

Lepidoptera of Arkhangelsk oblast of Russia: a regional checklist

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The first regional checklist of moths and butterflies of Arkhangelsk oblast of Russia includes 1,036 species (538 species of microlepidoptera and 498 species of macrolepidoptera), 496 of which have been found in the oblast for the first time. The most interesting records include *Gnorimoschema robustella*, *Caryocolum leucomelanella*, *Dichrorampha sequana*, *D. uralensis*, *Neptis rivularis* and *Melitaea phoebe*. We also discovered several populations of *Parnassius mnemosyne* in the southern part of the oblast. The fauna of Arkhangelsk oblast appears poorer than the fauna of Northern Ural Mts. but still includes some Siberian taiga species which do not reach Fennoscandia. Also, the distribution limits of several species extend further north in Arkhangelsk oblast than in the more western parts of Europe. We estimate that 500 to 800 species remain to be found in the study region.

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1. Introduction

Arkhangelsk oblast covers an area of 587,400 km², slightly larger than France, and is located in the northern part of the East European Plain. It includes Nenets Autonomous Okrug (NAO), the continental part of which is flat lowland tundra (Bolshezemelskaya Tundra) with several hill chains, while the Arctic islands (Novaya Zemlya and Franz Joseph Land) are mountainous. Due to the obvious environmental and biogeographical distinction between NAO and the remaining (mostly forested) parts of Arkhangelsk oblast,

and because of an insufficient knowledge on the moths and butterflies of NAO, we deliberately excluded NAO from our study region. Thus, the area covered by our checklist (Fig. 1) is 410,700 km². For the reasons of brevity, hereafter “Arkhangelsk oblast” means “Arkhangelsk oblast excluding NAO”.

The northernmost parts of Arkhangelsk oblast (Mezensky district and the northern part of Primorskyj district; Fig. 1) is forest-tundra, whereas the remaining territory is covered by boreal taiga forests. Arbitrarily, these forests are subdivided into northern taiga (to the north of 64–

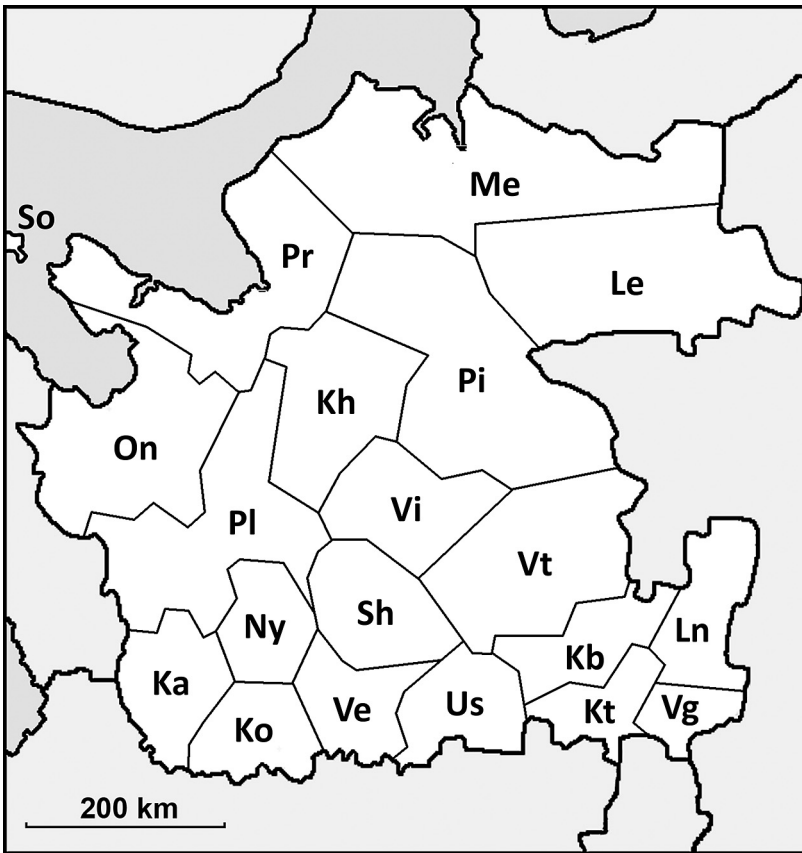


Fig. 1. Districts of Arkhangelsk oblast (excluding Nenets Autonomous Okrug): Ka – Kargopolsky, Kh – Kholmogorsky, Ko – Konoshsky, Kt – Kotlassky, Kb – Krasnoborsky, Ln – Lensky, Le – Leshukonsky, Me – Mezensky, Ny – Nyanedomskiy, On – Onezhsky, Pi – Pinezhsky, Pl – Plesetsky, Pr – Primorsky, Sh – Shenkursky, So – Solovetsky Archipelago (belongs to Pr), Us – Ustjansky, Ve – Velsky, Vt – Verkhnetotemskiy, Vg – Vilegot'sky, Vi – Vinogradovskiy.

65th latitudes), middle taiga (most of the oblast), and southern taiga (Konoshsky district). Nearly two thirds of forests are formed by Norway spruce, the remaining forests are dominated by Scots pine (20%) and birches (14%). Typical Siberian trees (*Abies sibirica*, *Larix sibirica*), which do not belong to the recent flora of the Nordic countries, occupy relatively small areas to the East of Onega River. Wetlands cover 14% of Arkhangelsk oblast, and meadows 2.5%. The most fertile meadows are located on flood-plains along Northern Dvina and Mezen Rivers (Byzova 2007).

