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Macroheterocera of a mixed Calabrian black pine-European beech forest of Sila Mountains (Italy) (Insecta: Lepidoptera)

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Abstract

In this paper, we surveyed for the first time the Macroheterocera fauna of mixed forests, mainly favored by human activities, composed by *Pinus nigra laricio* Maire and *Fagus sylvatica* L., a largely artificial association of two tree species with very different ecology. We found 312 species representing a perfect mix of moth species found in pure forests with only few changes in the ranking of tree feeding species and with evidences of the natural evolution of most forest woodlots toward mixed European beech-silver fir forests. We added seven species to the fauna of Sila Mountains, one of them deserving more accurate taxonomic studies. Furthermore, we fixed some mistakes reported in literature for the Sila fauna.
KEY WORDS: Insecta, Lepidoptera, *Pinus nigra laricio*, *Fagus sylvatica*, Calabria, Italy.

I Macroeterocera di una foresta mista di pino nero di Calabria e faggio dei monti della Sila (Italia) (Insecta: Lepidoptera)

Riassunto

In questo lavoro si descrive per la prima volta la fauna a Macroeterocera di una foresta mista formata da *Pinus nigra laricio* Maire e *Fagus sylvatica* L., una associazione largamente artificiale di due specie di alberi con una ecologia molto differente, favorita dalle attività antropiche. Sono state raccolte 312 specie che rappresentano una perfetta miscela dei Macroeterocera trovati nelle foreste pure, con piccoli cambiamenti solo nei rapporti di abbondanza di alcune specie troficamente legate agli alberi, e che mostrano evidenze di una naturale evoluzione di alcune porzioni di foresta verso una foresta mista di faggio e abete bianco. Si aggiungono sette specie alla fauna della Sila delle quali una merita approfondimenti tassonomici. Vengono corretti alcuni errori presenti in lavori dedicati alla fauna dei monti della Sila.
PAROLE CHIAVE: Insecta, Lepidoptera, *Pinus nigra laricio*, *Fagus sylvatica*, Calabria, Italia.

Los Macroheterocera de un bosque mixto de pino negro de Calabria y haya de los montes de Sila (Italia) (Insecta: Lepidoptera)

Resumen

En este trabajo se describe, por primera vez, la fauna de Macroheterocera de un bosque mixto de *Pinus nigra laricio* Maire y *Fagus sylvatica* L., una asociación largamente artificial de dos especies de árboles con una ecología muy diferente, favorita de la actividad antrópica. Se han recogido 312 especies que representan una perfecta mezcla

de Macroheterocera encontradas en bosque puro, sólo con pequeños cambios en relación con la abundancia de algunas especies tróficamente asociadas a los árboles y muestran evidencias de una natural evolución de algunas porciones de bosque mixto de haya y abeto blanco, Se añaden siete especies a la fauna del Sila, de los que una merecen mención taxonómica. Se corrigen algunos errores presentes en trabajos anteriores dedicados a la fauna de los montes de Sila.
PALABRAS CLAVE: Insecta, Lepidoptera, *Pinus nigra laricio*, *Fagus sylvatica*, Calabria, Italia.

Introduction

In Sila Mountains (Calabria, southern Italy) forest cover above 1,000 meters of altitude is mainly composed by *Pinus nigra* subsp. *laricio* Maire and *Fagus sylvatica* L. These tree species have a very different ecology and growth in very different edaphic conditions (NICOLACI *et al.*, 2014). However, natural and anthropogenic perturbations have greatly complicated the relationships between these plants and in some places created mixed forests which are actually an artifact and are naturally evolving towards beech forests (NICOLACI *et al.*, 2014). In some cases very old pine woodlots growth near the beech forest (PLUTINO *et al.*, 2018).

Previous studies in southern Italy described moth communities inhabiting pure beech (INFUSINO & SCALERCIO, 2018a) and pine (SCALERCIO & GRECO, 2018) forests allowing us to easy recognize moths preferably associated to one of this forest type, not only those linked to the presence of dominant trees because of foodplant for their larvae but also those favored by more complex ecological relationships. Anyway, species trophically linked to the canopy layer are the most representative of these forest types. Beech forests inhabit a well characterized moth fauna in southern Italy, enriched by the presence of several species of great biogeographic and conservation interest (INFUSINO *et al.*, 2016; INFUSINO & SCALERCIO, 2018). The most characteristic is *Operophtera fagata* (Scharfenberg, 1805) (Geometridae) very abundant and present everywhere the beech growths, but also *Watsonalla cultraria* (Fabricius, 1775) (Drepanidae) and *Ennomos quercinaria* (Hufnagel, 1767) (Geometridae) are strictly linked to this forest type (INFUSINO & SCALERCIO, 2018). Calabrian black pine forests inhabit a very different moth fauna, also very interesting from a biogeographic and conservation point of view. The most characteristic species are *Thaumetopoea pityocampa* ([Denis & Schiffermüller], 1775) (Notodontidae), *Pennitera firmata* (Hübner, [1822]) and *Eupithecia indigata* (Hübner, [1813]) (Geometridae) all with larvae feeding on *Pinus* and commonly found in this forest type (SCALERCIO & GRECO, 2018), to which can be linked also *Dendrolimus pini* (Linnaeus, 1758) (Lasiocampidae) and *Sphinx pinastri* (Linnaeus, 1758) (Sphingidae) with larvae feeding also on other conifers (BERTACCINI *et al.*, 1995).

In this study we explored composition and diversity of moths in such mixed forests to provide a dataset useful to carry out deep ecological investigations on the relationships between biocoenoses that are potentially very different and therefore forced to coexist in a given area. This study assumes a particular relevance as we described for the first time a moth community resulting from a seminatural habitat of which evolutionary trajectory was largely determined by human activities.

Material and methods

The study area was located at the western margin of the Sila Mountains, Calabria, South Italy (Fig. 1). In order to minimize the effects of any variable linked to large spatial scales, we selected an area of approx. 7 square kilometers only, where pine and beech forests are strictly intermingled and, in some places, equally compose the tree layer. Within this area we selected three localities and in each of them we selected one stand with pine dominant, one with beech dominant, and one mixed for a total of nine stands (Table 1).

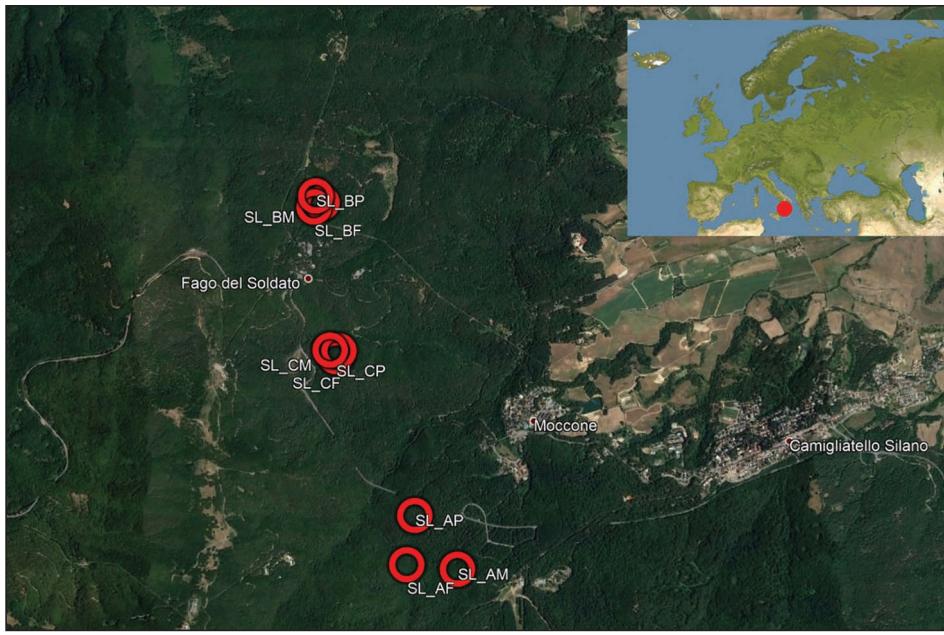

Fig. 1.– Location of study area.

Table 1.– Synthetic description of sampled stands.

