

Variability of Lepidoptera communities (moths and butterflies) along an altitudinal gradient of peat bogs from the Třeboň Basin up to the Bohemian Forest (South Bohemia, Central Europe)

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Abstract

All lepidopterological records and data from five South Bohemian peatlands were revised and analysed along an altitudinal gradient. The selected peatlands are represented by four characteristic montane peat bogs of the Bohemian Forest (Šumava National Park) and one Třeboň Basin peatland complex of the Červené Blato bog for comparative study. The most important Lepidoptera seem to be stenotopic bog specialists (tyrphobionts) distributed near the fragmentary southern frontier of boreal zone in Central Europe. The investigated peatlands are isolated habitats (refugia) for many tyrphophile and tyrphoneutral species endangered by human impacts outside the peatlands. The authors investigated 1,040 species of moths and butterflies on five peat bogs along altitudinal gradient from the Třeboň Basin up to montane/subalpine zone of the Bohemian Forest. The Lepidoptera species were represented by 33 relict species of cold-adapted tyrphobionts, 74 tyrrophilous species preferring peatlands and 716 very diverse and often rare or endangered tyrphoneutrals. Other 217 Lepidoptera species are tyrphoxenous, records of which are accidental only and not characteristic for peat bogs. Species of all the ecological categories seem to be variable with respect to peatland altitude. Habitat similarities calculated by Sørensen coefficient provide evidence about significant uniqueness of every peat bog. From the conservation biology point of view, the most valuable are populations of paleorefugial relict tyrphobionts and some local tyrrophiles, but even for many tyrphoneutral species the peatland habitat is their last refugium in man-made landscape.

Key words: moths and butterflies, peatlands, communities, paleorefugia, biogeography, species conservation, Šumava Mountains, Třeboň Basin, Czechia

INTRODUCTION

Biota of boreal peatlands of South Bohemia, above all the Bohemian Forest region (Šumava National Park) and some adjacent localities of the Třeboň Basin, contribute significantly to the central European insect biodiversity (SPITZER 1981, 1994, MIKKOLA & SPITZER 1983, SPITZER & DANKS 2006). The peatlands of South Bohemia are unique “habitat islands” of paleorefugial cold-adapted plants and insects of late Glacial and old periods of Holocene (cf. JANKOVSKÁ 1995, SVOBODOVÁ et al. 2002, SPITZER & DANKS 2006). Several typical lepidopterological records from Bohemian Forest have already been noted in an old faunistic review by SOFFNER (1930). These paleorefugial habitats represent communities of diverse complex boreal/subarctic tyrphobionts (peat bog relict specialists – cf. SPITZER & DANKS 2006), local tyrrophiles preferring peatlands and very diverse tyrphoneutral insect fauna. One of these diverse insect groups are local moths and butterflies (Lepidoptera) which is illustrated by

results of our 50 years of research and its all-European biogeographical comparative study (cf. MIKKOLA & SPITZER 1983). A similar comparative entomological study of peat bog boreal and subarctic communities is known from Fennoscandia only (KROGERUS 1960). A comprehensive synecological review of Lepidoptera (Macrolepidoptera – with characteristics of several tyrphobionts and tyrphophiles) associated with selected endangered peatland localities near the western foothills of the Alps in Württemberg was compiled by MEINEKE (1981, 1982). Outline of Lepidoptera of the Bavarian Forest National Park were compiled by HACKER & MÜLLER (2006) and LOHBERGER et al. (2011), but few peatland ecological data are available.

The aims of our review are: (1) Notes on new discoveries and records of bog specialists of Lepidoptera (mainly “Microlepidoptera”) and other interesting peatland species of the Bohemian Forest. (2) Outlines of all lepidopterological results along vegetation altitudinal gradient of five selected largest peatlands. Calculations of habitat similarity and differences in species composition along the altitudinal gradient. (3) Discussion of entire peatland biodiversity of Lepidoptera. (4) Conclusions for habitat conservation based on unique paleorefugial peatbog habitats and their fauna of Lepidoptera. (5) A revised list of all Lepidoptera associated with five South Bohemian peatlands based on 50-year data from the Bohemian Forest (Šumava Mountains in Czech) and the Třeboň Basin collected and revised by the authors (Appendix 1).

MATERIALS AND METHODS

Study sites

We collected and revised all records of Lepidoptera of five isolated peat bogs located in South Bohemia with special respect to the Šumava National Park (Table 1, Fig. 1). All five sites are characterized by a large area (>100 ha) and variable disturbance by human activities, which in the past has usually been slight. Habitat characteristics including descriptions of vegetation have been published, e.g., by NOVÁK & SPITZER (1972), SPITZER (1981, 1994), SPITZER & JAROŠ (1993, 2001, 2014), SPITZER et al. (2003), JAROŠ & SPITZER (2004, 2013), BUFKOVÁ et al. (2005), BEZDĚK et al. (2006), BASTL et al. (2008), SPITZER & BUFKOVÁ (2013) and several unpublished vegetation reports by ALBRECHT (1979, 1982, 1986). A general entomological and ecological synthesis dealing with biodiversity of boreal peatlands was compiled by SPITZER & DANKS (2006), with bibliography therein.

The Červené Blato bog (Fig. 2) near Šalmanovice in the Třeboň Basin is a basin transient raised peat bog. Central parts of the Červené Blato bog are mostly covered with an endemic community of *Pino rotundatae-Sphagnetum ledetosum* (BŘEZINA 1975 in SPITZER & JAROŠ 2014). The bog is mostly forested by bog pine (*Pinus rotundata*) with scattered *Betula* spp., accompanied by dominant shrubs of *Vaccinium* spp. (mainly *V. uliginosum*) and *Ledum palustre*. The most remarkable vegetation feature is the *L. palustre* shrub community, which is the largest in Central Europe. Margins of the peat bog support mostly various successional stages of pine and spruce forests. The site is a National Nature Reserve of the Třeboňsko Protected Landscape Area and the Třeboň Basin Biosphere Reserve of UNESCO (cf. SPITZER & JAROŠ 1993, 2014).

The Mrtvý Luh bog (Fig. 3) near Volary in the Bohemian Forest is an oligotrophic montane valley peat bog bordered by the confluence of the rivers Studená Vltava and Teplá Vltava. A unique large treeless central part of the bog is covered by scattered shrubby formations of *Pinus ×pseudopumilio* (*P. rotundata* introgressively hybridized with *P. mugo* – cf. BUFKOVÁ et al. 2005, BASTL et al. 2008). *Vaccinium uliginosum*, *Andromeda polifolia*, *Eriophorum vaginatum*, and *Calluna vulgaris* are the most abundant plant species. Marginal

Table 1. Habitat characteristics of five selected peat bogs used for detailed Lepidoptera sampling in South Bohemia (Central Europe).

Site name	Habitat type	Location	Altitude (m a.s.l.)	Area (ha)
Červené Blato	Basin transient peat bog	48°52'N 14°48'E	472	331
Mrtvý Luh	Montane valley bog	48°52'N 13°52'E	740	310
Velká Niva	Montane valley bog	48°55'N 13°49'E	750	120
Chalupská Slat'	Montane peat bog	49°00'N 13°40'E	910	116
Jezerní Slat'	Subalpine peat bog	49°02'N 13°34'E	1070	190

parts of the bog are covered by open pine forest dominated by polycormic shrubs and scattered monocormic trees of *P. ×pseudopumilio*; the ground layer is covered by various species of *Vaccinium*, mainly *V. myrtillus*. Bog margins support mostly natural birch mire forests (NOVÁK & SPITZER 1972, ALBRECHT 1979, SPITZER et al. 2003, BUFKOVÁ et al. 2005, BEZDĚK et al. 2006). The site is the largest peat bog in Bohemia and a part of the core zone of the Šumava National Park and the Šumava Biosphere Reserve.

The Velká Niva bog (Fig. 4) near Volary in the Bohemian Forest is a montane valley peat bog partially forested by waterlogged spruce forest. Central parts of the bog are covered by open pine forest with monocormic bog pine *Pinus rotundata* and scattered *Betula pubescens* and polycormic *P. ×pseudopumilio*. The ground layer is covered mainly by *Vaccinium uligi-*

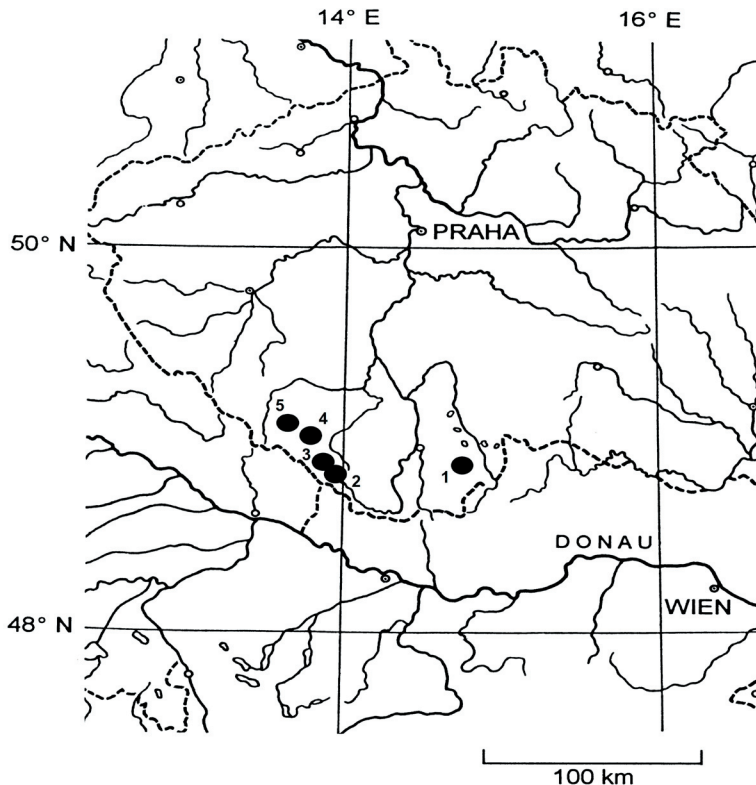


Fig. 1. Location of the study sites: 1 – the Červené Blato bog, 2 – the Mrtvý Luh bog, 3 – the Velká Niva bog, 4 – the Chalupská Slat' bog, 5 – the Jezerní Slat' bog (solid lines represent river network, dashed lines are state borders).



Fig. 2. The Červené Blato bog in the Třeboň Basin (May 2011) – community of *Ledum palustre* and *Vaccinium uliginosum* visible in foreground.



Fig. 3. The Mrtvý Luh bog near Volary in the Bohemian Forest (June 2010) – communities of open dwarf bog pine forest (*P. ×pseudopumilio*) with very common shrubs of *Vaccinium uliginosum*.



Fig. 4. The Velká Niva bog near Lenora in the Bohemian Forest (May 2011) – community of closed monocormic bog pine forest (*Pinus rotundata* complex).

nosum, *V. myrtillus* and *Eriophorum vaginatum* (JAROŠ & SPITZER 2004, 2013 and unpublished notes). The site is a National Nature Reserve of the Šumava Protected Landscape Area and the Šumava Biosphere Reserve.

The Chalupská Slat' bog (Fig. 5) near Borová Lada in the Bohemian Forest is an oligotrophic montane peat bog with a large bog pool in the centre. Central parts of the bog are covered partially by polycormic bog pine *P. ×pseudopumilio* with ground layer covered mainly by *Vaccinium uliginosum* and *V. myrtillus*. The open shrub virgin and successional areas are dominated by *Vaccinium uliginosum*, *V. vitis-idaea*, *V. myrtillus*, *Empetrum nigrum*, and *Eriophorum vaginatum*. Margins of the bog support mostly birch mire forests (ALBRECHT 1982, SPITZER & JAROŠ 2001). The site is a part of the core zone of the Šumava National Park and the Šumava Biosphere Reserve.

The Jezerní Slat' bog (Fig. 6) near Kvilda in the Bohemian Forest is an oligotrophic sub-alpine peat bog covered partially by polycormic bog pine *P. ×pseudopumilio* and dwarf pine *P. mugo*. The Jezerní Slat' bog supports a large population of dwarf shrubs of *Betula nana* accompanied by *Vaccinium uliginosum* and *Eriophorum vaginatum* as dominants. A small area that was disturbed in the past by traditional peat cutting is covered mainly with dwarf-shrubs of *Vaccinium uliginosum* and *Calluna vulgaris*. Margins of the peat bog form mainly waterlogged spruce forest (SPITZER 1981, 1988, JAROŠ & SPITZER, unpubl. data). The site is a part of the core zone of the Šumava National Park and the Šumava Biosphere Reserve.

Surveys

The Lepidoptera were studied for a period of 50 years (1964–2013). Sampling and surveying of the Lepidoptera were carried out nearly every year in all five bog sites, but each site was under more intensive investigation for about ten years at different times. The main methods of sampling adults were UV light trapping, including also a modified Minnesota light trap or Pennsylvanian light trap (125 W or 8 W UV lamps) placed about 2 m above the ground or directly on the ground (cf. e.g., SOUTHWOOD 1978). Diurnally active species were sampled by netting. Larvae were collected from food plants individually or by sweep-netting and reared in the laboratory. All Lepidoptera species and their parasitoids (mostly Braconidae) were identified and the specimens were counted (cf. LOZAN et al. 2012). Moths and butterflies, which were identified on site, were released after determination. For taxonomy and nomenclature, modified versions of catalogues by NOVÁK et al. (1997) and LAŠTŮVKA & LIŠKA (2011) were used.

We used four basic classical ecological categories of peat bog insect species described by PEUS (1928, 1932) and also recently by MIKKOLA & SPITZER (1983) and SPITZER & DANKS (2006): (a) tyrphobiontic species – bog specialists (occur only in bogs, stenotopic cold-adapted species obligatorily associated with peat bogs under alpine and subarctic timber line); (b) tyrphophilous species (characteristic of bogs but not confined to them, species more abundant in bogs than in adjacent habitats, some mountain species are tyrphophilous in lower elevations – e.g. Třeboň Basin); (c) tyrphoneutral species (resident in bogs but also common in other habitats, eurytopic species, widely distributed and usually not particularly abundant in peatlands); and (d) tyrphoxenous species (non-resident vagrants or erratics that cannot live permanently in bogs, often migratory species).

In order to measure the extent to which two sites have species in common, we used Sørensen similarity index (cf. SOUTHWOOD 1978, SOUTHWOOD & HENDERSON 2000 – see Tabs. 3–5). This index is very useful for evidently relict isolated insect populations even at a low but permanent abundance in old habitat islands (e.g., populations of tyrphobionts of cold peat bogs, usually early Holocene and late Glacial ancient relicts “in situ” – cf. SVOBODOVÁ et al. 2002).



Fig. 5. The Chalupská Slat' bog near Borová Lada in the Bohemian Forest (September 2011) – wet margins of central lake with characteristic vegetation complex of *Oxycoccus palustris*.



Fig. 6. The Jezerní Slat' bog near Kvilda in the Bohemian Forest (June 2014) – open subalpine bog pine communities (*Pinus mugo* and *P. x pseudopumilio* complex) and common dwarf birch *Betula nana*.

RESULTS AND DISCUSSION

During our 50-year study, 1,040 species and 84,859 individuals of Lepidoptera were recorded from the five peat bog habitats: 33 species of which are tyrphobiontic, 74 species tyrrophilous, 716 species tyrphoneutral and 217 tyrphoxenous (Table 2 and Appendix 1).

A similar entomological peatland analysis has been published only in Fennoscandia by KROGERUS (1960) and in a comparative biogeography review of peat bog Lepidoptera by MIK-KOLA & SPITZER (1983). The modified characteristics of tyrphobiontic species originally proposed by PEUS (1928, 1932) are given also by SPITZER & DANKS (2006). In general, Lepidoptera species richness of five investigated peat bog sites increases with decreasing altitude (cf. Tables 1, 2). Hence, the highest species richness (749 species) was found at the Červené Blato bog (472 m a.s.l., 331 ha), 569 Lepidoptera species were found at the Mrtvý Luh bog (740 m a.s.l., 310 ha), 521 species at the Velká Niva bog (750 m a.s.l., 120 ha), 377 species at the Chalupská Slat' bog (910 m a.s.l., 116 ha), and 460 species at the Jezerní Slat' bog (1070 m a.s.l., 190 ha). Lowest Lepidoptera species richness found in the Chalupská Slat' bog may be influenced by the smallest area of the bog, which is also reduced by the presence of a large central bog pool and perhaps human exploitation in the past. Observed species richness of the Chalupská Slat' bog may be partially influenced by the fact that this site was surveyed less intensively in comparison with other sites (cf. SPITZER & JAROŠ 2001).

We found that the species composition of tyrphobiontic Lepidoptera (bog specialists), each of the five isolated investigated sites is highly specific – Sørensen similarity index varies from 48.7% to 88.4% (cf. Table 3). The number of tyrphobiontic species found at each site varies from 17 to 24 and is not correlated with altitude. The Mrtvý Luh bog, which is unique in its large size, isolation and virgin conditions and the largest treeless central part, which is covered mostly by the characteristic food plant *Vaccinium uliginosum*, hosts 24 tyrphobiontic species (cf. NOVÁK & SPITZER 1972, SPITZER et al. 2003, BEZDĚK et al. 2006). In contrast, the nearest Velká Niva bog, which is mostly forested, hosts only 17 tyrphobions (Table 2), but includes a very unusual discovery of the rare subarctic *Apotomis fraterculana* (Fig. 7) – cf. JAROŠ & SPITZER (2004) and SPITZER & JAROŠ (2010). Of 33 recorded tyrphobiontic species only seven (21.2%) were found on all five peat bog sites: *Glyphipteryx hawortha-*

Table 2. Species richness of Lepidoptera sampled from five selected peat bogs in South Bohemia (Central Europe) arranged according to their peat bog association.

Sites	Tyrphobionts	Tyrrophiles	Tyrphoneutrals	Tyrphoxens	Total
Červené Blato	18	65	548	118	749
Mrtvý Luh	24	53	422	70	569
Velká Niva	17	46	408	50	521
Chalupská Slat'	19	45	277	36	377
Jezerní Slat'	19	48	340	53	460
All sites	33	74	716	217	1040

Table 3. Sørensen similarity index (%) – tyrphobionts.

