, 1796). Ab, Am, VA. v, ix, x. 9.
Patania ruralis (Scopoli, 1763). Am. v. 4.
Patania crocealis (Duponchel, 1834). Ab, Am, Br, Fi, Ri, SL, VA. v, vi, vii, viii, ix. 38.
Mecyna asinalis (Hübner, 1819). Ab, Am. v, vii, ix. 5.
Agrotera nemoralis (Scopoli, 1763). Am. v. 1.
Diasemiopsis ramburialis (Duponchel, 1834). Ab, Am, Br, Fi, SL, VA. v, vi, vii, viii, ix, x. 70.
Palpita vitrealis (Rossi, 1794). Ab, Am, Br, Fi, Ri, SL, VA. vi, vii, viii, ix, x, xi. 264.
Dolicharthria aetnaealis (Duponchel, 1833). Ab. v. 1.
Dolicharthria punctalis (Denis & Schiffermüller, 1775). Ab, Am. v, vi, vii. 5.
Antigastra catalaunalis (Duponchel, 1833). Ab, Am, Fi, VA. vii, ix, x. 14.
Metasia ibericalis Ragonot, 1894. Ab, SL, VA. vii. 10.
Nomophila noctuella (Denis & Schiffermüller, 1775). Ab, Am, Br, Fi, Ri, SL, VA. v, vi, vii, viii, ix, x, xi. 76.
Metasia cuencalis ssp. *bourgognei* Leraut, 2001. Ab, Am, SL (GP4024 f). vii, viii. 9. (Det. Slamka).
Aporodes floralis (Hübner, 1809). Ab, Am, Fi, SL. vii. 20.
Cynaeda dentalis (Denis & Schiffermüller, 1775). Am. vi. 1.
Evergestis frumentalis (Linnaeus, 1761). Am. v. 1.
Evergestis politalis (Denis & Schiffermüller, 1775). Ab, Am (GP2671 m; GP3165 m). v, vi, vii, ix. 10.
Hellula undalis (Fabricius, 1781). Ab, Ri. vii, ix, x, xi. 7.
Scoparia staudingeralis (Mabille, 1869). Am. v. 1.
Anarpia incertalis (Duponchel, 1832). Ab, Am, SL. vi, vii, ix, x. 10.
Eudonia angustea (Curtis, 1827). Ab, Am, Br, VA. iii, v, vi, x, xi. 180.
Eudonia mercurella (Linnaeus, 1758). Ab, Am, Br, Fi, Ri, SL, VA. vi, vii, viii, ix. 72.
Chrysoteuchia culmella (Linnaeus, 1758). Ab, Am, Br. v, vi, vii. 6.
Crambus perlella (Scopoli, 1763). Ri. vii. 1.
Agriphila inquinatella (Denis & Schiffermüller, 1775). Ab. ix. 3.
Agriphila latistria (Haworth, 1811). Ab, Am, VA. ix. 5.
Agriphila geniculea (Haworth, 1811). Ab, Am, VA. ix, x. 53.
Catoptria pinella (Linnaeus, 1758). Am, SL. vii, viii. 2.
Catoptria staudingeri (Zeller, 1863). Ab, Am, VA. ix, x. 63.

- Mesocrambus tamsi* Błeszyński, 1960. Ab, Am, Br. vii. 5.
Mesocrambus pallidellus (Duponchel, 1836). Br, Fi, Ri, SL. vii. 5.
Xanthocrambus delicatellus (Zeller, 1863). Ab, Am, Br (GP2625 m, Fi, SL, VA. vii, viii. 11.
Chrysocrambus dentuellus (Pierce & Metcalfe, 1938). Am. vi. 1.
Pediasia contaminella (Hübner, 1796). Ab, VA. vi, ix. 3.
Pediasia ribbeellus (Caradja, 1910). Ab. vi. 2.
Platytes cerussella (Denis & Schiffermüller, 1775). Am. v. 1.
Platytes alpinella (Hübner, 1813). Ab. vi. 1.

DREPANIDAE

- Watsonalla uncinula* (Borkhausen, 1790). Ab, Am, Fi, SL, VA. iii, v, vi, vii, viii, ix, x. 120.
Cilix algerica Leraut, 2006. Ab, VA. vi, vii. 4.
Tethea ocularis (Linnaeus, 1767). Ab, Am. v, vii. 8.

LASIOCAMPIDAE

- Lasiocampa trifolii* (Denis & Schiffermüller, 1775). Ab, Am, VA. ix, x. 5.
Lasiocampa quercus (Linnaeus, 1758). Ab. ix. 1.
Gufria limosa (de Villiers, 1827). Ab, Am. vi, viii, ix. 5.
Psilogaster loti (Ochsenheimer, 1810). Ab, Am, Br. v, vii, viii. 8.
Phyllodesma kermesifolia (Lajonquière, 1960). Ab, Am. v, vi, vii. 18.
Phyllodesma suberifolia (Duponchel, 1842). Ab, Am, Br, SL. v, vi, vii, ix. 13.

SATURNIIDAE

- Saturnia pyri* (Denis & Schiffermüller, 1775). Am. v. 1.
Saturnia pavonia (Linnaeus, 1758). Ab. iii. 1.

SPHINGIDAE

- Marumba quercus* (Denis & Schiffermüller, 1775). Am. v, vi. 8.
Mimas tiliae (Linnaeus, 1758). Ab, Am, Br, VA. vii. 8.
Smerinthus ocellata (Linnaeus, 1758). Ab, Am, Br, Ri, SL, VA. v, vi, vii, viii. 21.
Laothoe populi (Linnaeus, 1758). Ab, Am, Br, Ri, VA. v, vi, vii. 6.
Acherontia atropos (Linnaeus, 1758). Am. viii. 1.
Macroglossum stellatarum (Linnaeus, 1758). Am, Fi, Ri, SL. vii, ix. 6.
Hyles euphorbiae (Linnaeus, 1758). Am. viii. 1.
Hyles livornica (Esper, 1780). Ab, Am, Br, SL. v, vii. 8.
Deilephila elpenor (Linnaeus, 1758). Ab, Br. vii. 2.
Hippotion celerio (Linnaeus, 1758). Am, Br. vii, viii. 2.

GEOMETRIDAE

- Idaea litigiosaria* (Boisduval, 1840). Am. v. 2.
Idaea sardonjata (Homberg, 1912). Ab, Am (GP3027 m). vi. 6.
Idaea mediaria (Hübner, 1819). Ab. vii. 1.
Idaea macilentaria (Herrich-Schäffer, 1847). Ab, Am. vi. 6.

- Idaea ochrata* (Scopoli, 1763). Ab (GP3319 m), Am, Br. vi, vii. 4.
- Idaea figuraria* (Bang-Haas, 1907). Ab. v. 2.
- Idaea mustelata* (Gumpfenberg, 1892). Ab, Ab, Br, Fi, SL, VA. vii. 66.
- * *Idaea nigrolineata* (Chrétien, 1911). Fi (GP2756 m). vii. 1. (Corley *et al.*, 2007).
- Idaea alyssumata* (Himmighoffen & Millière, 1871). Am (GP2729 f). viii, ix. 7.
- Idaea circuitaria* (Hübner, 1819). Ab. vii. 1.
- Idaea calunetaria* (Staudinger, 1859). Ab, Am, VA. v, vi, vii, viii, ix, x. 36.
- Idaea belemiata* (Millière, 1868). Ab, Am, Br, Fi, Ri, SL, VA. vii, viii. 52.
- Idaea elongaria* (Rambur, 1833). Am. vii. 1.
- Idaea obsoletaria* (Rambur, 1833). Ab, Br (GP2592 m). vii. 3.
- Idaea blaesii* Lenz & Hausmann, 1992. Am (GP2606 f). vii. 1. Only on wine rope.
- Idaea fuscovenosa* (Goeze, 1781). Ab. vi. 2.
- Idaea robiginata* (Staudinger, 1863). Am. vii. 1. (J. Rosete).
- Idaea lutulentaria* (Staudinger, 1892). Ab, Am. vi, vii, 36.
- Idaea bigladiata* Herbulot, 1975. Ab, Am. v, vi. 21.
- Idaea longaria* (Herrich-Schäffer, 1852). Ab, Am. v, vi, ix, x. 9.
- Idaea minuscularia* (Ribbe, 1912). Am, SL. vii, viii, ix. 9.
- Idaea subsaturata* (Guenée, 1858). Ab. vii. 3.
- Idaea subsericeata* (Haworth, 1809). Ab, Am. v, vi, vii, ix, x. 15.
- Idaea cervantaria* (Millière, 1869). Ab, Am (GP J. Rosete 714 f), SL, VA. v, vi, vii, ix, x. 88.
- Idaea contiguaria* (Hübner, 1799). Am. vi, ix. 6.
- Idaea rhodogrammaria* (Püngeler, 1913). Ab, Am, Fi. vii. 5.
- Idaea infirmaria* (Rambur, 1833). Ab, Am, Fi, Ri, SL, VA. vi, vii. 39.
- Idaea eugeniata* (Dardoin & Millière, 1870). Ab, Am, VA. v, vii, viii, ix, x. 25.
- Idaea ostrinaria* (Hübner, 1813). Ab, Am. v, vi. 43.
- Idaea rubraria* Staudinger, 1901. Ab. viii. 1.
- Idaea degeneraria* (Hübner, 1799). Ab, Am, Fi, VA. v, vi, vii, viii, ix, x. 80.
- Idaea straminata* (Borkhausen, 1794). Am. ix. 8.
- Idaea deversaria* (Herrich-Schäffer, 1847). Am. vi, x. 2.
- Brachyglossina exilaria* (Guenée, 1858). Am, Fi, VA. vii, ix. 12.
- Brachyglossina hispanaria* (Püngeler, 1913). Am, Fi, SL. vii. 7.
- Scopula ornata* (Scopoli, 1763). Am, Ri. vii, ix. 3.
- Scopula submutata* (Treitschke, 1828) subsp. *nivellearia* (Oberthür, 1922). Ab, Am, SL, VA. vii, ix. 7.
- Scopula rubellata* (Staudinger, 1871). Ab, Am. viii. 2.
- Scopula marginepunctata* (Goeze, 1781). Ab, Am, Br, Fi, SL, VA. v, vi, vii, ix, x. 62.
- Scopula imitaria* (Hübner, 1799). Ab, Am, Br, VA. v, vi, viii, ix, x. 20.
- Scopula minorata* (Boisduval, 1833). Ab, Br. vii, ix, x. 3.
- Scopula rufomixtaria* (Graslin, 1863). Ab, Am, Fi, VA. v, vii, viii, ix, x, xi. 20.
- Scopula asellaria* (Herrich-Schäffer, 1847). Ab, Am. v, vi, x. 19.
- Rhodostrophia calabra* (Petagna, 1796). Ab, Am, VA. v, vi. 15.
- Timandra comae* Schmidt, 1931. Ab, Am, Br, Ri. v, vii, ix, x. 6.
- Cyclophora lennigaria* (Fuchs, 1883). SL. vii. 1. Also larvae on *Acer monspessulanum* L., Ab.

- Cyclophora puppillaria* (Hübner, 1799). Ab, Am, Fi, Ri, SL, VA. v, vi, vii, viii, ix, x, xi. 27.
Cyclophora porata (Linnaeus, 1767). Am. viii, ix. 2.
Rhodometra sacraria (Linnaeus, 1767). Ab, Am, Br, Fi, Ri, SL, VA. vii, viii, ix, x, xi. 167.
Lythria sanguinaria (Duponchel, 1848). Am. viii. 1.
Cataclysmes uniformata (Bellier, 1862). Ab, Am. vi, vii. 6.
Scotopteryx peribolata (Hübner, 1817). Ab, Am. ix, x. 4.
Orthonama obstipata (Fabricius, 1794). Br, VA. v, ix. 2.
Xanthorhoe fluctuata (Linnaeus, 1758). Ab, Am. iii, v, ix, x. 80. Also seen on flowers of *Hedera* L.
Camptogramma bilineata (Linnaeus, 1758). Ab, Am, Br, Co, Fi, Ri, SL, VA. v, vi, vii, viii, ix, x. 84.
Epirrhoe alternata (Müller, 1764). Ab, Am, VA. iii, v, viii, ix, x. 11.
Cosmorhoe ocellata (Linnaeus, 1758). Ab. v, vi. 2.
Nebula ibericata (Staudinger, 1871). Ab, Am, VA. iii, v, ix, x. 11.
Epirrita dilutata (Denis & Schiffermüller, 1775). Ab, Am. xi. 7.
Hospitalia flavolineata (Staudinger, 1883). Am. ix. 2.
Horisme scorteata (Staudinger, 1901). Ab (GP2829 m). v. 1.
Gymnoscelis rufifasciata (Haworth, 1809). Ab, Am, Br, Fi, Ri, SL, VA. iii, v, vi, vii, ix, x. 56.
Chloroclystis v-ata (Haworth, 1809). Ab, Am. v, vi. 5.
Eupithecia pulchellata Stephens, 1831. Ab, Am. v, vi. 17.
Eupithecia laquaearia Herrich-Schäffer, 1848. Am (GP2723 f). v, vi, ix. 13.
Eupithecia pantellata Millière, 1875. Ab, Am. v. 19.
Eupithecia cocciferata Millière, 1864. Ab, Am (GP3551 f). iii, v. 5.
Eupithecia dodoneata Guenée, 1858. Ab, Am. iii, v. 7.
Eupithecia massiliata Millière, 1865. Ab, Am. iii, v, vi. 29.
Eupithecia scopariata (Rambur, 1833). Ab, Am. v. 2.
Eupithecia oxycedrata (Rambur, 1833). Ab, Am. iii, v, ix, x, xi. 43.
Eupithecia breviculata (Donzel, 1837). Ab, Am. v, vi. 2.
Eupithecia irriguata (Hübner, 1813). Am. vi. 1.
Eupithecia centaureata (Denis & Schiffermüller, 1775). Ab, Am. v, vii, viii, ix. 7.
Eupithecia gratiosata Herrich-Schäffer, 1861. Ab, Am. v, vi. 4.
Eupithecia spadiceata Zerny, 1933. Am. (GP3328 f) v. 1.
Aplocera efformata (Guenée, 1858). Ab, Am. v, vi, vii, ix, x. 5.
Chesias legatella (Denis & Schiffermüller, 1775). Ab, Am. x, xi. 17.
Chesias isabella Schawerda, 1915. Ab, Am. iii, v. 9.
Stegania trimaculata (de Villers, 1789). Ab, Am, Br, Ri, VA. v, vi, vii, viii, ix. 23.
Rhoptria asperaria (Hübner, 1817). Ab, Am, SL, VA. iii, v, vi, vii, viii, ix, x. 66.
Isturgia famula (Esper, 1787). Ab, SL. v. 9.
Isturgia miniosaria (Duponchel, 1829). Ab, Am. ix, x, xi. 24.
Isturgia murinaria (Denis & Schiffermüller, 1775). Am. viii. 1.
Neognopharmia stevenaria (Boisduval, 1840). Am. v. 1.
Petrophora chlorosata (Scopoli, 1763). Ab, Am. v. 8.
Perigune convergata (de Villers, 1789). Ab, Am. ix, x, xi. 20.
Plagodis dolabraria (Linnaeus, 1767). Ab. vii. 1.
Pachycnemia hippocastanaria (Hübner, 1799). Ab, Am, Fi, SL. v, vi, vii, viii, ix, x. 33.