Locality	Stand	Concise description	Coordinates (lat., long)	Altitude (m a.s.l.)
Vallone Tasso	SL_AP	Pine dominant	39.3359N, 16.4151E	1410
Vallone Tasso	SL_AM	Mixed stand	39.3323N, 16.4185E	1375
Vallone Tasso	SL_AF	Beech dominant	39.3328N, 16.4142E	1405
Fago del Soldato	SL_BP	Pine dominant	39.3569N, 16.4079E	1405
Fago del Soldato	SL_BM	Mixed stand	39.3565N, 16.4084E	1400
Fago del Soldato	SL_BF	Beech dominant	39.3561N, 16.4078E	1395
Serra Cannile	SL_CP	Pine dominant	39.3465N, 16.4091E	1435
Serra Cannile	SL_CM	Mixed stand	39.3468N, 16.4093E	1435
Serra Cannile	SL_CF	Beech dominant	39.3469N, 16.4086E	1430

One UV LED light trap (INFUSINO *et al.*, 2017a) was positioned in selected stands twice per month from May to November 2018, and precisely 9 and 17-V, 7 and 12-VI, 9 and 16-VII, 6 and 13-VIII, 3 and 10-IX, 1 and 8-X, and 8 and 14-XI. One additional trapping night was carried out the 24-XI-2017. Trapping nights were chosen according to weather conditions favorable to the activity of moths, i.e. with low moonlight, low wind speed, temperature near to the mean of the period, with no or light rain.

Specimens has been identified at species level and counted in laboratory. Some specimens were dissected and identified on the basis of genitalia. Few specimens were submitted to DNA barcoding following the Canadian Centre for DNA Barcoding protocol (http://www.boldsystems.org/index.php/resources/handbook?chapter=1_gettingstarted.html), and sequences has been deposited in the

Barcoding of Life Database (BOLD) platform. Nomenclature follows KARSHOLT & NIEUKERKEN (2013). Voucher specimens are deposited in the Lepidoptera Collection of the Research Centre for Forestry and Wood, Rende, Italy.

Results and discussions

Community composition

We found 11,967 specimens belonging to 312 species (Appendix 1). The family of Noctuidae was the most species rich, but Geometridae were largely the most abundant (Table 2). Remarkable was the high richness of Notodontidae, trophically related to deciduous trees, and the low richness of Erebidae, mostly represented here by lychenophagous taxa. The thirteen most abundant species represent the 50% of the total abundance, whilst 73 species were singletons and 29 doubletons (Fig. 2). The most abundant species was *Operophtera fagata* (*n*=1313), characteristic for beech forests, followed by *Alcis repandata* (*n*=722), common in mountain forests, *Lymantria monacha* (*n*=539), usually associated to beeches, and *Dendrolimus pini* (*n*=398), associated to conifer woodlots.

Table 2.– Number of species and individuals belonging to moth families collected in a mixed pine-beech forest of the Sila Mountains.

Family	Species	Individuals
Geometridae	120	6,533
Noctuidae	134	3,532
Erebidae	25	1,005
Notodontidae	16	115
Lasiocampidae	4	448
Drepanidae	4	176
Nolidae	3	24
Sphingidae	2	55
Limacodidae	1	73
Cossidae	1	3
Endromiidae	1	1
Brahmaeidae	1	2
TOTAL	**312**	**11,967**

Eight species (*n*=2,237), representing the 18.7% of the whole community, are strictly linked to the dominant tree species, but with those linked to beeches (*Opeophtera fagata*, *Ennomos quercinaria*, *Watsonalla cultraria*, *Cyclophora linearia*) more abundant (*n*=1806) than those feeding on pines (*n*=431), namely, listed according to their abundance, *Pennithera firmata*, *Eupithecia indigata*, *Thaumetopoea pityocampa*, and *Panolis flammea*. This can be due to the climatic and edaphic conditions of the study area which tend to be more favorable to the beech than to the pine as demonstrated by the presence of beech renewal also in pine-dominated sites that probably will tend to naturally evolve towards a beech forest (NICOLACI *et al*., 2014), explaining also the absence of pine feeding moths among the top four species.

In pure Calabrian black pine forests SCALERCIO & GRECO (2018) reported 11 species with conifer feeding larvae. In mixed forests we found all these species, three of which primarily feeding on *Abies alba* Mill., two on other conifers, *Lymantria monacha* feeding primarily on beeches, and *Eupithecia subfuscata*, a species erroneously reported as a conifer feeder as it is polyphagous on several herbaceous plants (MIRONOV, 2003). However, the abundance of pine feeding species was quite different in pure forests as *T. pityocampa* and *P. flammea* were more abundant than in the mixed forest (Fig. 3). Although comparisons of moth abundances between different years can be affected by their

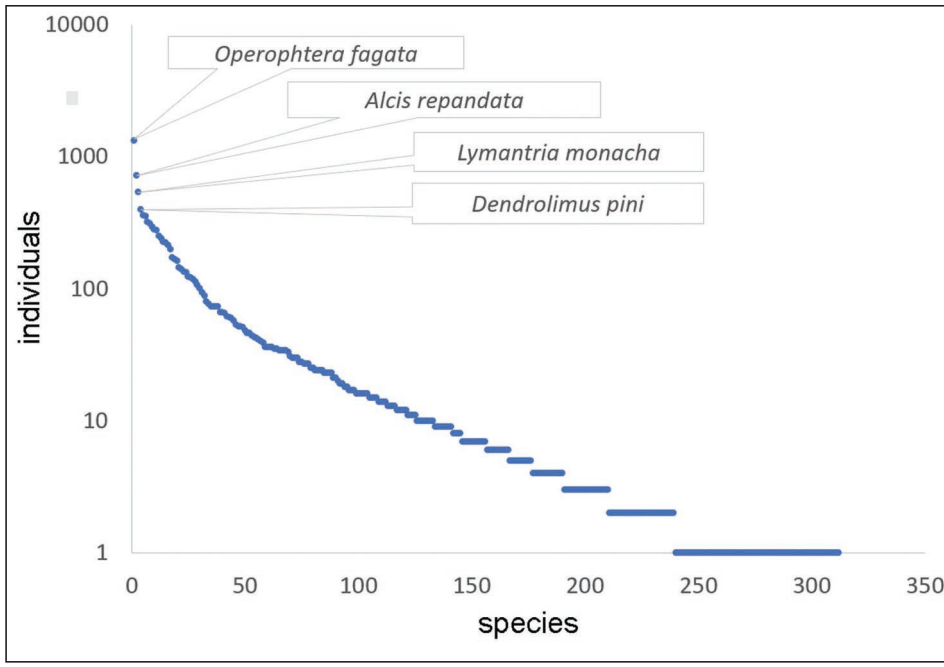

Fig. 2.– Logarithmic abundance of moth species in a mixed pine-beech forest of the Sila Mountains. The name of the four most abundant taxa is reported.

natural population dynamic (BERRYMAN, 1996), we can in any case argue that probably *T. pityocampa* in the studied mixed forest can be disadvantaged by lower temperatures and greater canopy shadowing than in pure pine forests, both known to be detrimental for larval development (BUFFO *et al*., 2007).

In mixed forests we found all the species typically linked to pure beech forests previously observed in the Calabria region (INFUSINO & SCALERCIO, 2018a), with small changes of their ranking. *O. fagata* was always the most abundant, whilst only *C. linearia* showed a significantly lower abundance (Fig. 3). In definitive, in mixed forests we found a perfect mix of the species trophically linked to the pure forests, with adjustment of their abundance according to local abiotic parameters. Interestingly we found five species that we can consider characteristics of the silver fir woodlots of the Serre Mountains (INFUSINO & SCALERCIO, 2018b), namely *Thera britannica*, *T. variata*, *Peribatodes secundaria*, *Pungeleria capreolaria*, and *Macaria liturata*. These species, feeding on *Abies alba*, cannot be considered as occasionally present in the study area because we observed young silver fir trees in beech woodlots. However, their presence led us to suppose a natural evolution of the forest cover, at least in some places and in absence of perturbations, towards a mixed forest with *Abies alba* Mill. and *Fagus sylvatica* because of edaphic and microclimatic conditions, a forest habitat of community interest listed in the Habitat Directive (9220* Apennine beech forests with *Abies alba* and beech forests with *Abies nebrodensis* (Lojac) Mattei).