One of the most fascinating regions of Arkhangelsk oblast is the Kuloi plateau on the White Sea confined by the rivers of the Northern Dvina, the Pinega and the Kuloi. In this region, gypsum and anhydrite rocks of the Early Permian age are subjected to active karst processes. One of the flagship plants of this region is *Paeonia anomala*. The strongly meandering rivers have remarkable impacts on diversity of the riparian

biotopes and act as migration paths for the southern fauna and flora (Mazur & Kubisz 2013).

The insect fauna of Arkhangelsk oblast is poorly known. The two first reports on Lepidoptera from this region listed 126 species collected in Kotlas (Krulikovskiy 1906) and 13 species collected mostly in Mezensky district (Poppius 1906). The next paper by Krulikovskiy (1909) increased the number of species recorded in Kotlas to 280. From late 1960s to mid-1970s, L. F. Zelenova intensively investigated moths feeding on trees and shrubs in the city of Arkhangelsk and its surrounding areas. Her major publication (Zelenova 1972) reports 201 species, and several more species were added in subsequent publications (Zelenova 1973, 1976). Importantly, L. F. Zelenova worked under supervision of V. I. Kuznetsov, who checked many of her identifications. From 1991 to 1994, A. M. Tikhomirov collected macrolepidoptera in the Pinega reserve. Results of his work are partially published (Tikhomirov 1994, Tikhomirov & Bolotov 2000,

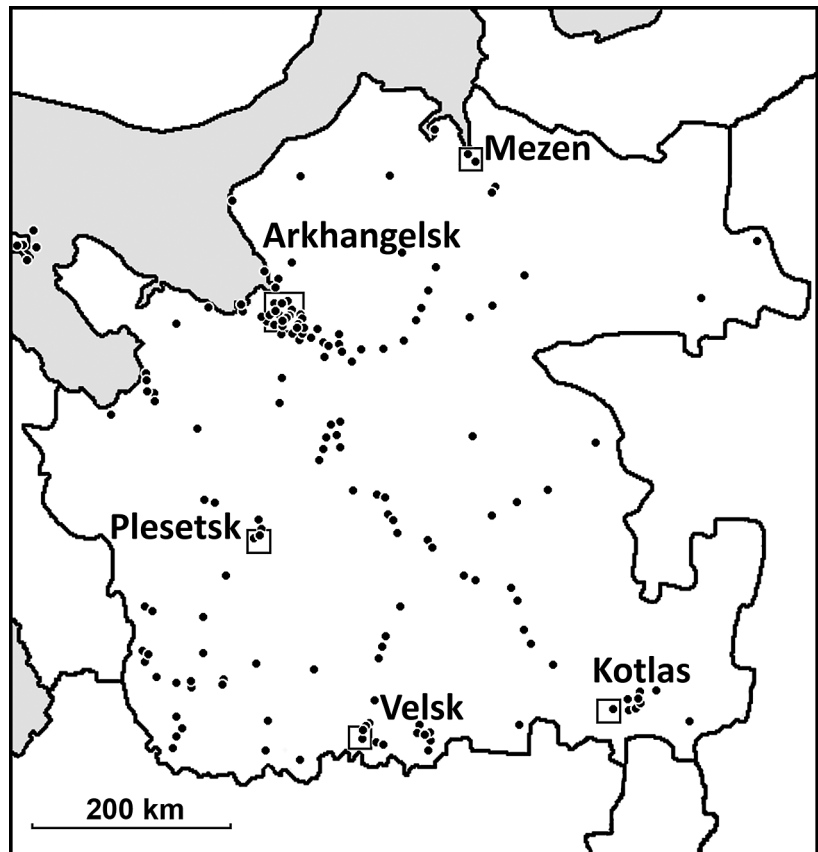


Fig. 2. Sampling localities (dots) in the Arkhangelsk oblast. Urban areas are shown by squares.

Antonova & Tikhomirov 2002). From the mid-1990s, I. N. Bolotov has been actively studying butterflies of Arkhangelsk oblast (Bolotov 2002, Bolotov *et al.* 2013a). Some information on macrolepidoptera was published in the lists of rare and protected species (Bolotov *et al.* 1998, Bolotov & Semushin 2003) as well as in two papers on *Parnassius mnemosyne* (Linnaeus) (Rykov 2009, Bolotov *et al.* 2013b). Finally, the rarely observed, but widespread palaeartic tiger moth, *Borearctia menetriesii* (Eversmann), was recently discovered in the study region (Bolotov *et al.* 2013c).

Although several applied publications (Ezhov 2008, Ezhov & Burak 2010, Burak & Ezhov 2011) reported records of some moth species in Arkhangelsk oblast, identifications of these species are doubtful and therefore these data sources were not used while compiling the checklist.

In this paper we summarize the recent knowledge on moths and butterflies of Arkhangelsk oblast in a form of checklist reporting localities

from which each species was collected. We believe that, in spite of the obvious incompleteness, this list may appear useful for ecological and biographical research and will facilitate further studies of Lepidoptera in the north-eastern Europe through identification of taxonomic and geographic gaps in our knowledge.

2. Material and methods

This paper is primarily based on the materials (some 4,500 pinned specimens, selected from over 17,500 collected specimens) sampled by M.V.K. and V.E.Z. from 86 localities in the Arkhangelsk oblast during 2009–2013 (Table 1). These samplings took place on: 17.–19.VII.2009; 14.–17.VI. and 7.–9.VIII.2010; 14.–26.VI.2011; 17.–20.VI.2012; 2.–6. and 24.–29.VI.2013. Information was kindly provided also by M. Tähtinen who (together with J. Paukkunen) collected Lepidoptera in SW part of the oblast, in lo-

Table 1. List of sampling localities in Arkhangelsk oblast.