- Pachycnemia tibiaria* (Rambur, 1829). Ab, Am, VA. ix, x. 18.
Ennomos alniaria (Linnaeus, 1758). Ab, Am. x. 3.
Ennomos fuscantaria (Haworth, 1809). Ab, Am, Br, Fi, Ri, VA. vi, vii, x. 20.
Ennomos erosaria (Denis & Schiffermüller, 1775). Ab, Am, Br. vii, viii, x. 14.
Crocallis tusciaria (Borkhausen, 1793). Ab, Am. xi, xii. 4.
Crocallis dardoinaria Donzel, 1840. Ab, Am. ix. 5.
Colotois pennaria (Linnaeus, 1761). Ab. xi. 1.
Biston strataria (Hufnagel, 1767). Am. iii. 1.
Chemerina caliginearia (Rambur, 1833). Am. iii, xi. 2.
Nychiodes andalusiaria Staudinger, 1892. Am (GP2655 m), SL. vii. 4.
Menophra abruptaria (Thunberg, 1792). Ab, Am, SL. iii, v, vi, vii, viii, ix, xi. 18.
Menophra japygiaria (Costa, 1849). Ab, Am, Fi, SL. iii, v, vi, vii, viii, ix, x. 34.
Calamodes occitanaria (Duponchel, 1829). Ab, Am. ix, x. 5.
Peribatodes rhomboidaria (Denis & Schiffermüller, 1775). Ab, Am. v, vi, viii, ix, x. 54.
Peribatodes ilicaria (Geyer, 1833). Ab, Am. v, ix. 8.
Selidosema pyrenaearia (Boisduval, 1840). Ab, Am, VA. ix. 7.
Selidosema taeniolaria (Hübner, 1813). Ab, Am, Br, Fi, SL, VA. vii, ix, x. 41.
Adactylotis gesticularia (Hübner, 1817). Ab, Am, VA. v, vi, ix. 20.
Tephronia lhommaria Cleu, 1928. Ab. vii. 1.
Eumannia oranaria (Staudinger, 1892). Ab, Br. vi, vii. 18.
Cabera pusaria (Linnaeus, 1758). Am. v. 1.
Aleucis distinctata (Herrich-Schäffer, 1839). Ab. iii. 1.
Gerinia honoraria (Denis & Schiffermüller, 1775). Am. v. 1.
Charissa mucidaria (Hübner, 1799). Ab, Am. iii, v, vi, vii, viii, ix, x, xi. 78.
Aspitates ochrearia (Rossi, 1794). Am. v. 1.
Onychora agaritharia (Dardoin, 1842). Ab, Am. ix, x. 9.
Compsoptera opacaria (Hübner, 1819). Ab, Am. ix, x. 10.
Pseudoterpna coronillaria (Hübner, 1817). Ab, Am, Br, SL, VA. v, vi, vii, viii, ix, x. 81.
Xenochlorodes olympiaria (Herrich-Schäffer, 1852). Ab (GP2998 f), Am. v, vi, vii, viii, ix. 11.
Jodis lactearia (Linnaeus, 1758). Ab. vi. 1.
Phaiogramma etruscaria (Zeller, 1849). Ab. v. 1.
Phaiogramma faustinata (Millière, 1868). Am. v, ix, x. 4.
Microloxia herbaria (Hübner, 1813). Am. v. 1.

NOTODONTIDAE

- Thaumetopoea pityocampa* (Denis & Schiffermüller, 1775). Ab, Am, Fi, Ri, SL, VA. vii, viii. 150.
Thaumetopoea herculeana (Rambur, 1840). Ab, Am. viii, ix, x. 6.
Cerura iberica (Templado & Ortiz, 1966). Am. v. 5.
Furcula bifida (Brahm, 1787). Ab. vi. 1.
Neoharpyia verbasci (Fabricius, 1798). Ab, Am, Br, Ri, SL. v, vi, vii. 22.
Harpyia milhauseri (Fabricius, 1775). Ab, Am, SL, VA. v, vi, vii. 19.
Drymonia querna (Denis & Schiffermüller, 1775). Ab, Am, SL. v, vi, vii, viii, ix. 19.
Notodonta ziczac (Linnaeus, 1758). Am. v. 1.

Peridea anceps (Goeze, 1781). Ab, Am. v, vi. 8.

Pheosia tremula (Clerck, 1759). Ab. v. 1.

Pterostoma palpina (Clerck, 1759). Ab, Am, VA. v, vi, vii, viii, ix. 6.

EUTELIIDAE

Eutelia adulatrix (Hübner, 1813). Am, SL. v, vi, vii. 11.

EREBIDAE

Scoliopteryx libatrix (Linnaeus, 1758). Ab. vi. 2. Only on wine ropes.

Hypena rostralis (Linnaeus, 1758). Ab, Am, Br, VA. iii, vi, vii, viii. 7.

Hypena obsitalis (Hübner, 1813). Ab, Am. v, x. 8. Also seen on flowers of *Hedera* L.

Hypena lividalis (Hübner, 1796). Am, VA. ix. 2.

Leucoma salicis (Linnaeus, 1758). Ab. viii. 1.

Lymantria dispar (Linnaeus, 1758). Ab, Am, Br, Fi, SL, VA. vii, viii. 24. Also larvae on *Quercus rotundifolia* Lam. and *Ulmus minor* Mill., Ab.

Orgyia trigotephras Boisduval, 1829. Am. vi. 1.

Phragmatobia fuliginosa (Linnaeus, 1758). Ab, Am. viii. 2.

Arctia villica (Linnaeus, 1758). Ab, Am. v, vi. 17.

Cymbalophora pudica (Esper, 1785). Ab, Am, VA. ix. 63.

Euplagia quadripunctaria (Poda, 1761). Fi. vii. 1.

Coscinia cribraria (Linnaeus, 1758). Ab, Am, Fi, VA. vii, viii, ix. 80.

Paidia rica (Freyer, 1858). Am, Br, SL, VA. vii, ix. 4.

Apaidia mesogona (Godart, 1824). Ab, Am. viii, ix. 40.

Eilema uniola (Rambur, 1866). Ab, Am. ix, x. 26.

Eilema caniola (Hübner, 1808). Ab, Am (GP2651 f), Fi, VA. v, vi, vii, viii, ix, x, xi. 1860.

Eilema complana (Linnaeus, 1758) subsp. *iberica* von Mentzer, 1980. Fi. vii. 1.

Nodaria nodosalis (Herrich-Schäffer, 1851). Ab, Am, Br, VA. v, vi, vii, viii, ix, x, xi. 53.

Polypogon plumigeralis Hübner, 1825. Ab, Am. v, vi, viii, ix, x. 14.

Schrankia costaestrigalis (Stephens, 1834). Ab, Am, VA. v, vii, viii, ix, x. 10.

Lygephila craccae (Denis & Schiffermüller, 1775). Ab, Am. v, vi, ix, x. 13.

Autophila cataphanes (Hübner, 1813). Ab, Am, Fi. v, vii. 3.

Parascotia nisseni Turati, 1905. Ab, Am, VA. vi, vii, ix. 32.

Eublemma candidana (Fabricius, 1794). Ab, Am, Fi. vi, vii, viii, x. 7.

Eublemma parva (Hübner, 1808). Ab, Am, Br, Fi, Ri, SL, VA. vii, viii, ix. 74.

Eublemma ostrina (Hübner, 1808). Ab, Am, Fi. vi, vii, x. 7.

Eublemma purpurina (Denis & Schiffermüller, 1775). Am. ix. 1.

Eublemma pura (Hübner, 1813). Ab, Am, Fi, VA. vii, viii. 13.

Eublemma polygramma (Duponchel, 1842). Am. vi. 1.

Metachrostis velox (Hübner, 1813). Am. vii, ix. 3.

Catephia alchymista (Denis & Schiffermüller, 1775). Am. v, vi, vii, viii, ix. 6.

Zethes insularis Rambur, 1833. Ab, Am, Fi, SL. v, vi, vii, viii, ix. 36.

Drasteria cailino (Lefèbvre, 1827). Ab, Am, Br, Fi, SL, VA. iii, v, vi, vii, viii, ix. 30.

Catocala mariana Rambur, 1858. SL. vii. 6.

- Catocala conversa* (Esper, 1783). Am, Fi. vii. 4.
Catocala nymphagoga (Esper, 1787). Ab, Am, SL. vi, vii. 16.
Catocala coniuncta (Esper, 1787). Ab, Am, SL. vii, viii, ix. 8.
Catocala elocata (Esper, 1787). Am. ix. 1.
Ophiusa tirhaca (Cramer, 1773). Am. vi, vii. 2.
Minucia lunaris (Denis & Schiffermüller, 1775). Am. v. 10.
Dysgonia algira (Linnaeus, 1767). Ab, Am, Br, Fi, Ri, SL, VA. v, vi, vii, viii, ix. 78.

NOCTUIDAE

- Abrostola triplasia* (Linnaeus, 1758). Am. v, vi. 5.
Trichoplusia ni (Hübner, 1803). Am, Br, Fi, VA. vii, ix. 10.
Ctenoplusia accentifera (Lefèbvre, 1827). Am. ix. 1.
Chrysodeixis chalcites (Esper, 1789). Am. xi. 2.
Macdunnoughia confusa (Stephens, 1850). Ab, Am, Br, VA. v, vi, vii, ix, x. 7.
Autographa gamma (Linnaeus, 1758). Ab, Am, Br, VA. v, vi, vii, viii, ix, x, xi. 30.
Recoropha canteneri (Duponchel, 1833). Ab, Am. v, vi. 17.
Metopoceras felicina (Donzel, 1844). Ab. v. 1.
Acontia lucida (Hufnagel, 1766). Ab, Am, Ri. vii, viii. 4.
Tyta luctuosa (Denis & Schiffermüller, 1775). Ab, Am, Br, Fi, Ri. v, vi, vii, viii. 18.
Raphia hybris (Hübner, 1813). Ab, VA. v, vi, vii, ix. 6.
Acronicta psi (Linnaeus, 1758). Ab, Am. v, viii. 5.
Acronicta aceris (Linnaeus, 1758). Am. ix. 1.
Acronicta leporina (Linnaeus 1758). Am, Br. vii, viii. 2.
Acronicta auricoma (Denis & Schiffermüller, 1775). Ab, Am. vi, viii. 4.
Acronicta euphorbiae (Denis & Schiffermüller, 1775). Ab, Am. v. 3.
Acronicta rumicis (Linnaeus, 1758). Ab, Am, Ri, VA. v, vii, ix. 5.
Acronicta megacephala (Denis & Schiffermüller, 1775). Am, Br, Ri. vi, vii. 3.
Craniophora pontica (Staudinger, 1878). Ab, Am, Br, Ri, VA. v, vi, vii, viii, ix. 27.
Aegle vespertinalis (Rambur, 1858). Ab, Am. vi, vii. 3.
Cucullia calendulae Treitschke, 1835. Larvae on *Coleostephus* Cass., Ab.
Lophoterges millierei (Staudinger, 1871). Am, SL. v, vi, vii. 3.
Stilbia andalusiaca Staudinger, 1892. Ab, Am. ix, x. 7.
Cleonymia yvanii (Duponchel, 1833). Ab, Am. v, vi. 10.
Cleonymia diffluens (Staudinger, 1870). Ab, Am. v, vi. 12.
Valeria jaspidea (de Villers, 1789). Ab. iii. 1.
Allophytes alfaroi Agenjo, 1951. Ab, Am. xi. 5.
Xylocampa areola (Esper, 1789). Am. iii, xi. 2.
Heliothis peltigera (Denis & Schiffermüller, 1775). Am, Br. v, vi, vii. 5.
Heliothis incarnata Freyer, 1838. Ab, Am. v, vi. 3.
Helicoverpa armigera (Hübner, 1808). Ab, Am, Br, Fi, SL, VA. vii, ix, x. 9.
Callopistria latreillei (Duponchel, 1827). Ab, Am, Fi, SL. v, vi, vii, ix, x, xi. 24.
Cryphia algae (Fabricius, 1775). Ab, Am, Fi, SL, VA. vii, viii, ix. 54.
Bryophila vandalusia Duponchel, 1842. Ab, Am (GP3961 f). vii, viii. 3.