We found that several species with larvae trophically linked to the undergrowth flora (e.g. *Mesotype parallelolineata*, *Diarsia mendica*, *Gnophos furvata*) were more abundant in mixed than in beech forests (Fig. 3). This is probably due to the higher cover and diversity of herbs and shrubs growing in pine than in beech forests that is partially preserved in mixed forests. On the opposite, the more mesophilic microclimate of mixed forests compared to pine woodlots led to a strong decrease of

thermophilic species such as *Tephronia sepiaria* and *Colostygia sericeata* (Fig. 3). Mixed forests appeared to be the optimal habitat for seven species that here were more abundant than in both pure forests (Fig. 3). It is also interesting to underline that no species was lesser abundant in mixed than in both pure forest types prevailing in mixed forests an additive process for the fauna.

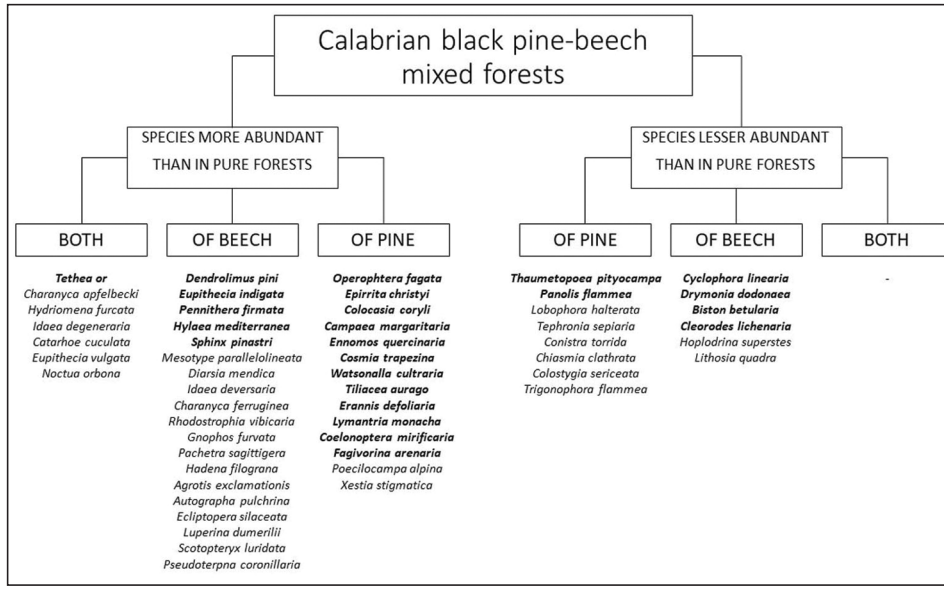

Fig. 3.– Main observed differences of the abundance of individual species between pure and mixed forests of Calabrian black pines and beeches. In bold the species with larvae having foodplants in the tree layer.

Among species found with few individuals a large ecologically homogeneous group is composed by *Cyclophora ruficiliaria*, *C. porata*, *C. suppunctaria*, *Adactylotis contaminaria*, *Catocala nymphagoga*, and *Lasiocampa quercus* feeding mainly on *Quercus* that likely are sporadically present in the surroundings of sampled sites. With clear affinity to warmer places are *Xanthia ruticilla*, *Rodostrophia calabra*, *Hypena lividalis*, *Agrotis trux*, *Synopsia sociaria*, and *Trigonophora flammea*, the last of which has been found in more sites and with more individuals in pure pine forests (SCALERCIO & GRECO, 2018).

We recognized 34 ubiquist species composing the 10.9% of the total abundance. Most abundant were *Peribatodes rhomboidaria* (*n*=360), *Noctua pronuba* (*n*=214) and *Idaea degeneraria* (*n*=141), accompanied by several species belonging to the genera *Agrotis*, *Noctua*, *Mythimna*, *Idaea* and *Scopula*.

Seasonal changes in community composition

In April dominant species were *Cerastis rubricosa*, *Orthosia cerasi* and *O. incerta* (Fig. 4), accompanied by some individuals of *O. gothica* and *Panolis flammea*, few overwintering *Conistra vaccinii* and *C. rubiginea*, and other early-spring active species. Remarkable was the presence of several *O. populeti* in areas were some trees of *Populus tremula* are present. As the season proceeded, *Eupithecia indigata*, *Agrotis cinerea* and *Colocasia coryli* replaced previously dominant species, some of which are still present with few individuals. *Diarsia mendica* characterized late spring communities dominated also by some species that we found for a long period such as *Peribatodes rhomboidaria* and

Epirrhoe galiata. The highest species richness was found during the first half of the summer when most abundant species were *Fagivorina arenaria*, showing a long fly period, and *Dendrolimus pini* that was among the most abundant also in mid-Summer together with *Lymantria monacha* and *Ennomos quercinaria* (Fig. 4). Communities sampled in September were characterized by *Mesotype parallelolineata* and started to be abundant also *Pennithera firmata* that was the dominant species in October with *Tiliacea aurago*. Late Autumn was characterized by *Epirrita christyi* and by *Operophtera fagata*, the most abundant species of mixed Calabrian black pine-beech forest (Fig. 4).

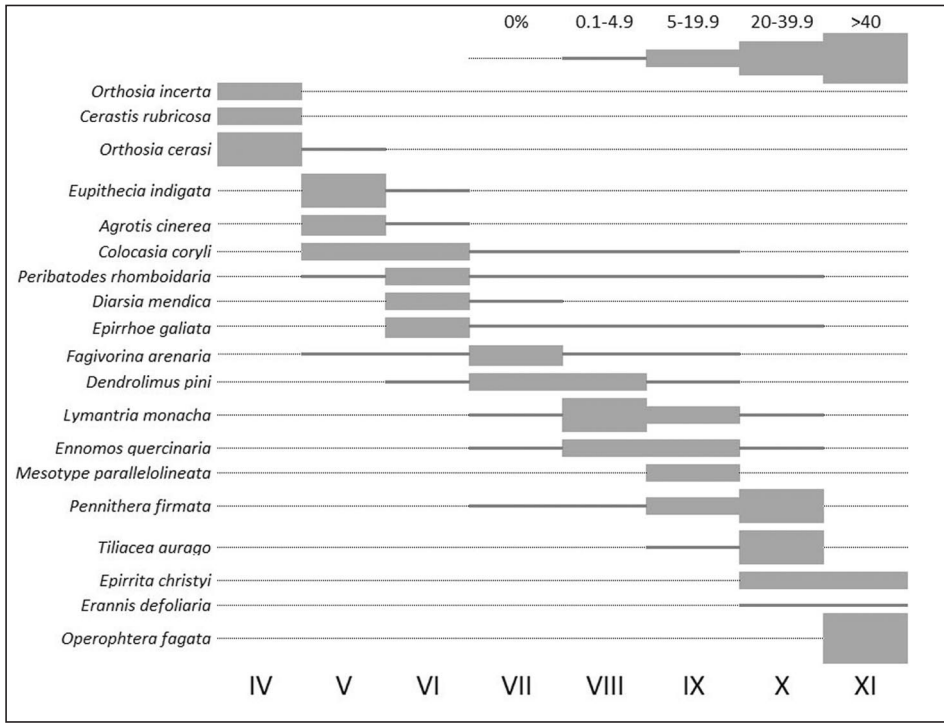

Fig. 4.– Phenological diagram of moth communities in the mixed Calabrian black pine-beech forest of the Sila Mountains. Roman numbers indicate the months.

Faunistic insights

In the study area we confirmed the presence of some very interesting species, known in the Peninsular Italy only for Sila Mountains or in very few additional localities. *Acossus terebra* was recently confirmed in only two localities (SCALERCIO & GRECO, 2018; LEONETTI *et al.*, 2019) 40 years after the first finding (PARENZAN, 1982). Our new findings in the western borders of the Sila Grande, the northern part of the Sila Mountains, significantly extended the range of this species as previous localities were located near the eastern (SCALERCIO & GRECO, 2018) and northern (PARENZAN, 1982; LEONETTI *et al.*, 2019) borders of this geographic area. Very interesting were also the following species: *Alsophila aceraria*, known in Calabria only in the study area (GRECO *et al.*, 2018); *Itame messapiaria*, endemic of the Sila, found in several places above the 1100 meters of altitude; *Metachrostis dardouini*, rare in the Alps and previously known in only two localities of the

Calabria region and in few additional localities of the Apennines (ZANGHERI, 1963; PARENZAN & PORCELLI, 2006); *Dichagyris* (*Dichagyris*) *signifera*, in Italy known only for the Alps and the Sila Mountains (SCALERCIO & GRECO, 2018), but recently found also in the Aspromonte Massif (locality Tre Limiti, 25-VII-2018, Francesco Parisi, Elvira Castilione and Francesco Manti legit); *Eupithecia indigata*, characteristic species for Calabrian black pine forests known with certitude in Italy only for the Alps and the Calabria region (MIRONOV, 2003; SCALERCIO & GRECO, 2018).