Code	Locality	Geographical coordinates*		No of species**
		Latitude, N	Longitude, E	
Ar0	Arkhangelsk oblast	—	—	6/1
Ka0	Kargopolsky district	—	—	1/0
Ka1	Kargopol	61°30'21"	38°56'56"	109/3
Ka2	Morstchikhinskaya	61°46'10"	38°02'37"	10/5
Ka3	Kenozersky National Park	—	—	6/0
Ka4	2 km SE Ileksinskaya	61°40'53"	38°05'08"	19/0
Ka5	7 km E Savinskaya	61°44'52"	39°12'45"	17/0
Ka6	3 km S Kargopol	61°29'04"	38°57'23"	28/0
Ka7	Ileksinskaya	61°41'51"	38°04'00"	39/0
Ka8	2 km S Kirillovo	61°32'28"	39°16'07"	29/0
Ka9	Stegnevskaya	61°29'26"	39°28'53"	8/0
Ka10	3 km W Zhukovskaya	61°29'01"	38°38'36"	33/0
Ka11	1 km E Khotenovo	61°12'06"	38°35'13"	60/0
Ka12	Kononovo	61°07'01"	38°45'08"	33/0
Ka13	3 km N Svarozero	61°02'58"	38°32'37"	33/0
Ka14	1 km NW Dubrovo	60°58'26"	38°32'46"	64/0
Ka15	6 km E Stegneevskaya	61°28'32"	39°35'42"	41/0
Kb2	13 km NW Cherevkovo	61°53'33"	45°09'50"	35/0
Kb3	Cherevkovo	61°46'52"	45°16'08"	0/2
Kb4	17 km NE Krasnoborsk	61°37'03"	45°39'16"	71/0
Kh2	5 km W Leunovo	64°13'20"	42°35'45"	11/0
Kh3	Kuzomen	64°16'17"	42°56'32"	14/0
Kh4	9 km NW Belogorsky	64°13'29"	42°09'52"	12/0
Kh5	2 km S Ust-Pinega	64°07'54"	41°56'24"	8/0
Kh6	12 km SE Kholmogory	64°10'28"	41°26'17"	26/0
Kh7	Boloto	63°38'	41°47'	11/0
Kh8	3 km S Bolshaya Gora	63°36'06"	41°36'54"	31/0
Kh9	5 km NE Emetsk	63°31'00"	41°42'54"	14/0
Kh10	3 km N Oseredok	63°30'16"	41°33'18"	16/0
Kh11	Yemtsa River	—	—	3/0
Kh12	8 km S Emetsk	63°24'48"	41°47'00"	20/0
Kh13	Seltso	63°19'	41°24'	2/0
Kh14	Kurja	64°16'	41°31'	1/0
Kh15	Kurostrov Island	64°15'	41°43'	28/0
Kh16	Naelostrov Island	64°13'	41°46'	18/0
Kh17	Lukovetsky	64°18'	41°55'	0/1
Ko1	Konosha	60°58'07"	40°15'23"	0/1
Ko2	5 km E Zaruchevskaya	60°54'02"	40°50'38"	49/0
Ko3	Melent'ev Pal	61°11'17"	40°18'30"	36/0
Kt1	Kotlas	61°15'	46°40'	3/283
Kt2	6 km E Vychevodsky	61°15'17"	46°59'18"	10/0
Kt3	6 km SW Koryazhma	61°16'35"	47°04'04"	15/0
Kt4	3 km E Solvychevodsk	61°19'43"	46°58'57"	36/0
Kt5	2 km N Koryazhma	61°19'53"	47°08'42"	33/0
Kt6	Koryazhma	61°19'	47°09'	7/0
Kt7	3 km N Zabolotie	61°23'05"	47°11'34"	14/0
Kt8	1 km W Kharitonovo	61°24'13"	47°28'46"	11/0
Le2	8 km N Chublaskhoe	64°47'	45°11'	0/3
Le3	Vozhgora	64°33'	48°27'	0/19
Le4	Borkovskaya	65°11'	49°34'	1/0
Me1	Mezen	65°50'	44°16'	0/7
Me2	34 km SE Mezen	65°34'24"	44°37'36"	5/0
Me3	2 km S Kimzha	65°33'00"	44°36'12"	17/0
Me4	Kamenka	65°54'	44°07'	1/0
Me5	Dolgostchelye	66°03'	43°29'	0/2
Me6	Soyana River	65°39'	42°49'	0/1
Ny1	Nyandoma	61°38'50"	40°09'34"	10/0