- Bryopsis muralis* (Forster, 1771). Ab, Am, Fi, SL, VA. vi, vii, viii, ix. 37.
- Spodoptera exigua* (Hübner, 1808). Ab, Am, Br, Fi, Ri, SL, VA. v, vi, vii, ix, x. 61.
- Caradrina proxima* Rambur, 1837. Ab, Am, VA. v, ix, x. 28. Also seen on flowers of *Hedera* L.
- Caradrina aspersa* Rambur, 1834. Ab, Am, Fi, SL. vii, viii, ix. 18.
- Caradrina germainii* (Duponchel, 1835). Ab. ix, x. 3.
- Caradrina flavirena* Guenée, 1852. Ab (GP2821 f), Am, Fi, VA. v, vi, vii, viii, ix, x. 112. Also seen on aaaaflowers of *Hedera* L.
- Caradrina clavipalpis* (Scopoli, 1763). Ab, Am, VA. v, vi, viii, ix. 24.
- Hoplodrina ambigua* (Denis & Schiffermüller, 1775). Ab, Am, Fi, VA. v, vi, vii, ix, x. 51. Also seen on flowers of *Hedera* L.
- Proxenus hospes* (Freyer, 1831). Ab, Am. v, vi. 2.
- Mormo maura* (Linnaeus, 1758). Ab, Ri, VA. vii, x. 3.
- Polyphaenis sericata* (Esper, 1787). Ab, Am. vi, vii. 28.
- Thalpophila vitalba* Freyer, 1834. Ab, Am, VA. ix, x. 9.
- Chloantha hyperici* (Denis & Schiffermüller, 1775). Ab, Am. iii, v, vi, viii, ix. 12.
- Phlogophora meticulosa* (Linnaeus, 1758). Ab, Am, VA. v, vii, ix, x, xi. 10.
- Luperina testacea* (Denis & Schiffermüller, 1775). Ab. x. 1.
- Luperina nickerlii* (Freyer, 1845). Am. ix. 4.
- Denticucullus pygmina* (Haworth, 1809). Am (GP3521 f). ix. 1.
- Apamea arabs* (Oberthür, 1881). Am. v. 2.
- Mesapamea secalis* (Linnaeus, 1758). Ab, Am (GP3493 f). vi. 4.
- Mesoligia furuncula* (Denis & Schiffermüller, 1775). Ab, Am. viii. 4.
- Oligia strigilis* (Linnaeus, 1758). Am. vi. 2.
- Leucochlaena oditis* (Hübner, 1822). Am. ix, x. 8.
- Agrochola lychnidis* (Denis & Schiffermüller, 1775). Ab, Am. xi, xii. 3. Only on wine ropes.
- Agrochola lunosa* (Haworth, 1809). Ab. x. 2.
- Agrochola meridionalis* (Staudinger, 1871). Am. xi. 2.
- Agrochola blidaensis* (Stertz, 1915). Am. xi. 1.
- Agrochola haematidea* (Duponchel, 1827). Ab, Am. xi. 6.
- Agrochola circellaris* (Hufnagel, 1766). Am. xii. 1.
- Spudaea ruticilla* (Esper, 1791). Ab, Am. iii, v. 17.
- Conistra ligula* (Esper, 1791). Ab, Am. xi. 10.
- Conistra alicia* Lajomquièrre, 1939. Am (GP3544 f). xi. 1.
- Conistra rubiginosa* (Scopoli, 1763). Ab (GP6123 f). xi. 3.
- Conistra rubiginea* (Denis & Schiffermüller, 1775). Ab, Am (GP6122 f). iii, xi. 3.
- Lithophane semibrunnea* (Haworth, 1809). SL. vii. 1. The collection date (20.vii.2006) is remarkable, but there was no error in identification or confusion of date.
- Cosmia affinis* (Linnaeus, 1767). Am. vii. 1.
- Atethmia algerica* (Culot, 1917). Ab, Am. ix, x. 9.
- Dryobota labecula* (Esper, 1788). Ab, Am. xi. 11.
- Dryobotodes eremita* (Fabricius, 1775). Ab, Am. x, xi. 3.
- Dryobotodes monochroma* (Esper, 1790). Ab, Am. ix, x. 4.
- Dryobotodes roboris* Geyer (1835). Ab, Am. x. 14.

- Dryobotodes tenebrosa* (Esper, 1789). Ab, Am. x. 9.
Ammopolia witzenmanni (Standfuss, 1890). Am. xi. 3.
Trigonophora flammea (Esper, 1785). Ab, Am. x, xi. 49. Also seen on flowers of *Hedera* L.
Trigonophora jodea (Herrich-Schäffer, 1850). Am. x. 3.
Trigonophora haasi (Staudinger, 1892). Am. ix. 11.
Aporophyla luenebergensis Freyer, 1848. Ab, Am. x. 2.
Aporophyla nigra (Haworth, 1809). Ab, Am. ix, x, xi. 59. Also seen on flowers of *Hedera* L.
Aporophyla canescens (Duponchel, 1826). Am. ix. 1.
Polymixis xanthomista (Hübner, 1819). Ab, Am. ix, x. 11.
Polymixis argillaceago (Hübner, 1822). Ab. x. 1.
Polymixis lichenea (Hübner, 1813). Ab, Am. x, xi. 19. Also seen on flowers of *Hedera* L.
Polymixis flavicineta (Denis & Schiffermüller, 1775). Ab, Am. x, xi, xii. 18.
Polymixis dubia (Duponchel, 1836). Ab, Am. ix, x. 21. Also seen on flowers of *Hedera* L.
Mniotype occidentalis Yela, Fibiger, L. Ronkay & Zilli, 2010. Am. ix, x. 10.
Orthosia cerasi (Fabricius, 1775). Ab, Am. iii. 2.
Egira conspicularis (Linnaeus, 1758). Ab, Am. iii. 5.
Anarta trifolii (Hufnagel, 1766). Am. v. 3.
* *Anarta gredosi* (Laever, 1977). Ab (GP3022 m), Am. v, vi, vii, viii. 6. (Corley *et al.*, 2009).
Anarta myrtilli (Linnaeus, 1761). VA. vii. 1.
Lacanobia w-latinum (Hufnagel, 1766). Am. v. 2.
Lacanobia oleracea (Linnaeus, 1758). Ab, Am. v, vi, ix. 7.
Sideridis turbida (Esper, 1790). Ab, Am. v, vi. 19.
Luteohadena andalusica (Staudinger, 1859). Am. v, vi. 7.
Hecatera weissii (Draudt, 1934). Ab, Am. v, vi. 11.
Hecatera dysodea (Denis & Schiffermüller, 1775). SL. vii. 1.
Hadena magnolii (Boisduval, 1829). Am. v, vi. 8.
Hadena compta (Denis & Schiffermüller, 1775). Larva on *Dianthus lusitanus* Brot., Am.
Hadena confusa (Hufnagel, 1766). Ab, Am. v. 12.
Hadena perplexa (Denis & Schiffermüller, 1775). Ab, Am. iii, v, vi. 13.
Hadena sancta (Staudinger, 1859). Ab. v. 1.
Mythimna vitellina (Hübner, 1808). Ab, Am, VA. v, vi, vii, ix, x. 34.
Mythimna unipuncta (Haworth, 1809). Ab, Am. x. 3.
Mythimna sicula (Treitschke, 1835). Ab, Am. v, vii, viii, ix, x. 24.
Mythimna albipuncta (Denis & Schiffermüller, 1775). Ab, Am, VA. v, vi, vii, viii, ix, x. 31.
Mythimna ferrago (Fabricius, 1787). Ab, Am, Br, SL. vii, viii, ix. 10.
Mythimna l-album (Linnaeus, 1767). Ab, Am, VA. iii, v, vi, vii, viii, ix, x, xi. 41.
Mythimna riparia (Rambur, 1829). Ab, Am, VA. v, vi, viii, ix, x. 22.
Leucania putrescens (Hübner, 1824). Ab, Am, VA. vii, viii, ix. 30.
Leucania punctosa (Treitschke, 1825). Ab, Am, VA. ix, x. 7.
Leucania loreyi (Duponchel, 1827). Ab, Am. ix, xi. 3.
Peridroma saucia (Hübner, 1808). Ab, Am, SL. vi, vii, ix, xi. 15.
Dichagyris fidelis (Joannis, 1903). Am. vi. 3.
Euxoa temera (Hübner, 1808). Am, VA. ix. 4.

- Euxoa tritici* (Linnaeus, 1761) agg. Am (GP2656 f). *vii*, *ix*. 2.
Agrotis bigramma (Esper, 1790). Ab, Am, VA. *ix*. 8.
Agrotis exclamatoris (Linnaeus, 1758). Ab, Am, Br. *v*, *vii*, *viii*. 7.
Agrotis segetum (Denis & Schiffermüller, 1775). Ab, Am, Ri, SL. *v*, *vi*, *vii*, *x*. 15.
Agrotis trux (Hübner, 1824). Ab, Am, VA. *vi*, *viii*, *ix*, *x*. 193. Also seen on flowers of *Hedera* L.
Agrotis puta (Hübner, 1803). Ab, Am, VA. *iii*, *v*, *viii*, *ix*, *x*. 27.
Agrotis ipsilon (Hufnagel, 1766). Ab, Am. *vi*, *viii*, *x*. 6.
Ochropleura plecta (Linnaeus, 1761). Ab, Am. *v*, *vi*, *vii*, *viii*, *ix*, *x*. 19.
Ochropleura leucogaster (Freyer, 1831). Ab, Br. *vi*, *vii*. 7.
Cerastis faceta (Treitschke, 1835). Ab, Am. *iii*, *xi*, *xii*. 22.
Paucigraphia erythrina (Herrich-Schäffer, 1852). Am. *vi*. 1.
Noctua pronuba Linnaeus, 1758. Ab, Am. *v*, *vi*, *vii*, *viii*, *ix*, *x*, *xi*. 68. Also seen on flowers of *Hedera* L.
Noctua tirrenica Biebinger, Speidel & Hanigk, 1983. Am (GP3576 f). *vi*, *vii*, *ix*, *x*. 10.
Noctua orbona (Hufnagel, 1766). Ab, Am. *viii*, *ix*. 4.
Noctua comes Hübner, 1813. Ab, Am, Br, SL, VA. *v*, *vi*, *vii*, *viii*, *ix*, *x*. 59. Also seen on flowers of *Hedera* L.
Noctua interjecta Hübner, 1803. Ab, Am. *vii*. 2.
Noctua janthina (Denis & Schiffermüller, 1775). SL. *vii*. 1.
Noctua janthe (Borkhausen, 1792). Ab, Am, Br, Fi, SL, VA. *vi*, *vii*, *viii*, *ix*, *x*. 32.
Epilecta linogrisea (Denis & Schiffermüller, 1775). Ab, Am, SL. *vii*, *ix*. 6.
Xestia agathina (Duponchel, 1827). Am. *ix*, *x*. 5.
Xestia kermesina (Mabille, 1869). Ab, Am, VA. *ix*, *x*. 7.
Xestia xanthographa (Denis & Schiffermüller, 1775). Ab, Am. *x*. 5.
Xestia c-nigrum (Linnaeus, 1758). Ab, Am. *v*, *vii*, *x*. 4.
Eugnorisma glareosa (Esper, 1788). Ab, Am. *ix*, *x*. 60.
Eugnorisma arenoflavida (Schawerda, 1934). Ab, Am, VA. *ix*, *x*. 9.

NOLIDAE

- Meganola strigula* (Denis & Schiffermüller, 1775). Ab, Am, Br. *v*, *vi*, *vii*, *viii*. 4.
Nola tutulella Zerny, 1927. Ab. *vii*. 2.
Nola infantula Kitt, 1926. Ab, Am. *iii*, *v*. 2.
Nola subchlamydula Staudinger, 1871. Ab, Am. *iii*, *v*, *vi*. 12.
Bena bicolorana (Fuessly, 1775). Am. *ix*. 1.
Nycteola revayana (Scopoli, 1772). Am (GP3395 f), SL (GP2652 f). *vii*, *xi*. 2.
Nycteola columbana (Turner, 1925). Ab (GP3087 m). *x*. 1.
Nycteola siculana (Fuchs, 1899). Ab, Am. *iii*, *vi*. 5. Also larvae on *Salix salviifolia* Brot., Ab.
* *Nycteola asiatica* (Krulikovsky, 1904). Am (GP4014 f). *viii*. 1. (Corley *et al.*, 2014).
Earias albovenosana Oberthür, 1917. Ab, Am, SL. *v*, *vi*, *vii*. 6.

Discussion

This list serves as a baseline survey of the Tua Valley Lepidoptera prior to the building of the dam. A further survey a few years after the dam is completed and the valley flooded would be of great interest, although some of the sites used for this survey will no longer be available. Hopefully suitable new sites will be possible to find in the vicinity of the original sites.

Of the 25 species that were recorded as new for Portugal, the majority have since been found elsewhere in the country, but the following six species have no records outside the Tua valley:

Caloptilia fidella (Reutti, 1833), *Sorhagenia janiszewskae* Riedl, 1962, *Scrobipalpa hyoscyamella* (Stainton, 1869), *Coleophora adjectella* Herrich-Schäffer, 1761, *Stenoptilia eborinodactyla* Zagulajev, 1986 and *Sciota rhenella* (Zincken, 1818). *Idaea nigrolineata* (Chrétien, 1911) has one additional site on a tributary of Rio Tua only three kilometres east of the valley.

Appendix

Cruz and Gonçalves (1974) published a list of Lepidoptera they had recorded in the port-wine producing area, the Alto Douro. Records of the following 97 species were made in the central part of the Alto Douro, in the Douro valley at Vesúvio and Pinhão, but were not recorded in the Tua valley in the present survey. The Cruz & Gonçalves paper only treats Macrolepidoptera. Some of their records are not included here as they were rejected as misidentifications (Corley, 2008).

LIMACODIDAE

Hoyosia codeti (Oberthür, 1883)

ZYGAENIDAE

Jordanita notata (Zeller, 1847). Not mentioned by Cruz & Gonçalves (1974), but Monteiro (1971) added this species after studying the Silva Cruz collection.