Sites	Červené Blato	Mrtvý Luh	Velká Niva	Chalupská Slat'	Jezerní Slat'
Červené Blato	×				
Mrtvý Luh	52.4	×			
Velká Niva	51.4	78.1	×		
Chalupská Slat'	54.1	88.4	66.7	×	
Jezerní Slat'	48.7	79.1	66.7	84.2	×



Fig. 7. *Apotomis fraterculana*, the Velká Niva bog, 28 May 2003.



Fig. 8. *Pediasia truncatella*, the Chalupská Slat' bog, 10 June 1997.



Fig. 9. *Coranarta cordigera*, the Jezerní Slat' bog, larva 14 June 2007, ex larva 2008.



Fig. 10. *Coenophila subrosea* ssp. *malickyi*, the Mrtvý Luh bog, 30 July 1992.

na, *Athrips pruinosellus*, *Colias palaeno*, *Vacciniina optilete*, *Acrionicta menyanthidis*, *Lithophane lamda*, and *Amphipoea lucens*. Species composition of tyrphobionts of the Červené Blato bog located in the Třeboň Basin is the most different in comparison to other sites in the Bohemian Forest (Sørensen similarity index 48.7–54.1%). This is mainly caused by the presence of the specific food plant, *Ledum palustre*, that hosts six of seven tyrphobiontic species which do not occur on the other four sites: *Stigmella lediella*, *Lyonetia ledi*, *Coleophora ledi*, *Olethreutes ledianus*, *Eupithecia gelidata*, and *Chloroclysta infuscata* (cf. SPITZER & JAROŠ 1993, 2014).

All four sites in the Bohemian Forest host 26 tyrphobiontic Lepidoptera species, of which 15 species are absent from the Červené Blato bog in the Třeboň Basin. Sørensen similarity index between sites situated in the Bohemian Forest, counted for tyrphobionts, varies from 66.7% to 88.4%. The most similar species composition was found between the Mrtvý Luh bog and the Chalupská Slat' bog (Sørensen similarity index 88.4%). All 19 tyrphobiontic species recorded at the Chalupská Slat' bog occur at the Mrtvý Luh bog, which hosts an additional five tyrphobionts. The most different species composition between sites in the Bohemian Forest was found between the Velká Niva bog and the Chalupská Slat' bog (Sørensen similarity index 66.7%) and the Velká Niva bog and the Jezerní Slat' bog (Sørensen similarity index 66.7%). Species associated with open treeless parts of peat bogs do not occur on the Velká Niva bog. Four tyrphobiontic species, associated namely with open peat bogs, were recorded only at the Mrtvý Luh bog, the Chalupská Slat' bog, and the Jezerní Slat' bog: *Chionodes nebulosellus*, *Crambus alienellus*, *Pediasia truncatella* (Fig. 8), and *Boloria aquilonaris*. Two additional open peat bog tyrphobiontic species were recorded at these three

Table 4. Sørensen similarity index (%) – tyrphophiles.

Sites	Červené Blato	Mrtvý Luh	Velká Niva	Chalupská Slat'	Jezerní Slat'
Červené Blato	×				
Mrtvý Luh	81.4	×			
Velká Niva	79.3	84.9	×		
Chalupská Slat'	76.4	87.8	79.1	×	
Jezerní Slat'	77.9	85.2	83.0	83.9	×

Table 5. Sørensen similarity index (%) – tyrphoneutrals.

Sites	Červené Blato	Mrtvý Luh	Velká Niva	Chalupská Slat'	Jezerní Slat'
Červené Blato	×				
Mrtvý Luh	66.4	×			
Velká Niva	69.7	66.5	×		
Chalupská Slat'	55.3	65.8	60.2	×	
Jezerní Slat'	55.2	67.5	60.7	64.2	×

sites and also at the Červené Blato bog: *Chionodes viduellus* and *Coranarta cordigera* (Fig. 9).

One of the most interesting relict species of the Bohemian Forest is a local subspecies of the boreal noctuid *Coenophila subrosea* ssp. *malickyi* (Fig. 10) (see SPITZER & JAROŠ 2010) which is associated only with the investigated montane valley peat bogs of Mrtvý Luh and Velká Niva. Fluctuations of this population complex of *C. subrosea* is very low, which seems to be very characteristic for some isolated relict bog insects (cf. TILLOTSON & SPITZER 1998 – Britain, DAPKUS 2006 – Lithuania, JAROŠ & SPITZER, unpubl. data – Mrtvý Luh bog, the Bohemian Forest). The single specimen of the boreo-alpine species *Xestia alpicola* was recorded in 1989 at the Mrtvý Luh bog (SPITZER & JAROŠ 1990). The boreo-alpine species *Xestia rhaetica* was recorded for the first time in 1974 at the Jezerní Slat' bog and later occasionally from other subalpine peat bogs in the Bohemian Forest (SPITZER et al. 1983, JAROŠ & SPITZER 1995). Unique and very isolated subarctic-boreal species in Central Europe are *Pediasia truncatella* (recorded at all open peat bogs in the Bohemian Forest – cf. SPITZER 1988) and *Apotomis fraterculana* (recorded at the Velká Niva bog in 2003 and the Jezerní Slat' bog in 2004 – cf. JAROŠ & SPITZER 2004). Nearest known occurrence of these species are from boreal and subarctic Europe. Other isolated and relict boreal species associated with the Červené Blato bog (Třeboň Basin) are *Eupithecia gelidata* and *Chloroclysta infuscata* (cf. SPITZER & JAROŠ 2014), of which the nearest known populations are in northern or north-eastern Central Europe.

Three tyrphobiontic species, which are still very abundant on the peat bogs in the Bohemian Forest, have not been safely recorded on the Červené Blato bog since 1991. Population density of these species on the Červené Blato bog is probably very small, and they might even be extinct there. These are *Celaena haworthii* and *Coranarta cordigera*, and the third species, *Colias paleano*, is known to have been extinct since 1991. These conclusions are also supported by our observation of other peat bog localities in the Třeboň Basin. However, *Procllossiana eunomia*, which from the mid-1960s was recorded only at the Mrtvý Luh bog and the Velká Niva bog, has expanded its range and has been recorded since the beginning of 21st century at the Chalupská Slat' bog and the Jezerní Slat' bog. This species has recently been associated with acid wet meadows (mire meadows) outside peat bogs, and it is apparently not a tyrphobiontic species *sensu stricto*. Even so, most European localities of *P. eunomia* are usually adjacent to the peatbogs.

The species composition of tyrphophiles, at each of the five sites investigated, is more like that of tyrphobionts (Sørensen similarity index, counted for tyrphophiles, varies from 76.4% to 87.8% – cf. Table 4). The most similar species composition was found between the Mrtvý Luh bog and the Chalupská Slat' bog (Sørensen similarity index 87.8%). The most different species composition was found between the Červené Blato bog and the Chalupská Slat' bog (Sørensen similarity index 76.4%). Of 74 recorded tyrphophilous species 33 (44.6%) were found at all five sites. Tyrphophilous species very closely associated on the bogs, which are not recorded outside bogs in Bohemia or are extremely rare outside them are e.g.: *Acleris lipsiana* and *A. maccana* (recorded at all five sites), *Coenonympha tullia* (recorded at Červené Blato bog, Mrtvý Luh bog, Chalupská Slat' bog, and Jezerní Slat' bog), *Protolampra sobrina* (Červené Blato bog, Mrtvý Luh bog and Velká Niva bog), *Phyllodesma ilicifolium* (Červené Blato bog) and *Olethreutes arbutellus* (Chalupská Slat' bog). All these species are not uncommon on all sites with the exception of *C. tullia* on the Červené Blato bog where it has not been recorded since 1972. Two rare, cold-adapted boreo-montane species, associated only with marginal forested parts of the Mrtvý Luh bog and adjacent cold montane habitats were found: *Exaeretia ciniflonella* and *Choreutis diana*, both of which feed on *Betula* spp. The single specimen of *C. diana* was recorded in 1968 on the Mrtvý Luh bog, the only known locality for this species in Czechia (ELSNER et al. 1981). Only two specimens of the very rare boreo-montane noctuid *Xestia sincera* were recorded from the Jezerní Slat' bog in 1976 and 1977 – this bog is the only known locality for this species which is associated with waterlogged spruce forest in Czechia (cf. ELSNER & SPITZER 1975). There are some xerothermophilous species which are abundant on the Červené Blato bog, which are also locally distributed in some warm and dry heathlands and grasslands outside bogs: *Idaea sylvestraria*, *Perconia strigillaria*, *Coscinia cribraria*, etc. (cf. Appendix 1). *Idaea sylvestraria* is found in two ecotypes, one xerothermophilous, the other hygrophilous (HAUSMANN 2004). Another heathland species, *Acleris hyemana*, was discovered in 2000–2002 on the Mrtvý Luh bog. In Czechia only very old records are known (cf. LAŠTŮVKA & LIŠKA 2011).

Very high species richness of tyrphoneutral Lepidoptera was found at five investigated peat bog sites (716 species – cf. Table 2). Tyrphoneutral Lepidoptera represent the most diverse category of all moth and butterfly species associated with the peat bogs which were investigated. Species composition of tyrphoneutrals is similar to their diversity in the surrounding habitats and their altitudinal gradient of average landscape outside peatlands is also very similar. Sørensen similarity index, counted for tyrphoneutrals, varies from 55.2% to 69.7% (cf. Table 5). The most similar species composition was found between the Červené Blato bog and the Velká Niva bog (Sørensen similarity index 69.7%); this similarity is mainly due to the fact that these sites have in common many open and closed forest species. The most different species composition was found between the Červené Blato bog and the Jezerní Slat' bog, the sites with lowest and highest elevation (Sørensen similarity index 55.2%). *Levipalpus hepatariellus* is recorded as a heathland species from marginal parts of the Jezerní Slat' bog which is the only known locality for it in Czechia. *Epinotia crenana* is associated with cold acid meadows in the environs of the Mrtvý Luh bog (cf. ELSNER et al. 1981). It seems likely that these two cold-adapted montane species of the Bohemian Forest are very close to being tyrphophiles, but because of the limited number of records/localities and few biological data, the authors have included these species provisionally into the category of tyrphoneutrals (see ELSNER et al. 1981).

Altogether 217 tyrphoxenous species of Lepidoptera were recorded from five investigated sites. The majority reached the peat bogs from surrounding habitats or were accidentally introduced from distant localities. Eleven characteristic migratory species of tyrphoxenous moths and butterflies were recorded. Adults of these species were sometimes observed by

the authors in open parts of the bogs feeding at *Calluna vulgaris* and other flowering plants (e.g., *Autographa gamma*, *Agrotis ipsilon*, *Phlogophora meticulosa*, and *Vanessa cardui*). Conservation value of such migratory species is very low.

CONCLUSIONS

Species composition of Lepidoptera communities associated with the five largest South Bohemian peatlands, one in the Třeboň Basin and four montane peat bogs in the Bohemian Forest, was investigated. The altitudinal gradient of species composition was found to be significant not only in tyrphoneutral and tyrphophilous taxa, but to some degree in paleoregional relicts of tyrphobionts, under the joint influence of altitudinal gradient and isolation of bog habitat islands. Each of the five peat bogs is unique in species composition (cf. Appendix 1). The biogeographical value of each of the localities is high and is of high priority for central European biodiversity conservation. A complete list of all moths and butterflies associated with the four largest habitat islands of the Bohemian Forest peatlands is given for the first time (see Appendix 1). Altogether, in the five investigated sites a total of 1,040 species has been recorded, 33 of which are tyrphobionts and 74 tyrphophiles. Evidently the investigated peatlands form a “habitat island archipelago” for cold-adapted species of moths and butterflies near the southern frontier of the boreal zone. Peatland refugial character is also important for some rare and local tyrphoneutral species (see complete list of species – Appendix 1) which are endangered in surrounding traditional man-made landscape. Each component of the unique peat bogs of the Bohemian Forest and South Bohemia is important for local habitat conservation and bioindication of ecological change in central Europe.

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Appendix 1. List of Lepidoptera species, their abundance and localities: CB – Červené Blato bog, ML – Mrtvý Luh bog, VN – Velká Niva bog, CS – Chalupská Slat' bog, JS – Jezerní Slat' bog.

Species	Family	CB	ML	VN	CS	JS
Tyrphobionts						
<i>Stigmella lediella</i> (Schleich, 1867)	Nepticulidae	29	0	0	0	0
<i>Glyphipterix haworthana</i> (Stephens, 1834)	Glyphipterigidae	10	1	3	45	7
<i>Lyonetia ledi</i> Wocke, 1859	Lyonetiidae	76	0	0	0	0
<i>Elachista kilmunella</i> Stainton, 1849	Elachistidae	0	1	7	14	4
<i>Coleophora ledi</i> Stainton, 1860	Coleophoridae	35	0	0	0	0
<i>Coleophora uliginosella</i> Glitz, 1872	Coleophoridae	0	2	6	0	0
<i>Athrips pruinosellus</i> (Lienig & Zeller, 1846)	Gelechiidae	222	505	2	42	23
<i>Chionodes lugubrellus</i> (Fabricius, 1794)	Gelechiidae	21	0	0	0	0
<i>Chionodes nebulosellus</i> (Heinemann, 1870)	Gelechiidae	0	5	0	1	53
<i>Chionodes viduellus</i> (Fabricius, 1794)	Gelechiidae	6	28	0	1	5
<i>Apotomis fraterculana</i> Krogerus 1946	Tortricidae	0	0	2	0	1
<i>Epinotia gimmerthaliana</i> (Lienig & Zeller, 1846)	Tortricidae	0	1	27	0	6
<i>Olethreutes ledianus</i> (Linnaeus, 1758)	Tortricidae	154	0	0	0	0
<i>Olethreutes turfosanus</i> (Herrich-Schäffer, 1851)	Tortricidae	0	102	0	3	0
<i>Pammene luedersiana</i> (Sorhagen, 1885)	Tortricidae	0	90	5	22	0
<i>Crambus alienellus</i> (Germar & Kaulfuss, 1817)	Crambidae	0	62	0	21	39
<i>Pediasia truncatella</i> (Zetterstedt, 1839)	Crambidae	0	35	0	14	36
<i>Colias palaeno</i> (Linnaeus, 1761)	Pieridae	21	265	70	74	43
<i>Boloria aquilonaris</i> (Stichel, 1908)	Nymphalidae	0	15	0	1	10
<i>Proclossiana eunomia</i> (Esper, 1799)	Nymphalidae	0	70	5	3	2
<i>Vacciniina optilete</i> (Knoch, 1781)	Lycaenidae	20	42	19	20	9
<i>Arichanna melanaria</i> (Linnaeus, 1758)	Geometridae	1643	27	139	1	0
<i>Carsia sororiata</i> (Hübner, 1813)	Geometridae	0	285	19	78	214
<i>Chloroclysta infusca</i> (Tengström, 1869)	Geometridae	19	0	0	0	0
<i>Eupithecia gelidata</i> Möschler, 1860	Geometridae	28	0	0	0	0
<i>Acronicta menyanthidis</i> (Esper, 1789)	Noctuidae	127	118	187	13	52
<i>Amphipoea lucens</i> (Freyer, 1845)	Noctuidae	16	54	25	1	1
<i>Celaena haworthii</i> (Curtis, 1829)	Noctuidae	1	251	17	0	0
<i>Coenophila subrosea</i> (Stephens, 1829)	Noctuidae	0	610	147	0	0
<i>Coranarta cordigera</i> (Thunberg, 1788)	Noctuidae	3	58	0	12	21
<i>Lithophane lamda</i> (Fabricius, 1787)	Noctuidae	227	72	21	2	30
<i>Xestia alpicola</i> (Zetterstedt, 1839)	Noctuidae	0	1	0	0	0
<i>Xestia rhaetica</i> (Staudinger, 1781)	Noctuidae	0	0	0	0	2
Tyrphophiles						
<i>Micropterix aureatella</i> (Scopoli, 1763)	Micropterigidae	8	4	20	26	2
<i>Stigmella myrtillella</i> (Stainton, 1857)	Nepticulidae	2	0	0	0	1
<i>Sterrhopterix fusca</i> (Haworth, 1809)	Psychidae	35	0	0	0	0
<i>Sterrhopterix standfussi</i> (Wocke, 1851)	Psychidae	0	23	16	7	16
<i>Exaeretia ciniflonella</i> (Lienig & Zeller, 1846)	Oecophoridae	0	6	0	0	0
<i>Pleurota bicostella</i> (Clerck, 1759)	Oecophoridae	93	13	17	120	11
<i>Bisalachista albidella</i> (Nylander, 1848)	Elachistidae	29	3	24	27	3

Appendix 1. Continued.