Although recent studies significantly improved the knowledge on the moth fauna of the Sila Mountains (SCALERCIO & GRECO, 2018; LEONETTI *et al.*, 2019), we added 7 species not recorded so far: *Eumannia lepraria* (Rebel, 1909), *Hydrelia flammeolaria* (Hufnagel, 1767), *Pasiphila rectangulata* (Linnaeus, 1758), and *Polyphaenis sericata* (Esper, 1787) previously found in few Calabrian localities; *Eupsilia transversa* (Hufnagel, 1766) and *Noctua orbona* (Hufnagel, 1766) not found southward of the Polino Massif so far; *Autophila* (*Autophila*) cfr. *dilucida* (Hübner, [1808]), found in only one specimen that showed a great COI divergence (3.53%) (BOLD sequence ID: BCLEP459-18) from the other European populations belonging to this species, deserving deep taxonomic investigations.

In this paper we also correct some mistakes present in literature concerning the fauna of Sila Mountains. *Ligdia adustata* has been erroneously reported for Vivaio Sbanditi (INFUSINO *et al.*, 2017), these specimens belonging to *Lomaspilis marginata*. *Pterostoma palpina* has not been found in Fallistro and Vivaio Sbanditi (LEONETTI *et al.*, 2019), these records refer to *Poecilocampa alpina*. *Apamea ferrago* has been erroneously listed in LEONETTI *et al.* (2019), but these data refer to *Mythimna ferrago*. *Mesogona oxalina* is absent in the Sila as the records in SCALERCIO & GRECO (2018) must be attributed to *M. acetosellae*. *Dryobotodes eremita* has been erroneously reported for the locality Fossiata (LEONETTI *et al.*, 2019), the correct name for these specimens is *Hada plebeja*. *Scotopteryx mucronata* reported in LEONETTI *et al.* (2019) is *S. chenopodiata*.

Conclusions

In this paper we described the moth community of mixed Calabrian black pine-European beech forests, analyzing the community from a functional point of view. We found that mixed Calabrian black pine-beech forests of Sila Mountains inhabit a perfect mix of moth species characteristic of the pure forest types, but probably this is only a temporary situation. Based on observed moth species and their distribution, we can corroborate the natural evolution of the mixed pine-beech forests of anthropogenic origin towards beech forests associated to silver fir in most humid and cold places as predicted by NICOLACI *et al.* (2014). In fact, we found evidences that moth species usually found in beech forests are more common and diverse than those having functional relationships with Calabrian black pines, and that a relevant portion of species characteristic of silver fir forests have been found. Furthermore, this study added seven species to the fauna of the Sila Mountains, underlying also the presence of taxa that deserve accurate taxonomic studies.

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ANEXO

	SL_AP	SL_BP	SL_CP	SL_AM	SL_BM	SL_CM	SL_AF	SL_BF	SL_CF	TOTAL	Phenology
Operophtera fagata (Scharfenberg, 1805)	390	35	109	288	73	107	180	53	78	1313	XI
Alcis repandata (Linnaeus, 1758)	118	38	36	110	90	53	81	141	55	722	VII-VIII
Lymantria monacha (Linnaeus, 1758)	14	5	15	145	17	40	249	9	45	539	VII-X
Dendrolimus pini (Linnaeus, 1758)	62	35	42	73	56	28	46	10	46	398	VI-IX
Peribatodes rhomboidaria ([Denis & Schiffermüller], 1775)	30	51	26	28	66	39	39	47	34	360	V-X
Ennomos quercinaria (Hufnagel, 1767)	11	12	6	96	23	64	82	38	24	356	VII-X
Colocasia coryli (Linnaeus, 1758)	13	18	12	89	27	22	94	24	19	318	V-IX
Campaea margaritaria (Linnaeus, 1767)	11	6	10	75	23	37	88	36	25	311	V-X
Pennithera firmata (Hübner, [1822])	90	16	52	22	41	31	13	13	13	291	VII-X
Epirrhoe galiata ([Denis & Schiffermüller], 1775)	46	33	37	18	36	24	16	29	41	280	VI-X
Fagivorina arenaria (Hufnagel, 1767)	13	8	17	76	21	32	69	26	16	278	V-IX
Idaea aversata (Linnaeus, 1758)	9	18	16	35	22	37	41	36	37	251	VI-IX
Epirrita christyi (Allen, 1906)	34	15	20	50	30	23	24	18	25	239	X-XI
Eilema lurideola (Zincken, 1817)	11	14	7	61	43	11	25	29	24	225	VII-VIII
Diarsia mendica (Fabricius, 1775)	25	11	6	33	32	9	38	52	16	222	VI-VII
Noctua pronuba Linnaeus, 1758	12	8	21	47	11	16	58	18	23	214	IV-X
Cosmia (Calymnia) trapezina (Linnaeus, 1758)	8	2	5	25	31	48	27	33	19	198	VI-X
Charanyca (Rusina) apfelbecki (Rebel, 1901)	5	28	22	2	31	15	3	41	25	172	VI-VII
Tiliacea aurago ([Denis & Schiffermüller], 1775)	6	5	7	20	25	41	17	31	15	167	IX-X
Scotopteryx luridata (Hufnagel, 1767)	25	39	15	13	32	6	4	16	11	161	VI-VII
Pachetra sagittigera (Hufnagel, 1766)	15	29	24	3	22	9	7	13	23	145	V-VI
Idaea degeneraria (Hübner, [1799])	6	24	9	10	22	8	31	21	10	141	V-VIII, X
Apamea monoglypha (Hufnagel, 1766)	11	4	3	40	9	9	39	9	11	135	VI-VIII
Orthosia (Monima) cerasi (Fabricius, 1775)	8	9	10	40	23	10	23	4	6	133	IV-V
Agrotis segetum ([Denis & Schiffermüller], 1775)	6	0	3	32	30	6	15	16	15	123	V-VII, X
Mesotype parallelolineata (Retzius, 1783)	36	16	14	5	13	10	10	9	8	121	IX-X
Scotopteryx angularia (de Villers, 1789)	12	3	13	6	22	13	6	19	24	118	VII-VIII
Watsonalla cultraria (Fabricius, 1775)	8	14	5	17	19	8	10	26	6	113	V-IX
Idaea deversaria (Herrich-Schäffer, 1847)	9	14	6	7	31	4	4	24	7	106	VI-VII
Cosmorhoe ocellata (Linnaeus, 1758)	12	11	15	4	11	12	8	16	12	101	V-IX
Eupithecia indigata (Hübner, [1813])	15	13	11	2	23	16	4	2	7	93	V-VI