Code	Locality	Geographical coordinates*		No of species**
		Latitude, N	Longitude, E	
On0	Onezhsky district	—	—	8/0
On1	Onega	63°55'	38°06'	3/0
On2	7 km N Pokrovskoye	64°04'35"	38°03'14"	3/0
On3	1 km N Pokrovskoye	64°01'20"	38°05'52"	25/0
On4	3 km SE Anda-Kirpichnaya	63°50'18"	38°16'17"	19/0
On5	Maloschuika	63°42'57"	37°27'11"	3/0
On6	2 km NE Pavlovsky Bor	63°36'26"	39°05'19"	29/0
On7	4 km NW Kopylovka	63°00'38"	39°17'42"	11/0
On8	Kamenikha	63°49'	38°20'	0/1
Pi0	Pinezhsky district	—	—	0/2
Pi2	9 km S Kuloy	64°54'18"	43°31'06"	25/0
Pi3	Pinega	64°42'19"	43°23'44"	8/9
Pi4	Golubino	64°33'	43°16'	67/146
Pi5	Kokornaya	64°33'	44°37'	0/2
Pi6	6 km SW Soyala	64°27'08"	43°10'20"	22/0
Pi7	Polta River, lower flow	64°59'	43°08'	0/2
Pi8	Nyukhcha	63°26'	46°32'	0/1
Pi9	Yula River, 50 km above Kushkopala	63°29'	44°17'	0/1
Pi10	Ust-Ezhuga	64°28'	44°16'	2/0
PI0	Plesetsky district	—	—	4/0
PI1	Plesetsk	62°43'	40°17'	1/0
PI2	Lomovoe	64°01'	40°39'	124/29
PI3	Kholmogorskaya	63°48'	40°39'	119/6
PI4	6 km NE Yarnema	62°59'06"	39°28'30"	26/0
PI5	6 km S Sheleksa	62°50'21"	40°17'19"	5/0
PI6	Mirnyi	62°46'	40°20'	13/0
PI7	4 km SE Plesetsk	62°41'49"	40°13'42"	34/0
PI8	3 km S Lipakovo	62°22'48"	39°40'58"	17/0
PI9	Fedosovo	62°07'	38°09'	3/0
PI10	7 km S Konevo	62°03'36"	39°15'00"	23/0
Pr0	Primorsky district	—	—	5/5
Pr1	Arkhangelsk	64°33'	40°33'	233/43
Pr2	Mudyugsky lighthouse	64°55'	40°14'	24/0
Pr3	Lapominka	64°47'09"	40°28'02"	11/2
Pr4	Neftebaza	64°39'	40°41'	3/0
Pr5	Talagi	64°38'	40°38'	9/4
Pr6	Molodezhnyi Island	64°34'	40°29'	9/0
Pr7	Kegostrov	64°33'	40°25'	0/1
Pr8	Ilma	64°32'	40°42'	3/0
Pr9	Krasnoflotsky Island	64°29'22"	40°39'14"	39/4
Pr10	60 km W Severodvinsk	64°29'30"	38°37'48"	22/0
Pr11	Yagry Island	64°37'52"	39°49'59"	14/0
Pr12	Severodvinsk	64°35'33"	39°50'58"	35/2
Pr13	Yuras	64°31'06"	40°41'22"	8/4
Pr14	Uemsky	64°29'	40°59'	3/0
Pr15	Zaostrovje	64°28'	40°30'	5/0
Pr16	Malye Karely	64°27'	40°58'	331/54
Pr17	Babonegovo	64°26'	40°58'	17/10
Pr18	Psarevo	64°26'	41°00'	3/2
Pr19	Lodma	64°25'	41°18'	0/5
Pr20	Katunino	64°24'	40°37'	2/0
Pr21	Khorkovo, Lyavlya	64°23'	41°01'	13/2
Pr22	Lesnaya Rechka	64°25'	40°38'	0/1
Pr23	Vologodskoe shosse	64°21'	40°58'	9/6
Pr24	Chasovenskoje	64°28'	40°38'	16/0
Pr25	Bobrovo	64°21'	41°10'	3/0
Pr26	Nenoksa	64°37'	39°12'	5/1
Pr27	Mechka	64°23'	40°51'	5/0

Code	Locality	Geographical coordinates*		No of species**
		Latitude, N	Longitude, E	
Pr28	Laisky Dok	64°32'	40°15'	13/0
Pr29	Zolotitsa River, upper flow	65°39'	41°06'	0/1
Pr30	Halt 25th km	64°29'	41°02'	0/1
Pr31	Halt 36th km	64°27'	41°14'	0/1
Pr32	Izhma	64°46'	40°47'	0/8
Pr33	Ilmatikha River, upper flow	64°33'	40°43'	0/1
Pr34	Chidvia River, upper flow	64°54'	41°02'	0/1
Pr35	Mouth of Ivovik River	65°27'	39°43'	0/1
Sh1	Shenkursk	62°06'25"	42°54'36"	2/1
Sh2	5 km S Ust-Padenga	61°51'49"	42°38'01"	43/0
Sh3	2 km W Rovdino	61°40'41"	42°30'02"	4/0
Sh4	Rudinskaya	61°46'02"	42°34'57"	93/0
So0	Solovetskie Islands	—	—	6/35
So1	Bolshoi Solovetsky Is.	—	—	55/1
So2	Anzer Is.	65°09'	36°03'	2/0
So3	Bolshoi Zayatsky Is.	64°58'	35°40'	2/0
So4	Bolshaya Muksalma Is.	65°02'	35°57'	50/0
So5	Botanical Garden	65°03'09"	35°39'50"	30/0
So6	Near Solovetsky settlement	65°01'	35°45'	109/0
So7	Pechak Cape	64°57'	35°45'	43/0
So8	So1 near the dam leading to So4	65°01'11"	35°52'24"	16/0
So9	Malaya Muksalma Is.	—	—	2/0
Us1	Oktyabrsky	61°05'	43°10'	1/0
Us2	10 km E Kizema	61°08'	44°59'	18/0
Us3	7 km NWW Oktyabrsky	61°09'04"	43°05'43"	46/0
Us4	6 km NWW Oktyabrsky	61°06'36"	43°03'53"	60/0
Us5	4 km S Oktyabrsky	61°02'05"	43°13'52"	28/0
Us6	6 km N Uglovskaya	60°58'01"	43°12'38"	29/0
Ve1	Velsk	61°04'	42°06'	87/0
Ve2	5 km N Priluki	61°21'22"	42°23'01"	25/0
Ve3	12 km NE Velsk	61°09'26"	42°12'39"	21/0
Ve4	9 km NE Velsk	61°08'05"	42°11'27"	42/0
Ve5	7 km NE Velsk	61°07'15"	42°10'36"	33/0
Ve6	12 km SE Velsk	61°01'	42°20'	16/0
Ve7	7 km E Kozlovskaya	61°05'35"	42°58'05"	21/0
Ve8	1 km W Priluk	61°00'00"	42°24'23"	42/0
Ve9	7 km W Verkhnepuisky	61°36'56"	41°16'14"	21/0
Vg1	Vilegodsk	61°10'	48°17'	11/0
Vi1	Bereznik	62°50'46"	42°44'02"	1/0
Vi2	1 km S Monastyrrek	63°03'46"	42°04'11"	36/0
Vi3	Uyta	63°00'36"	42°31'36"	142/0
Vi4	Ust-Vaenga	63°00'	42°38'	4/0
Vi5	2 km SE Bereznik	62°49'54"	42°46'15"	37/0
Vi6	6 km S Zaborye	62°41'52"	42°53'35"	31/0
Vi7	6 km S Rochedga	62°37'21"	43°27'24"	25/0
Vi8	Tulgas	62°35'32"	43°30'35"	40/0
Vi9	Ura (abandoned)	63°00'	45°20'	0/1
Vi10	Shivrey River	62°54'	44°31'	0/2
Vt2	50 km S Mamonikha	63°00'43"	45°39'37"	0/10
Vt3	2 km W Osiyevskaya	62°20'24"	44°06'56"	42/0
Vt4	3 km W Verkhnyaya Toima	62°13'46"	44°57'04"	19/0
Vt5	12 km S Verkhnyaya Toima	62°08'15"	45°04'03"	18/0
Vt6	10 km SW Osiyevskaya	62°18'03"	44°19'12"	38/0