Species	Family	CB	ML	VN	CS	JS
<i>Biselachista serricornis</i> (Stainton, 1854)	Elachistidae	0	0	1	0	0
<i>Coleophora glitzella</i> Hofmann, 1869	Coleophoridae	8	2	2	2	4
<i>Coleophora idaeella</i> Hofmann, 1869	Coleophoridae	2	7	2	2	3
<i>Coleophora vacciniella</i> Herrich Schäffer, 1861	Coleophoridae	8	3	2	8	3
<i>Aristotelia ericinella</i> (Zeller, 1839)	Gelechiidae	52	101	0	31	0
<i>Bryotropha boreella</i> (Douglas, 1851)	Gelechiidae	4	1	0	5	0
<i>Neofaculta ericetella</i> (Geyer, 1832)	Gelechiidae	113	56	1	108	2
<i>Neofaculta infernella</i> (Herrich-Schäffer, 1854)	Gelechiidae	892	17	156	2	72
<i>Prolita sexpunctella</i> (Fabricius, 1794)	Gelechiidae	16	131	1	8	11
<i>Rhagades pruni</i> (Denis & Schiffermüller, 1775)	Zygaenidae	20	0	0	0	0
<i>Choreutis diana</i> (Hübner, 1822)	Choreutidae	0	1	0	0	0
<i>Acleris hyemana</i> (Haworth, 1811)	Tortricidae	0	6	0	0	0
<i>Acleris lipsiana</i> (Denis & Schiffermüller, 1775)	Tortricidae	32	75	1	7	14
<i>Acleris maccana</i> (Treitschke, 1835)	Tortricidae	38	91	7	52	10
<i>Ancylis myrtillana</i> (Treitschke, 1830)	Tortricidae	125	13	65	278	42
<i>Ancylis unguicella</i> (Linnaeus, 1758)	Tortricidae	95	1	0	52	4
<i>Apotomis sauciana</i> (Frölich, 1828)	Tortricidae	16	6	10	3	1
<i>Bactra lancealana</i> (Hübner, 1799)	Tortricidae	35	2	75	188	90
<i>Blastesthia mughiana</i> (Zeller, 1868)	Tortricidae	0	1	0	1	6
<i>Cydia cognatana</i> (Barrett, 1874)	Tortricidae	2	0	0	1	0
<i>Lozotaenia forsterana</i> (Fabricius, 1781)	Tortricidae	154	0	7	0	3
<i>Olethreutes arbutellus</i> (Linnaeus, 1758)	Tortricidae	0	0	0	303	0
<i>Olethreutes bipunctanus</i> (Fabricius, 1794)	Tortricidae	111	207	241	268	64
<i>Olethreutes micanus</i> (Denis & Schiffermüller, 1775)	Tortricidae	8	34	26	11	3
<i>Olethreutes mygindianus</i> (Denis & Schiffermüller, 1775)	Tortricidae	115	2	1	184	20
<i>Olethreutes palustranus</i> (Lienig & Zeller, 1846)	Tortricidae	9	3	4	75	3
<i>Olethreutes schulzianus</i> (Fabricius, 1776)	Tortricidae	3	0	1	0	0
<i>Rhopobota myrtillana</i> (Humphries & Westwood, 1845)	Tortricidae	7	1	3	0	1
<i>Rhopobota ustomaculana</i> (Curtis, 1831)	Tortricidae	13	1	7	63	4
<i>Buckleria paludum</i> (Zeller, 1839)	Pterophoridae	2	0	0	0	0
<i>Catoptria margaritella</i> (Denis & Schiffermüller, 1775)	Crambidae	176	154	167	49	105
<i>Udea hamalis</i> (Thunberg, 1788)	Crambidae	3	0	3	0	0
<i>Udea inquinatalis</i> (Lienig & Zeller, 1846)	Crambidae	0	0	0	0	4
<i>Cosmotriche lobulina</i> (Denis & Schiffermüller, 1775)	Lasiocampidae	31	1	3	0	4
<i>Lasiocampa quercus</i> (Linnaeus, 1758)	Lasiocampidae	18	10	1	7	8
<i>Phyllodesma ilicifolium</i> (Linnaeus, 1758)	Lasiocampidae	15	0	0	0	0
<i>Saturnia pavonia</i> (Linnaeus, 1758)	Saturniidae	16	16	0	50	18
<i>Coenonympha tullia</i> (Müller, 1764)	Satyridae	2	212	2	1	0
<i>Callophrys rubi</i> (Linnaeus, 1758)	Lycanidae	219	126	63	10	1
<i>Angerona prunaria</i> (Linnaeus, 1758)	Geometridae	273	0	0	0	0
<i>Elophos dilucidarius</i> (Denis & Schiffermüller, 1775)	Geometridae	1	356	7	25	17
<i>Ematurga atomaria</i> (Linnaeus, 1758)	Geometridae	118	266	109	599	180

Appendix 1. Continued.

Species	Family	CB	ML	VN	CS	JS
<i>Eulithis testata</i> (Linnaeus, 1761)	Geometridae	8	349	56	23	43
<i>Eupithecia nanata</i> (Hübner, 1813)	Geometridae	26	12	0	14	3
<i>Idaea muricata</i> (Hufnagel, 1767)	Geometridae	25	0	0	0	0
<i>Idaea sylvestraria</i> (Hübner, 1799)	Geometridae	19	0	0	0	0
<i>Jodis putata</i> (Linnaeus, 1758)	Geometridae	254	3	46	0	4
<i>Pachynemina hippocastanaria</i> (Hübner, 1799)	Geometridae	44	2	0	0	0
<i>Perconia strigillaria</i> (Hübner, 1787)	Geometridae	31	0	0	0	0
<i>Rheumaptera subhastata</i> (Nolcken, 1870)	Geometridae	7	0	0	0	13
<i>Rhinoprora debiliata</i> (Hübner, 1817)	Geometridae	325	4	27	3	0
<i>Semiothisa brunneata</i> (Thunberg, 1784)	Geometridae	1284	53	137	43	100
<i>Coscinia cribraria</i> (Linnaeus, 1758)	Arctiidae	53	0	0	0	0
<i>Anarta myrtilii</i> (Linnaeus, 1761)	Noctuidae	15	26	0	6	86
<i>Autographa buraetica</i> (Staudinger, 1892)	Noctuidae	5	0	0	0	0
<i>Eurois occultus</i> (Linnaeus, 1758)	Noctuidae	39	74	141	6	189
<i>Hypena crassalis</i> (Fabricius, 1787)	Noctuidae	238	3	68	1	21
<i>Hypenodes humidalis</i> Doubleday, 1850	Noctuidae	395	12	404	0	0
<i>Hyppa rectilinea</i> (Esper, 1788)	Noctuidae	15	20	18	10	42
<i>Lithomoia solidaginis</i> (Hübner, 1803)	Noctuidae	189	103	42	6	36
<i>Lycophotia porphyrea</i> (Denis & Schiffermüller, 1775)	Noctuidae	158	1744	67	51	236
<i>Nola aerugula</i> (Hübner, 1793)	Noctuidae	1379	0	0	0	0
<i>Orthosia opima</i> (Hübner, 1809)	Noctuidae	31	39	2	0	2
<i>Papestra biren</i> (Goeze, 1781)	Noctuidae	6	36	3	6	452
<i>Protolampra sobrina</i> (Duponchel, 1843)	Noctuidae	54	308	1	0	0
<i>Syngrapha interrogationis</i> (Linnaeus, 1758)	Noctuidae	25	18	18	10	60
<i>Xestia sincera</i> (Herrich-Schäffer, 1851)	Noctuidae	0	0	0	0	2
Tyrphoneutrals						
<i>Eriocrania semipurpurella</i> (Stephens, 1835)	Eriocraniidae	0	0	3	0	0
<i>Hepialus fusconebulosus</i> (De Geer, 1778)	Hepialidae	0	0	0	0	2
<i>Hepialus hecta</i> (Linnaeus, 1758)	Hepialidae	13	6	9	0	33
<i>Hepialus humuli</i> (Linnaeus, 1758)	Hepialidae	0	25	1	1	8
<i>Hepialus sylvinus</i> (Linnaeus, 1761)	Hepialidae	1	1	0	0	0
<i>Ectoedemia weaveri</i> (Stainton, 1855)	Nepticulidae	0	4	0	0	1
<i>Adela degeerella</i> (Linnaeus, 1758)	Adelidae	1	2	0	2	0
<i>Nematopogon metaxellus</i> (Hübner, 1813)	Adelidae	0	0	2	0	0
<i>Nematopogon robertellus</i> (Clerck, 1759)	Adelidae	1	3	0	0	1
<i>Nematopogon schwarziellus</i> Zeller, 1839	Adelidae	8	0	2	1	5
<i>Nematopogon swammerdamellus</i> (Linnaeus, 1758)	Adelidae	51	0	1	0	1
<i>Incurvaria mascullella</i> (Denis & Schiffermüller, 1775)	Incurvariidae	1	0	0	0	0
<i>Incurvaria oehlmanniella</i> (Hübner, 1796)	Incurvariidae	2	0	5	3	2
<i>Incurvaria pectinea</i> Haworth, 1828	Incurvariidae	1	0	0	0	0
<i>Incurvaria vetulella</i> (Zetterstedt, 1839)	Incurvariidae	0	0	0	0	2
<i>Lampronia corticella</i> (Linnaeus, 1758)	Incurvariidae	0	1	0	0	0

Appendix 1. Continued.

Species	Family	CB	ML	VN	CS	JS
<i>Canephora hirsuta</i> (Poda, 1761)	Psychidae	1	1	0	0	0
<i>Epichnopterix plumella</i> (Denis & Schiffermüller, 1775)	Psychidae	4	5	10	7	52
<i>Megalophanes viciella</i> (Denis & Schiffermüller, 1775)	Psychidae	0	1	0	0	0
<i>Phalacropterix graslinella</i> (Boisduval, 1852)	Psychidae	0	7	0	0	0
<i>Agnathosia mendicella</i> (Denis & Schiffermüller, 1775)	Tineidae	0	0	1	1	0
<i>Archinemapogon yildizae</i> Kocak, 1981	Tineidae	5	0	0	1	1
<i>Haplotinea insectella</i> (Fabricius, 1794)	Tineidae	1	0	0	0	0
<i>Infurcitinea ignicomella</i> (Heydenreich, 1851)	Tineidae	7	1	0	0	0
<i>Monopis laevigella</i> (Denis & Schiffermüller, 1775)	Tineidae	4	2	4	1	3
<i>Monopis obiella</i> (Denis & Schiffermüller, 1775)	Tineidae	1	0	0	0	0
<i>Monopis weaverella</i> (Scott, 1858)	Tineidae	0	3	0	1	0
<i>Nemapogon cloacellus</i> (Haworth, 1828)	Tineidae	20	1	2	2	1
<i>Niditinea fuscella</i> (Linnaeus, 1758)	Tineidae	1	0	0	0	0
<i>Niditinea striolella</i> (Matsumura, 1931)	Tineidae	10	0	11	0	0
<i>Scardia tessulatella</i> (Lienig & Zeller, 1846)	Tineidae	3	1	0	3	0
<i>Tinea trinotella</i> Thunberg, 1794	Tineidae	9	0	5	0	0
<i>Caloptilia betulicola</i> (Hering, 1928)	Gracillariidae	10	2	3	2	0
<i>Caloptilia stigmatella</i> (Fabricius, 1781)	Gracillariidae	18	3	4	0	0
<i>Calybites phasianipennellus</i> (Hübner, 1813)	Gracillariidae	11	0	2	0	0
<i>Parornix betulae</i> (Stainton, 1854)	Gracillariidae	60	0	24	0	6
<i>Phyllocnistis saligna</i> (Zeller, 1839)	Gracillariidae	6	0	0	0	0
<i>Phyllonorycter cavellus</i> (Zeller, 1846)	Gracillariidae	2	0	6	0	0
<i>Phyllonorycter connexellus</i> (Zeller, 1846)	Gracillariidae	0	0	1	0	0
<i>Phyllonorycter froelichiellus</i> (Zeller, 1839)	Gracillariidae	0	0	3	0	0
<i>Phyllonorycter strigulatellus</i> (Lienig & Zeller, 1846)	Gracillariidae	1	0	6	0	0
<i>Phyllonorycter ulmifoliellus</i> (Hübner, 1817)	Gracillariidae	9	0	0	0	0
<i>Bucculatrix demaryella</i> (Duponchel, 1840)	Bucculatricidae	2	0	13	0	0
<i>Bucculatrix frangutella</i> (Goeze, 1783)	Bucculatricidae	9	0	0	0	0
<i>Argyresthia bergiella</i> (Ratzeburg, 1840)	Yponomeutidae	0	1	11	0	7
<i>Argyresthia brockeella</i> (Hübner, 1813)	Yponomeutidae	68	3	40	20	3
<i>Argyresthia conjugella</i> Zeller, 1839	Yponomeutidae	7	1	17	10	24
<i>Argyresthia glabratella</i> (Zeller, 1847)	Yponomeutidae	9	0	0	0	0
<i>Argyresthia goedartella</i> (Linnaeus, 1758)	Yponomeutidae	34	6	34	1	0
<i>Argyresthia pygmaeella</i> (Denis & Schiffermüller, 1775)	Yponomeutidae	1	0	2	0	0
<i>Argyresthia retinella</i> Zeller, 1839	Yponomeutidae	40	0	0	0	0
<i>Argyresthia svenssoni</i> Bengtsson & Johansson, 2012	Yponomeutidae	0	0	0	0	3
<i>Cedestis gysseleliella</i> Zeller, 1839	Yponomeutidae	16	13	17	0	1
<i>Cedestis subfasciella</i> (Stephens, 1834)	Yponomeutidae	4	1	1	0	0
<i>Ocerostoma friesei</i> Svensson, 1966	Yponomeutidae	82	1	1	2	0
<i>Ocerostoma piniariellum</i> Zeller, 1847	Yponomeutidae	12	0	0	0	0
<i>Paraswammerdamia lutarea</i> (Haworth, 1828)	Yponomeutidae	1	0	2	0	0
<i>Swammerdamia caesiella</i> (Hübner, 1796)	Yponomeutidae	14	6	170	0	9

Appendix 1. Continued.

Species	Family	CB	ML	VN	CS	JS
<i>Swammerdamia compunctella</i> (Herrich-Schäffer, 1855)	Yponomeutidae	0	1	0	0	0
<i>Ypsolopha parenthesella</i> (Linnaeus, 1761)	Ypsolophidae	41	7	0	0	0
<i>Glyphipterix bergstraessera</i> (Fabricius, 1781)	Glyphipterigidae	0	0	0	0	1
<i>Lyonetia clerkella</i> (Linnaeus, 1758)	Lyonetiidae	0	0	1	0	0
<i>Agonopterix alstromeriana</i> (Clerck, 1759)	Oecophoridae	1	0	0	0	0
<i>Agonopterix arenella</i> (Denis & Schiffermüller, 1775)	Oecophoridae	0	0	1	0	0
<i>Agonopterix ciliella</i> (Stainton, 1849)	Oecophoridae	0	0	3	0	0
<i>Agonopterix conterminella</i> (Zeller, 1839)	Oecophoridae	0	0	2	0	0
<i>Agonopterix curvipunctosa</i> (Haworth, 1811)	Oecophoridae	0	1	0	0	0
<i>Agonopterix heracliata</i> (Linnaeus, 1758)	Oecophoridae	0	2	1	0	0
<i>Agonopterix ocellana</i> (Fabricius, 1775)	Oecophoridae	2	0	1	0	0
<i>Agonopterix propinquella</i> (Treitschke, 1835)	Oecophoridae	1	3	0	0	0
<i>Batia unitella</i> (Hübner, 1796)	Oecophoridae	3	0	0	0	0
<i>Bisigna procerella</i> (Denis & Schiffermüller, 1775)	Oecophoridae	32	1	5	0	0
<i>Borkhausenia fuscescens</i> (Haworth, 1828)	Oecophoridae	1	2	0	0	0
<i>Cheimophila salicella</i> (Hübner, 1796)	Oecophoridae	0	9	0	0	0
<i>Denisia nubilosella</i> (Herrich-Schäffer, 1854)	Oecophoridae	0	0	0	0	4
<i>Denisia similella</i> (Hübner, 1796)	Oecophoridae	9	0	5	0	1
<i>Denisia stipella</i> (Linnaeus, 1758)	Oecophoridae	7	0	11	0	4
<i>Depressaria albipunctella</i> (Denis & Schiffermüller, 1775)	Oecophoridae	2	0	0	0	0
<i>Depressaria daucella</i> (Denis & Schiffermüller, 1775)	Oecophoridae	4	0	0	0	0
<i>Depressaria pastinacella</i> (Duponchel, 1838)	Oecophoridae	0	4	0	0	0
<i>Depressaria pimpinellae</i> Zeller, 1839	Oecophoridae	3	6	0	0	1
<i>Depressaria sordidatella</i> Tengström, 1848	Oecophoridae	0	4	0	0	0
<i>Diurnea fagella</i> (Denis & Schiffermüller, 1775)	Oecophoridae	5	0	2	0	0
<i>Diurnea lipsiella</i> (Denis & Schiffermüller, 1775)	Oecophoridae	5	7	0	5	0
<i>Ethmia quadrillella</i> (Goeze, 1783)	Oecophoridae	0	2	2	0	3
<i>Harpella forficella</i> (Scopoli, 1763)	Oecophoridae	2	0	0	0	0
<i>Levipalpus hepatariellus</i> (Lienig & Zeller, 1846)	Oecophoridae	0	0	0	0	17
<i>Metalampra cinnamomea</i> (Zeller, 1839)	Oecophoridae	1	0	0	0	0
<i>Semioscopis avellanella</i> (Hübner, 1793)	Oecophoridae	0	1	1	0	0
<i>Semioscopis steinkellneriana</i> (Denis & Schiffermüller, 1775)	Oecophoridae	1	0	0	0	0
<i>Schiffermuelleria schaefferella</i> (Linnaeus, 1758)	Oecophoridae	2	0	0	0	0
<i>Stathmopoda pedella</i> (Linnaeus, 1761)	Oecophoridae	1	3	6	0	0
<i>Tichonia tinctella</i> (Hübner, 1796)	Oecophoridae	27	0	1	0	0
<i>Lypusa maurella</i> (Denis & Schiffermüller, 1775)	Lypusidae	1	0	1	0	0
<i>Pseudatemelia elsae</i> Svensson, 1982	Lypusidae	1	0	0	0	0
<i>Pseudatemelia flavifrontella</i> (Denis & Schiffermüller, 1775)	Lypusidae	2	0	0	0	0
<i>Pseudatemelia josephinae</i> (Toll, 1956)	Lypusidae	8	1	4	1	0
<i>Elachista adscitella</i> Stainton, 1851	Elachistidae	0	0	1	0	0
<i>Elachista alpinella</i> Stainton, 1854	Elachistidae	2	5	0	2	3
<i>Elachista canapennella</i> (Hübner, 1813)	Elachistidae	2	0	0	0	0

Appendix 1. Continued.