Orthosia (Orthosia) incerta (Hufnagel, 1766)	4	6	8	18	10	8	13	10	11	88	IV
Hoplodrina octogenaria (Goeze, 1781)	11	6	4	11	15	6	13	11	3	80	VI-VIII
Peridroma saucia (Hübner, [1808])	8	4	4	10	16	8	10	9	8	77	V-VII, IX-X
Apoda limacodes (Hufnagel, 1766)	2	3	0	21	9	7	13	8	10	73	VI-VIII
Erannis defoliaria (Clerck, 1759)	6	3	4	14	8	4	21	7	6	73	X-XI
Pseudoterpna coronillaria (Hübner, [1817])	5	9	16	2	7	5	2	11	16	73	VI-VIII, X
Xestia (Megasema) triangulum (Hufnagel, 1766)	15	5	0	25	9	2	6	9	2	73	VI-VIII
Hypena proboscidalis (Linnaeus, 1758)	4	7	5	9	11	1	9	13	7	66	VI-X
Charanyca (Rusina) ferruginea (Esper, 1785)	9	7	4	13	11	3	10	7	2	66	VII
Hylaea mediterranea Sihvonen, Skou, Flamigni, Fiumi & Hausmann, 2014	6	5	9	5	7	8	10	5	10	65	VI-VII, IX-X
Calliteara pudibunda (Linnaeus, 1758)	2	5	0	9	7	8	16	4	11	62	V-VI
Tethea or ([Denis & Schiffermüller], 1775)	9	3	5	8	5	9	4	11	7	61	V-IX
Amphipyra (Amphipyra) tragopoginis (Clerck, 1759)	11	5	9	6	11	6	6	2	4	60	VI-X
Gandaritis pyraliata ([Denis & Schiffermüller], 1775)	7	13	5	2	5	4	1	13	7	57	VII
Agrotis exclamationis (Linnaeus, 1758)	3	3	8	19	10	1	3	4	2	53	VI
Hydriomena furcata (Thunberg, 1784)	3	4	1	24	0	2	12	3	3	52	VII
Cerastis rubricosa ([Denis & Schiffermüller], 1775)	21	4	1	2	11	9	2	1	1	52	IV
Thera britannica (Turner, 1925)	4	3	5	10	3	7	8	5	6	51	V-VI, X
Noctua interposita (Hübner, 1790)	4	0	1	3	3	12	11	3	11	48	VI-IX
Sphinx pinastri (Linnaeus, 1758)	6	3	1	6	5	3	8	5	9	46	VI-VIII
Poecilocampa alpina (Frey & Wullschlegel, 1874)	3	2	2	10	3	4	13	4	5	46	XI
Colostygia pectinataria (Knoch, 1781)	8	1	0	8	2	4	7	7	7	44	VII-VIII
Orthosia (Semiophora) gothica (Linnaeus, 1758)	3	9	5	5	10	2	1	7	1	43	IV
Hadena (Hadena) filograna (Esper, 1788)	4	10	5	0	15	1	0	3	4	42	VI
Eupithecia vulgata (Haworth, 1809)	1	5	5	2	3	7	2	4	12	41	VI
Aplocera plagiata (Linnaeus, 1758)	4	7	6	3	9	3	1	6	1	40	V-VII, IX-X
Xestia (Xestia) stigmatica (Hübner, [1813])	6	2	4	2	6	6	1	10	2	39	VIII-IX
Agrochola (Leptologia) macilenta (Hübner, [1809])	8	0	1	9	7	2	3	3	3	36	X-XI
Opisthograptis luteolata (Linnaeus, 1758)	7	6	5	2	2	2	6	2	4	36	VI-IX
Hoplodrina ambigua ([Denis & Schiffermüller], 1775)	0	2	4	11	5	2	6	0	6	36	VI
Spodoptera exigua (Hübner, [1808])	0	1	2	17	8	1	0	6	1	36	VII, X
Catarhoe cuculata (Hufnagel, 1767)	2	6	11	2	6	2	0	4	2	35	VI
Oligia versicolor (Borkhausen, 1792)	0	2	3	4	5	8	3	8	2	35	VII
Gnophos (Gnophos) furvata ([Denis & Schiffermüller], 1775)	2	8	4	0	2	3	2	11	2	34	VII-VIII

Conistra (Conistra) vaccinii (Linnaeus, 1761)	6	1	1	5	6	6	3	4	2	34	IV, X-XI
Stilbia faillae Püngeler, 1918	3	9	5	1	9	0	0	5	2	34	VIII-IX
Mythimna (Hyphilare) l-album (Linnaeus, 1767)	0	4	1	5	10	0	6	5	3	34	V-VI, VIII
Aplocera praeformata (Hübner, [1826])	5	12	7	0	2	3	0	0	4	33	VII
Dysstroma truncata (Hufnagel, 1767)	4	0	1	10	3	1	2	7	3	31	V-X
Ptilodon capucina (Linnaeus, 1758)	3	0	2	11	3	1	6	2	2	30	VI-VIII
Celonoptera mirificaria Lederer, 1862	4	1	1	5	4	3	2	5	5	30	VI-VIII
Eilema caniola (Hübner, [1808])	0	7	1	1	14	0	1	4	2	30	VI-VIII
Ecliptopera silaceata ([Denis & Schiffermüller], 1775)	3	0	1	2	0	0	19	2	1	28	VI-VIII
Epirrhoe alternata (Müller, 1764)	2	7	2	3	0	3	2	4	5	28	VI-IX
Cyclophora (Cyclophora) puppillaria (Hübner, [1799])	2	4	0	1	9	2	3	2	4	27	VI-VIII
Hadena (Hadena) albimacula (Borkhausen, 1792)	3	3	7	0	3	3	1	4	3	27	VI, VIII
Oligia strigilis (Linnaeus, 1758)	1	1	3	2	6	8	0	3	3	27	VI-VII
Rhodostrophia vibicaria (Clerck, 1759)	2	0	6	4	3	1	0	6	3	25	VII-VIII
Noctua janthe (Borkhausen, 1792)	1	0	1	3	3	4	5	6	2	25	VI-IX
Cyclophora (Codonia) linearia (Hübner, [1799])	2	2	1	4	3	3	4	4	1	24	V-VIII
Thaumetopoea pityocampa ([Denis & Schiffermüller], 1775)	2	7	5	0	2	3	5	0	0	24	VII-VIII
Mesapamea secalella Remm, 1983	2	0	2	4	1	4	3	2	6	24	VI-IX
Noctua comes Hübner, [1813]	2	4	1	2	4	1	2	2	6	24	VI-X
Panolis flammea ([Denis & Schiffermüller], 1775)	2	1	4	0	8	3	0	3	2	23	IV-V
Itame messapiaria Sohn-Rethel, 1929	4	0	2	3	3	2	3	3	3	23	VI-VIII
Agrotis cinerea ([Denis & Schiffermüller], 1775)	2	4	1	1	11	0	0	4	0	23	V-VI
Polia nebulosa (Hufnagel, 1766)	1	0	0	14	1	0	3	0	4	23	VI-VII
Nothocasis rosariae Scalercio, Infusino, Hausmann, 2016	3	4	0	2	4	2	0	4	2	21	IX-XI
Lygephila craccae ([Denis & Schiffermüller], 1775)	1	5	0	2	3	6	2	1	1	21	VI-IX
Selenia lunularia (Hübner, 1788)	1	1	2	3	2	4	3	2	2	20	V-VI, VIII-IX
Colotois pennaria (Linnaeus, 1761)	0	6	1	2	1	2	1	5	1	19	X-XI
Caradrina (Paradrina) flavirena Guenée, 1852	1	3	1	2	3	1	3	3	2	19	IV-VII, IX
Arctia villica (Linnaeus, 1758)	1	2	1	0	7	1	0	3	3	18	VI
Conistra (Dasycampa) rubiginea ([Denis & Schiffermüller], 1775)	2	2	2	2	1	4	1	3	1	18	IV-V, X-XI
Colostygia olivata ([Denis & Schiffermüller], 1775)	4	0	0	0	1	2	2	4	4	17	VII-IX
Larentia clavaria (Haworth, 1809)	2	4	0	3	2	2	0	4	0	17	X
Mesapamea secalis (Linnaeus, 1758)	0	0	2	0	1	8	4	1	1	17	VI-IX
Furcula furcula (Clerck, 1759)	0	0	4	0	3	6	0	0	3	16	VI-VII