*Geographical coordinates were rounded off to minutes when the sampled area exceeded 1 km² or when the extent of the historical sampling area cannot be recovered. Coordinates are not provided when the locality name refers to an area exceeding 100 km².

**Based on examined specimens / published records. Data for large territories (entire Arkhangelsk oblast or one of administrative units within it) are included only for species that have not been reported from any clearly specified locality within this territory.

calities Ka15, Sh4 and Ve9 (Table 1), on 12.VI. – 21.VII.2013. The specimens were mostly collected by netting and the total collecting time was ca. 210 person-hours. We performed short-term (1–5 nights) light trapping in four localities: Ka1 on 25.–26.VII. 2011 and 18.–20.VI.2012, Pi4 on 21.–22.VII.2011, So6 on 24.–29.VI.2013, and Ve1 on 16.–18.VII.2012. In addition, we arranged a 10 week-long light trapping in one locality, Vi3, on 15.VII. – 28. IX.2011. We also recorded easily identifiable species on the basis of visual observations, collected leaf mines and reared moths from field-collected larvae.

The materials are mostly deposited in the Zoological Museum, University of Helsinki (MZH). Some specimens were donated to the Zoological Museum in St. Petersburg (ZISP), and samples of 2011 were partially donated to the Natural History Museum in London (NHM).

Additional information was obtained by studying collections of ZISP, where we checked materials of each of 717 species that were reported (Sinev 2008) from the biogeographical region that includes Arkhangelsk oblast. We also sought for specimens from Arkhangelsk oblast in so-called “Arctic collection” created by N. Y. Kusnezov in 1930s and in accession materials. In the Northern (Arctic) Federal University (NarFU), Arkhangelsk, we checked, sorted and identified all specimens (some 2,000 exx) collected by L. F. Zelenova; most of this material is now transferred to ZISP. We also studied reference collections of NarFU, samples collected by students during the summer courses and photographic images from the private collection of Anatoly Popov, Arkhangelsk.

In the following list, an asterisk (*) denotes species that are reported from Arkhangelsk oblast for the first time. The references to earlier publications are given only if there are no specimens examined by the authors. For each species, we provide the list of localities (Table 1, Fig. 2). Codes of the localities include two-letter abbreviations of the administrative units (“rayon”, translated as district) within the Arkhangelsk oblast (Fig. 1) and a numerical code, with 0 referring to a record made from this administrative unit which cannot be attributed to any specific locality within it, and with 1 referring to the administrative centre of respective unit. The only exception is

Solovetsky Archipelago, for which we used the codes starting with “So”, although this archipelago administratively belongs to Primorsky district. A dash between the numerical codes indicates that the species was recorded in all localities whose numbers lie between those connected by a dash. The order of families follows Nieuwerkerken *et al.* (2011), the order of genera and species within a family mostly follows Sinev (2008), whereas species-level nomenclature is given after Fauna Europaea (Karsholt *et al.* 2013).

When commenting distribution records, we used all available sources of information, primarily Kullberg *et al.* (2014), Hyönteistietokanta (2014) and Sinev (2008). The references to the regions of Russia follow the subdivision of the country adopted by Sinev (2008). Biogeographical provinces of Finland are given in italics; for a map of the provinces, consult Kullberg *et al.* (2002) or Haarto and Winqvist (2006).

3. List of species

Micropterigidae

- **Micropterix aruncella* (Scop.). Ve1.
- **M. aureatella* (Scop.). Kh8, Kh12, Kt3, Pi2, Pi7, Pr16, So6, Us3, Vi2, Vi7–8, Vt6.
- **M. calthella* (L.). Ka11, Kb4, Kh8, Ko3, Pi7, Pr9, Ve1, Ve4, Vi2, Vi7, Vt3, Vt6.
- **M. mansuetella* Z. Ka11.