Species	Family	CB	ML	VN	CS	JS
<i>Elachista monosemiella</i> Rössler, 1881	Elachistidae	0	0	1	0	0
<i>Elachista subalbidella</i> Schläger, 1847	Elachistidae	1	0	1	0	1
<i>Coleophora albidella</i> (Denis & Schiffmüller, 1775)	Coleophoridae	0	0	1	0	0
<i>Coleophora alticolella</i> Zeller, 1849	Coleophoridae	55	2	33	5	30
<i>Coleophora betulella</i> Heinemann, 1876	Coleophoridae	5	0	9	0	0
<i>Coleophora binderella</i> (Kollar, 1832)	Coleophoridae	0	0	1	0	0
<i>Coleophora caespitiella</i> Zeller, 1839	Coleophoridae	4	0	4	0	0
<i>Coleophora cornutella</i> Herrich-Schäffer, 1861	Coleophoridae	0	0	1	0	2
<i>Coleophora glaucicolella</i> Wood, 1892	Coleophoridae	60	2	42	2	8
<i>Coleophora lixella</i> Zeller, 1849	Coleophoridae	1	0	0	1	0
<i>Coleophora milvipennis</i> Zeller, 1839	Coleophoridae	17	0	48	0	1
<i>Coleophora otidipennella</i> (Hübner, 1817)	Coleophoridae	1	0	1	1	2
<i>Coleophora serratella</i> (Linnaeus, 1761)	Coleophoridae	14	0	41	1	0
<i>Coleophora siccifolia</i> Stainton, 1856	Coleophoridae	1	0	2	1	0
<i>Coleophora striatipennella</i> Nylander, 1848	Coleophoridae	6	1	1	0	0
<i>Coleophora taeniipennella</i> Herrich-Schäffer, 1855	Coleophoridae	0	1	5	0	0
<i>Coleophora tamesis</i> Waters, 1929	Coleophoridae	0	0	1	0	0
<i>Coleophora vitisella</i> Gregson, 1856	Coleophoridae	0	0	0	0	2
<i>Batrachedra pinicolella</i> (Zeller, 1839)	Batrachedridae	32	0	12	0	2
<i>Limnaecia phragmitella</i> Stainton, 1851	Cosmopterigidae	31	0	0	0	0
<i>Hypatopa binotella</i> (Thunberg, 1794)	Blastobasidae	24	5	16	0	0
<i>Acanthophila latipennella</i> (Rebel, 1937)	Gelechiidae	36	0	3	1	5
<i>Acompsia cinerella</i> (Clerck, 1759)	Gelechiidae	1	2	3	0	3
<i>Anacampsis blattariella</i> (Hübner, 1796)	Gelechiidae	13	0	0	0	0
<i>Anacampsis populella</i> (Clerck, 1759)	Gelechiidae	9	0	0	0	0
<i>Brachmia blandella</i> (Fabricius, 1798)	Gelechiidae	7	0	0	0	0
<i>Bryotropha affinis</i> (Haworth, 1828)	Gelechiidae	4	0	0	0	0
<i>Bryotropha galbanella</i> (Zeller, 1839)	Gelechiidae	4	0	8	0	2
<i>Bryotropha senectella</i> (Zeller, 1839)	Gelechiidae	6	0	0	0	0
<i>Bryotropha similis</i> (Stainton, 1854)	Gelechiidae	52	0	2	0	0
<i>Bryotropha terrella</i> (Denis & Schiffmüller, 1775)	Gelechiidae	0	0	1	0	1
<i>Chionodes electellus</i> (Zeller, 1839)	Gelechiidae	7	0	11	0	4
<i>Chionodes ignorantellus</i> (Herrich-Schäffer, 1854)	Gelechiidae	0	0	6	0	0
<i>Chionodes luctuellus</i> (Hübner, 1793)	Gelechiidae	2	1	20	1	5
<i>Exoteleia dodecella</i> (Linnaeus, 1758)	Gelechiidae	247	67	32	3	7
<i>Gelechia muscosella</i> Zeller, 1839	Gelechiidae	0	0	1	0	0
<i>Gelechia sororculella</i> (Hübner, 1817)	Gelechiidae	0	0	2	1	0
<i>Helcystogramma rufescens</i> (Haworth, 1828)	Gelechiidae	8	3	1	0	0
<i>Hypatima rhomboidella</i> (Linnaeus, 1758)	Gelechiidae	2	0	2	0	0
<i>Monochroa lucidella</i> (Stephens, 1834)	Gelechiidae	1	0	0	0	0
<i>Neofriseria peliella</i> (Treitschke, 1835)	Gelechiidae	0	0	0	0	2
<i>Sophronia semicostella</i> (Hübner, 1813)	Gelechiidae	0	0	0	0	2

Appendix 1. Continued.

Species	Family	CB	ML	VN	CS	JS
<i>Teleiodes alburnellus</i> (Zeller, 1839)	Gelechiidae	6	0	0	0	0
<i>Teleiodes luculellus</i> (Hübner, 1813)	Gelechiidae	1	0	0	0	0
<i>Teleiodes paripunctellus</i> (Thunberg, 1794)	Gelechiidae	1	0	0	0	0
<i>Teleiodes proximellus</i> (Hübner, 1796)	Gelechiidae	12	4	9	4	18
<i>Teleiopsis diffinis</i> (Haworth, 1828)	Gelechiidae	0	0	0	0	1
<i>Cossus cossus</i> (Linnaeus, 1758)	Cossidae	3	0	0	2	0
<i>Synanthedon sphecoformis</i> (Denis & Schiffermüller, 1775)	Sesiidae	0	1	0	1	0
<i>Acleris abietana</i> (Hübner, 1822)	Tortricidae	2	0	0	0	0
<i>Acleris aspersana</i> (Hübner, 1817)	Tortricidae	1	6	0	0	4
<i>Acleris cristana</i> (Denis & Schiffermüller, 1775)	Tortricidae	0	0	1	0	0
<i>Acleris emargana</i> (Fabricius, 1775)	Tortricidae	2	0	1	0	0
<i>Acleris hastiana</i> (Linnaeus, 1758)	Tortricidae	1	0	0	0	0
<i>Acleris laterana</i> (Fabricius, 1794)	Tortricidae	99	2	14	1	0
<i>Acleris logiana</i> (Clerck, 1759)	Tortricidae	5	1	0	0	0
<i>Acleris notana</i> (Donovan, 1806)	Tortricidae	36	0	43	0	0
<i>Acleris shepherdana</i> (Stephens, 1852)	Tortricidae	0	1	0	0	9
<i>Acleris sparsana</i> (Denis & Schiffermüller, 1775)	Tortricidae	0	0	0	1	1
<i>Acleris variegana</i> (Denis & Schiffermüller, 1775)	Tortricidae	0	0	0	1	1
<i>Adoxophyes orana</i> (Fischer von Röslerstamm, 1834)	Tortricidae	98	3	34	4	0
<i>Aethes cnicana</i> (Westwood, 1854)	Tortricidae	1	1	5	0	3
<i>Ancylis achatana</i> (Denis & Schiffermüller, 1775)	Tortricidae	1	0	0	0	0
<i>Ancylis apicella</i> (Denis & Schiffermüller, 1775)	Tortricidae	50	0	1	0	0
<i>Ancylis geminana</i> (Donovan, 1806)	Tortricidae	1	0	1	1	2
<i>Ancylis laetana</i> (Fabricius, 1775)	Tortricidae	3	0	0	0	0
<i>Ancylis tineata</i> (Hübner, 1799)	Tortricidae	22	0	0	0	0
<i>Ancylis uncella</i> (Denis & Schiffermüller, 1775)	Tortricidae	8	0	0	6	1
<i>Ancylis unculana</i> (Haworth, 1811)	Tortricidae	8	0	0	0	0
<i>Aphelia paleana</i> (Hübner, 1793)	Tortricidae	3	0	0	0	0
<i>Aphelia unitana</i> (Hübner, 1799)	Tortricidae	1	5	16	1	4
<i>Apotomis betuletana</i> (Haworth, 1811)	Tortricidae	50	1	1	0	0
<i>Apotomis capreana</i> (Hübner, 1817)	Tortricidae	6	0	4	0	0
<i>Apotomis infida</i> (Heinrich, 1926)	Tortricidae	1	0	0	0	0
<i>Apotomis semifasciana</i> (Haworth, 1811)	Tortricidae	1	0	0	0	0
<i>Apotomis sororculana</i> (Zetterstedt, 1839)	Tortricidae	9	0	1	2	0
<i>Apotomis turbidana</i> Hübner, 1825	Tortricidae	87	1	16	1	0
<i>Argyrotaenia ljungiana</i> (Thunberg, 1797)	Tortricidae	3	5	0	1	0
<i>Archips oporanus</i> (Linnaeus, 1758)	Tortricidae	29	0	1	0	0
<i>Archips podanus</i> (Scopoli, 1763)	Tortricidae	47	0	1	0	0
<i>Bactra lacteana</i> Caradja, 1916	Tortricidae	3	0	0	0	0
<i>Blastesthia posticana</i> (Zetterstedt, 1839)	Tortricidae	5	0	0	0	0
<i>Blastesthia turionella</i> (Linnaeus, 1758)	Tortricidae	28	1	7	0	0
<i>Capua vulgana</i> (Frölich, 1828)	Tortricidae	22	0	2	0	0

Appendix 1. Continued.

Species	Family	CB	ML	VN	CS	JS
<i>Celypha striana</i> (Denis & Schiffermüller, 1775)	Tortricidae	4	1	2	0	2
<i>Celypha woodiana</i> (Barrett, 1882)	Tortricidae	1	0	0	0	0
<i>Clepsis rurinana</i> (Linnaeus, 1758)	Tortricidae	1	1	4	0	0
<i>Clepsis senecionana</i> (Hübner, 1819)	Tortricidae	23	14	4	16	11
<i>Cnephasia alticolana</i> (Herrich-Schäffer, 1851)	Tortricidae	0	0	0	0	1
<i>Cnephasia asseclana</i> (Denis & Schiffermüller, 1775)	Tortricidae	57	22	45	70	23
<i>Cnephasia communana</i> (Herrich-Schäffer, 1851)	Tortricidae	2	0	0	1	0
<i>Cnephasia genitalana</i> Pierce & Metcalfe, 1922	Tortricidae	5	0	0	0	0
<i>Cnephasia incertana</i> (Treitschke, 1835)	Tortricidae	1	0	0	0	0
<i>Cnephasia stephensiana</i> (Doubleday, 1849)	Tortricidae	68	19	60	21	7
<i>Cochyliidia implicitana</i> (Wocke, 1856)	Tortricidae	7	0	0	0	0
<i>Cochylys dubitana</i> (Hübner, 1799)	Tortricidae	0	0	1	0	1
<i>Cochylys nana</i> (Haworth, 1811)	Tortricidae	3	0	1	4	0
<i>Cydia cosmophorana</i> (Treitschke, 1835)	Tortricidae	4	0	0	1	2
<i>Cydia illutana</i> (Herrich-Schäffer, 1851)	Tortricidae	1	0	0	0	0
<i>Cydia indivisa</i> (Danilevsky, 1963)	Tortricidae	0	0	0	0	1
<i>Cydia pactolana</i> (Zeller, 1840)	Tortricidae	7	0	0	0	0
<i>Cydia strobilella</i> (Linnaeus, 1758)	Tortricidae	1	0	0	0	3
<i>Dichelia histrionana</i> (Frölich, 1828)	Tortricidae	16	3	11	0	7
<i>Eana argentana</i> (Clerck, 1759)	Tortricidae	0	2	0	0	182
<i>Eana incanana</i> (Stephens, 1852)	Tortricidae	5	1	1	0	0
<i>Eana osseana</i> (Scopoli, 1763)	Tortricidae	0	1	0	1	194
<i>Endothenia ericetana</i> (Humphries & Westwood, 1845)	Tortricidae	1	3	0	0	0
<i>Endothenia quadrimaculana</i> (Haworth, 1811)	Tortricidae	7	0	0	0	0
<i>Epagoge grotiana</i> (Fabricius, 1781)	Tortricidae	28	0	0	0	0
<i>Epiblema cynosbatellum</i> (Linnaeus, 1758)	Tortricidae	2	0	0	0	0
<i>Epiblema hepaticanum</i> (Treitschke, 1835)	Tortricidae	13	1	3	0	0
<i>Epiblema uddmannianum</i> (Linnaeus, 1758)	Tortricidae	2	0	0	0	0
<i>Epinotia bilunana</i> (Haworth, 1811)	Tortricidae	15	0	1	0	0
<i>Epinotia brunnichana</i> (Linnaeus, 1767)	Tortricidae	6	1	0	0	0
<i>Epinotia caprana</i> (Fabricius, 1798)	Tortricidae	0	1	0	0	0
<i>Epinotia cinereana</i> (Haworth, 1811)	Tortricidae	1	0	0	0	0
<i>Epinotia crenana</i> (Hübner, 1817)	Tortricidae	0	9	0	0	0
<i>Epinotia demarniana</i> (Fischer von Röslerstamm, 1840)	Tortricidae	20	0	1	0	0
<i>Epinotia granitana</i> (Herrich-Schäffer, 1851)	Tortricidae	2	0	0	1	0
<i>Epinotia immundana</i> (Fischer von Röslerstamm, 1839)	Tortricidae	0	1	0	0	0
<i>Epinotia nanana</i> (Treitschke, 1835)	Tortricidae	6	2	3	0	0
<i>Epinotia nisella</i> (Clerck, 1759)	Tortricidae	2	2	0	0	2
<i>Epinotia pygmaeana</i> (Hübner, 1799)	Tortricidae	0	0	0	0	6
<i>Epinotia ramella</i> (Linnaeus, 1758)	Tortricidae	23	2	33	34	8
<i>Epinotia rubiginosana</i> (Herrich-Schäffer, 1851)	Tortricidae	15	0	0	0	0
<i>Epinotia solandriana</i> (Linnaeus, 1758)	Tortricidae	5	2	3	3	1

Appendix 1. Continued.

Species	Family	CB	ML	VN	CS	JS
<i>Epinotia subocellana</i> (Donovan, 1806)	Tortricidae	2	0	0	0	0
<i>Epinotia tedella</i> (Clerck, 1759)	Tortricidae	51	25	66	243	47
<i>Epinotia tenerana</i> (Denis & Schiffermüller, 1775)	Tortricidae	2	2	0	0	1
<i>Epinotia tetraquetra</i> (Haworth, 1811)	Tortricidae	32	0	0	6	1
<i>Epinotia trigonella</i> (Linnaeus, 1758)	Tortricidae	1	0	0	0	0
<i>Eucosma campoliliana</i> (Denis & Schiffermüller, 1775)	Tortricidae	3	1	3	0	3
<i>Eucosma cana</i> (Haworth, 1811)	Tortricidae	4	12	18	2	27
<i>Eulia ministrana</i> (Linnaeus, 1758)	Tortricidae	12	0	4	1	35
<i>Eupoecilia angustana</i> (Hübner, 1799)	Tortricidae	6	25	0	2	1
<i>Exapate congelatella</i> (Clerck, 1759)	Tortricidae	0	0	0	0	61
<i>Gypsonoma dealbana</i> (Frölich, 1828)	Tortricidae	0	0	1	0	0
<i>Hedya atropunctana</i> (Zetterstedt, 1839)	Tortricidae	4	0	0	0	0
<i>Hedya nubiferana</i> (Haworth, 1811)	Tortricidae	15	0	14	0	0
<i>Olethreutes arcuellus</i> (Clerck, 1759)	Tortricidae	16	0	0	0	0
<i>Olethreutes dissolutanus</i> (Stange, 1886)	Tortricidae	0	0	4	0	0
<i>Olethreutes lacunanus</i> (Denis & Schiffermüller, 1775)	Tortricidae	715	40	98	147	10
<i>Olethreutes rivulanus</i> (Scopoli, 1763)	Tortricidae	0	7	6	20	8
<i>Olethreutes sideranus</i> (Treitschke, 1835)	Tortricidae	0	191	0	0	0
<i>Olindia schumacherana</i> (Fabricius, 1787)	Tortricidae	0	0	1	0	0
<i>Orthotaenia undulana</i> (Denis & Schiffermüller, 1775)	Tortricidae	1115	7	30	4	0
<i>Pammene obscurana</i> (Stephens, 1834)	Tortricidae	0	0	2	0	0
<i>Pammene oxshenheimeriana</i> (Lienig & Zeller, 1846)	Tortricidae	0	0	0	0	2
<i>Pandemis cerasana</i> (Hübner, 1786)	Tortricidae	97	6	24	23	0
<i>Pandemis cinnamomeana</i> (Treitschke, 1830)	Tortricidae	0	1	5	1	1
<i>Pandemis corylana</i> (Fabricius, 1794)	Tortricidae	13	1	2	0	0
<i>Pandemis dumetana</i> (Treitschke, 1835)	Tortricidae	5	0	0	0	0
<i>Pandemis heparana</i> (Denis & Schiffermüller, 1775)	Tortricidae	12	2	4	0	0
<i>Paramesia gnomana</i> (Clerck, 1759)	Tortricidae	10	1	0	1	0
<i>Phalonidia manniana</i> (Fischer von Röslerstamm, 1839)	Tortricidae	1	0	0	0	0
<i>Philedonides lunanus</i> (Thunberg, 1784)	Tortricidae	0	2	0	1	2
<i>Piniphila bifasciata</i> (Haworth, 1811)	Tortricidae	115	15	3	3	0
<i>Pseudohermenias abietana</i> (Fabricius, 1787)	Tortricidae	2	0	2	0	24
<i>Pseudosciaphila branderiana</i> (Linnaeus, 1758)	Tortricidae	4	0	0	0	0
<i>Ptycholoma lecheanum</i> (Linnaeus, 1758)	Tortricidae	2	0	0	0	0
<i>Retinia resinella</i> (Linnaeus, 1758)	Tortricidae	19	3	5	1	0
<i>Rhopobota naevana</i> (Hübner, 1817)	Tortricidae	468	389	119	293	5
<i>Rhyacionia buoliana</i> (Denis & Schiffermüller, 1775)	Tortricidae	35	0	1	0	0
<i>Rhyacionia duplana</i> (Hübner, 1813)	Tortricidae	3	0	0	1	0
<i>Rhyacionia pinicolana</i> (Doubleday, 1849)	Tortricidae	27	24	11	1	0
<i>Rhyacionia pinivorana</i> (Lienig & Zeller, 1846)	Tortricidae	46	6	1	1	0
<i>Spilonota ocellana</i> (Denis & Schiffermüller, 1775)	Tortricidae	3	0	0	0	0
<i>Syndemis musculana</i> (Hübner, 1799)	Tortricidae	52	0	4	0	1

Appendix 1. Continued.