Camptogramma bilineata (Linnaeus, 1758)	3	1	1	2	2	2	2	3	0	16	VI-X
Apamea syriaca (Osthelder, 1933)	1	1	0	3	1	0	5	4	1	16	VI-VII
Luperina dumerilii (Duponchel, 1826)	1	6	1	0	7	0	1	0	0	16	IX
Gymnoscelis rufifasciata (Haworth, 1809)	1	1	3	1	4	0	1	2	3	16	VI-VII
Xestia (Megasema) c-nigrum (Linnaeus, 1758)	0	0	2	1	4	0	4	3	2	16	V-VIII
Lycia hirtaria (Clerck, 1759)	1	0	1	1	2	6	1	1	2	15	IV-V
Caradrina (Platyperigea) aspersa Rambur, 1834	1	0	1	1	5	0	2	3	2	15	VI-VIII
Nola confusalis (Herrich-Schäffer, 1847)	0	0	0	12	1	1	1	0	0	15	V-VI
Rhodometra sacraria (Linnaeus, 1767)	0	2	2	5	1	1	0	3	1	15	IV, VIII-X
Agriopis marginaria (Fabricius, 1776)	3	1	3	2	0	4	1	0	0	14	IV-V
Charissa (Kemtrognophos) onustaria (Herrich-Schäffer, 1852)	0	5	0	0	3	1	1	1	3	14	V-VI, IX-X
Lomaspilis marginata (Linnaeus, 1758)	0	3	1	0	2	1	0	3	4	14	VI-VIII
Chersotis margaritacea (Villers, 1789)	0	0	4	0	1	4	0	3	2	14	VII-IX
Conisania (Luteohadena) luteago ([Denis & Schiffermüller], 1775)	0	1	1	1	6	1	0	2	1	13	V-VI
Conistra (Peperina) torrida (Lederer, 1857)	1	0	3	0	3	2	3	1	0	13	IV, XI
Orthosia (Monima) cruda ([Denis & Schiffermüller], 1775)	3	2	0	0	5	1	2	0	0	13	IV
Autographa gamma (Linnaeus, 1758)	0	0	2	0	4	2	0	3	2	13	V-VII
Peribatodes secundaria ([Denis & Schiffermüller], 1775)	1	0	0	4	2	1	2	1	1	12	VI-IX
Thera variata ([Denis & Schiffermüller], 1775)	1	2	2	0	2	1	1	2	1	12	VI
Xanthorhoe fluctuata (Linnaeus, 1758)	0	2	1	2	2	0	1	2	2	12	V-VIII, X
Dichagyris (Dichagyris) signifera ([Denis & Schiffermüller], 1775)	0	1	1	0	2	2	0	5	1	12	VII
Hoplodrina blanda ([Denis & Schiffermüller], 1775)	0	1	1	1	1	3	2	2	1	12	VII-VIII
Charissa (Charissa) obscurata ([Denis & Schiffermüller], 1775)	0	2	0	0	1	5	0	2	1	11	VI, VIII
Chesias rufata (Fabricius, 1775)	0	2	0	2	2	0	1	4	0	11	IV-V
Drymonia velitaris (Hufnagel, 1766)	0	0	3	0	2	3	0	1	2	11	VI-VII
Amphipyra (Amphipyra) pyramidea (Linnaeus, 1758)	0	0	0	4	2	1	3	0	1	11	VII-X
Autographa pulchrina (Haworth, 1809)	3	0	0	2	0	0	3	1	1	10	VII
Charanyca (Charanyca) trigrammica (Hufnagel, 1766)	0	1	2	1	3	0	1	0	2	10	VI-VII
Epilecta linogrisea ([Denis & Schiffermüller], 1775)	1	1	2	0	1	1	0	3	1	10	VII-IX
Hadena (Hadena) magnolii (Boisduval, 1829)	2	4	0	0	1	0	0	2	1	10	V-VI
Noctua fimbriata (Schreber, 1759)	1	0	0	2	3	1	2	1	0	10	VII-IX
Orthosia (Monima) populeti (Fabricius, 1775)	0	0	0	0	0	2	0	0	8	10	IV
Mythimna (Pseudaletia) unipuncta (Haworth, 1809)	0	0	0	2	5	0	2	1	0	10	VI, VIII-X
Noctua tirrenica Biebinger, Speidel & Hanigk, 1983	1	0	0	4	1	1	3	0	0	10	VI-IX

Laothoe populi (Linnaeus, 1758)	2	0	2	1	2	1	1	0	0	9	V, VII-VIII
Eupithecia haworthiata Doubleday, 1856	0	2	0	0	4	0	0	2	1	9	VI-VII
Xanthorhoe montanata ([Denis & Schiffermüller], 1775)	0	0	0	1	0	1	5	2	0	9	VI-VII
Cryphia (Euthales) algae (Fabricius, 1775)	0	2	1	0	1	1	0	2	2	9	VII
Xanthia (Cirrhia) icteritia (Hufnagel, 1766)	0	1	0	0	6	0	1	1	0	9	IX-X
Caradrina (Paradrina) clavipalpis Scopoli, 1763	0	3	1	1	1	1	1	1	0	9	VI-VIII
Mythimna (Hyphilare) albipuncta ([Denis & Schiffermüller], 1775)	0	0	2	1	2	0	2	0	2	9	VI, IX
Phlogophora meticulosa (Linnaeus, 1758)	2	0	1	2	3	0	1	0	0	9	IV, VI-VII, IX
Eupithecia subfuscata (Haworth, 1809)	1	1	1	1	1	0	1	2	0	8	V-VI
Pheosia tremula (Clerck, 1759)	0	0	1	2	2	1	1	0	1	8	V, VIII
Catocala fraxini (Linnaeus, 1758)	0	1	3	1	1	0	2	0	0	8	IX-X
Mythimna (Mythimna) vitellina (Hübner, [1808])	0	0	1	0	0	1	5	0	1	8	V-VI
Solitanea mariae (Stauder, 1921)	0	1	0	1	2	0	2	1	0	7	VI-VIII
Tephronia sepiaria (Hufnagel, 1767)	4	0	0	0	1	0	0	1	1	7	VII-VIII
Callimorpha dominula (Linnaeus, 1758)	0	1	0	3	3	0	0	0	0	7	VII
Eilema complana (Linnaeus, 1758)	0	3	0	0	3	0	0	1	0	7	VI-VIII
Chersotis rectangula ([Denis & Schiffermüller], 1775)	0	1	0	2	1	1	1	0	1	7	VI-VIII
Hadena (Hadena) bicruris (Hufnagel, 1766)	0	0	2	1	2	0	0	0	2	7	VI-IX
Litoligia literosa (Haworth, 1809)	0	0	0	0	1	0	2	4	0	7	VII
Oligia latruncula ([Denis & Schiffermüller], 1775)	0	1	0	0	1	3	0	2	0	7	VI
Xestia (Xestia) baja ([Denis & Schiffermüller], 1775)	0	0	1	1	1	0	0	2	2	7	VIII-IX
Agrotis ipsilon (Hufnagel, 1766)	0	0	0	1	0	2	4	0	0	7	V-VI, IX-X
Noctua janthina ([Denis & Schiffermüller], 1775)	0	0	0	0	1	2	2	1	1	7	VI-IX
Stauropus fagi (Linnaeus, 1758)	1	0	0	2	2	0	0	1	0	6	V-VII
Chloroclysta siterata (Hufnagel, 1767)	1	0	2	1	0	2	0	0	0	6	IV-V, IX-X
Coenotephria ablutaria (Boisduval, 1840)	0	2	1	0	1	1	0	1	0	6	IV, X
Pungeleria capreolaria ([Denis & Schiffermüller], 1775)	3	0	0	1	0	0	2	0	0	6	IX-X
Xanthorhoe vidanoi Parenzan & Hausmann, 1994	1	0	0	1	0	1	0	2	1	6	VI-VII, IX
Euxoa (Euxoa) nigricans (Linnaeus, 1761)	0	0	0	0	3	1	0	1	1	6	VIII-IX
Mythimna (Mythimna) conigera ([Denis & Schiffermüller], 1775)	0	3	0	0	0	1	0	1	1	6	VII-VIII
Xestia (Xestia) castanea (Esper, 1798)	1	1	0	0	0	1	1	0	2	6	VIII-X
Nycteola revayana (Scopoli, 1772)	0	0	0	0	3	1	0	2	0	6	VI-VII, X
Scopula (Calothysanis) imitaria (Hübner, [1799])	0	1	0	1	0	1	0	3	0	6	VI-VII
Crocallis elinguaria (Linnaeus, 1758)	1	0	1	0	1	0	0	1	1	5	VIII-IX