Eriocraniidae

- **Eriocrania cicatricella* (Zett.). Pr16.
- **E. semipurpurella* (Steph.). Pr16.
- **E. sparrmannella* (Bosc.). Kh9, Kt3, Pi2, Sh2, Ve4, Vi6.

Hepialidae

- Gazoryctra ganna* (Hbn.). Pi4 (A. Tikhomirov, pers. comm.).
- Pharmacis fusconebulosa* (De Geer). Pi4 (A. Tikhomirov, pers. comm.).
- Phymatopus hecta* (L.). Kb4, Kh6, Kh10, Kh15, Kt8, Pi4, Pi3, Pr16, Sh2, So1, Vi2.
- Hepialus humuli* (L.). Kh15, Kt1, Pr16–17.

Nepticulidae

- **Stigmella anomalella* (Goeze). Pi4, Pr1.
- **S. assimilella* (Z.). Pr1.

- **S. betulicola* (Stt.). Kh9, Pi2, Sh2, Vi6.
- **S. confusella* (Wood & Wals.). Sh2, Vi6.
- **S. lapponica* (Wck.). Ka6, Kh2, Kh4, Kh9, On6, Pi2, Pr1, Sh2, Ve4, Vi6.
- **S. lemniscella* (Z.). Ve1.
- **S. luteella* (Stt.). Pr1.
- **S. magdalenae* (Klim.). Ka4, Kh6, Kt4, On4, On5, Pr1, Sh2, Ve3, Vi7.
- **S. nylandriella* (Tengstr.). Pr1.
- **S. sorbi* (Stt.). Ka4, Ka11, Ka13, Ka14, Kt4, Pi4, Pr1, Us4, Ve1, Ve3–4, Vi5, Vt3.
- **S. splendidissimella* (H.-S.). Ka6, Pi4.
- **S. trimaculella* (Haw.). Kt1, Kt6, Pl1, Pr1, Sh1, Ve1.
- **Bohemannia pulverosella* (Stt.). Kt1.
- **Ectoedemia intimella* (Z.). Ka14.
- **E. minimella* (Zett.). Kt3.
- **E. occultella* (L.). Kt3.

Opostegidae

- **Opostega salaciella* (Tr.). Vi2, Vi5.

Heliozelidae

- **Heliozela hammoniella* Sorh. Ka14.

Adelidae

- **Nemophora amatella* (Stgr.). Pi2–3, Pr16.
- N. degerella* (L.). Kb4, Kt1, Pl10, Vi7.
- **Adela croesella* (Scop.). Ka7.
- **A. cuprella* (Den. & Schiff.). Pr16.
- **Cauchas fibulella* (Den. & Schiff.). Ka7, Ka13–14, Kt3, Us4, Ve1, Ve7–8.
- Nematopogon pilella* (Den. & Schiff.). Kt1 (Krulikovsky 1909).
- N. robertella* (Cl.). Kt1, Pl3, So6.
- **N. schwarziellus* Z. So1.

Incurvariidae

- Alloclementia mesospilella* (H.-S.). Pr1, Pr16 (Zelenova 1972).
- Incurvaria oehlmaniella* (Hbn.). Me3, Pi2–3, Pr16, So6–7.
- I. pectinea* Haw. Kt1, Pi2, Pr16, Pr23, So6, So7, Vi6.
- I. praelatella* (Den. & Schiff.). Pi2.
- **Phylloporia bistrigella* (Haw.). Pr16, Sh2.

Prodoxidae

- Lampronia capitella* (Cl.). Ka11, Pi2–3, Pr1, Pr16, Ve1.

- L. corticella* (L.). Kt1, Pr16.

L. fuscata (Tengstr.). Pr16 (Zelenova 1972).

- **L. luzella* (Hbn.). So6.

**L. provectella* (Heyd.). Pr16. This is the northernmost record of this rarely collected boreomontane Euro-Siberian species which has not been discovered in the Nordic countries yet. The nearest and the only Fennoscandian record is from Russian Karelia: the single female, collected 17.VII.1863 in humid semi-open spruce forest at “Käpselgä” (Käppäselkä, 62°40'04" N, 34°16'16" E), was described as *Lampronia triangulifera* by Tengström (1869).

- **L. redimitella* (Lienig & Z.). Pr1.

**L. rupella* (Den. & Schiff.). Pi4, Pi2–3, Pr16, Us4.

**L. standfussiella* Z. Pl3. This is a rare species which was for a long time known from Fennoscandia only by a specimen (deposited in MZH) that was collected near Petrozavodsk in Russian Karelia by A. Günther. Recently it has been reported from northern Finland (Itämies et al. 1996), Kola Peninsula (Kozlov & Kullberg 2006) and Sweden (Svensson 2005). It has also been collected from Labytnangi on the Asian side of the Ural Mts. (J. K., pers. obs.).

Tischeriidae

- **Tischeria angusticollella* (Dup.). Ka4, Kh8, Kt5, Pi4, Pl4, Pl7, Pr1, Pr10, Ve5, Vi7.

Psychidae

- **Siederia rupicolella* (Sauter). Pl3.
- Taleporia tubulosa* (Retz.). Kt1, Pl3, Pr16, So6.
- Psyche casta* (Pallas). Kt1 (Krulikovsky 1909).
- **Psyche crassiorella* (Bruand). Ka1, Ko3, Vi2.
- **Acanthopsyche atra* (L.). Ka7.
- Canephora hirsuta* (Poda). Kt1 (Krulikovsky 1909).
- **Sterrhopterix standfussi* (Wck.). Kh10, Ko2.