Species	Family	CB	ML	VN	CS	JS
<i>Zeiraphera griseana</i> (Hübner, 1799)	Tortricidae	3	6	3	0	7
<i>Zeiraphera ratzeburgiana</i> (Saxesen, 1840)	Tortricidae	0	1	0	0	0
<i>Hellinsia osteodactyla</i> (Zeller, 1841)	Pterophoridae	0	2	1	1	0
<i>Hellinsia tephradactyla</i> (Hübner, 1813)	Pterophoridae	0	0	0	0	1
<i>Platyptilia calodactyla</i> (Denis & Schiffermüller, 1775)	Pterophoridae	0	0	0	1	2
<i>Stenoptilia bipunctidactyla</i> (Scopoli, 1763)	Pterophoridae	0	0	0	0	1
<i>Assara terebrella</i> (Zincken, 1818)	Pyralidae	2	4	2	6	4
<i>Cryptoblates bistriga</i> (Haworth, 1811)	Pyralidae	4	0	2	0	0
<i>Dioryctria abietella</i> (Denis & Schiffermüller, 1775)	Pyralidae	48	5	21	20	51
<i>Dioryctria simplicella</i> Heinemann, 1863	Pyralidae	3	0	2	0	0
<i>Euzophera fuliginosella</i> (Heinemann, 1865)	Pyralidae	14	0	0	0	0
<i>Laodamia faecella</i> (Zeller, 1839)	Pyralidae	15	0	0	0	0
<i>Metriostola betulae</i> (Goeze, 1778)	Pyralidae	47	1	32	0	0
<i>Myelopsis tetricella</i> (Denis & Schiffermüller, 1775)	Pyralidae	4	0	0	0	0
<i>Pempelia palumbella</i> (Denis & Schiffermüller, 1775)	Pyralidae	7	205	1	0	0
<i>Phycitodes albatellus</i> (Ragonot, 1887)	Pyralidae	5	0	0	0	0
<i>Pyla fusca</i> (Haworth, 1811)	Pyralidae	44	0	0	4	2
<i>Trachycera advenella</i> (Zincken, 1818)	Pyralidae	1	0	0	0	0
<i>Vitula bivielia</i> (Zeller, 1848)	Pyralidae	2	0	0	0	0
<i>Acentria ephemerella</i> (Denis & Schiffermüller, 1775)	Crambidae	922	6	0	0	0
<i>Agriphila selasella</i> (Hübner, 1813)	Crambidae	3	0	0	0	0
<i>Agriphila straminella</i> (Denis & Schiffermüller, 1775)	Crambidae	27	12	9	0	17
<i>Agriphila tristella</i> (Denis & Schiffermüller, 1775)	Crambidae	5	5	1	0	6
<i>Cataclysta lemnata</i> (Linnaeus, 1758)	Crambidae	11	1	0	0	0
<i>Catoptria falsella</i> (Denis & Schiffermüller, 1775)	Crambidae	37	3	2	0	0
<i>Catoptria osthelderi</i> (de Lattin, 1950)	Crambidae	21	0	0	0	0
<i>Catoptria permutatella</i> (Herrich-Schäffer, 1848)	Crambidae	20	3	1	0	4
<i>Catoptria pinella</i> (Linnaeus, 1758)	Crambidae	1	0	0	0	0
<i>Chilo phragmitellus</i> (Hübner, 1810)	Crambidae	8	0	0	0	0
<i>Chrysoteuchia culmella</i> (Linnaeus, 1758)	Crambidae	256	19	12	1	69
<i>Crambus ericellus</i> (Hübner, 1813)	Crambidae	0	4	0	2	3
<i>Crambus lathoniellus</i> (Zincken, 1817)	Crambidae	94	17	86	6	58
<i>Crambus pascuellus</i> (Linnaeus, 1758)	Crambidae	64	3	0	0	1
<i>Crambus perlellus</i> (Scopoli, 1763)	Crambidae	0	4	1	2	37
<i>Crambus pratellus</i> (Linnaeus, 1758)	Crambidae	0	1	0	0	1
<i>Crambus silvellus</i> (Hübner, 1813)	Crambidae	1	0	0	0	0
<i>Dipleurina lacustrata</i> (Panzer, 1804)	Crambidae	61	9	15	0	1
<i>Donacaula mucronellus</i> (Denis & Schiffermüller, 1775)	Crambidae	3	0	0	0	0
<i>Elophila nymphaeata</i> (Linnaeus, 1758)	Crambidae	39	0	4	0	0
<i>Eudonia murana</i> (Curtis, 1827)	Crambidae	10	1	48	2	13
<i>Eudonia pallida</i> (Curtis, 1827)	Crambidae	13	2	0	0	0
<i>Eudonia petrophila</i> (Standfuss, 1848)	Crambidae	0	0	0	0	59

Appendix 1. Continued.

Species	Family	CB	ML	VN	CS	JS
<i>Eudonia sudetica</i> (Zeller, 1839)	Crambidae	0	0	0	0	1
<i>Eudonia truncicolella</i> (Stainton, 1849)	Crambidae	1090	41	642	1	3
<i>Evergestis pallidata</i> (Hufnagel, 1767)	Crambidae	2	0	0	0	0
<i>Nymphula stagnata</i> (Donovan, 1806)	Crambidae	16	0	1	0	0
<i>Opsibotys fuscalis</i> (Denis & Schiffermüller, 1775)	Crambidae	3	39	21	34	22
<i>Phlyctaenia coronata</i> (Hufnagel, 1767)	Crambidae	1	1	3	0	0
<i>Platytes cerussellus</i> (Denis & Schiffermüller, 1775)	Crambidae	4	0	0	0	0
<i>Scoparia ambigualis</i> (Treitschke, 1829)	Crambidae	341	22	378	6	9
<i>Scoparia ancipitella</i> (La Harpe, 1855)	Crambidae	164	12	45	0	0
<i>Scoparia basistrigalis</i> Knaggs, 1866	Crambidae	480	0	0	0	0
<i>Scoparia pyralella</i> (Denis & Schiffermüller, 1775)	Crambidae	5	3	0	0	0
<i>Schoenobius forcicellus</i> (Thunberg, 1794)	Crambidae	22	0	0	0	0
<i>Udea decrepitalis</i> (Herrich-Schäffer, 1848)	Crambidae	0	1	0	0	2
<i>Udea lutealis</i> (Hübner, 1809)	Crambidae	2	5	2	3	2
<i>Udea nebulalis</i> (Hübner, 1796)	Crambidae	0	1	0	0	23
<i>Udea olivalis</i> (Denis & Schiffermüller, 1775)	Crambidae	0	1	2	0	2
<i>Udea prunalis</i> (Denis & Schiffermüller, 1775)	Crambidae	52	3	2	0	0
<i>Dendrolimus pini</i> (Linnaeus, 1758)	Lasiocampidae	102	48	52	6	9
<i>Eriogaster lanestris</i> (Linnaeus, 1758)	Lasiocampidae	0	1	0	0	0
<i>Euthrix potatoria</i> (Linnaeus, 1758)	Lasiocampidae	13	0	0	0	0
<i>Macrothylacia rubi</i> (Linnaeus, 1758)	Lasiocampidae	33	16	2	3	2
<i>Poecilocampa populi</i> (Linnaeus, 1758)	Lasiocampidae	2	1	0	3	15
<i>Trichiura crataegi</i> (Linnaeus, 1758)	Lasiocampidae	1	0	0	0	0
<i>Endromis versicolora</i> (Linnaeus, 1758)	Endromidae	13	2	0	2	0
<i>Deilephila elpenor</i> (Linnaeus, 1758)	Sphingidae	5	31	0	2	1
<i>Deilephila porcellus</i> (Linnaeus, 1758)	Sphingidae	0	35	0	2	1
<i>Hyles gallii</i> (Rottemburg, 1775)	Sphingidae	0	2	0	0	1
<i>Laothoe populi</i> (Linnaeus, 1758)	Sphingidae	4	14	4	0	9
<i>Mimas tiliae</i> (Linnaeus, 1758)	Sphingidae	5	0	0	0	0
<i>Smerinthus ocellatus</i> (Linnaeus, 1758)	Sphingidae	5	12	0	0	2
<i>Sphinx pinastri</i> Linnaeus, 1758	Sphingidae	340	14	88	7	15
<i>Aglia tau</i> (Linnaeus, 1758)	Saturniidae	11	0	3	0	0
<i>Carterocephalus palaemon</i> (Pallas, 1771)	Hesperiidae	12	0	0	0	1
<i>Anthocharis cardamines</i> (Linnaeus, 1758)	Pieridae	0	2	0	3	0
<i>Gonepteryx rhamni</i> (Linnaeus, 1758)	Pieridae	98	0	1	0	5
<i>Pieris napi</i> (Linnaeus, 1758)	Pieridae	0	0	19	3	210
<i>Apatura iris</i> (Linnaeus, 1758)	Nymphalidae	0	1	0	0	1
<i>Argynnis aglaja</i> (Linnaeus, 1758)	Nymphalidae	0	0	0	0	11
<i>Boloria euphrosyne</i> (Linnaeus, 1758)	Nymphalidae	0	1	0	0	0
<i>Boloria selene</i> (Denis & Schiffermüller, 1775)	Nymphalidae	0	3	0	0	11
<i>Brenthis ino</i> (Rottemburg, 1775)	Nymphalidae	0	4	10	0	0
<i>Melitaea athalia</i> (Rottemburg, 1775)	Nymphalidae	0	65	28	1	50

Appendix 1. Continued.

Species	Family	CB	ML	VN	CS	JS
<i>Nymphalis antiopa</i> (Linnaeus, 1758)	Nymphalidae	5	4	2	2	0
<i>Polygonia c-album</i> (Linnaeus, 1758)	Nymphalidae	0	0	0	0	3
<i>Aphantopus hyperantus</i> (Linnaeus, 1758)	Satyridae	0	2	0	0	0
<i>Coenonympha glycerion</i> (Borkhausen, 1788)	Satyridae	0	2	0	0	0
<i>Erebia euryale</i> (Esper, 1805)	Satyridae	0	0	10	3	111
<i>Erebia medusa</i> (Denis & Schiffermüller, 1775)	Satyridae	0	10	0	1	42
<i>Lasiommata maera</i> (Linnaeus, 1758)	Satyridae	0	0	3	0	1
<i>Maniola jurtina</i> (Linnaeus, 1758)	Satyridae	0	5	0	0	0
<i>Pararge aegeria</i> (Linnaeus, 1758)	Satyridae	8	3	7	0	0
<i>Celastrina argiolus</i> (Linnaeus, 1758)	Lycaenidae	1	0	1	0	0
<i>Lycaena hippothoe</i> (Linnaeus, 1761)	Lycaenidae	0	1	0	0	0
<i>Plebejus argus</i> (Linnaeus, 1758)	Lycaenidae	4	0	0	0	0
<i>Achlya flavicornis</i> (Linnaeus, 1758)	Drepanidae	10	19	43	3	7
<i>Drepana falcataria</i> (Linnaeus, 1758)	Drepanidae	73	2	12	4	0
<i>Falcaria lacertinaria</i> (Linnaeus, 1758)	Drepanidae	41	12	19	5	5
<i>Habrosyne pyritoides</i> (Hufnagel, 1766)	Drepanidae	40	4	74	4	1
<i>Ochropacha duplaris</i> (Linnaeus, 1761)	Drepanidae	76	7	155	6	10
<i>Tethea or</i> (Denis & Schiffermüller, 1775)	Drepanidae	9	1	10	1	1
<i>Tetheella fluctuosa</i> (Hübner, 1803)	Drepanidae	18	1	5	0	0
<i>Thyatira batis</i> (Linnaeus, 1758)	Drepanidae	15	4	2	2	0
<i>Abraxas sylvatus</i> (Scopoli, 1763)	Geometridae	3	1	1	0	0
<i>Aethalura punctulata</i> (Denis & Schiffermüller, 1775)	Geometridae	43	2	2	0	0
<i>Agriopis aurantiaria</i> (Hübner, 1799)	Geometridae	0	2	0	0	0
<i>Agriopis marginaria</i> (Fabricius, 1776)	Geometridae	2	2	0	0	0
<i>Alcis bastelbergeri</i> (Hirschke, 1908)	Geometridae	10	20	7	1	1
<i>Alcis jubata</i> (Thunberg, 1788)	Geometridae	0	1	0	0	0
<i>Alcis repandata</i> (Linnaeus, 1758)	Geometridae	1700	125	311	12	75
<i>Apocheima pilosarium</i> (Denis & Schiffermüller, 1775)	Geometridae	1	4	3	0	0
<i>Archiearis parthenias</i> (Linnaeus, 1761)	Geometridae	1	1	0	0	0
<i>Asthenes albulata</i> (Hufnagel, 1767)	Geometridae	0	2	0	0	0
<i>Biston betularius</i> (Linnaeus, 1758)	Geometridae	27	19	46	8	20
<i>Biston stratarius</i> (Hufnagel, 1767)	Geometridae	5	0	0	0	0
<i>Bupalus piniarius</i> (Linnaeus, 1758)	Geometridae	575	6	4	0	2
<i>Cabera exanthemata</i> (Scopoli, 1763)	Geometridae	4	0	21	2	2
<i>Cabera pusaria</i> (Linnaeus, 1758)	Geometridae	159	2	60	12	7
<i>Campaea margaritata</i> (Linnaeus, 1767)	Geometridae	5	4	10	6	7
<i>Camptogramma bilineatum</i> (Linnaeus, 1758)	Geometridae	7	5	2	1	1
<i>Catarhoe cuculata</i> (Hufnagel, 1767)	Geometridae	2	0	0	0	0
<i>Cepphis advenaria</i> (Hübner, 1790)	Geometridae	279	0	1	0	0
<i>Chloroclysta citrata</i> (Linnaeus, 1861)	Geometridae	17	63	14	28	40
<i>Chloroclysta miata</i> (Linnaeus, 1758)	Geometridae	8	5	0	6	17
<i>Chloroclysta siterata</i> (Hufnagel, 1767)	Geometridae	4	1	1	6	4

Appendix 1. Continued.

Species	Family	CB	ML	VN	CS	JS
<i>Chloroclysta truncata</i> (Hufnagel, 1767)	Geometridae	126	45	40	28	81
<i>Cleora cinctaria</i> (Denis & Schiffermüller, 1775)	Geometridae	2	4	0	1	3
<i>Colostygia olivata</i> (Denis & Schiffermüller, 1775)	Geometridae	0	0	2	0	0
<i>Colostygia pectinataria</i> (Knoch, 1781)	Geometridae	3	4	5	10	3
<i>Colotois pennaria</i> (Linnaeus, 1761)	Geometridae	12	4	6	0	1
<i>Cosmorhoe ocellata</i> (Linnaeus, 1758)	Geometridae	1	4	1	1	0
<i>Crocalis elinguarua</i> (Linnaeus, 1758)	Geometridae	28	56	68	5	129
<i>Cyclophora albipunctata</i> (Hufnagel, 1767)	Geometridae	81	3	6	2	0
<i>Cyclophora linearia</i> (Hübner, 1799)	Geometridae	0	0	1	0	0
<i>Deileptenia ribeata</i> (Clerck, 1759)	Geometridae	37	13	107	1	0
<i>Ecliptopera silaceata</i> (Denis & Schiffermüller, 1775)	Geometridae	14	1	5	1	2
<i>Ectropis crepuscularia</i> (Denis & Schiffermüller, 1775)	Geometridae	169	33	22	1	2
<i>Electrophaes corylata</i> (Thunberg, 1792)	Geometridae	7	3	8	1	0
<i>Elophos vittarius</i> (Thunberg, 1788)	Geometridae	0	4	7	0	47
<i>Ennomos alniarius</i> (Linnaeus, 1758)	Geometridae	0	2	0	0	0
<i>Ennomos autumnarius</i> (Werneburg, 1859)	Geometridae	3	2	1	1	0
<i>Entephria caesiata</i> (Denis & Schiffermüller, 1775)	Geometridae	0	5	44	13	448
<i>Epione repandaria</i> (Hufnagel, 1767)	Geometridae	4	4	3	0	0
<i>Epirrhoe alternata</i> (Müller, 1764)	Geometridae	15	4	4	2	0
<i>Epirrhoe molluginata</i> (Hübner, 1813)	Geometridae	1	1	1	2	3
<i>Epirrhoe tristata</i> (Linnaeus, 1758)	Geometridae	2	0	1	0	2
<i>Epirrita autumnata</i> (Borkhausen, 1794)	Geometridae	16	9	10	2	44
<i>Epirrita dilutata</i> (Denis & Schiffermüller, 1775)	Geometridae	8	0	0	0	0
<i>Erannis defoliaria</i> (Clerck, 1759)	Geometridae	0	2	1	0	0
<i>Euchoeca nebulata</i> (Scopoli, 1763)	Geometridae	2	0	4	0	0
<i>Eulithis populata</i> (Linnaeus, 1758)	Geometridae	532	190	306	26	895
<i>Eulithis pyraliata</i> (Denis & Schiffermüller, 1775)	Geometridae	1	2	0	2	6
<i>Euphyia unangulata</i> (Haworth, 1809)	Geometridae	36	1	13	0	0
<i>Eupithecia abietaria</i> (Goeze, 1781)	Geometridae	2	1	6	1	2
<i>Eupithecia absinthiata</i> (Clerck, 1759)	Geometridae	3	0	0	0	0
<i>Eupithecia centaureata</i> (Denis & Schiffermüller, 1775)	Geometridae	2	1	0	0	0
<i>Eupithecia europaea</i> Lempke, 1969	Geometridae	1	0	1	1	0
<i>Eupithecia exiguata</i> (Hübner, 1813)	Geometridae	19	0	9	0	3
<i>Eupithecia extraversaria</i> Herrich-Schäffer, 1852	Geometridae	0	1	1	1	0
<i>Eupithecia indigata</i> (Hübner, 1813)	Geometridae	89	13	11	0	0
<i>Eupithecia lanceata</i> (Hübner, 1825)	Geometridae	93	2	3	3	5
<i>Eupithecia pimpinellata</i> (Hübner, 1813)	Geometridae	0	0	2	0	0
<i>Eupithecia plumbeolata</i> (Haworth, 1809)	Geometridae	1	18	9	30	44
<i>Eupithecia satyrata</i> (Hübner, 1813)	Geometridae	5	0	2	2	8
<i>Eupithecia selinata</i> Herrich-Schäffer, 1861	Geometridae	0	0	2	0	0
<i>Eupithecia subfuscata</i> (Haworth, 1809)	Geometridae	41	3	8	8	2
<i>Eupithecia subumbrata</i> (Denis & Schiffermüller, 1775)	Geometridae	1	1	0	0	0

Appendix 1. Continued.