Jordanita hispanica (Alberti, 1937)

Adscita jordani (Naufock, 1921)

Aglaope infausta (Linnaeus, 1767)

HESPERIIDAE

Thymelicus lineola (Ochsenheimer, 1808)

Hesperia comma (Linnaeus, 1758)

Ochlodes sylvanus (Esper, 1777)

PIERIDAE

Euchloe belemia (Esper, 1800)

Aporia crataegi (Linnaeus, 1758)

Gonepteryx cleopatra (Linnaeus, 1767)

NYMPHALIDAE

- Lasiommata maera* (Linnaeus, 1758)
- Hipparchia statilinus* (Hufnagel, 1766)
- Hipparchia fidia* (Linnaeus, 1767)
- Argynnis paphia* (Linnaeus, 1758)
- Argynnis niobe* (Linnaeus, 1758)
- Charaxes jasius* (Linnaeus, 1767)
- Euphydryas aurinia* ssp. *beckeri* (Herrich-Schäffer, 1851)
- Melitaea phoebe* (Denis & Schiffermüller, 1775)
- Melitaea trivialis* (Denis & Schiffermüller, 1775)
- Melitaea deione* (Geyer, 1832)

LYCAENIDAE

- Lycaena alciphron* (Rottemburg, 1775)
- Laeosopis roboris* (Esper, 1789)
- Tomares ballus* (Fabricius, 1787)
- Satyrium ilicis* (Esper, 1779)
- Satyrium esculi* (Hübner, 1806)
- Glauropsyche melanops* (Boisduval, 1828)
- Plebejus argus* (Linnaeus, 1758)

LASIOCAMPIDAE

- Malacosoma neustria* (Linnaeus, 1758)

SPHINGIDAE

- Agrius convolvuli* (Linnaeus, 1758)

GEOMETRIDAE

- Idaea incisaria* (Staudinger, 1892)
- Anthometra plumularia* Boisduval, 1840
- Scopula turbidaria* (Hübner, 1819)
- Cyclophora punctaria* (Linnaeus, 1758)
- Cataclysmia rigata* (Hübner, 1813)
- Perizoma albulata* (Denis & Schiffermüller, 1775)
- Epirrhoe galiata* (Denis & Schiffermüller, 1775)
- Colostygia olbiaria* (Millière, 1865)
- Eupithecia venosata* (Fabricius, 1787)
- Eupithecia nanata* (Hübner, 1813)
- Abraxas pantaria* (Linnaeus, 1767)
- Pseudopanthera macularia* (Linnaeus, 1758)
- Eurrhantia plummistaria* (de Villiers, 1789)
- Peribatodes umbraria* (Hübner, 1809)
- Hypomecis punctinalis* (Scopoli, 1763)

Ematurga atomaria (Linnaeus, 1758)
Tephronia sepiaria (Hufnagel, 1767)
Cabera exanthemata (Scopoli, 1763)
Campaea margaritata (Linnaeus, 1761)
Ortaliella perspersata (Treitschke, 1827)
Charissa obscurata (Denis & Schiffermüller, 1775)
Compsoptera jourdanaria (Serres, 1826)
Aplasta ononaria (Fuessly, 1783)
Thalera fimbrialis (Scopoli, 1763)
Hemithea aestivaria (Hübner, 1789)

EREBIDAE

Ocneria rubea (Denis & Schiffermüller, 1775)
Spilosoma lubricipeda (Linnaeus, 1758)
Artimelia latreillii (Godart, 1823)
Atlantarctia tigrina (de Villers, 1789)
Eilema lurideola (Zincken, 1817)
Eilema pygmaeola ssp. *pallifrons* (Zeller, 1847)
Autophila dilucida (Hübner, 1808)
Autophila cataphanes (Hübner, 1813)
Metachrostis dardouini (Boisduval, 1840)
Euclidia glyphica (Linnaeus, 1758)
Clytie illunaris (Hübner, 1813)

NOCTUIDAE

Abrostola tripartita (Hufnagel, 1766)
Thysanoplusia orichalcea (Fabricius, 1775)
Ctenoplusia accentifera (Lefèbvre, 1827)
Plusia festucae (Linnaeus, 1758)
Cucullia verbasci (Linnaeus, 1758)
Calophasia hamifera Staudinger, 1863
Cleonymia baetica (Rambur, 1837)
Heliothis viriplaca (Hufnagel, 1766)
Bryophila domestica (Hufnagel, 1766)
Spodoptera cilium Guenée, 1852
Spodoptera littoralis (Boisduval, 1833)
Caradrina ibeasi (Fernandez, 1918)
Caradrina selini Boisduval, 1840
Euplexia lucipara (Linnaeus, 1758)
Luperina dumerilii (Duponchel, 1826)
Apamea monoglypha (Hufnagel, 1766)
Sesamia nonagrioides (Lefèbvre, 1827)
Cirrhia ocellaris (Borkhausen, 1792)

Conistra staudingeri (Graslin, 1863)
Jodia croceago (Hübner, 1813)
Lithophane leautieri ssp. *andalusica* Boursin, 1957
Fissipunctia ypsilon (Hübner, 1813)
Antitype chi (Linnaeus, 1758)
Aporophyla chioleuca (Herrich-Schäffer, 1850)
Orthosia gothica (Linnaeus, 1758)
Mamestra brassicae (Linnaeus, 1758)
Sideridis rivularis (Fabricius, 1775)
Eucoptocnemis optabilis (Boisduval, 1834)
Agrotis spinifera (Hübner, 1808)
Axylia putris (Linnaeus, 1761)
Violaphotia molothina (Esper, 1789)

Acknowledgements

I am extremely grateful to my friends José Manuel Grosso-Silva, Sónia Ferreira and Pedro Sousa for involving me in the July 2006 survey. JMG-S chose the sites to be worked on that trip and he organised our rescue after our van was abandoned at Fiolhal. SF and PS provided logistical support, particularly carrying equipment, sometimes for considerable distances and also joined me on subsequent visits to the valley; SF also produced the map. Ernestino Maravalhas joined me on some later visits; Eduardo Marabuto and Fernando Romão joined me at Abreiro Station in 2013. Café Victinho in Carrazeda de Ansiães kindly allowed me to use their freezer. Erik van Nieukerken, Wilfried Arnscheid, František Slamka and Klaus Sattler helped me with identification of Nepticulidae, Psychidae, Crambidae and Gelechiidae respectively.

Jorge Rosete and Aleš and Zdenek Laštůvka very generously provided me with records from their visits to the valley.

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Algarve holiday produces a new moth species for Portugal

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Abstract

Moths recorded during a family holiday in Algarve included *Eublemma baccatrix* Hacker, 2019, a species new to Portugal.

Introduction

Our family has made fairly regular visits to the Algarve since the 1970s, usually to Cabanas east of Tavira, although due to large-scale building work there since the millennium we have chosen to visit more rural areas to the west of Tavira within the Rio Formosa natural park. At the end of June 2024 we returned to Casa Rosa in Pinheiro near Luz da Tavira for a ten-day stay. This was our second visit to the villa there, which is situated on the slope of a small conifer-covered hill overlooking the coastal marshes to the south. The village is surrounded by farmland dominated by citrus plantations.

In the UK I have run light traps in my own garden almost every night over more than 20 years and have done a lot of additional survey work in my local county (Buckinghamshire) to the north-west of London. I have taken a moth light with me when on holiday abroad several times in the past, including to Portugal, mostly just for fun because it is so interesting to see “something different”, especially those resident species which are very rare migrants to the UK. This time I resolved to collect data a little more seriously, having been requested by Peter Hall to help him populate the website www.mothdissection.co.uk with genitalia examples from some of the European species which have yet to be illustrated there. This is a very well-used free on-line resource which Peter runs in conjunction with a handful of other UK moth experts.

In the past I have taken a collapsible Heath-type moth trap abroad using a 15w actinic light, but due to the difficulty of making room for it and its accompanying choke in airline luggage and the fact that the 15w bulb is not all that efficient at attracting moths, I have resorted to operating without a trap as such, relying only on a mains-powered 160w MV bulb screwed in to a ceramic socket with a built-in hook (actually designed for a reptile vivarium). The bulb holder is suspended beneath either a modified music stand or, if I have room in the suitcase, a rather more bulky camera tripod. It was the tripod arrangement which I used in 2024.

Casa Rosa has a patio surrounded by a low wall which looks out over the coastal area to the south and that is where I placed the light each night. A white sheet was laid on the ground with the tripod in the centre surrounded by a few egg trays. The tripod raised the 160w MV bulb high enough so that the wall was not a factor and a small extension cable was all that was needed to reach the closest electricity socket. Of course, this is only a fair-weather arrangement because there's no protection for the electrics so I had to keep an eye on the forecast, but luckily neither rain nor wind was a factor during our visit. There was a fairly stiff breeze one night which resulted in a couple of egg boxes being blown over but that was all. Occasional checks of activity

around the light were made soon after dark but, for the most part, cataloguing of the moths was left until just before dawn when I got up to photograph as many species as possible and put into pots anything which I thought might be of interest or which I couldn't identify. Those moths still on the egg trays and on the sheet were then released into nearby vegetation when the light was turned off in order to try to prevent the local bird population from having a hearty breakfast, although a Little Owl *Athene noctua* soon became a regular night-time visitor and towards the end of our stay a noisy family of Azure-winged Magpies *Cyanopica cyanus* began appearing at dawn to scour the area for left-overs. Not using a trap and not constantly monitoring activity around the light meant that some moths will undoubtedly have come and gone without me seeing them, but those which stayed were certainly enough to keep me occupied.



Light arrangement on the patio at Casa Rosa, looking south towards the coast.
(Photo: © David L. Wilton)

Results

During the first night of our visit (30th June 2024) the light attracted very large numbers of two Crambid moth species: more than five hundred examples of *Uresiphita gilvata* (Fabricius, 1794) and more than one hundred examples of *Palpita vitrealis* (Rossi, 1794). I had thought this might just have been a local mass emergence because I knew that both are very common in the Algarve, but a report on Facebook from another moth-trapper in Cadiz province across the border in Spain mentioned that he got more than 7,000 *U. gilvata* at light over three successive nights at this time and the weather conditions did apparently favour immigration from Morocco or beyond in North Africa. *U. gilvata* and *P. vitrealis* certainly out-numbered everything else brought to the light throughout our stay at *Casa Rosa* but those two species were nowhere near as abundant as on that first night.

It was the second night (1st July 2024) when the most interesting moth of this visit turned up. Looking rather worn, a fairly dark but well-marked brown *Eublemma* species which I didn't recognise appeared on one of the egg-boxes and it was potted up to await a closer inspection in

daylight. Even then I couldn't place it so after photography it was consigned to the freezer to be brought home to the UK for genitalia dissection. A few weeks later, at around the same time that Peter Hall carried out the dissection, I became aware of a short note (Knapp et al., 2024) which detailed the discovery of *Eublemma baccatrix* Hacker, 2019 in southern Spain during the Autumn of 2022, the first record for Europe. The images there were a very good match to my specimens (of which two more had come to light before the holiday ended, one on 3rd July and another on 8th July) and the dissection by Peter confirmed the identification as that species. All three of the moths which came to light at *Casa Rosa* proved to be male and were confirmed as the first for Portugal. Whether they were also a part of the mass immigration experienced on 30th June or had already taken up residence in the area is anyone's guess, but it is worth mentioning that another specimen was caught and photographed by Ana Valadares at Sargaçal near Lagos in western Algarve on 7th December 2024 (M. Corley, pers. comm). *Eublemma baccatrix* is an African species known from many countries on that continent. While the closest records to Portugal are from the Canary Islands and Mauritania, it could well be resident but as yet unrecorded from the coastal areas of Western Sahara, Morocco and Algeria. I can find no reference on-line to its larval food-plant.



Eublemma baccatrix, Pinheiro, Luz de Tavira, Algarve 1st July 2024 (first for Portugal).
(Photo: © David L. Wilton)



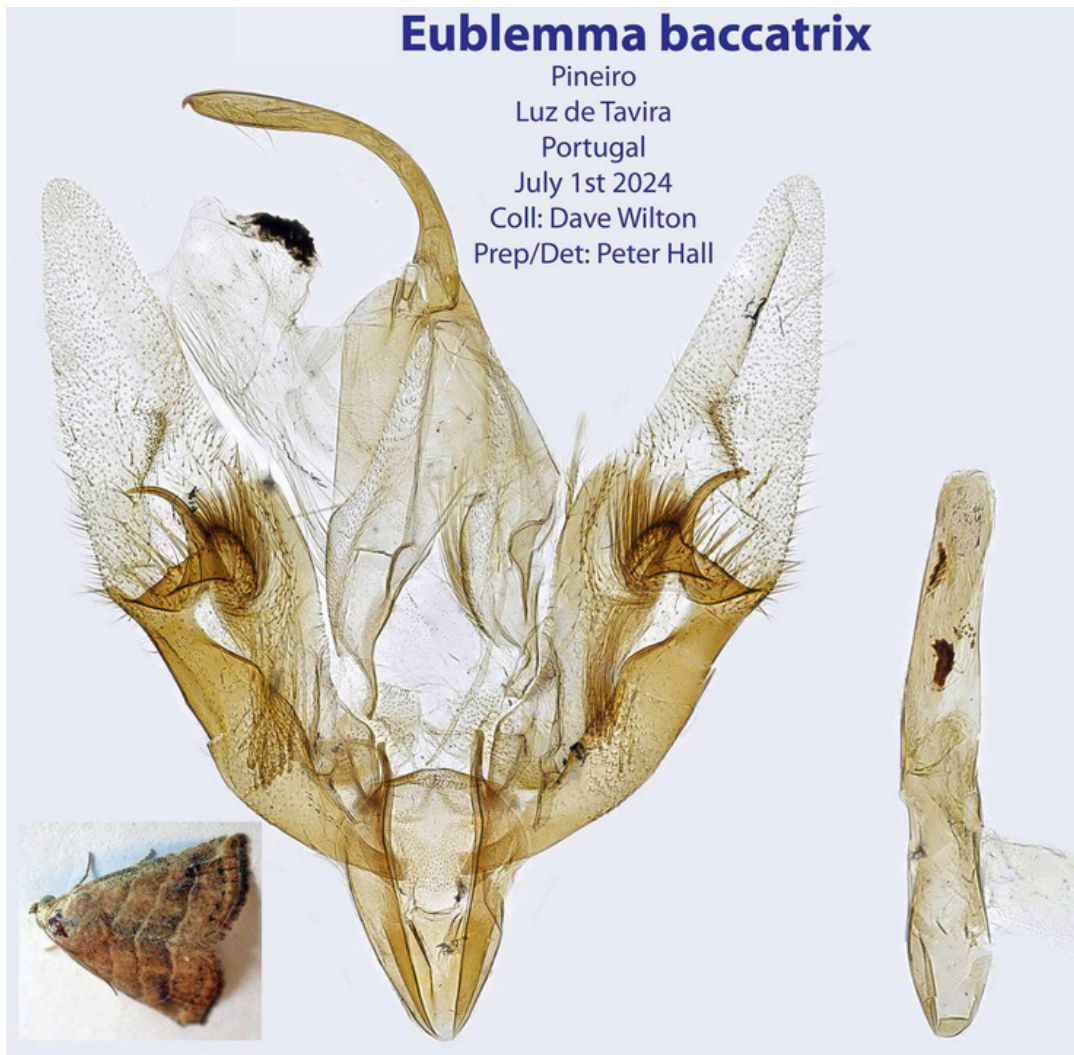
Eublemma baccatrix, Pinheiro, Luz de Tavira, Algarve 3rd July 2024.

(Photo: © David L. Wilton)



Eublemma baccatrix, Pinheiro, Luz de Tavira, Algarve 8th July 2024.