Megalycinia serraria (A. Costa, 1882)	0	1	2	0	1	1	0	0	0	5	VIII-IX
Menophra abruptaria (Thunberg, 1792)	2	1	0	0	1	1	0	0	0	5	IV-VII
Perizoma flavofasciata (Thunberg, 1792)	0	1	0	0	2	0	0	1	1	5	VI
Phigalia pilosaria ([Denis & Schiffermüller], 1775)	0	0	1	1	0	1	2	0	0	5	IV
Amphipyra (Amphipyra) tetra (Fabricius, 1787)	1	0	1	0	3	0	0	0	0	5	VIII-IX
Atypha pulmonaris (Esper, 1790)	0	0	0	0	1	0	1	1	2	5	VII
Euplexia lucipara (Linnaeus, 1758)	1	0	0	3	0	0	0	1	0	5	VI
Luperina testacea ([Denis & Schiffermüller], 1775)	1	1	1	0	0	0	2	0	0	5	VIII-IX
Noctua interjecta Hübner, [1803]	0	0	0	0	1	0	4	0	0	5	VII-VIII
Ptilodon cucullina ([Denis & Schiffermüller], 1775)	0	0	1	1	0	0	1	1	0	4	VI-VII
Chiasmia clathrata (Linnaeus, 1758)	1	0	1	0	1	1	0	0	0	4	VI-VII
Hypomecis roboraria ([Denis & Schiffermüller], 1775)	0	1	0	3	0	0	0	0	0	4	VI-VII
Idaea mutilata (Staudinger, 1876)	0	0	0	0	0	1	0	3	0	4	VI-VII
Macaria liturata (Clerck, 1759)	0	0	0	2	0	0	1	1	0	4	VII
Eugnorisma (Metagnorisma) depuncta (Linnaeus, [1761])	1	0	1	0	0	0	1	1	0	4	VIII-IX
Lacanobia (Lacanobia) w-latinum (Hufnagel, 1766)	1	1	2	0	0	0	0	0	0	4	VI
Noctua orbona (Hufnagel, 1766)	1	0	0	1	0	0	0	2	0	4	VI-VIII
Ochropleura plecta (Linnaeus, 1761)	0	1	0	1	0	0	1	0	1	4	VI-VII
Thalpophila matura (Hufnagel, 1766)	0	2	0	0	1	0	0	0	1	4	VIII-IX
Xanthia (Xanthia) togata (Esper, 1788)	0	0	0	0	1	0	0	2	1	4	X
Pachycnemia hippocastanaria (Hübner, [1799])	0	0	1	3	0	0	0	0	0	4	VI-VII, X
Scopula (Calothysanis) marginepunctata (Goeze, 1781)	0	3	0	0	1	0	0	0	0	4	VI, IX
Mythimna (Hyphilare) ferrago (Fabricius, 1787)	0	0	0	2	0	0	2	0	0	4	VII
Acossus terebra ([Denis & Schiffermüller], 1775)	0	0	0	0	0	1	0	1	1	3	VI, VIII
Malacosoma (Clisiocampa) neustria (Linnaeus, 1758)	0	0	0	0	0	2	0	1	0	3	VII
Coenotephria tophaceata ([Denis & Schiffermüller], 1775)	0	0	0	0	0	0	1	0	2	3	VII-VIII
Comibaena bajularia ([Denis & Schiffermüller], 1775)	0	0	0	0	2	0	1	0	0	3	VI-VII
Epione repandaria (Hufnagel, 1767)	0	0	0	0	0	0	0	2	1	3	VII-VIII
Horisme tersata ([Denis & Schiffermüller], 1775)	0	1	0	0	2	0	0	0	0	3	VII
Perconia strigillaria (Hübner, 1787)	1	1	0	0	1	0	0	0	0	3	VI
Clostera pigra (Hufnagel, 1766)	0	1	0	0	0	0	1	1	0	3	VII-VIII
Phalera bucephala (Linnaeus, 1758)	1	0	0	0	0	0	2	0	0	3	VII
Idia calvaria ([Denis & Schiffermüller], 1775)	0	0	0	2	0	1	0	0	0	3	VI-VII
Leucoma salicis (Linnaeus, 1758)	1	0	0	1	0	1	0	0	0	3	VII

Agrochola (Sunira) circellaris (Hufnagel, 1766)	1	0	0	1	2	0	0	0	0	3	X-XI
Allophyes corsica (Spuler, 1905)	1	0	0	0	0	0	0	1	1	3	X
Caradrina (Platyperigea) kadenii Freyer, 1836	0	0	0	1	1	0	0	1	0	3	VI
Luperina rubella (Duponchel, 1835)	0	0	0	0	0	2	0	0	1	3	IX
Macdunnoughia confusa (Stephens, 1850)	0	0	1	0	1	0	0	1	0	3	VI
Meganola strigula ([Denis & Schiffermüller], 1775)	0	0	0	1	0	0	0	0	2	3	VI-VII
Xanthia (Spudaea) ruticilla (Esper, 1791)	1	0	0	0	2	0	0	0	0	3	IV
Helicoverpa armigera (Hübner, [1808])	0	1	0	0	1	0	0	1	0	3	VI-VII, X
Ochropleura leucogaster (Freyer, 1831)	0	0	0	3	0	0	0	0	0	3	V-VI
Cabera pusaria (Linnaeus, 1758)	0	0	0	1	0	0	0	0	1	2	VII
Eupithecia icterata (de Villers, 1789)	1	0	0	0	0	1	0	0	0	2	VIII
Eupithecia pyreneata Mabille, 1871	0	1	0	0	0	1	0	0	0	2	VI
Idaea fuscovenosa (Goeze, 1781)	0	1	0	0	0	0	0	1	0	2	VII
Idaea humiliata (Hufnagel, 1767)	0	1	0	0	1	0	0	0	0	2	VI
Idaea straminata (Borkhausen, 1794)	1	0	0	0	0	0	1	0	0	2	VII
Odontopera bidentata (Clerck, 1759)	1	0	0	0	0	0	0	1	0	2	V
Ourapteryx sambucaria (Linnaeus, 1758)	1	0	0	1	0	0	0	0	0	2	VII
Thetidia (Antonechloris) smaragdaria (Fabricius, 1787)	1	0	0	0	0	0	0	0	1	2	VII
Xanthorhoe designata (Hufnagel, 1767)	0	0	0	0	1	0	0	1	0	2	VI
Notodonta tritophus ([Denis & Schiffermüller], 1775)	0	0	0	0	0	0	0	0	2	2	VII
Notodonta ziczac (Linnaeus, 1758)	0	0	0	0	0	0	0	0	2	2	V
Pterostoma palpina (Clerck, 1759)	0	1	0	0	1	0	0	0	0	2	VI
Catocala nupta (Linnaeus, 1767)	0	0	0	0	1	0	0	1	0	2	IX
Orgyia (Orgyia) antiqua (Linnaeus, 1758)	0	0	0	0	0	0	0	1	1	2	X
Acronicta (Viminia) rumicis (Linnaeus, 1758)	0	0	0	0	2	0	0	0	0	2	VI
Agrotis clavis (Hufnagel, 1766)	0	0	0	0	1	1	0	0	0	2	VII
Apamea illyria Freyer, 1846	1	0	0	1	0	0	0	0	0	2	VI
Apamea lithoxylaea ([Denis & Schiffermüller], 1775)	0	0	0	0	0	0	1	0	1	2	VI-VII
Conistra (Orrhodiella) ragusae (Failla-Tedaldi, 1890)	0	2	0	0	0	0	0	0	0	2	XI
Hoplodrina superstes (Ochsenheimer, 1816)	0	0	1	0	0	0	1	0	0	2	VII
Lacanobia (Dianobia) contigua ([Denis & Schiffermüller], 1775)	2	0	0	0	0	0	0	0	0	2	VII
Polymixis (Polymixis) polymita (Linnaeus, 1761)	0	0	0	0	1	0	0	1	0	2	IX
Rhodostrophia calabra (Petagna, 1786)	0	0	0	0	0	0	1	1	0	2	VI
Lemonia taraxaci ([Denis & Schiffermüller], 1775)	1	1	0	0	0	0	0	0	0	2	IX