Species	Family	CB	ML	VN	CS	JS
<i>Eupithecia succenturiata</i> (Linnaeus, 1758)	Geometridae	4	5	0	4	12
<i>Eupithecia tantillaria</i> Boisdual, 1840	Geometridae	80	14	56	19	6
<i>Eupithecia tenuiata</i> (Hübner, 1813)	Geometridae	1	0	1	0	0
<i>Eupithecia tripunctaria</i> Herrich-Schäffer, 1852	Geometridae	1	0	0	1	1
<i>Eupithecia trisignaria</i> Herrich-Schäffer, 1848	Geometridae	2	0	2	0	0
<i>Eupithecia virgaureata</i> Doubleday, 1861	Geometridae	19	0	1	0	0
<i>Eupithecia vulgata</i> (Haworth, 1809)	Geometridae	10	1	3	1	0
<i>Geometra papilionaria</i> (Linnaeus, 1758)	Geometridae	60	11	40	17	10
<i>Hemitea aestivaria</i> (Hübner, 1799)	Geometridae	7	0	0	0	0
<i>Hydrelia flammeolaria</i> (Hufnagel, 1767)	Geometridae	15	1	4	2	0
<i>Hydrelia sylvata</i> (Denis & Schiffermüller, 1775)	Geometridae	12	0	0	0	0
<i>Hydriomena furcata</i> (Thunberg, 1784)	Geometridae	352	39	83	3	3493
<i>Hydriomena impluviata</i> (Denis & Schiffermüller, 1775)	Geometridae	2	0	9	3	0
<i>Hylaea fasciaria</i> (Linnaeus, 1758)	Geometridae	34	1	4	2	5
<i>Hypomecis punctinalis</i> (Scopoli, 1763)	Geometridae	39	1	18	0	2
<i>Hypomecis roboraria</i> (Denis & Schiffermüller, 1775)	Geometridae	57	0	18	0	0
<i>Idaea aversata</i> (Linnaeus, 1758)	Geometridae	158	12	34	1	1
<i>Idaea biselata</i> (Hufnagel, 1767)	Geometridae	3	0	6	1	0
<i>Idaea dimidiata</i> (Hufnagel, 1767)	Geometridae	3	0	0	0	0
<i>Idaea emarginata</i> (Linnaeus, 1758)	Geometridae	2	0	0	0	0
<i>Idaea serpentata</i> (Hufnagel, 1767)	Geometridae	1	2	0	0	0
<i>Idaea straminata</i> (Borkhausen, 1794)	Geometridae	14	1	0	2	0
<i>Jodis lactearia</i> (Linnaeus, 1758)	Geometridae	1	2	0	0	0
<i>Lampropteryx otregiata</i> (Metcalf, 1917)	Geometridae	2	0	7	1	2
<i>Lampropteryx suffumata</i> (Denis & Schiffermüller, 1775)	Geometridae	0	0	8	1	0
<i>Lobophora halterata</i> (Hufnagel, 1767)	Geometridae	5	0	0	1	0
<i>Lomaspilis marginata</i> (Linnaeus, 1758)	Geometridae	37	4	16	4	7
<i>Lomographa bimaculata</i> (Fabricius, 1775)	Geometridae	0	0	3	0	0
<i>Lomographa temerata</i> (Denis & Schiffermüller, 1775)	Geometridae	5	0	1	2	0
<i>Lycia hirtaria</i> (Clerck, 1759)	Geometridae	9	11	18	0	0
<i>Mesoleuca albicillata</i> (Linnaeus, 1758)	Geometridae	3	0	6	0	1
<i>Odezia atrata</i> (Linnaeus, 1758)	Geometridae	0	0	1	0	0
<i>Odontopera bidentata</i> (Clerck, 1759)	Geometridae	16	13	35	2	8
<i>Operophtera brumata</i> (Linnaeus, 1758)	Geometridae	590	1	1	3	144
<i>Operophtera fagata</i> (Scharfenberg, 1805)	Geometridae	0	2	0	0	1
<i>Opisthograptis luteolata</i> (Linnaeus, 1758)	Geometridae	2	1	0	1	2
<i>Orthonama vittata</i> (Borkhausen, 1794)	Geometridae	2	13	2	0	0
<i>Paradarisa consonaria</i> (Hübner, 1799)	Geometridae	97	0	12	0	0
<i>Peribatodes secundarius</i> (Denis & Schiffermüller, 1775)	Geometridae	70	6	4	0	2
<i>Perizoma affinitatum</i> (Stephens, 1831)	Geometridae	0	2	9	0	0
<i>Perizoma albulatum</i> (Denis & Schiffermüller, 1775)	Geometridae	0	13	4	3	22
<i>Perizoma alchemillatum</i> (Linnaeus, 1758)	Geometridae	75	33	103	35	55

Appendix 1. Continued.

Species	Family	CB	ML	VN	CS	JS
<i>Perizoma blandiatum</i> (Denis & Schiffermüller, 1775)	Geometridae	0	1	2	0	7
<i>Perizoma didymatum</i> (Linnaeus, 1758)	Geometridae	0	2	2	1	1
<i>Perizoma parallelolineatum</i> (Retzius, 1783)	Geometridae	0	2	0	1	0
<i>Perizoma verberatum</i> (Scopoli, 1763)	Geometridae	0	0	0	0	74
<i>Plagodis pulveraria</i> (Linnaeus, 1758)	Geometridae	16	5	12	1	8
<i>Pterapherapteryx sexalata</i> (Retzius, 1783)	Geometridae	5	3	1	0	1
<i>Puengeleria capreolaria</i> (Denis & Schiffermüller, 1775)	Geometridae	2	3	0	2	3
<i>Rheumaptera hastata</i> (Linnaeus, 1758)	Geometridae	2	0	0	0	0
<i>Rheumaptera undulata</i> (Linnaeus, 1758)	Geometridae	20	1	6	3	4
<i>Scopula floslactata</i> (Haworth, 1809)	Geometridae	32	0	2	0	0
<i>Scopula immorata</i> (Linnaeus, 1758)	Geometridae	6	2	0	0	1
<i>Scopula immutata</i> (Linnaeus, 1758)	Geometridae	5	0	0	0	24
<i>Scopula nigropunctata</i> (Hufnagel, 1767)	Geometridae	89	0	0	0	0
<i>Scopula ornata</i> (Scopoli, 1763)	Geometridae	2	0	0	0	0
<i>Scopula ternata</i> (Schrank, 1802)	Geometridae	188	38	18	7	56
<i>Scotopteryx chenopodiata</i> (Linnaeus, 1758)	Geometridae	7	13	6	0	2
<i>Selenia dentaria</i> Fabricius, 1775)	Geometridae	140	20	16	0	16
<i>Selenia lumularia</i> (Hübner, 1788)	Geometridae	0	2	1	0	0
<i>Selenia tetralunaria</i> (Hufnagel, 1767)	Geometridae	13	1	12	1	0
<i>Semiothisa alternata</i> (Denis & Schiffermüller, 1775)	Geometridae	45	0	12	0	1
<i>Semiothisa clathrata</i> (Linnaeus, 1758)	Geometridae	5	17	4	3	20
<i>Semiothisa liturata</i> (Clerck, 1759)	Geometridae	492	8	180	5	53
<i>Semiothisa notata</i> (Linnaeus, 1758)	Geometridae	27	0	0	5	1
<i>Semiothisa signaria</i> (Hübner, 1809)	Geometridae	44	0	26	1	22
<i>Siona lineata</i> (Scopoli, 1763)	Geometridae	1	35	0	1	3
<i>Spargania luctuata</i> (Denis & Schiffermüller, 1775)	Geometridae	1	2	4	0	3
<i>Thera britannica</i> (Turner, 1825)	Geometridae	0	3	0	0	2
<i>Thera cognata</i> (Thunberg, 1792)	Geometridae	0	0	0	0	1
<i>Thera firmata</i> (Hübner, 1822)	Geometridae	32	7	5	0	0
<i>Thera obeliscata</i> (Hübner, 1787)	Geometridae	102	2	8	0	3
<i>Thera variata</i> (Denis & Schiffermüller, 1775)	Geometridae	38	12	5	3	152
<i>Thera vetustata</i> (Denis & Schiffermüller, 1775)	Geometridae	0	2	0	1	9
<i>Timandra comae</i> Schmidt, 1931	Geometridae	15	2	0	0	0
<i>Trichopteryx carpinata</i> (Borkhausen, 1794)	Geometridae	5	8	5	3	0
<i>Trichopteryx polycommata</i> (Denis & Schiffermüller, 1775)	Geometridae	0	2	0	0	0
<i>Venusia cambrica</i> Curtis, 1839	Geometridae	0	1	1	1	1
<i>Xanthorhoe biriviata</i> (Borkhausen, 1794)	Geometridae	3	1	1	0	0
<i>Xanthorhoe designata</i> (Hufnagel, 1767)	Geometridae	1	0	6	2	13
<i>Xanthorhoe ferrugata</i> (Clerck, 1759)	Geometridae	24	6	3	0	3
<i>Xanthorhoe fluctuata</i> (Linnaeus, 1758)	Geometridae	8	1	1	0	2
<i>Xanthorhoe incurvata</i> (Hübner, 1813)	Geometridae	0	0	3	0	7
<i>Xanthorhoe montanata</i> (Denis & Schiffermüller, 1775)	Geometridae	9	6	23	5	192

Appendix 1. Continued.

Species	Family	CB	ML	VN	CS	JS
<i>Xanthorhoe quadrifasciata</i> (Clerck, 1759)	Geometridae	19	3	3	1	0
<i>Xanthorhoe spadicearia</i> (Denis & Schiffermüller, 1775)	Geometridae	30	12	15	7	10
<i>Cerura vinula</i> (Linnaeus, 1758)	Notodontidae	0	3	0	0	2
<i>Clostera curtula</i> (Linnaeus, 1758)	Notodontidae	3	11	2	0	1
<i>Clostera pigma</i> (Hufnagel, 1766)	Notodontidae	19	12	6	0	3
<i>Drymonia ruficornis</i> (Hufnagel, 1766)	Notodontidae	6	0	0	0	0
<i>Eligmodonta ziczac</i> (Linnaeus, 1758)	Notodontidae	6	8	3	5	5
<i>Furcula bicuspis</i> (Borkhausen, 1790)	Notodontidae	7	0	3	0	0
<i>Furcula bifida</i> (Brahm, 1787)	Notodontidae	1	0	0	0	0
<i>Leucodonta bicoloria</i> (Denis & Schiffermüller, 1775)	Notodontidae	13	0	4	0	0
<i>Notodontia dromedarius</i> (Linnaeus, 1767)	Notodontidae	20	3	0	7	6
<i>Notodontia torva</i> (Hübner, 1803)	Notodontidae	0	0	2	1	4
<i>Odontotia carmelita</i> (Esper, 1798)	Notodontidae	17	3	4	2	17
<i>Phalera bucephala</i> (Linnaeus, 1758)	Notodontidae	64	8	78	1	0
<i>Pheosia gnoma</i> (Fabricius, 1776)	Notodontidae	18	9	27	2	62
<i>Pheosia tremula</i> (Clerck, 1759)	Notodontidae	4	6	0	2	18
<i>Pterostoma palpinum</i> (Clerck, 1759)	Notodontidae	2	6	2	1	2
<i>Ptilodon capucina</i> (Linnaeus, 1758)	Notodontidae	8	0	40	5	16
<i>Stauropus fagi</i> (Linnaeus, 1758)	Notodontidae	14	1	4	2	0
<i>Calliteara abietis</i> (Denis & Schiffermüller, 1775)	Lymantriidae	20	0	0	0	0
<i>Calliteara pudibunda</i> (Linnaeus, 1758)	Lymantriidae	32	4	55	0	1
<i>Euproctis similis</i> (Fuessly, 1775)	Lymantriidae	106	0	0	0	0
<i>Leucoma salicis</i> (Linnaeus, 1758)	Lymantriidae	2	2	1	1	0
<i>Lymantria monacha</i> (Linnaeus, 1758)	Lymantriidae	371	2	157	0	1
<i>Orgyia antiqua</i> (Linnaeus, 1758)	Lymantriidae	2	4	2	0	1
<i>Arctia caja</i> (Linnaeus, 1758)	Arctiidae	19	120	24	17	115
<i>Atolmis rubricollis</i> (Linnaeus, 1758)	Arctiidae	34	3	8	0	0
<i>Callimorpha dominula</i> (Linnaeus, 1758)	Arctiidae	5	0	0	0	0
<i>Cybosia mesomella</i> (Linnaeus, 1758)	Arctiidae	178	110	40	1	1
<i>Diacrisia sannio</i> (Linnaeus, 1758)	Arctiidae	85	108	38	4	88
<i>Eilema complanum</i> (Linnaeus, 1758)	Arctiidae	1439	59	13	1	0
<i>Eilema depressum</i> (Esper, 1787)	Arctiidae	431	74	81	1	0
<i>Eilema griseolum</i> (Hübner, 1803)	Arctiidae	270	0	0	0	0
<i>Eilema lurideolum</i> (Zincken, 1817)	Arctiidae	703	26	86	1	0
<i>Eilema lutarellum</i> (Linnaeus, 1758)	Arctiidae	12	8	0	0	0
<i>Eilema sororculum</i> (Hufnagel, 1766)	Arctiidae	18	0	2	0	0
<i>Lithosia quadra</i> (Linnaeus, 1758)	Arctiidae	13	1	0	0	0
<i>Mitochrista miniata</i> (Forster, 1771)	Arctiidae	360	0	0	0	0
<i>Parasemia plantaginis</i> (Linnaeus, 1758)	Arctiidae	4	0	1	2	0
<i>Phragmatobia fuliginosa</i> (Linnaeus, 1758)	Arctiidae	56	39	3	1	3
<i>Spilosoma lubricipeda</i> (Linnaeus, 1758)	Arctiidae	57	21	10	2	4
<i>Spilosoma luteum</i> (Hufnagel, 1766)	Arctiidae	5	0	0	0	0

Appendix 1. Continued.

Species	Family	CB	ML	VN	CS	JS
<i>Thumatha senex</i> (Hübner, 1808)	Arctiidae	211	2	2	0	0
<i>Acronicta alni</i> (Linnaeus, 1767)	Noctuidae	2	1	0	3	0
<i>Acronicta auricoma</i> (Denis & Schiffermüller, 1775)	Noctuidae	43	21	7	9	16
<i>Acronicta leporina</i> (Linnaeus, 1758)	Noctuidae	14	1	1	5	1
<i>Acronicta megacephala</i> (Denis & Schiffermüller, 1775)	Noctuidae	4	7	14	1	0
<i>Acronicta psi</i> (Linnaeus, 1758)	Noctuidae	7	0	0	0	0
<i>Acronicta rumicis</i> (Linnaeus, 1758)	Noctuidae	32	0	5	2	0
<i>Acronicta tridens</i> (Denis & Schiffermüller, 1775)	Noctuidae	1	0	0	0	0
<i>Agrochola circellaris</i> (Hufnagel, 1766)	Noctuidae	1	23	0	1	10
<i>Agrochola helvola</i> (Linnaeus, 1758)	Noctuidae	36	124	12	33	25
<i>Agrochola litura</i> (Linnaeus, 1761)	Noctuidae	0	12	0	1	3
<i>Agrochola lota</i> (Clerck, 1759)	Noctuidae	1	5	0	0	0
<i>Agrochola macilentata</i> (Hübner, 1809)	Noctuidae	0	17	0	0	55
<i>Agrotis exclamatoris</i> (Linnaeus, 1758)	Noctuidae	15	5	4	0	25
<i>Agrotis segetum</i> (Denis & Schiffermüller, 1775)	Noctuidae	8	2	1	0	1
<i>Allophytes oxyacanthae</i> (Linnaeus, 1758)	Noctuidae	2	9	15	1	0
<i>Amphipoea oculea</i> (Linnaeus, 1761)	Noctuidae	0	3	0	0	0
<i>Amphipyra berbera</i> Rungs, 1949	Noctuidae	2	0	1	0	0
<i>Amphipyra perflua</i> (Fabricius, 1787)	Noctuidae	0	1	6	0	0
<i>Amphipyra pyramidea</i> (Linnaeus, 1758)	Noctuidae	9	1	3	0	0
<i>Amphipyra tragopoginis</i> (Clerck, 1759)	Noctuidae	16	56	5	1	47
<i>Anaplectoides prasinus</i> (Denis & Schiffermüller, 1775)	Noctuidae	32	82	8	9	46
<i>Antitype chi</i> (Linnaeus, 1758)	Noctuidae	6	6	0	1	0
<i>Apamea anceps</i> (Denis & Schiffermüller, 1775)	Noctuidae	0	0	0	0	5
<i>Apamea crenata</i> (Hufnagel, 1766)	Noctuidae	4	15	2	28	893
<i>Apamea illyria</i> Freyer, 1846	Noctuidae	0	0	0	0	3
<i>Apamea lateritia</i> (Hufnagel, 1766)	Noctuidae	5	2	1	2	8
<i>Apamea monoglypha</i> (Hufnagel, 1766)	Noctuidae	47	262	17	11	678
<i>Apamea ophiogramma</i> (Esper, 1794)	Noctuidae	1	2	0	0	2
<i>Apamea remissa</i> (Hübner, 1809)	Noctuidae	0	1	1	7	30
<i>Apamea rubirena</i> (Treitschke, 1825)	Noctuidae	0	6	1	4	27
<i>Apamea scolopacina</i> (Esper, 1788)	Noctuidae	13	25	9	0	1
<i>Apamea sordens</i> (Hufnagel, 1766)	Noctuidae	6	3	0	2	25
<i>Apamea sublustris</i> (Esper, 1788)	Noctuidae	2	6	4	0	0
<i>Apamea unanims</i> (Hübner, 1813)	Noctuidae	6	2	1	0	0
<i>Athetis pallustris</i> (Hübner, 1808)	Noctuidae	0	2	0	0	26
<i>Autographa bractea</i> (Denis & Schiffermüller, 1775)	Noctuidae	0	6	0	8	179
<i>Autographa pulchrina</i> (Haworth, 1809)	Noctuidae	8	18	4	5	69
<i>Blepharita satura</i> (Denis & Schiffermüller, 1775)	Noctuidae	64	26	20	0	0
<i>Brachionycha nubeculosa</i> (Esper, 1785)	Noctuidae	3	1	0	0	0
<i>Brachylomia viminalis</i> (Fabricius, 1776)	Noctuidae	6	13	9	5	9
<i>Caradrina morpheus</i> (Hufnagel, 1766)	Noctuidae	1	3	0	0	2

Appendix 1. Continued.