Tineidae

- Haplotinea insectella* (F.). Kt1, Pr1, Ve1.
- Agnathosia mendicella* (Den. & Schiff.). Pr1.
- Montescardia tessulatella* (Lienig & Z.). Kt1, Pr1, Pr16, So6, Ve1.
- Scardia boletella* (F.). Kt1 (Krulikovsky 1909).
- **Triaxomera fulvimitrella* (Sodoffsky). So6.

Archinemapogon yildizae Koçak. Kt1, P12.

Nemapogon cloacella (Haw.). Kt1, Pi4, P12, Pr1, Pr16, So6.

N. granella (L.). Kt1 (Krulikovsky 1909).

**N. wolffiella* Karsholt & Nielsen. Pr16.

Tineola bisselliella (Hummel). Kt1, Pr1.

Tinea pelliionella L. Ka1, Kt1, P12, Pr1, Pr16, Vi3.

**Niditinea fuscella* (L.). Pr1, Pr16.

**N. truncicolella* (Tengstr.). So6.

Monopis laevigella (Den. & Schiff.). Kt1, Pr1, Pr16, So6.

M. spilotella (Tengstr.). Kt1, Pr16.

**M. weaverella* (Scott). Ka11.

Bucculatricidae

**Bucculatrix cidarella* (Z.). Ka4, Ka7, Pr1.

**B. cristatella* (Z.). Ka12, Kt3, So6.

**B. demaryella* (Dup.). Kh2, Sh2, Ve4, Vi6.

**B. frangutella* (Goeze). Ka11.

**B. maritima* Stt. So6.

**B. nigricomella* (Z.). Ka14, Pr16, Sh2.

Gracillariidae

**Gracillaria syringella* (F.). Pr1.

**Caloptilia betulicola* (M. Hering). Kh9, Pi2, P13, Vi6.

C. elongella (L.). Kt1, Pr1, Pr16.

C. stigmatella (F.). Kt1, Pi4, P13, Pr1, Pr7, Pr16.

**C. suberinella* (Tengstr.). Kb4, Kh2, Kh6, Kh9, On4, Pi2, Pi4, Pi6, P12, Ve4, Vi2, Vi5, Vi8.

**Euspilapteryx auroguttella* (Steph.). P12, P110.

**Parornix anglicella* (Stt.). Kt6, P13.

**P. devoniella* (Stt.). Pr1, Pr24.

**P. loganella* (Stt.). Pr1, Pr16.

**Phyllonorycter apparella* (H.-S.). Kt4–5, Pr1, Vt5.

P. cavella (Z.). Pr1, Pr16.

**P. issikii* (Kumata). Kt6. This species originates from the Russian Far East and Japan, but has recently aggressively expanded in Europe including Baltic countries and Finland (Karsholt *et al.* 2013). This record (made on planted limes outside their natural range) most likely lies at the current northern distribution limit, because the extensive search of mines on limes in more northern localities in 2011–2013 yielded no positive results.

P. sorbi (Frey). Ka4, Kt1, Pr1, Ve3.

**P. strigulatella* (Lienig & Z.). Ka6–7, Ka11, Ka14, Ko3, Pr1, Pr9, Pr16, Ve7, Vi2.

**P. ulmifoliella* (Hbn.). Pr16, Us3, Us4.

**P. salicicolella* (Sircom). Pr16.

**P. salictella* (Z.). Pr16.

P. emberizaepennella (Bouché). Pr1, Pr16.

Phyllocnistis labyrinthella (Bjerk.). Ka1, Ka7, On2, On6, Pr1, Pr16, Vi5.

**P. unipunctella* (Steph.). Pr1. On cultivated *Populus* spp.

Yponomeutidae

Yponomeuta evonymella (L.). Kb3, Kt1, Pr1, Ve1, Vi3.

**Y. sedella* (Retz.). Ka1, Vi3.

**Euhyponomeutoides albithoracellus* Gaj. Pr1, Pr16.

Swammerdamia caesiella (Hbn.). P13, Pr1, Pr16, Pr23.

**S. compunctella* H.-S. P12, Pr16.

**S. passerella* (Zett.). Pr16.

**Paraswammerdamia conspersella* (Tengstr.). P13, Pr1, Pr16.

**P. lapponica* (W. Petersen). Pr16.

Cedestis gysseleniella Z. P12, Pr16.

**Atemelia torquatella* (Lienig & Z.). Pr1.

Argyresthiidae

**Argyresthia dilectella* Z. Pi4.

**A. glabratella* (Z.). Kh9, So5–6.

A. laevigatella (Heyd.). Pr16.

A. praecocella Z. Pr16.

A. brockeella (Hbn.). Pr1.

A. conjugella Z. Kb2, Kh6, P12, Pr1, Pr16, Pr24, So4–5, Vi2, Vi8, Vt3.

**A. pygmaeella* (Den. & Schiff.). Pr1, Pr9, Pr16, So5.

A. retinella Z. Pr1, Pr16 (Zelenova 1972).

A. sorbiella (Tr.). P13, Pr1, Pr16.

Plutellidae

Plutella xylostella (L.). Ka1, Ka6, Kh12, Ko1–2, Kt1–2, Me3, Pi4, P12, P110, Pr1, Pr4, Pr16, Sh2, So4–6, Ve1, Ve7, Vi3, Vi5–6, Vi8.