(Photo: © David L. Wilton)



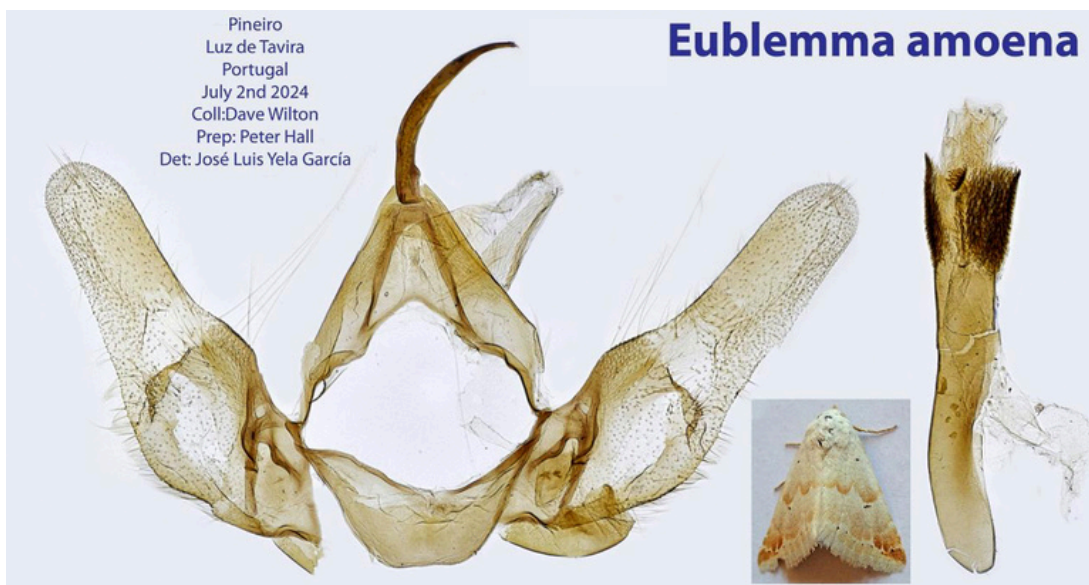
(Image: © Peter R. Hall)

There were two other particularly noteworthy moths seen during our stay at *Casa Rosa*. The first of these was another *Eublemma* species, this time *Eublemma amoena* (Hübner, 1803) on 2nd July which was new for the Algarve. Already known from Spain, this species was finally confirmed from Portugal in May 2019 (Nunes *et al.*, 2021) although two older records are mentioned in Corley (2015) which were rejected due to lack of evidence. Marabuto (2022) included an earlier record which predates the Nunes (*loc. cit.*) record.



Eublemma amoena, Pinheiro, Luz de Tavira, Algarve 2nd July 2024.

(Photo: © David L. Wilton)

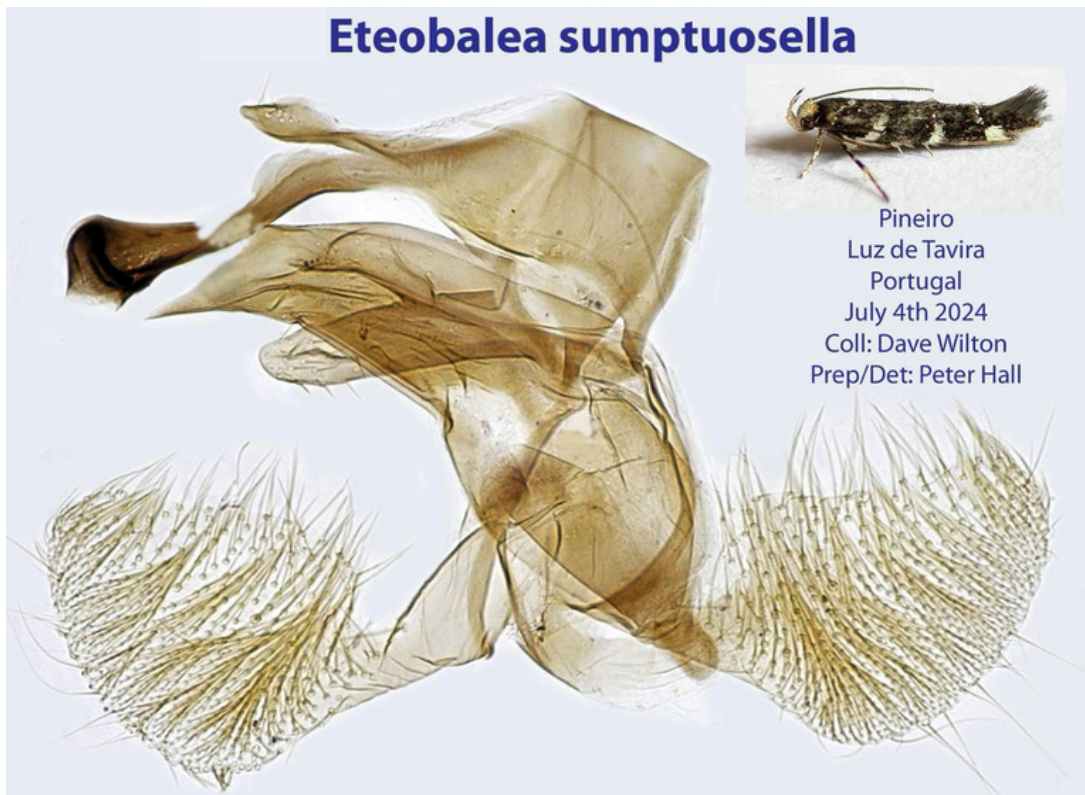


(Image: © Peter R. Hall)

The other interesting sighting was of *Eteobalea sumptuosella* (Lederer, 1855) (Cosmopterigidae: Cosmopteriginae) on 4th July which was another first for the Algarve and only the second for Portugal (Nunes *et al.*, 2025).



Eteobalea sumptuosella, Pinheiro, Luz de Tavira, Algarve 4th July 2024.
(Photo: © David L. Wilton)



(Image: © Peter R. Hall)

Just over 120 different moth species were positively identified during the holiday which I thought was quite a good result for the limited amount of effort put in. The only Hawk-moths seen were Striped Hawk-moth *Hyles livornica* (Esper, 1804) and Silver-striped Hawk-moth *Hippotion celerio* (Linnaeus, 1758), which was perhaps a little disappointing as I am a great fan of larger moths! Of those which we do not see at all in the UK I thought that I might at least have expected Oak Hawk-moth *Marumba quercus* (Dennis & Schiffermüller, 1775) which I've recorded several times in Andalusia, Spain but not yet found in the Algarve even though it is a known resident in the region (Corley, 2015). However, seeing such striking species as *Heliothis incarnata* Freyer, 1838 and *Ophiusa tirhaca* (Cramer, 1773) as well as a host of others, both large and small, which may be common in Portugal but are very rare migrants to the UK, more than made up for it. It was also good to be able to familiarise myself with Spiny Hook-tip *Watsonalla uncinula* (Borkhausen, 1790) in advance of finding the first in my home garden on 1st November 2024. It has only recently become obvious that this species has been "hiding in plain sight" in the UK alongside Oak Hook-tip *Watsonalla binaria* (Hufnagel, 1767) for the last three or four years, if not for longer.

Acknowledgements

Grateful thanks to Peter Hall for genitalia work on the moths and for providing such high quality images of the dissections. Ana Valadares kindly allowed me to include her record of *E. baccatrix*.

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***Borkhausenia crimnodes* Meyrick, 1912 (Lepidoptera, Oecophoridae), a new species for Cantabria and Spain**

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Abstract

After the discovery of this species in central Portugal in 2012, the first sighting in Spain was made in the summer of 2024 in San Pedro de Rudagüera (Cantabria, northern Spain). Its possible relationship with the importation of wood from the Southern Hemisphere (where the species originates) makes this sighting a new approach to its distribution in the Iberian Peninsula.

Key words: Lepidoptera, Oecophoridae, Cantabria, Spain.

Resumen

Tras descubrirse ésta especie en el centro de Portugal en 2012, se da la primicia de su avistamiento en el verano de 2024 en San Pedro de Rudagüera (Cantabria, norte de España). Su posible relación con la importación de madera del Hemisferio Sur (de donde es originaria la especie) hace de éste avistamiento un enfoque nuevo relativo a su distribución en la Península Ibérica.

Palabras clave: Lepidoptera, Oecophoridae, Cantabria, España.

Introduction

In this contribution to the knowledge of the Lepidoptera of Cantabria, we present a new species for the Cantabrian and Spanish fauna with allochthonous characteristics, namely *Borkhausenia crimnodes* Meyrick, 1912. Identification was confirmed from Corley et al. (2017) which figures the genitalia dissection of a male *B. crimnodes* found at a site in Beira Litoral and the photograph of this specimen. The first Portuguese specimens were found in five different localities in central-western Portugal (Beira Litoral), not far from two local paper mills. The species appears to be slowly expanding northwards and has recently been located in the vicinity of Porto (Corley et al., 2024). Following thorough taxonomic, morphological, genitalic and genetic (DNA barcoding) comparisons it was concluded that the specimens found in Portugal were probably imported from South Africa or South America. Although the family Oecophoridae is very strongly represented in Australia, origin from that country was considered unlikely.

The only male specimen found and studied in Cantabria (Fig. 1) coincides in its morphological and genitalia characters (Fig. 2) with its counterparts from different parts of the Southern Hemisphere and Portugal where the species is located.

Material and methods

The specimen was captured by sweeping the vegetation with an entomological net on 26.viii.2024 in a field of wet grassland in a terraced area, where cattle graze regularly. The field is surrounded by a small mixed copse of *Quercus robur* L. and *Quercus ilex* L., as well as other species such as: *Ilex aquifolium* L., *Laurus nobilis* L., *Sambucus nigra* L., *Castanea sativa* Mill., etc., which in turn is surrounded by extensive Eucalyptus plantations.

Genitalia dissection was performed using the standard procedure of maceration of the abdomen in potassium hydroxide. Microscopy and macrophotographic images were taken with a Leica camera and enhanced with a photographic programme and are deposited with the specimen in the authors' private collection. At the time of writing, presumably all the literature concerning this species in Cantabria has been consulted, but no results have been obtained. The geographical coordinates are given in the MGRS system, datum WGS84.

Abbreviations

Fig Images and maps depicted in the text.

mm millimetres.

Results



Figure 1. Male *Borkhausenia crimnodes* Meyrick, 1912, San Pedro de Rudagüera, 26.viii.2024.

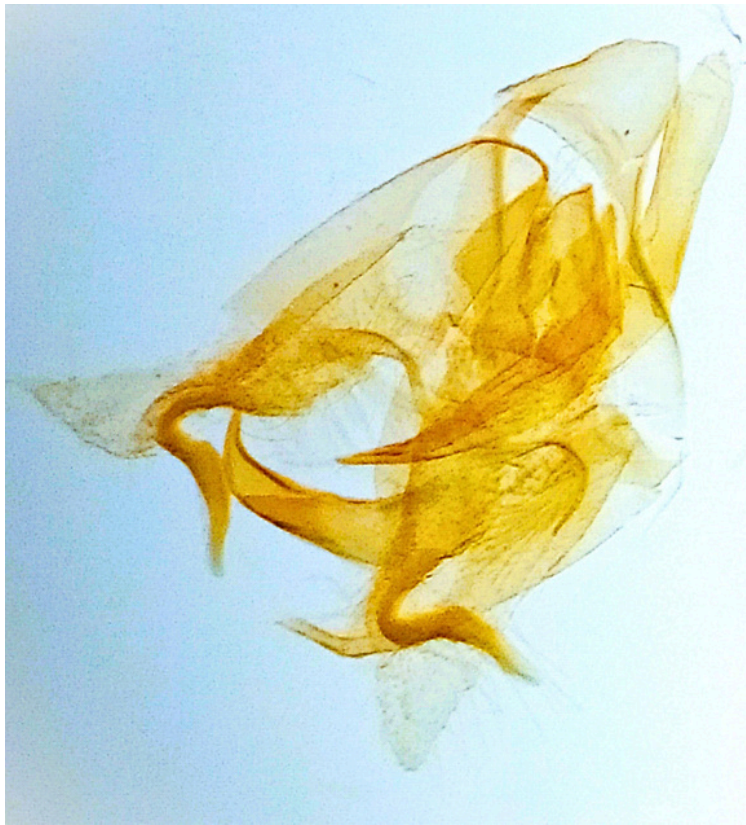


Figure 2. *Borkhausenia crimnodes* Meyrick, 1912, male genitalia, San Pedro de Rudagüera, 26.viii.2024.

Bionomics

In Corley *et al.* (2017) it is stated: ‘The larval food of *B. crimnodes* is unknown, but is likely to be some form of dried plant matter or fungi’.

Habitus

The wingspan of Portuguese specimens is between 9 and 13 mm. In the case of the Rudagüera specimen it is 13 mm.

Discussion

The capture of a male specimen of this species in a site near the coast of Cantabria in northern Spain (San Pedro de Rudagüera, 30TVP0602) raises the question as to whether the species has managed to spread from Portugal, which appears unlikely as it has not been located in intermediate places, and the new locality is very distant from the location of the Portuguese records, (see the attached map, Fig. 3).

Both the Spanish and Portuguese localities have in common the presence of paper mills nearby. This gives a possible answer to how this species has reached its present location in Cantabria. It could have been imported directly through timber shipments from the Southern Hemisphere, as has been suggested for its arrival in the neighbouring country.