Cyclophora (Codonia) suppunctaria (Zeller, 1847)	0	0	1	0	0	0	1	0	0	2	VI-VII
Dasypolia (Dasypolia) templi (Thunberg, 1792)	0	0	0	1	0	0	0	0	1	2	XI
Polyphaenis sericata (Esper, 1787)	0	0	0	0	2	0	0	0	0	2	VII
Lithosia quadra (Linnaeus, 1758)	0	0	1	0	1	0	0	0	0	2	VII
Agriopis aurantiaria (Hübner, [1799])	0	0	0	1	0	0	0	0	0	1	XI
Cleorodes lichenaria (Hufnagel, 1767)	0	0	0	0	0	1	0	0	0	1	VIII
Drymonia dodonaea ([Denis & Schiffermüller], 1775)	0	0	0	1	0	0	0	0	0	1	VII
Alsophila aceraria ([Denis & Schiffermüller], 1775)	0	0	1	0	0	0	0	0	0	1	XI
Biston strataria (Hufnagel, 1767)	0	0	0	0	0	0	1	0	0	1	IV
Endromis versicolora (Linnaeus, 1758)	0	0	0	1	0	0	0	0	0	1	IV
Chloroclystis v-ata (Haworth, 1809)	0	0	1	0	0	0	0	0	0	1	VII
Thyatira batis (Linnaeus, 1758)	0	0	0	0	0	1	0	0	0	1	VI
Watsonalla binaria (Hufnagel, 1767)	0	1	0	0	0	0	0	0	0	1	VIII
Colostygia sericeata (Schwingenschuss, 1926)	0	0	0	0	1	0	0	0	0	1	XI
Dysstroma citrata (Linnaeus, 1761)	0	0	0	0	0	0	1	0	0	1	IX
Earophila badiata ([Denis & Schiffermüller], 1775)	0	0	0	0	1	0	0	0	0	1	IV
Eumannia lepraria (Rebel, 1909)	0	0	0	1	0	0	0	0	0	1	VII
Eupithecia schiefereri Bohatsch, 1893	0	1	0	0	0	0	0	0	0	1	VI
Eupithecia venosata (Fabricius, 1787)	0	0	0	0	1	0	0	0	0	1	VI
Hydrelia flammeolaria (Hufnagel, 1767)	0	0	0	0	1	0	0	0	0	1	VII
Hydriomena sanfilensis (Stauder, 1915)	0	0	0	0	0	0	1	0	0	1	VI
Idaea dilutaria (Hübner, [1799])	0	0	0	0	1	0	0	0	0	1	VII
Lampropteryx suffumata ([Denis & Schiffermüller], 1775)	1	0	0	0	0	0	0	0	0	1	V
Pasiphila rectangulata (Linnaeus, 1758)	0	0	0	0	0	1	0	0	0	1	VI
Scotopteryx chenopodiata (Linnaeus, 1758)	0	0	0	0	1	0	0	0	0	1	VII
Thalera fimbrialis (Scopoli, 1763)	0	0	0	0	0	1	0	0	0	1	VI
Cerura (Cerura) vinula (Linnaeus, 1758)	0	0	0	0	1	0	0	0	0	1	VI
Notodonta dromedarius (Linnaeus, 1758)	0	0	0	1	0	0	0	0	0	1	VII
Dysauxes ancilla (Linnaeus, 1767)	0	0	0	0	1	0	0	0	0	1	VII
Euproctis (Euproctis) chrysorrhoea (Linnaeus, 1758)	0	0	0	0	0	1	0	0	0	1	VII
Ocneria rubea ([Denis & Schiffermüller], 1775)	0	0	0	0	0	0	0	1	0	1	VII
Parascotia fuliginaria (Linnaeus, 1761)	0	0	0	0	1	0	0	0	0	1	VIII
Agrochola (Anchoscelis) litura (Linnaeus, 1758)	0	0	0	0	0	0	0	0	1	1	X
Agrochola (Anchoscelis) pistacinoides (d'Aubuisson, 1867)	0	0	0	0	1	0	0	0	0	1	X

Agrochola (Leptologia) lota (Clerck, 1759)	0	0	0	1	0	0	0	0	0	1	X
Agrotis catalaunensis (Millière, 1873)	0	0	0	0	1	0	0	0	0	1	IX
Antitype chi (Linnaeus, 1758)	0	0	0	0	1	0	0	0	0	1	IX
Apamea sordens (Hufnagel, 1766)	0	0	1	0	0	0	0	0	0	1	VI
Aporophyla (Phylapora) lutulenta ([Denis & Schiffermüller], 1775)	0	0	0	0	0	1	0	0	0	1	X
Chloantha hyperici ([Denis & Schiffermüller], 1775)	0	0	0	0	1	0	0	0	0	1	VI
Dichagyris (Dichagyris) nigrescens (Höfner, 1888)	0	0	0	0	0	1	0	0	0	1	VII
Eupsilia transversa (Hufnagel, 1766)	0	0	0	0	1	0	0	0	0	1	X
Hadena (Hadena) compta ([Denis & Schiffermüller], 1775)	0	0	0	0	0	1	0	0	0	1	VI
Lithophane (Lithophane) ornitopus (Hufnagel, 1766)	0	0	1	0	0	0	0	0	0	1	XI
Subacronicta megacephala ([Denis & Schiffermüller], 1775)	0	0	0	0	0	0	0	0	1	1	VII
Valeria oleagina ([Denis & Schiffermüller], 1775)	0	0	0	1	0	0	0	0	0	1	IV
Xylena (Xylena) exsoleta (Linnaeus, 1758)	0	0	0	0	0	0	1	0	0	1	XI
Metachrostis dardouini (Boisduval, 1840)	0	0	0	0	1	0	0	0	0	1	VI
Lasiocampa (Lasiocampa) quercus (Linnaeus, 1758)	0	0	0	1	0	0	0	0	0	1	VII
Adactylotis contaminaria (Hübner, [1813])	0	0	1	0	0	0	0	0	0	1	V
Cyclophora (Codonia) porata (Linnaeus, 1767)	0	0	0	0	1	0	0	0	0	1	VI
Cyclophora (Cyclophora) ruficiliaria (Herrich-Schäffer, 1855)	0	0	0	0	0	1	0	0	0	1	VI
Idaea ostrinaria (Hübner, [1813])	0	0	0	0	0	0	0	1	0	1	VI
Nychiodes (Nychiodes) ragusaria Millière, 1884	0	1	0	0	0	0	0	0	0	1	VIII
Autophila (Autophila) cfr. *dilucida* (Hübner, [1808])	0	0	0	0	1	0	0	0	0	1	VI
Catocala nymphagoga (Esper, 1787)	0	1	0	0	0	0	0	0	0	1	VI
Eublemma viridula (Guenée, 1841)	0	0	0	0	0	0	1	0	0	1	VI
Hypena lividalis (Hübner, 1796)	0	0	0	0	0	0	1	0	0	1	VII
Lygephila procax (Hübner, [1813])	1	0	0	0	0	0	0	0	0	1	VI
Agrotis trux (Hübner, [1824])	0	0	0	0	0	1	0	0	0	1	X
Bryophila (Bryoleuca) raptricula ([Denis & Schiffermüller], 1775)	0	0	0	0	0	1	0	0	0	1	VIII
Cucullia (Shargacucullia) caninae Rambur, 1833	0	0	0	0	1	0	0	0	0	1	VI
Diachrysia chrysitis (Linnaeus, 1758)	0	1	0	0	0	0	0	0	0	1	VI
Dypterygia scabriuscula (Linnaeus, 1758)	0	0	0	0	0	0	0	0	1	1	V
Episema glaucina (Esper, 1789)	0	0	0	1	0	0	0	0	0	1	IX
Hada plebeja (Linnaeus, 1761)	0	0	0	0	1	0	0	0	0	1	VI
Leucania (Acantholeucania) loreyi (Duponchel, 1827)	0	0	0	1	0	0	0	0	0	1	VI
Mesogona acetosellae ([Denis & Schiffermüller], 1775)	0	0	0	0	1	0	0	0	0	1	IX

Mormo maura (Linnaeus, 1758)	0	0	0	1	0	0	0	0	0	1	VII
Synopsia sociaria (Hübner, [1799])	0	1	0	0	0	0	0	0	0	1	VI
Trigonophora (Trigonophora) flammea (Esper, 1785)	0	0	0	0	1	0	0	0	0	1	X
Drymonia querna ([Denis & Schiffermüller], 1775)	0	0	0	0	1	0	0	0	0	1	VIII
Mythimna (Mythimna) impura (Hübner, [1808])	0	0	0	0	1	0	0	0	0	1	VI
Timandra comae A. Schmidt, 1931	0	0	0	0	0	1	0	0	0	1	VII
Idaea rubraria (Staudinger, 1901)	0	0	0	0	0	1	0	0	0	1	VIII
Idaea subsericeata (Haworth, 1809)	0	1	0	0	0	0	0	0	0	1	VI
Lacanobia (Diataraxia) oleracea (Linnaeus, 1758)	0	0	0	1	0	0	0	0	0	1	VII