Species	Family	CB	ML	VN	CS	JS
<i>Catocala fraxini</i> (Linnaeus, 1758)	Noctuidae	2	0	1	0	0
<i>Catocala nupta</i> (Linnaeus, 1767)	Noctuidae	0	1	1	0	0
<i>Celaena leucostigma</i> (Hübner, 1808)	Noctuidae	0	9	0	0	0
<i>Cerapteryx graminis</i> (Linnaeus, 1758)	Noctuidae	3	78	0	8	493
<i>Cerastis rubricosa</i> (Denis & Schiffermüller, 1775)	Noctuidae	33	66	5	5	38
<i>Chersotis cuprea</i> (Denis & Schiffermüller, 1775)	Noctuidae	0	0	0	0	31
<i>Chortodes minima</i> (Haworth, 1809)	Noctuidae	6	3	4	1	21
<i>Chortodes pygmaea</i> (Haworth, 1809)	Noctuidae	3	70	1	4	1
<i>Colobochyla salicalis</i> (Denis & Schiffermüller, 1775)	Noctuidae	1	0	0	0	0
<i>Colocasia coryli</i> (Linnaeus, 1758)	Noctuidae	12	5	77	3	28
<i>Conistra rubiginosa</i> (Denis & Schiffermüller, 1775)	Noctuidae	13	0	0	0	0
<i>Conistra vaccinii</i> (Linnaeus, 1761)	Noctuidae	26	61	1	0	2
<i>Cosmia trapezina</i> (Linnaeus, 1758)	Noctuidae	16	5	0	2	4
<i>Cucullia umbratica</i> (Linnaeus, 1758)	Noctuidae	1	5	0	0	2
<i>Dasypolia templi</i> (Thunberg, 1792)	Noctuidae	0	4	0	3	62
<i>Deltote deceptoria</i> (Scopoli, 1763)	Noctuidae	15	0	0	0	0
<i>Deltote uncula</i> (Clerck, 1759)	Noctuidae	13	1	0	0	1
<i>Diachrysa chrysitis</i> (Linnaeus, 1758)	Noctuidae	2	58	7	2	51
<i>Diarsia brunnea</i> (Denis & Schiffermüller, 1775)	Noctuidae	48	33	19	8	27
<i>Diarsia mendica</i> (Fabricius, 1775)	Noctuidae	27	11	96	5	261
<i>Diarsia rubi</i> (Vieweg, 1790)	Noctuidae	4	19	2	1	210
<i>Diloba caeruleocephala</i> (Linnaeus, 1758)	Noctuidae	1	0	0	0	0
<i>Earias clorana</i> (Linnaeus, 1761)	Noctuidae	3	0	0	0	0
<i>Elaphria venustula</i> (Hübner, 1790)	Noctuidae	229	0	0	0	0
<i>Enargia paleacea</i> (Esper, 1788)	Noctuidae	19	13	0	12	1
<i>Eriopygodes imbecillus</i> (Fabricius, 1794)	Noctuidae	0	57	1	0	653
<i>Euclidia glyphica</i> (Linnaeus, 1758)	Noctuidae	0	3	0	0	0
<i>Euplexia lucipara</i> (Linnaeus, 1758)	Noctuidae	8	1	4	0	2
<i>Eupsilia transversa</i> (Hufnagel, 1766)	Noctuidae	10	41	1	0	0
<i>Gortyna flavago</i> (Denis & Schiffermüller, 1775)	Noctuidae	0	42	0	1	0
<i>Graphiphora augur</i> (Fabricius, 1775)	Noctuidae	1	11	5	2	8
<i>Hada plebeja</i> (Linnaeus, 1761)	Noctuidae	0	61	0	4	180
<i>Hadena rivularis</i> (Fabricius, 1775)	Noctuidae	1	2	3	0	1
<i>Herminia grisealis</i> (Denis & Schiffermüller, 1775)	Noctuidae	2	0	3	0	1
<i>Herminia tarsicrinalis</i> (Knoch, 1782)	Noctuidae	8	0	0	0	0
<i>Herminia tarsipennalis</i> Treitschke, 1835	Noctuidae	3	0	1	0	0
<i>Hoplodrina blanda</i> (Denis & Schiffermüller, 1775)	Noctuidae	17	57	6	0	4
<i>Hoplodrina octogenaria</i> (Goeze, 1781)	Noctuidae	6	1	3	1	5
<i>Hypena proboscidalis</i> (Linnaeus, 1758)	Noctuidae	4	13	9	3	3
<i>Lacanobia contigua</i> (Denis & Schiffermüller, 1775)	Noctuidae	3	3	0	2	3
<i>Lacanobia suasa</i> (Denis & Schiffermüller, 1775)	Noctuidae	14	4	0	0	4
<i>Lacanobia thalassina</i> (Hufnagel, 1766)	Noctuidae	34	9	34	7	90

Appendix 1. Continued.

Species	Family	CB	ML	VN	CS	JS
<i>Lasionycta proxima</i> (Hübner, 1809)	Noctuidae	2	3	0	0	34
<i>Laspeyria flexula</i> (Denis & Schiffermüller, 1775)	Noctuidae	59	2	17	1	1
<i>Leucania comma</i> (Linnaeus, 1761)	Noctuidae	0	55	0	3	225
<i>Lithophane consocia</i> (Borkhausen, 1792)	Noctuidae	0	16	1	2	8
<i>Lithophane furcifera</i> (Hufnagel, 1766)	Noctuidae	0	5	1	0	2
<i>Lithophane socia</i> (Hufnagel, 1766)	Noctuidae	0	7	0	1	0
<i>Lygephila pastinum</i> (Treitschke, 1826)	Noctuidae	1	0	1	0	0
<i>Macrochilo cribrumalis</i> (Hübner, 1793)	Noctuidae	1	0	0	0	0
<i>Mamestra brassicae</i> (Linnaeus, 1758)	Noctuidae	30	12	1	4	10
<i>Melanchnra persicariae</i> (Linnaeus, 1761)	Noctuidae	5	6	0	0	0
<i>Melanchnra pisi</i> (Linnaeus, 1758)	Noctuidae	4	41	1	3	63
<i>Mesapamea didyma</i> (Esper, 1788)	Noctuidae	2	3	0	0	1
<i>Mesapamea secalis</i> (Linnaeus, 1758)	Noctuidae	34	36	1	0	14
<i>Mniotype adusta</i> (Esper, 1790)	Noctuidae	0	1	0	0	60
<i>Moma alpium</i> (Osbeck, 1778)	Noctuidae	6	0	0	0	0
<i>Mythimna conigera</i> (Denis & Schiffermüller, 1775)	Noctuidae	0	9	0	1	14
<i>Mythimna ferrago</i> (Fabricius, 1787)	Noctuidae	2	5	0	1	2
<i>Mythimna impura</i> (Hübner, 1808)	Noctuidae	80	398	41	13	36
<i>Mythimna pallens</i> (Linnaeus, 1758)	Noctuidae	11	2	1	2	21
<i>Mythimna pudorina</i> (Denis & Schiffermüller, 1775)	Noctuidae	5	2	0	0	0
<i>Mythimna turca</i> (Linnaeus, 1761)	Noctuidae	5	0	0	0	0
<i>Naenia typica</i> (Linnaeus, 1758)	Noctuidae	0	6	0	1	0
<i>Noctua comes</i> Hübner, 1813	Noctuidae	4	4	0	0	4
<i>Noctua fimbriata</i> (Schreber, 1759)	Noctuidae	3	21	3	1	20
<i>Noctua janthina</i> Denis & Schiffermüller, 1775	Noctuidae	7	0	0	0	0
<i>Noctua pronuba</i> (Linnaeus, 1758)	Noctuidae	22	112	5	4	309
<i>Nola confusalis</i> (Herrich-Schäffer, 1847)	Noctuidae	5	0	0	0	0
<i>Ochropleura plecta</i> (Linnaeus, 1761)	Noctuidae	48	83	10	16	61
<i>Oligia latruncula</i> (Denis & Schiffermüller, 1775)	Noctuidae	8	13	3	1	9
<i>Oligia strigilis</i> (Linnaeus, 1758)	Noctuidae	7	3	11	13	33
<i>Orthosia cerasi</i> (Fabricius, 1775)	Noctuidae	5	2	0	1	0
<i>Orthosia cruda</i> (Denis & Schiffermüller, 1775)	Noctuidae	5	0	0	0	0
<i>Orthosia gothica</i> (Linnaeus, 1758)	Noctuidae	104	365	119	5	155
<i>Orthosia incerta</i> (Hufnagel, 1766)	Noctuidae	24	50	2	0	1
<i>Panemeria tenebrata</i> (Scopoli, 1763)	Noctuidae	1	1	0	0	0
<i>Panolis flammea</i> (Denis & Schiffermüller, 1775)	Noctuidae	174	2	0	1	0
<i>Panthea coenobita</i> (Esper, 1785)	Noctuidae	14	0	4	2	4
<i>Paradiarsia glareosa</i> (Esper, 1788)	Noctuidae	0	1	0	0	1
<i>Parascotia fuliginaria</i> (Linnaeus, 1761)	Noctuidae	4	0	3	0	0
<i>Parastichtis suspecta</i> (Hübner, 1718)	Noctuidae	2	17	1	6	1
<i>Parastichtis ypsilon</i> (Denis & Schiffermüller, 1775)	Noctuidae	0	1	3	0	0
<i>Plusia festucae</i> (Linnaeus, 1758)	Noctuidae	0	6	0	0	0

Appendix 1. Continued.

Species	Family	CB	ML	VN	CS	JS
<i>Plusia putnami</i> (Grote, 1873)	Noctuidae	13	15	7	10	1
<i>Polia bombycina</i> (Hufnagel, 1766)	Noctuidae	12	12	6	3	2
<i>Polia hepatica</i> (Clerck, 1759)	Noctuidae	38	49	21	5	17
<i>Polia nebulosa</i> (Hufnagel, 1766)	Noctuidae	10	1	0	1	1
<i>Polychrysia moneta</i> (Fabricius, 1787)	Noctuidae	0	1	0	0	1
<i>Polymixis gemmea</i> (Treitschke, 1825)	Noctuidae	0	6	0	15	43
<i>Polypogon tentacularius</i> (Linnaeus, 1758)	Noctuidae	5	1	0	0	0
<i>Protodeltote pygarga</i> (Hufnagel, 1766)	Noctuidae	481	0	5	1	1
<i>Pseudoips prasinanus</i> (Linnaeus, 1758)	Noctuidae	8	12	3	0	2
<i>Rivula sericealis</i> (Scopoli, 1763)	Noctuidae	40	6	4	1	1
<i>Rusina ferruginea</i> (Esper, 1785)	Noctuidae	82	41	33	0	2
<i>Scoliopteryx libatrix</i> (Linnaeus, 1758)	Noctuidae	7	2	2	2	5
<i>Tholera cespitis</i> (Denis & Schiffermüller, 1775)	Noctuidae	0	7	0	0	1
<i>Tholera decimalis</i> (Poda, 1761)	Noctuidae	1	4	5	0	3
<i>Trachea atriplicis</i> (Linnaeus, 1758)	Noctuidae	1	0	1	0	0
<i>Trichosea ludifica</i> (Linnaeus, 1758)	Noctuidae	0	0	0	2	3
<i>Xanthia citrargo</i> (Linnaeus, 1758)	Noctuidae	2	0	0	0	0
<i>Xanthia icteritia</i> (Hufnagel, 1766)	Noctuidae	3	1	0	1	0
<i>Xanthia togata</i> (Esper, 1788)	Noctuidae	1	4	1	0	0
<i>Xestia baja</i> (Denis & Schiffermüller, 1775)	Noctuidae	220	534	20	9	37
<i>Xestia c-nigrum</i> (Linnaeus, 1758)	Noctuidae	126	131	3	12	193
<i>Xestia collina</i> (Boisduval, 1840)	Noctuidae	0	1	2	0	4
<i>Xestia ditrapezium</i> (Denis & Schiffermüller, 1775)	Noctuidae	14	3	2	1	0
<i>Xestia rhomboidea</i> (Esper, 1790)	Noctuidae	0	2	0	0	0
<i>Xestia sexstrigata</i> (Haworth, 1809)	Noctuidae	0	15	0	2	4
<i>Xestia speciosa</i> (Hübner, 1813)	Noctuidae	0	2	10	1	254
<i>Xestia triangulum</i> (Hufnagel, 1766)	Noctuidae	2	0	1	0	0
<i>Xylena vetusta</i> (Hübner, 1813)	Noctuidae	5	130	2	3	10
Tyrphoxenus species						
<i>Adela reaumurella</i> (Linnaeus, 1758)	Adelidae	1	0	0	0	0
<i>Tinea semifulvella</i> Haworth, 1828	Tineidae	0	0	2	0	0
<i>Tineola bisselliella</i> (Hummel, 1823)	Tineidae	1	0	0	0	0
<i>Aspilapteryx tringipennella</i> (Zeller, 1839)	Gracillariidae	1	0	0	0	0
<i>Caloptilia elongella</i> (Linnaeus, 1761)	Gracillariidae	1	0	0	0	0
<i>Eucalybites aurogutellus</i> (Stephens, 1835)	Gracillariidae	0	2	2	1	0
<i>Phyllonorycter blancardellus</i> (Fabricius, 1781)	Gracillariidae	1	0	0	0	0
<i>Phyllonorycter maestingellus</i> (Müller, 1764)	Gracillariidae	1	0	0	0	0
<i>Phyllonorycter rajellus</i> (Linnaeus, 1758)	Gracillariidae	1	0	0	0	0
<i>Swammerdamia pyrella</i> (de Villiers, 1789)	Yponomeutidae	1	0	0	0	0
<i>Yponomeuta evonymellus</i> (Linnaeus, 1758)	Yponomeutidae	140	41	28	14	83
<i>Yponomeuta malinellus</i> Zeller, 1838	Yponomeutidae	1	0	0	0	0
<i>Yponomeuta padellus</i> (Linnaeus, 1758)	Yponomeutidae	0	0	0	1	0

Appendix 1. Continued.

Species	Family	CB	ML	VN	CS	JS
<i>Yponomeuta sedellus</i> Treitschke, 1832	Yponomeutidae	2	0	0	0	1
<i>Ypsolopha asperella</i> (Linnaeus, 1761)	Ypsolophidae	0	1	0	0	0
<i>Ypsolopha ustella</i> (Clerck, 1759)	Ypsolophidae	5	0	0	0	0
<i>Plutella xylostella</i> (Linnaeus, 1758)	Plutellidae	41	39	3	66	62
<i>Agonopterix assimilella</i> (Treitschke, 1832)	Oecophoridae	0	0	1	0	0
<i>Agonopterix lituosa</i> (Haworth, 1811)	Oecophoridae	0	3	2	0	0
<i>Agonopterix petasitis</i> (Standfuss, 1851)	Oecophoridae	0	1	1	0	0
<i>Borkhausenia minutella</i> (Linnaeus, 1758)	Oecophoridae	0	0	1	0	0
<i>Deuteronia pudorina</i> (Wocke, 1857)	Oecophoridae	1	0	0	0	0
<i>Ethmia pusiella</i> (Linnaeus, 1758)	Oecophoridae	0	4	0	0	0
<i>Mendesia farinella</i> (Thunberg, 1794)	Elachistidae	0	1	0	0	0
<i>Coleophora laricella</i> (Hübner, 1817)	Coleophoridae	1	0	0	0	0
<i>Coleophora lutipennella</i> (Zeller, 1838)	Coleophoridae	2	0	0	0	0
<i>Coleophora mayrella</i> (Hübner, 1813)	Coleophoridae	0	0	0	0	1
<i>Coleophora sternipennella</i> (Zetterstedt, 1839)	Coleophoridae	0	0	1	0	0
<i>Coleophora therinella</i> Tengström, 1848	Coleophoridae	1	0	0	0	0
<i>Batrachedra praeangusta</i> (Haworth, 1828)	Batrachedridae	1	0	0	0	0
<i>Mompha conturbatella</i> (Hübner, 1819)	Momphidae	0	0	1	0	0
<i>Mompha epilobiella</i> (Denis & Schiffermüller, 1775)	Momphidae	0	0	0	0	1
<i>Mompha raschkiella</i> (Zeller, 1839)	Momphidae	0	0	0	0	1
<i>Mompha sturnipennella</i> (Treitschke, 1833)	Momphidae	1	0	0	0	0
<i>Aroga velocella</i> (Zeller, 1839)	Gelechiidae	0	0	1	0	0
<i>Athrips mouffetellus</i> (Linnaeus, 1758)	Gelechiidae	0	0	1	0	0
<i>Eulamprotes atrella</i> (Denis & Schiffermüller, 1775)	Gelechiidae	0	0	2	0	2
<i>Metzneria metzneriella</i> (Stainton, 1851)	Gelechiidae	0	0	1	0	0
<i>Monochroa hornigi</i> (Staudinger, 1883)	Gelechiidae	1	0	0	0	0
<i>Teletodes vulgellus</i> (Denis & Schiffermüller, 1775)	Gelechiidae	1	0	1	0	0
<i>Zeuzera pyrina</i> (Linnaeus, 1761)	Cossidae	1	2	0	0	0
<i>Adscita statices</i> (Linnaeus, 1758)	Zygaenidae	1	0	0	0	0
<i>Apoda limacodes</i> (Hufnagel, 1766)	Limacodidae	4	0	0	0	0
<i>Heterogenea asella</i> (Denis & Schiffermüller, 1775)	Limacodidae	6	0	0	0	0
<i>Anthophila fabriciana</i> (Linnaeus, 1767)	Choreutidae	0	0	0	0	1
<i>Acleris lorquiniana</i> (Duponchel, 1835)	Tortricidae	1	0	0	0	0
<i>Acleris rhombana</i> (Denis & Schiffermüller, 1775)	Tortricidae	0	0	0	1	0
<i>Aethes smeathmanniana</i> (Fabricius, 1781)	Tortricidae	4	3	1	1	0
<i>Agapeta hamana</i> (Linnaeus, 1758)	Tortricidae	1	0	0	0	0
<i>Ancylis badiana</i> (Denis & Schiffermüller, 1775)	Tortricidae	1	4	2	0	0
<i>Ancylis mitterbacheriana</i> (Denis & Schiffermüller, 1775)	Tortricidae	1	0	0	0	0
<i>Apotomis inundana</i> (Denis & Schiffermüller, 1775)	Tortricidae	1	0	0	0	0
<i>Archips rosanus</i> (Linnaeus, 1758)	Tortricidae	0	2	0	0	0
<i>Archips xylosteanus</i> (Linnaeus, 1758)	Tortricidae	1	0	0	0	0
<i>Celypha rufana</i> (Scopoli, 1763)	Tortricidae	0	1	1	0	0

Appendix 1. Continued.