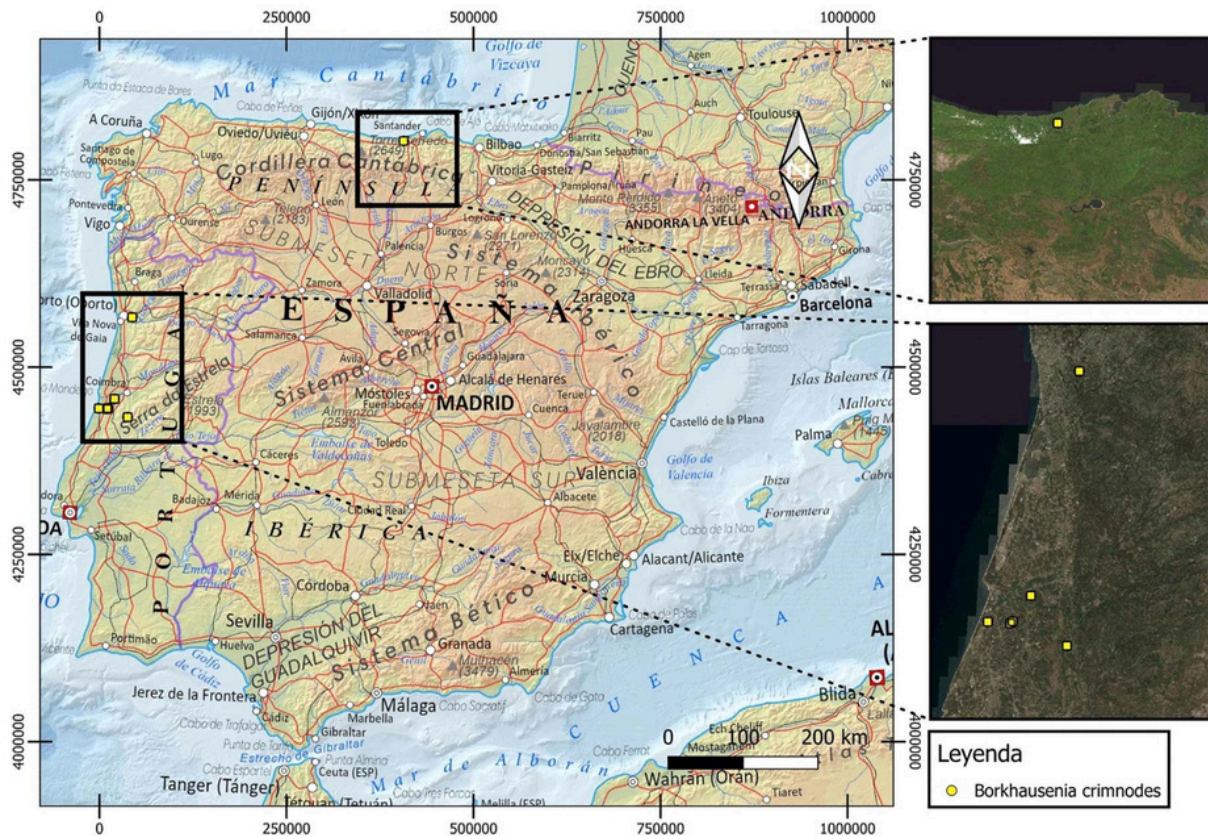


Figure 3. Current distribution of *Borkhausenia crimnodes* Meyrick, 1912.

The main characteristic of this coincidence lies in the fact that the vegetation in the areas close to their location (both in Portugal and in Spain) has been altered as many plots of land have been dedicated to the planting of Eucalyptus trees to supply wood to these pulp mills. In the same way, there has been some importation of wood into both countries from other parts of the world, which has been confirmed for the paper mill near the Spanish locality. Corley *et al.* (2017) state: ‘Those *Borkhausenia* species with known larvae feed on plant detritus, so it is likely that this is also the case for *B. crimnodes*. Species with this larval behaviour are easily transported by human trade over considerable distances and the resulting adults can easily find suitable food sources for oviposition’.

It remains to be seen how well established *B. crimnodes* is in Spain and if it will spread in succeeding years as it has done in Portugal.

Acknowledgements

To the Dirección General de Biodiversidad, Medio Ambiente y Cambio Climático del Gobierno de Cantabria for granting the corresponding permit, which allowed us to carry out the survey in 2024 as well as the capture of the studied material. To Martin Corley without whose invaluable help in determining the specimen and his extensive knowledge of the subject, this interesting species would not have been discovered in the region, and to Miguel Óscar García Fernández for facilitating the survey on his land in Rudagüera, for the information on the importation of wood by the Sniace paper mill in Torrelavega, and other data on the plant species in the area surveyed.

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Resumo Crítico de *Microlepidoptera of Europe, Volume 10: Depressariidae*, P. Buchner & M. Corley, 2024. 605 pp. Brill, Leiden. ISBN 978-90-04-41272-09. €130.

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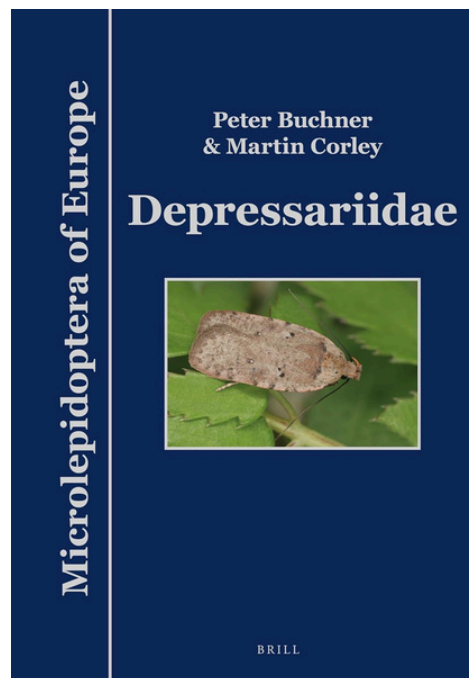
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Foi recentemente dado à estampa o resultado de um esforço colossal com profundo impacto no conhecimento dos microlepidópteros paleárticos. Trata-se do décimo volume da série *Microlepidoptera of Europe* o qual incide sobre a família *Depressariidae*. Dando continuidade a um longo hiato, dado que a última revisão desta família data do início do século passado (Meyrick, 1910), esta obra inova na abordagem taxonómica fazendo convergir a clássica descrição morfológica dos espécimes com o respetivo código de barras genético (*DNA barcode*).

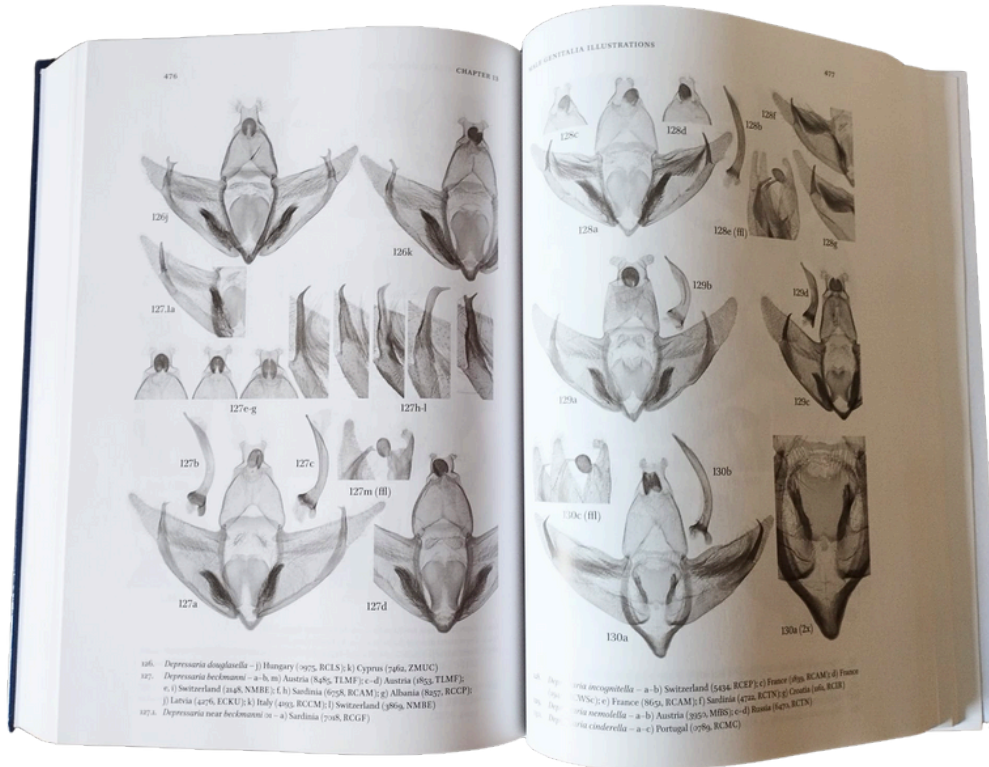
É extensa a informação reunida ao longo de 605 páginas. Na abertura são feitas considerações sobre a evolução do conhecimento desta família, é esclarecida a sua classificação taxonómica e é descrita a sua morfologia distintiva, particularmente ao nível da genitália, culminando com uma caracterização genérica da sua biologia. Posteriormente, são elencados métodos de coleta, técnicas de dissecação, de fotografia e de análise molecular, seguindo-se uma chave interpretativa da família, uma lista detalhada das espécies abrangidas e uma ficha exaustiva de cada espécie, infelizmente sem mapas de distribuição. Uma vez excluídas algumas espécies por carência de espécimes ou não enquadramento geográfico, são disponibilizadas tabelas de presença/ausência ao nível dos países e fotografias ilustrativas, ocasionalmente referentes a detalhes morfológicos, suportadas por breves notas. Como corolário abre-se uma ampla secção de imagens da genitália masculina e feminina.

Resulta do trabalho efetuado o levantamento de um impressionante número de 192 espécies, distribuídas por cinco géneros. Dasquelas, 6 são descritas para a Ciência nesta obra. Inúmeras alterações de nomenclatura foram igualmente introduzidas, na maior parte dos casos por sinonímia. No que ao território português diz respeito, são atribuídas 57 espécies, dasquais 54 ocorrem no Continente e 6 nas Regiões Autónomas. As alterações que implica à checklist nacional continental é a substituição por sinonimização de *Agonopterix mendesi* Corley, 2002 e *Depressaria adustatella* Turati, 1927 por *Agonopterix straminella* (Staudinger, 1859) e



Depressaria radiosquamella Walsingham, 1903, respetivamente, e a eliminação de *Depressaria beckmanni* Heinemann, 1870.

Muito felicitamos a equipa de autores pela sua perseverança ao longo de mais de duas décadas. A ela devemos este contributo extraordinário, imprescindível em qualquer biblioteca que se proponha aprofundar o conhecimento daquele que é um relevante grupo entre os nossos microlepidoptera.



A revision of Portuguese records of the genus *Gymnancyla* Zeller, 1848 (Pyralidae: Phycitinae)

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Introduction

The Portuguese checklist (Corley, 2015) was a synthesis of published information on the Portuguese Lepidoptera fauna together with the results of examination of recent and historical collections, all subject to critical evaluation. Some of the province records were unpublished, but many of these were later made available on GBIF (Corley & Afonso, 2021).

Knowledge of the Lepidoptera of southern Europe has always lagged behind that of more northern parts of the continent, so it was inevitable that a work of this sort would be found to contain errors. Most often these result from poor understanding of particular species or genera at the time of publication. Improved knowledge of many species results from new papers clarifying the taxonomy of difficult groups or from the results of DNA barcoding, but also from collection of new specimens. When such new information becomes available it can present an opportunity for a revision updating knowledge of particular species or genera. In this paper the genus *Gymnancyla* Zeller, 1848 in Portugal is re-examined.

According to GlobIZ (2003–2025) the genus *Gymnancyla* has 28 known species, and occurs in Europe, North Africa and Asia extending east to India and China and south to South Africa. Gastón & Vives (2018) give five species for the Iberian Peninsula. The species are mainly found in saline habitats, those with known larvae feeding on Chenopodiaceae such as *Atriplex* L., *Chenopodium* L., *Salsola* L. and *Salicornia* L. (Leraut, 2014).

Corley (2015) listed only two species, *G. ruscionella* (Ragonot, 1888) and *G. canella* (Denis & Schiffermüller, 1775) but two others have been reported since, *G. hornigii* (Lederer, 1852) (Corley *et al.*, 2018) and *G. sfakesella* Chrétien, 1911 (Corley *et al.*, 2024). The discovery of the last species in Portugal prompted a review of all the previous records of the genus. The excellent figures of male and female genitalia of the five Iberian species in Gastón & Vives (2018) have made this review possible.

Gymnancyla canella (Denis & Schiffermüller, 1775)

Recorded by Monteiro (1962). He examined a male specimen from Moledo do Minho (Caminha, NG13) collected by Maria Amélia da Silva Cruz in August 1947. His paper has a drawing of the genitalia of this specimen which leaves no doubt that it is *G. canella*. His preparation has not been re-examined.

In Monteiro (1964) he lists *G. canella* from Azurara (Vila do Conde, 29TNF27) in August 1961. No further details are given, but it is probable that this is indeed *G. canella*.

There is a further record of *G. canella* from Algarve (Corley *et al.*, 2009), but this is a misidentification of *G. ruscionella*, see below.

In Portugal *G. canella* flies in August and is recorded from Minho and Douro Litoral only.

Gymnancyla ruscionella (Ragonot, 1888)

Recorded from Ilha da Culatra (Olhão, PA09) (Corley *et al.*, 2009). Pedro Pires and Eduardo Marabuto stayed briefly with the late João Pedro Cardoso who had a hut on the island where he spent his August holidays. Pedro Pires sent me specimens dated 18.viii.2008 from which I made preparations (GP 3171 male, GP 3201 female).

In 2007 I had received material from Cardoso himself from the same locality. This came to me as several envelopes each containing all the microlepidoptera trapped on a single night. Sorting through the material from 20.viii.2007, not all in good condition, I detected one male *Gymnancyla* (GP 2950) which I identified at the time as *G. canella*. This was also published in Corley *et al.* (2009). Re-examination of this shows that it is also *G. ruscionella*.

In Portugal *G. ruscionella* flies in August and is recorded only from this one locality in Algarve.

Gymnancyla sfakesella Chrétien, 1911

This species was recently published as new for Portugal in Corley *et al.* (2024) from Trafaria (Almada, MC77), 18.viii.2023, collected by José Luís Fabião (Fabião gen. prep. 100-3763 female). Specimen in collection of João Nunes. José Fabião (pers. comm.) has additional gen. preps 100-3993 male, 100-8728 male and 100-3952 female. In 2023 he recorded 15 individuals between 18.viii and 23.ix. In 2024 he recorded 19 between 16.viii and 28.ix. These were trapped in an area containing a mosaic of more or less abandoned open ground, hedges, olive and other fruit trees < vines and pine trees, probably with some ruderal Chenopodiaceae present. Around 500 metres to the north-west is a very small area of salt marsh, but he thinks it is improbable that so many moths come from the salt marsh.

Two earlier records have been found in the course of this review of the genus:

Praia da Mareta, Sagres (Vila do Bispo, NA09), 5.ix.2017, P. Pires (Corley GP 5501 female), recorded in Corley *et al.* (2018) as *G. hornigii* (Lederer, 1852).

Sapais de Castro Marim (Castro Marim, PB32), 2.x.2018, M. Corley and S. Ferreira (Corley GP 5643 female).

In Portugal *G. sfakesella* flies from August to October and is recorded from two localities in Algarve and one in Estremadura.

Gymnancyla hornigii (Lederer, 1852)

The only Portuguese record (Corley *et al.*, 2018) has been re-examined and found to belong to *G. sfakesella*.

G. hornigii must therefore be deleted from the Portuguese list.

Distribution of *Gymnancyla* species in Portugal



Acknowledgements

I am most grateful to Pedro Pires and the late João Pedro Cardoso for making specimens available for study. José Fabião provided valuable information on *G. sfakesella*. João Nunes suggested improvements to an earlier draft of this article and provided the map.

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Lepidoptera recorded during a visit to Montechoro, Algarve, Portugal in June 2024. *Eupithecia minusculata* Alphéraky, 1883 (Geometridae, Larentiinae) is reported from Portugal for the first time.

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Abstract

Moth-trapping results from a week in Algarve in June 2024 produced the first published records of *Eupithecia minusculata* Alphéraky, 1887 and *Reisserita haasi* (Rebel, 1901).

Introduction

In June 2024 I spent a week on holiday with my family at a rented villa in the Algarve region of Portugal. As a keen lepidoperist I always try to combine holidays with some casual recording of the local moth and butterfly fauna. We stayed at Villa do Vale, Montechoro (37.09855, -8.22200), on the outskirts of Albufeira between 02 and 09.vi.2024. During the visit, I ran a portable 2x2W LED Skinner light trap (Anglian Lepidopterist Supplies) (fig. 1), deployed six funnel traps baited with various pheromone lures and made frequent rounds of the outside lamps around the villa. Other records were made by casual observations around the villa. The villa is part of an urbanisation of similar properties with very little natural habitat nearby and is situated about 1.5 km from the Algarve coast. The garden of the villa is mostly paved with only a small area planted with palms and other non-native plants.



Figure 1. Site of moth trap.

Moths were recorded as totals by species on a daily basis. Most were photographed and where identity required further examination, a specimen was retained and if necessary a subsequent genitalia preparation was made by the author to confirm the determination. A total of 327 moths of 78 species were recorded during the week. As a visiting English recorder, many species (30) were new to me but there were a significant number of familiar species that are resident in the UK or visit as immigrants. A provisional list of the records was sent to Martin Corley for review and several of my initial identifications were challenged. Photos of adult moths and genitalia preparations were sent to Martin so that records could be validated or alternative identifications established. The full list of species recorded is shown in Table 1 and totals recorded during the week and the first date recorded are shown. The check list number refers to that used by Corley (2015). Where dissections were performed, the genitalia preparation ID is shown alongside the sex of the specimen.

Table 1: List of Species Recorded

Check list No.	Species	Family	Total	First Date	Genitalia prep. ID	Gen. Det
0119	<i>Placodoma calpella</i> Sobczyk, 2013	Psychidae	4	02.vi.2024	Q-240602-05 Q-240605-10	m m
0178.1	<i>Reisserita haasi</i> (Rebel, 1901)	Tineidae	5	02.vi.2024	Q-240602-01 Q-240603-09 Q-240603-12 Q-240603-13 Q-240605-08	m m m m m
0195	<i>Phereoeca lodli</i> Vives, 2001	Tineidae	1	04.vi.2024		
0264	<i>Phyllonorycter mespilella</i> (Hübner, 1805)	Gracillariidae	1	03.vi.2024	Q-240604-81	m
0309	<i>Zelleria oleastrella</i> (Millière, 1864)	Yponomeutidae	6	02.vi.2024		
0326	<i>Plutella xylostella</i> (Linnaeus, 1758)	Plutellidae	9	02.vi.2024		
0333	<i>Glyphipterix umbilici</i> M. Hering, 1927	Glyphipterigidae	1	04.vi.2024	Q-240604-09	m
0363	<i>Prays citri</i> (Millière, 1873)	Praydidae	2	03.vi.2024		
0365	<i>Bedellia somnulentella</i> (Zeller, 1847)	Bedelliidae	1	04.vi.2024		
0377	<i>Oegoconia novimundi</i> (Busck, 1915)	Autostichidae	1	03.vi.2024	Q-240603-03	f
0380	<i>Symmoca signatella</i> Herrich-Shäffer, 1854	Autostichidae	13	02.vi.2024		
0390	<i>Symmocoides oxybiella</i> (Millière, 1872)	Autostichidae	7	04.vi.2024	Q-240604-21 Q-240604-22 Q-240604-23	m m m
0460	<i>Agonopterix subpropinquella</i> (Stainton, 1849)	Depressariidae	2	03.vi.2024		
0484	<i>Ethmia bipunctella</i> (Fabricius, 1775)	Depressariidae	13	02.vi.2024		
0501	<i>Anatrachyntis badia</i> (Hodges, 1962)	Cosmopterigidae	1	06.vi.2024	Q-240606-13	m
0555	<i>Platyedra subcinerea</i> (Haworth, 1828)	Gelechiidae	5	03.vi.2024		
0611	<i>Ptocheuusa paupella</i> (Zeller, 1847)	Gelechiidae	1	03.vi.2024		

0674	<i>Tuta absoluta</i> (Meyrick, 1917)	Gelechiidae	3	04.vi.2024		
0839	<i>Coleophora deviella</i> Zeller, 1847	Coleophoridae	1	03.vi.2024	Q-240603-01	m
0896	<i>Blastobasis maroccanella</i> Amsel, 1952	Blastobasidae	5	02.vi.2024	Q-240602-02 Q-240602-03 Q-240604-08 Q-240605-07 Q-240605-09	f f f f f
0922	<i>Agdistis heydeni</i> (Zeller, 1852)	Pterophoridae	1	06.vi.2024	Q-240606-14	m
0967	<i>Emmelina monodactyla</i> (Linnaeus, 1758)	Pterophoridae	2	07.vi.2024		
0990	<i>Archips xylosteana</i> (Linnaeus, 1758)	Tortricidae	1	06.vi.2024		
1007.1	<i>Clepsis coriacanus</i> (Rebel, 1894)	Tortricidae	10	02.vi.2024	Q-240602-04 Q-240602-09 Q-240605-11 Q-240606-15	f f f f
1106	<i>Lobesia botrana</i> (Denis & Shiffermüller, 1775)	Tortricidae	1	03.vi.2024		
1146	<i>Crociosema plebejana</i> Zeller, 1847	Tortricidae	9	02.vi.2024		
1222	<i>Paranthrene tabaniformis</i> ssp. <i>synagriformis</i> (Rambur, 1866)	Sesiidae	1	05.vi.2024		
1310	<i>Pararge aegeria</i> (Linnaeus, 1758)	Nymphalidae	8	02.vi.2024		
1413	<i>Endotricha flammealis</i> (Denis & Shiffermüller, 1775)	Pyralidae	1	03.vi.2024		
1414	<i>Hypsopygia costalis</i> (Fabricius, 1775)	Pyralidae	8	02.vi.2024		
1422	<i>Bostra obsoletalis</i> (Mann, 1864)	Pyralidae	4	03.vi.2024		
1442	<i>Ematheudes punctella</i> (Treitschke, 1833)	Pyralidae	2	03.vi.2024		
1446	<i>Cryptoblabes gnidiella</i> (Millière, 1867)	Pyralidae	2	06.vi.2024	Q-240606-05 Q-240606-06	f f
1506	<i>Acrobasis glaucella</i> Staudinger, 1859)	Pyralidae	1	02.vi.2024	Q-240602-11	f
1514	<i>Apomyelois ceratoniae</i> (Zeller, 1839)	Pyralidae	2	02.vi.2024	Q-240602-10	f
1538	<i>Phycitodes saxicola</i> (Vaughan, 1870)	Pyralidae	2	03.vi.2024	Q-240603-08 Q-240604-18	m m

1544	<i>Ephestia disparella</i> Hampson, 1901	Pyralidae	3	05.vi.2024	Q-240605-06 Q-240607-04 Q-240607-05	m f f
1550	<i>Cadra figulilella</i> (Gregson, 1871)	Pyralidae	6	02.vi.2024	Q-240602-06 Q-240604-16 Q-240604-17 Q-240605-03 Q-240605-05 Q-240606-09	f f m f m m
1552	<i>Cadra calidella</i> (Guenée, 1845)	Pyralidae	4	04.vi.2024	Q-240604-15 Q-240605-04 Q-240607-02 Q-240607-03	f m m m
1556	<i>Achyra nudalis</i> (Hübner, 1796)	Crambidae	2	04.vi.2024		
1567	<i>Uresiphita gilvata</i> (Fabricius, 1794)	Crambidae	2	02.vi.2024		
1578	<i>Udea ferrugalis</i> (Hübner, 1796)	Crambidae	1	03.vi.2024		
1594	<i>Palpita vitrealis</i> (Rossi, 1794)	Crambidae	7	05.vi.2024		
1603	<i>Nomophila noctuella</i> (Denis & Shiffermüller, 1775)	Crambidae	3	03.vi.2024		
1736	<i>Hyles livornica</i> (Esper, 1780)	Sphingidae	1	06.vi.2024		
1747	<i>Idaea ochrata</i> (Scopoli, 1763)	Geometridae	1	06.vi.2024		
1762	<i>Idaea elongaria</i> (Rambur, 1833)	Geometridae	1	05.vi.2024		
1766	<i>Idaea blaesii</i> Lenz & Hausmann, 1992	Geometridae	1	02.vi.2024	Q-240602-12	m
1777	<i>Idaea minuscularia</i> (Ribbe, 1912)	Geometridae	4	04.vi.2024	Q-240604-04 Q-240606-02 Q-240606-03 Q-240606-04	f f f m
1790	<i>Idaea ostrinaria</i> (Hübner, 1813)	Geometridae	1	03.vi.2024		
1810	<i>Scopula marginepunctata</i> (Goeze, 1781)	Geometridae	1	07.vi.2024		
1823	<i>Cyclophora puppillaria</i> (Hübner, 1799)	Geometridae	5	02.vi.2024		
1831	<i>Rhodometra sacraria</i> (Linnaeus, 1767)	Geometridae	12	02.vi.2024		
1893	<i>Gymnoscelis rufifasciata</i> (Haworth, 1809)	Geometridae	84	02.vi.2024		

1900	<i>Eupithecia ultimaria</i> Boisduval, 1840	Geometridae	1	03.vi.2024	Q-240603-14	f
1900.1	<i>Eupithecia minusculata</i> Alphéraky, 1883	Geometridae	1	07.vi.2024	Q-240607-01	f
1950	<i>Chiasmia aestimaria</i> (Hübner, 1809)	Geometridae	1	07.vi.2024		
2001	<i>Menophra japygiaria</i> (Costa, 1849)	Geometridae	1	04.vi.2024		
2090	<i>Zebeeba falsalis</i> (Herrich-Shäffer, 1839)	Erebidae	1	02.vi.2024		
2142	<i>Eilema caniola</i> (Hübner, 1808)	Erebidae	1	03.vi.2024	Q-240603-10	m
2154	<i>Nodaria nodosalis</i> (Herrich-Shäffer, 1851)	Erebidae	1	04.vi.2024		
2176	<i>Eublemma ostrina</i> (Hübner, 1808)	Erebidae	3	02.vi.2024		
2191	<i>Catocala nymphagoga</i> (Esper, 1787)	Erebidae	1	05.vi.2024		
2214	<i>Thysanoplusia orichalcea</i> (Fabricius, 1775)	Noctuidae	1	09.vi.2024		
2217	<i>Ctenoplusia limbirena</i> (Guenée, 1852)	Noctuidae	1	06.vi.2024		
2233	<i>Tyta luctuosa</i> (Denis & Shiffermüller, 1775)	Noctuidae	1	05.vi.2024		
2251	<i>Aegle vespertinalis</i> (Rambur, 1858)	Noctuidae	1	03.vi.2024		
2285	<i>Heliothis peltigera</i> (Denis & Shiffermüller, 1775)	Noctuidae	1	06.vi.2024		
2289	<i>Helicoverpa armigera</i> (Hübner, 1808)	Noctuidae	4	05.vi.2024		
2290	<i>Condica viscosa</i> (Freyer, 1831)	Noctuidae	1	05.vi.2024		
2303	<i>Spodoptera exigua</i> (Hübner, 1808)	Noctuidae	3	04.vi.2024		
2304	<i>Spodoptera ciliium</i> Guenée, 1852	Noctuidae	4	06.vi.2024		
2315	<i>Caradrina clavipalpis</i> (Scopoli, 1763)	Noctuidae	18	02.vi.2024	Q-240606-10 Q-240606-11 Q-240606-12	m f f
2318	<i>Hoplodrina ambigua</i> (Denis & Shiffermüller, 1775)	Noctuidae	1	06.vi.2024		
2490	<i>Mythimna unipuncta</i> (Haworth, 1809)	Noctuidae	2	06.vi.2024		

2507	<i>Peridroma saucia</i> (Hübner, 1808)	Noctuidae	1	02.vi.2024		
2537	<i>Agrotis spinifera</i> (Hübner, 1808)	Noctuidae	1	07.vi.2024		
2577	<i>Nola infantula</i> Kitt, 1926	Nolidae	1	06.vi.2024		

The following species were not recorded in the light trap and were only seen at rest on walls or plants in the garden – *Catocala nymphagoga* (Esper, 1787), *Thysanoplusia orichalcea* (Fabricius, 1775), *Ctenoplusia limbirena* (Guenée, 1852) and *Mythimna unipuncta* (Haworth, 1809). Only one species was recorded as an early stage. Larval cases of *Phereoeca lodli* Vives, 2001 were found on 06.vi.2024 on a window frame behind shutters, although these were all vacated. An adult of this species was also recorded in the light trap on 04.vi.2024.

As expected, the pheromone traps had limited success, with only two specimens recorded. However, both of these were not seen at light traps or by casual observations. These are both considered to be positive responses to the lures. The *C. nigricana* lure is well-known as a lure for several *Phyllonorycter* spp. (Green, T. unpublished information).

Phyllonorycter mespilella (Hübner, 1805)

A single male *Phyllonorycter mespilella* came to a funnel trap containing a lure for *Cydia nigricana* overnight on 03.vi.2024 and was confirmed by dissection.

Paranthrene tabaniformis ssp. *synagriformis* (Rambur, 1866)

A male *Paranthrene tabaniformis* responded to the target lure for that species at 1600hrs on 05.vi.2024.

Moths attracted to the LED Skinner trap were often collected during the evening as it quickly became apparent that with high overnight temperatures retention in the trap was quite poor and many specimens initially attracted were no longer in the trap in the morning. As the trap was run adjacent to a white wall, many moths settled on the wall and could be photographed or tubed. The most frequently recorded species was *Gymnoscelis rufifasciata* (Haworth, 1809) with 84 specimens comprising over a quarter of the moths recorded. 38 of the 77 species recorded were represented by single specimens.

There were several records of national or regional significance which are reported below.