Species	Family	CB	ML	VN	CS	JS
<i>Clepsis consimilana</i> (Hübner, 1817)	Tortricidae	0	0	0	0	1
<i>Cochylidia rupicola</i> (Curtis, 1834)	Tortricidae	1	0	0	0	0
<i>Croesia forsskaleana</i> (Linnaeus, 1758)	Tortricidae	0	0	1	0	0
<i>Cydia fagiglandana</i> (Zeller, 1841)	Tortricidae	2	2	0	0	1
<i>Cydia jungiella</i> (Clerck, 1759)	Tortricidae	0	0	0	1	0
<i>Cydia splendana</i> (Hübner, 1799)	Tortricidae	5	17	0	2	5
<i>Dichrorampha petiverella</i> (Linnaeus, 1758)	Tortricidae	0	5	0	0	0
<i>Dichrorampha simpliciana</i> (Haworth, 1811)	Tortricidae	0	2	0	0	0
<i>Epiblema sticticanum</i> (Fabricius, 1794)	Tortricidae	2	0	2	0	0
<i>Epiblema trimaculatum</i> (Haworth, 1811)	Tortricidae	1	0	0	0	0
<i>Eupoecilia sanguisorbana</i> (Herrich-Schäffer, 1856)	Tortricidae	0	0	1	0	0
<i>Gypsonoma minutana</i> (Hübner, 1799)	Tortricidae	0	0	0	1	0
<i>Hedya salicella</i> (Linnaeus, 1758)	Tortricidae	2	0	0	0	0
<i>Lathronympha strigana</i> (Fabricius, 1775)	Tortricidae	1	1	2	1	31
<i>Lobesia reliquana</i> (Hübner, 1825)	Tortricidae	3	0	0	0	0
<i>Lobesia virulenta</i> Bae & Komai, 1991	Tortricidae	0	0	0	0	1
<i>Pristerognatha penthinana</i> (Guenée, 1845)	Tortricidae	0	0	0	1	0
<i>Pseudargyrotoza conwagana</i> (Fabricius, 1775)	Tortricidae	1	0	0	0	1
<i>Ptycholomoides aeriferanus</i> (Herrich-Schäffer, 1851)	Tortricidae	0	0	1	0	0
<i>Spatalistis bifasciana</i> (Hübner, 1787)	Tortricidae	1	0	0	0	0
<i>Spilonota laricana</i> (Heinemann, 1863)	Tortricidae	0	0	0	0	1
<i>Strophedra weirana</i> (Douglas, 1850)	Tortricidae	0	0	1	0	0
<i>Tortrix viridana</i> (Linnaeus, 1758)	Tortricidae	15	0	0	2	1
<i>Zeiraphera isertana</i> (Fabricius, 1794)	Tortricidae	7	0	0	0	1
<i>Epermenia illigerella</i> (Hübner, 1813)	Epermeniidae	0	0	4	2	0
<i>Cnaemidophorus rhododactylus</i> (Denis & Schiffermüller, 1775)	Pterophoridae	0	0	0	0	1
<i>Emmelina monodactyla</i> (Linnaeus, 1758)	Pterophoridae	2	0	0	0	1
<i>Gillmeria pallidactyla</i> (Haworth, 1811)	Pterophoridae	0	1	0	1	1
<i>Gillmeria tetradactyla</i> (Linnaeus, 1758)	Pterophoridae	0	1	0	0	1
<i>Hellinsia carphodactyla</i> (Hübner, 1813)	Pterophoridae	0	1	0	0	0
<i>Merrifieldia tridactyla</i> (Linnaeus, 1758)	Pterophoridae	2	1	0	0	0
<i>Platyptilia gonodactyla</i> (Denis & Schiffermüller, 1775)	Pterophoridae	0	0	2	0	5
<i>Stenoptilia pelidnodactyla</i> (Stein, 1837)	Pterophoridae	0	0	0	0	1
<i>Stenoptilia pterodactyla</i> (Linnaeus, 1761)	Pterophoridae	0	2	0	6	7
<i>Anerastia lotella</i> (Hübner, 1813)	Pyralidae	1	0	0	0	0
<i>Conobathra repandana</i> (Fabricius, 1798)	Pyralidae	12	0	0	0	0
<i>Endotricha flammealis</i> (Denis & Schiffermüller, 1775)	Pyralidae	1	0	0	0	0
<i>Etiella zinckenella</i> (Treitschke, 1832)	Pyralidae	1	0	0	0	0
<i>Pempelia formosa</i> (Haworth, 1811)	Pyralidae	1	0	0	0	0
<i>Pempeliella ornata</i> (Denis & Schiffermüller, 1775)	Pyralidae	1	1	0	0	0
<i>Phycita roborella</i> (Denis & Schiffermüller, 1775)	Pyralidae	9	0	0	0	0
<i>Pyralis farinalis</i> (Linnaeus, 1758)	Pyralidae	3	1	0	0	0

Appendix 1. Continued.

Species	Family	CB	ML	VN	CS	JS
<i>Sciota rhenella</i> (Zincken, 1818)	Pyrilidae	1	0	1	0	0
<i>Synphe punctalis</i> (Fabricius, 1775)	Pyrilidae	2	0	0	0	0
<i>Agriphila inquinatella</i> (Denis & Schiffermüller, 1775)	Crambidae	1	0	0	0	0
<i>Ecpyrrhorrhoe rubiginalis</i> (Hübner, 1796)	Crambidae	1	0	0	0	0
<i>Eudonia merculella</i> (Linnaeus, 1758)	Crambidae	1	0	1	0	0
<i>Eurrhypara hortulata</i> (Linnaeus, 1758)	Crambidae	4	1	0	0	1
<i>Evergestis forficalis</i> (Linnaeus, 1758)	Crambidae	0	1	0	0	1
<i>Loxostege sticticalis</i> (Linnaeus, 1761)	Crambidae	0	0	0	0	21
<i>Microstega hyalinalis</i> (Hübner, 1796)	Crambidae	1	0	0	0	0
<i>Nomophila noctuella</i> (Denis & Schiffermüller, 1775)	Crambidae	24	4	4	1	2
<i>Ostrinia nubilalis</i> (Hübner, 1796)	Crambidae	0	0	1	0	0
<i>Phlyctaenia perlucidalis</i> (Hübner, 1809)	Crambidae	1	0	0	0	0
<i>Platytes alpinellus</i> (Hübner, 1813)	Crambidae	0	0	0	0	1
<i>Pleuroptya ruralis</i> (Scopoli, 1763)	Crambidae	21	16	9	3	8
<i>Sitochroa palealis</i> (Denis & Schiffermüller, 1775)	Crambidae	1	0	0	0	0
<i>Malacosoma neustria</i> (Linnaeus, 1758)	Lasiocampidae	2	0	0	0	0
<i>Agrius convolvuli</i> (Linnaeus, 1758)	Sphingidae	0	0	1	0	3
<i>Acherontia atropos</i> (Linnaeus, 1758)	Sphingidae	0	1	0	0	0
<i>Ochlodes venatus</i> (Bremer & Grey, 1853)	Hesperiidae	0	0	0	1	0
<i>Papilio machaon</i> Linnaeus, 1758	Papilionidae	0	2	0	0	0
<i>Pieris rapae</i> (Linnaeus, 1758)	Pieridae	0	0	0	0	2
<i>Aglais urticae</i> (Linnaeus, 1758)	Nymphalidae	2	1	0	0	11
<i>Araschnia levana</i> (Linnaeus, 1758)	Nymphalidae	5	0	0	0	0
<i>Argynnis niobe</i> (Linnaeus, 1758)	Nymphalidae	0	0	0	0	2
<i>Inachis io</i> (Linnaeus, 1758)	Nymphalidae	1	0	2	2	14
<i>Vanessa atalanta</i> (Linnaeus, 1758)	Nymphalidae	1	2	0	0	3
<i>Vanessa cardui</i> (Linnaeus, 1758)	Nymphalidae	0	11	0	0	0
<i>Polyommatus amandus</i> (Schneider, 1792)	Lycaenidae	0	1	0	0	0
<i>Polyphoca ridens</i> (Fabricius, 1787)	Drepanidae	1	0	0	0	0
<i>Watsonalla binaria</i> (Hufnagel, 1767)	Drepanidae	8	0	0	0	0
<i>Watsonalla cultraria</i> (Fabricius, 1775)	Drepanidae	2	1	1	0	0
<i>Anticollix sparsata</i> (Treitschke, 1828)	Geometridae	1	0	0	0	0
<i>Apeira syringaria</i> (Linnaeus, 1758)	Geometridae	0	0	2	0	0
<i>Aplocera plagiata</i> (Linnaeus, 1858)	Geometridae	0	0	0	0	2
<i>Aplocera praeformata</i> (Hübner, 1826)	Geometridae	2	5	8	13	22
<i>Artitora evonymaria</i> (Denis & Schiffermüller, 1775)	Geometridae	0	0	1	0	0
<i>Ascotis selenaria</i> (Denis & Schiffermüller, 1775)	Geometridae	5	0	0	0	0
<i>Catarhoe rubidata</i> (Denis & Schiffermüller, 1775)	Geometridae	1	0	0	0	0
<i>Chesias legatella</i> (Denis & Schiffermüller, 1775)	Geometridae	0	0	1	0	0
<i>Chloroclystis v-ata</i> (Haworth, 1809)	Geometridae	1	0	1	0	0
<i>Cyclophora punctaria</i> (Linnaeus, 1758)	Geometridae	1	0	0	0	0
<i>Ecliptopera capitata</i> (Herrich-Schäffer, 1839)	Geometridae	1	0	2	0	0

Appendix 1. Continued.

Species	Family	CB	ML	VN	CS	JS
<i>Ennomos erosarius</i> (Denis & Schiffermüller, 1775)	Geometridae	1	0	0	0	0
<i>Ennomos fuscantarius</i> (Haworth, 1809)	Geometridae	1	0	0	0	0
<i>Epione vespertaria</i> (Linnaeus, 1767)	Geometridae	0	1	0	1	0
<i>Epirrita christyi</i> (Allen, 1906)	Geometridae	0	1	0	0	1
<i>Eulithis prunata</i> (Linnaeus, 1758)	Geometridae	1	0	0	0	0
<i>Euphyia biangulata</i> (Haworth, 1809)	Geometridae	0	0	1	0	0
<i>Eupithecia assimilata</i> Doubleday, 1856	Geometridae	1	1	0	0	0
<i>Eupithecia distinctaria</i> Herrich-Schäffer, 1848	Geometridae	0	0	0	1	0
<i>Eupithecia icterata</i> (de Villers, 1789)	Geometridae	4	0	0	2	0
<i>Eupithecia innotata</i> (Hufnagel, 1767)	Geometridae	4	0	0	0	0
<i>Eupithecia lariciata</i> (Freyer, 1842)	Geometridae	6	0	1	1	5
<i>Eupithecia pusillata</i> (Denis & Schiffermüller, 1775)	Geometridae	0	1	0	0	1
<i>Eustroma reticulatum</i> (Denis & Schiffermüller, 1775)	Geometridae	0	0	3	0	0
<i>Gnophos obscuratus</i> (Denis & Schiffermüller, 1775)	Geometridae	1	0	0	0	0
<i>Hydrelia blomeri</i> (Curtis, 1832)	Geometridae	0	0	2	0	0
<i>Ligdia adustata</i> (Denis & Schiffermüller, 1775)	Geometridae	0	0	0	0	1
<i>Nothocasis sertata</i> (Hübner, 1817)	Geometridae	0	1	0	0	0
<i>Pareulype berberata</i> (Denis & Schiffermüller, 1775)	Geometridae	1	0	0	0	0
<i>Peribatodes rhomboidarius</i> (Denis & Schiffermüller, 1775)	Geometridae	1	0	0	0	0
<i>Perizoma taeniatum</i> (Stephens, 1831)	Geometridae	0	0	1	1	0
<i>Plagodis dolabraria</i> (Linnaeus, 1767)	Geometridae	2	0	2	0	0
<i>Plemyria rubiginata</i> (Denis & Schiffermüller, 1775)	Geometridae	3	0	0	0	0
<i>Rhinoprora rectangulata</i> (Linnaeus, 1758)	Geometridae	20	0	2	0	0
<i>Tephрина arenacearia</i> (Denis & Schiffermüller, 1775)	Geometridae	1	0	0	0	0
<i>Thera juniperata</i> (Linnaeus, 1758)	Geometridae	0	2	0	0	0
<i>Triphosa dubitata</i> (Linnaeus, 1758)	Geometridae	0	0	0	1	1
<i>Drymonia dodonaea</i> (Denis & Schiffermüller, 1775)	Notodontidae	0	1	1	1	0
<i>Furcula furcula</i> (Clerck, 1759)	Notodontidae	0	2	0	0	0
<i>Gluphisia crenata</i> (Esper, 1785)	Notodontidae	1	0	0	0	0
<i>Ptilodontella cucullina</i> (Denis & Schiffermüller, 1775)	Notodontidae	0	1	0	0	1
<i>Arctornis l-nigrum</i> (Müller, 1764)	Lymantriidae	2	0	0	0	0
<i>Setina roscida</i> (Denis & Schiffermüller, 1775)	Arctiidae	0	1	0	0	0
<i>Abrostola tripartita</i> (Hufnagel, 1766)	Noctuidae	2	4	0	0	1
<i>Abrostola triplasia</i> (Linnaeus, 1758)	Noctuidae	1	1	0	1	0
<i>Acronicta aceris</i> (Linnaeus, 1758)	Noctuidae	1	0	0	0	0
<i>Actinotia polyodon</i> (Clerck, 1759)	Noctuidae	0	1	0	0	0
<i>Agrotis ipsilon</i> (Hufnagel, 1766)	Noctuidae	26	473	1	4	63
<i>Amphipoea fucosa</i> (Freyer, 1830)	Noctuidae	5	0	0	0	0
<i>Apamea lithoxylaea</i> (Denis & Schiffermüller, 1775)	Noctuidae	0	3	0	0	0
<i>Archana sparganii</i> (Esper, 1790)	Noctuidae	1	0	0	0	0
<i>Autographa gamma</i> (Linnaeus, 1758)	Noctuidae	23	49	0	20	548
<i>Callierges ramosa</i> (Esper, 1786)	Noctuidae	0	1	1	0	0

Appendix 1. Continued.

Species	Family	CB	ML	VN	CS	JS
<i>Cerastis leucographa</i> (Denis & Schiffermüller, 1775)	Noctuidae	0	0	0	1	0
<i>Charanyca trigrammica</i> (Hufnagel, 1766)	Noctuidae	1	0	0	0	3
<i>Conistra rubiginosa</i> (Scopoli, 1763)	Noctuidae	0	1	0	0	0
<i>Cosmia pyralina</i> (Denis & Schiffermüller, 1775)	Noctuidae	1	0	0	0	0
<i>Cryphia algae</i> (Fabricius, 1775)	Noctuidae	0	0	0	0	1
<i>Cryphia ereptricula</i> (Treitschke, 1825)	Noctuidae	0	1	0	0	0
<i>Cucullia lactucae</i> (Denis & Schiffermüller, 1775)	Noctuidae	0	0	0	1	0
<i>Dypterygia scabriuscula</i> (Linnaeus, 1758)	Noctuidae	1	0	0	0	0
<i>Eugraphe sigma</i> (Denis & Schiffermüller, 1775)	Noctuidae	1	0	0	0	0
<i>Euxoa nigricans</i> (Linnaeus, 1761)	Noctuidae	0	0	0	1	0
<i>Euxoa tritici</i> (Linnaeus, 1761)	Noctuidae	1	0	0	0	0
<i>Hadena bicruris</i> (Hufnagel, 1766)	Noctuidae	0	0	0	0	2
<i>Hadena confusa</i> (Hufnagel, 1766)	Noctuidae	0	1	0	0	0
<i>Hoplodrina ambigua</i> (Denis & Schiffermüller, 1775)	Noctuidae	0	1	0	0	0
<i>Hydraecia micacea</i> (Esper, 1789)	Noctuidae	0	1	0	0	0
<i>Ipimorpha retusa</i> (Linnaeus, 1761)	Noctuidae	0	0	1	0	0
<i>Ipimorpha subtusa</i> (Denis & Schiffermüller, 1775)	Noctuidae	0	2	0	0	1
<i>Lithophane ornitopus</i> (Hufnagel, 1766)	Noctuidae	0	0	0	1	1
<i>Luperina testacea</i> (Denis & Schiffermüller, 1775)	Noctuidae	0	1	0	0	0
<i>Meganola strigula</i> (Denis & Schiffermüller, 1775)	Noctuidae	1	0	0	0	0
<i>Mesogona oxalina</i> (Hübner, 1803)	Noctuidae	0	1	0	0	0
<i>Mesoligia furuncula</i> (Denis & Schiffermüller, 1775)	Noctuidae	0	0	0	0	1
<i>Mythimna albipuncta</i> (Denis & Schiffermüller, 1775)	Noctuidae	3	0	0	0	2
<i>Mythimna vitellina</i> (Hübner, 1808)	Noctuidae	0	1	0	1	0
<i>Noctua interposita</i> (Hübner, 1790)	Noctuidae	0	1	0	0	0
<i>Nycteola revayana</i> (Scopoli, 1772)	Noctuidae	3	0	0	0	0
<i>Opigena polygona</i> (Denis & Schiffermüller, 1775)	Noctuidae	11	7	0	0	1
<i>Orthosia gracilis</i> (Denis & Schiffermüller, 1775)	Noctuidae	0	0	0	0	1
<i>Orthosia munda</i> (Denis & Schiffermüller, 1775)	Noctuidae	1	0	0	0	0
<i>Orthosia populeti</i> (Fabricius, 1781)	Noctuidae	1	1	0	0	0
<i>Paradrina clavipalpis</i> (Scopoli, 1763)	Noctuidae	0	1	0	0	0
<i>Paradrina selini</i> (Boisduval, 1840)	Noctuidae	1	0	0	0	0
<i>Phlogophora meticulosa</i> (Linnaeus, 1758)	Noctuidae	5	40	0	2	43
<i>Pyrrhia umbra</i> (Hufnagel, 1766)	Noctuidae	1	0	0	0	0
<i>Trisateles emortualis</i> (Denis & Schiffermüller, 1775)	Noctuidae	2	2	2	0	0
<i>Xanthia aurago</i> (Denis & Schiffermüller, 1775)	Noctuidae	0	1	0	0	0

Notes