Eupithecia minusculata Alphéraky, 1883

A single specimen of *Eupithecia minusculata* was recorded at the LED trap on 07.vi.2024 and is new for Portugal. The specimen (figs 2, 3) was a female and was dissected to confirm its identity. This species is a member of the '*ultimaria*' group and, like the other two European species in the group, feeds on *Tamarix* spp. (Tamaricaceae). In Spain, *E. minusculata* is known to feed on *Tamarix gallica* (Gómez de Aizpurua, 1994). This species has a rather strange and disjunct

distribution, being known in Europe only from Spain and European Russia. Elsewhere, it is found in North Africa, the Middle East and from Turkey eastwards. Its existence in Portugal is therefore not entirely unexpected. Its close relative and species group member, *Eupithecia ultimaria* Boisduval, 1840, has a wider distribution in Western Europe and is known from Spain, Portugal, France, UK, Belgium and Italy. It is reported to be oligophagous on a wider range of *Tamarix* spp. (Mironov, 2003). A single female of the latter species was taken in the LED trap on 03.vi.2024 (figs 4, 5). This was a larger individual when compared to the *E. minusculata* specimen (17.3 mm vs. 13.6 mm wingspan respectively) which is consistent with the size ranges of the two species reported by Mironov (2003). The genital preparations of the two specimens revealed clear differences and allowed confirmation that the two species were present.



Figure 2. *Eupithecia minusculata*

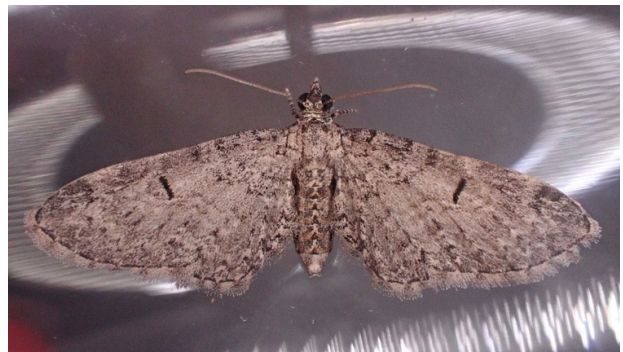


Figure 4. *Eupithecia ultimaria*

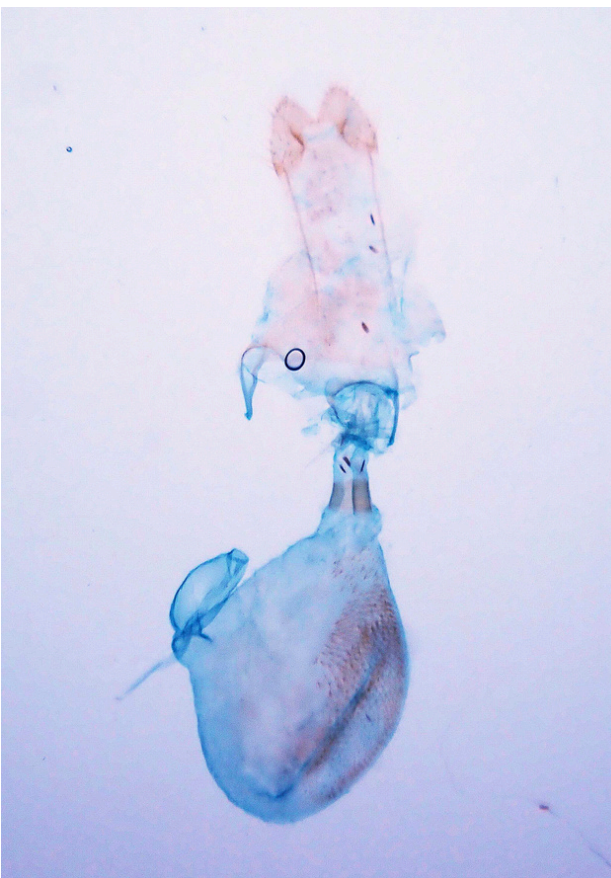


Figure 3. *Eupithecia minusculata* female gen. prep. Q-240607-01.



Figure 5. *Eupithecia ultimaria* female gen. prep. Q-240603-14.

Reisserita haasi (Rebel, 1901)

A series of five small dark tineids were taken in and around the LED trap between 02.vi.2024 and 05.vi.2024. The moths had dark-grey to black unicolorous forewings and a yellowish-brown head brush. After much searching, they were tentatively identified as *Reisserita haasi* and dissection of the specimens revealed that all were males of this species (figs 6, 7). *Reisserita haasi* is not listed in the checklist of Portuguese Lepidoptera (Corley, 2015), nor are Portuguese records shown on the Lepiforum site (https://lepiforum.org/wiki/page/Reisserita_haasi). However, Gaedike (2019), states that the species is known from the Iberian Peninsular. A record from the Algarve, pre-dating the Montechoro records by a few weeks, has been reported (Corley, pers. comm.). These records therefore represent the second occurrence of the species in Portugal. There appears to be no data on the larval pabulum for any of the *Reisserita* spp. (Gaedike, 2019).



Figure 6. *Reisserita haasi*

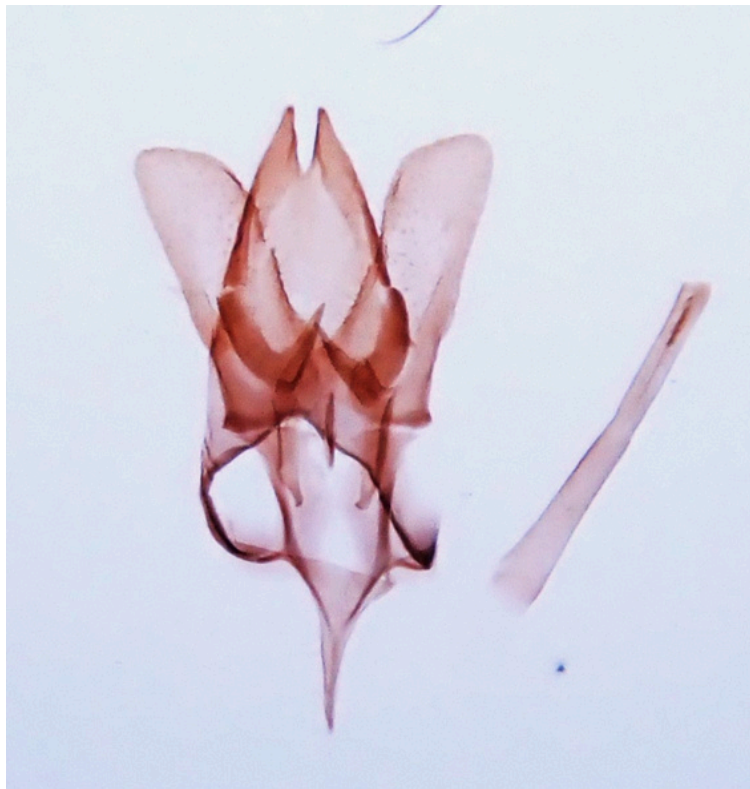


Figure 7. *Reisserita haasi* male gen. prep. Q-240603-13.

***Phereoeca lodli* Vives, 2001**

A single specimen of *Phereoeca lodli* was found on the wall next to the trap on 04.vi.2024 (fig. 8). The adult has not been dissected and was identified by morphology. This species was first described in 2001 from material collected in Huelva Province in Spain and is one of only two representatives of the genus in Europe. The other, *P. allutella* (Rebel, 1892), is found in the Canary Islands, Sardinia and Madeira. *P. lodli* is known from France, Spain, Portugal, Canary Islands and Malta. The presence in Portugal was published by Billi & Nel (2014) who give details of a specimen captured in Lisbon in 2013. A few days after the adult specimen was found, several cases of the same species were discovered. The characteristically shaped cases (fig. 9) were found attached to walls and window frames around the villa. All had been vacated so the opportunity to rear adults for examination was not possible. These records are the first for the Algarve region of Portugal.



Figure 8. *Phereoeca lodli*



Figure 9. *Phereoeca lodli* 3 case on window frame.

***Placodoma calpella* Sobczyk, 2013**

A series of Psychid moths were taken at light between 02.vi.2024 and 06.vi.2024 (fig. 10). They were initially identified as a *Placodoma* sp. Chrétien, 1915. Of the three European species, *P. ragonoti* (Rebel, 1901) was immediately ruled out as the heavily marked forewings of this species didn't match my specimens. Both *P. veletaella* Sobczyk, 2013 and *P. calpella* Sobczyk, 2013 are known from Portugal. The former has been recorded from the Alto Alentejo region in 2014 (Corley *et al.*, 2015) and the latter from the Beira Baixa region in 2007 (Corley *et al.*, 2013). Dissection of two of the specimens, and reference to Sobczyk & Nuss (2013), revealed that my specimens were both males of *Placodoma calpella*. These are the first records from the Algarve region.



Figure 10. *Placodoma calpella*

***Coleophora deviella* Zeller, 1847**

The only member of the Coleophoridae to be encountered was a male *Coleophora deviella* which came to light on 03.vi.2024. The identity was confirmed by dissection. This species is well distributed in Western Europe but this capture is only the third record for Portugal. The two previous records are both from the Algarve region (Corley, 2005).

***Oegoconia novimundi* (Busck, 1915)**

A female specimen of *Oegoconia novimundi* was taken at light on 03.vi.2024 and confirmed by dissection. This appears to be the first record for the Algarve region.

***Anatrychytis badia* Meyrick, 1915**

A male *Anatrychytis badia* was taken at light on 06.vi.2024 and confirmed by dissection. This species originates from the United States and is known from Portugal, being first recorded in 2011 (Corley *et al.*, 2012).

Acknowledgements

I am indebted to Martin Corley (Faringdon, UK) for his encouragement in publishing these findings and for help with some of the identifications, information on species status in Portugal and for constructive comments on the manuscript.

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Two corrections to the Noctuidae fauna of Portugal

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Introduction

During the compilation of the Portuguese checklist (Corley, 2015) every effort was made to ensure that there were no errors of identification. Inevitably this process was not entirely successful and since 2015 there have been a number of corrections, which have mainly been published in the annual 'New and Interesting' papers published in SHILAP. Often these have been as a result of new knowledge becoming available that was not available in 2015.

Recent work by Jose Luis Yela and others aiming to produce maps of the distribution of all Noctuoidea in the Iberian Peninsula has resulted in some queries regarding Portuguese records. Here two species are reconsidered.

***Archanara dissoluta* (Treitschke, 1825)**

Archanara dissoluta (Treitschke, 1825) was recorded by Brian Elliott from Lagoa de Santo André in Baixo Alentejo sometime between 16.ix.1995 and 10.x.1995. The record was published in Corley (2004). The specimens that Elliott collected were given to Barry Goater, whose collection eventually went to the Zoological Museum of the University of Copenhagen in Denmark. Regrettably when compiling moth data for Lagoa de Santo André I did not consider it necessary to confirm Elliott's record, as I knew him to be a lepidopterist with many years of experience collecting in the U.K. who was undoubtedly familiar with *A. dissoluta*. Barry Goater provided me with Elliott's data and he had not questioned the record.

The only other records of this species in the Iberian Peninsula are from North-East Spain with an earlier flight period than the Portuguese record. Since the doubts expressed by Yela regarding the record, I have been informed (Ole Karsholt, pers. comm.) that there is no Portuguese specimen in Copenhagen. I have also questioned Brian Elliott. He thinks the specimen was not collected as it was quite worn and with the benefit of hindsight, he thinks it was probably a worn specimen of *Proxenus hospes* (Freyer, 1831).

There is therefore no evidence that *A. dissoluta* occurs in Portugal and the species must be deleted from the Portuguese list.

***Epipsilia latens* (Hübner, 1809)**

On 13.vii.2009 I collected a single female of an *Epipsilia* at light at Covão do Boi, Serra da Estrela. Three species of *Epipsilia* are known in the Iberian Peninsula, which are externally very similar. Using Noctuidae Europaeae 2 and 3 (Fibiger, 1993, 1997) I initially suspected this was *E. grisescens* (Fabricius, 1794), but decided that a male was necessary for more definite identification. Two years later on 3.viii.2011 I was able to obtain a male from the same locality.

From this *E. grisescens* could be rejected, leaving a choice between *E. latens* (Hübner, 1809) and *E. cervantes* (Reisser, 1935). From a biogeographical perspective, *E. cervantes*, described from Serra de Gredos, appeared the most likely possibility, although the more frequent rainfall and slightly less cold winters in Portugal can result in unexpected distributions, such as that of *Setina cantabrica* Freina & Witt, 1985 (Corley, 2013), so I could not exclude *E. latens* on this basis alone. Based on Fibiger (1997) the male genitalia appeared to be a better match for *E. latens* and the record was published under this name (Corley *et al.*, 2012).

There have been two subsequent records from the same area: By the tunnel at Cântaro Raso, Serra da Estrela, 15.viii.2014, Fernando Romão; Covão do Boi, 1.viii.2018, Jorge Rosete.

José Luis Yela expressed strong doubts regarding the identification of Portuguese specimens as *E. latens*. He indicated that the genitalia are not reliable for separating these species, but pointed to the ciliation of the male antennae as a really reliable character for separating *E. latens* and *E. cervantes*. In *E. latens* the cilia are around half as long as the width of the antennal segments, while in *E. cervantes* they are equal to the width of the antennal segments. Using this character there is absolutely no doubt that the Portuguese *Epipsilia* is *E. cervantes*. It is unfortunate that this character is not mentioned in Noctuidae Europaeae (Fibiger, 1993, 1997), as this would have allowed correct identification in the first place. *Epipsilia cervantes* must therefore be added to the Portuguese fauna list and *E. latens* deleted.

Unfortunately both *Archanara dissoluta* and *Epipsilia latens* were included in the Portuguese Red List of Invertebrates. The status given for *E. latens* should be transferred to *E. cervantes*.

Acknowledgements

I am most grateful to José Luis Yela for advising me on these errors. Ole Karsholt and Brian Elliott kindly provided information on the Portuguese record of *Archanara dissoluta*.

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- Discussion
- Acknowledgements
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Dates should appear in the format 6.vii.2024 (day.month.year).

The date of a record should be the actual date for daytime records, but records from overnight work should be the date on which the light was set, not the date when trap contents were examined.

References in the text should be given in the form (Vivaldi, 2014), or for two authors (Vivaldi & Beethoven, 2024), for more than two authors (Vivaldi *et al.*, 2024).

In the References papers should be cited in the form:

Vivaldi, A. 2024. A quartet of new moths from eastern Portugal. *Lepidoptera fantastica*, **25** (2): 100–105.

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