**P. porrectella* (L.). Ka1.

Glyphipterigidae

**Digitivalva reticulella* (Hbn.). Pi4, P12, Vi5.

Glyphipterix forsterella (F.). Ka13, So7.

**G. haworthana* (Steph.). Me3, So4.

**G. simplicella* (Steph.). Ka7, Ka10–12, Ka14, Kh12, Kt2–3, Ko3, Pi3, Pr1, Sh2, So6, Us4,

Us6, Ve1, Ve4, Ve8, Vi6.

**G. thrasonella* (Scop.). Pi4, Pi2, Pi7, Sh2, Ve2, Vi2, Vt6.

Ypsolophidae

Ypsolopha dentella (F.). Pr1, Pr16, Pr23.

**Y. falcella* (Den. & Schiff.). Kt6, Pr1.

**Y. nemorella* (L.). Pr16.

Y. parenthesesella (L.). Pi3, Pr1, So6, Vi3.

**Ochsenheimeria urella* F. v. R. Pi10.

Lyonetiidae

**Leucoptera sinuella* (Reutti). Ka6, Kb2, Kt8.

**L. malifoliella* (O. Costa). Kt1, Kt5–7, Ve1.

**Lyonetia clerkella* (L.). Kh10, Pr1, Vi5.

**L. ledi* Wck. On3.

Douglasiidae

**Tinagma perdicella* Z. Ka14.

Oecophoridae

**Denisia similella* (Hbn.). Ka1, Pi2, Pr16, So6.

**D. stipella* (L.). Pi2–3, So6.

**Borkhausenia fuscescens* (Haw.). Vi8.

**B. luridicomella* (H.-S.). Ka1.

Endrosis sarcitrella (L.). Kt1, Pi2, Pr1, Pr16.

**Pleurota bicostella* (Cl.). Ve2.

**Pseudatemelia josephinae* (Toll). Pi2.

Elachistidae

Semioscopis avellanella (Hbn.). Pr16.

**S. steinkellneriana* (Den. & Schiff.). Pr16.

S. strigulana (F.). Pr16.

Levipalpus hepatariella (Lienig & Z.). Kt1 (Krulikovsky 1909).

**Exaeretia allisella* Stt. Vi3.

E. ciniflonella (Lienig & Z.). Kt1, Pi2, So0.

**Agonopterix angelicella* (Hbn.). Pi4, Pr1, Pr16.

**A. conterminella* (Z.). Pr1, Pr6, Pr16.

A. heracliana (L.). Kt1, Pr16.

**A. hypericella* (Hbn.). Pi4.

A. kaekeritziana (L.). Kt1 (Krulikovsky 1909).

**A. ocellana* (F.). Vi3.

**A. propinquella* (Tr.). Ve1.

**Depressaria badiella* (Hbn.). Vi3.

**D. depressana* (F.). Pi3, Pr16.

**D. leucocephala* Snell. Vi3.

D. pimpinellae Z. Kt1 (Krulikovsky 1909).

D. daucella (Den. & Schiff.). Kt1, Vi3.

**D. sordidatella* Tengstr. Pi4, Vi3.

**Ethmia quadrillemma* (Goeze). Us6.

**Elachista adscitella* Stt. Pi4, So6.

**E. albifrontella* (Hbn.). Ka14, Pi3, Pi2–3, Pr1, Pr16, Us4, Ve1.

**E. alpinella* Stt. Kh4, Kt8, Pi2.

**E. apicipunctella* Stt. Pr1, Ve1.

**E. diderichsiella* E. Hering. Pr16, So5, Ve1.

**E. humilis* Z. Pr16.

**E. maculicerusella* (Bruand). So6.

**E. nobilella* Z. Pi2, Pr1, Pr16.

**E. pullicomella* Z. Ka1, Kh4, Pi3, Vi2.

**E. subalbidella* Schläger. Ka10–11, Kh12, Kt2, Pi3, So6.

**E. tengstromi* Kaila, Bengtsson, Šulcs & Junnilainen. Pi7.

**E. baltica* Hering. Pi2–3, Pr1, Pr16.

**E. eleochariella* (Stt.). Kh4, Kh10.

**E. occidentalis* Frey. Vi2.

**E. exactella* (H.-S.). Pr1.

**Heinemannia laspeyrella* (Hbn.). Ko3.

**Hypercallia citrinalis* (Scop.). Kb4.

Stathmopodidae

**Stathmopoda pedella* (L.). Kb4, Kt6.

Batrachedridae

Batrachedra praeangusta (Haw.). Kt5, Pr9, Pr16, Ve3.

Coleophoridae

Coleophora serratella (L.). Ka10, Pi2, Pr1, Pr16.

**C. milvipennis* Z. Ko2.

**C. gryphipennella* (Hbn.). Pr1.

**C. plumbella* Kanerva. Pr16, Ve7.

C. lusciniæpennella (Tr.). Pr1 (Zelenova 1972).

**C. potentillae* Elisha. Ka14.

**C. violacea* (Ström). So6.

C. binderella Kollar. Pr16.

C. sibiricella Falk. Pr1, Pr16. Older reports of *C. laricella* in the northern Russia refer to this species.

**C. cornutella* (H.-S.). So6.

**C. albidella* (Den. & Schiff.). Ka1.

C. alcyonipennella (Koll.). Ka14, Kt1, Sh2, So5–6, Vi3, Vt6.

C. deauratella Lienig & Z. Ka1, Ka7, Ka9–10, Ka12, Ka14, Kt1, Pi2, Pi2, Pr1, Pr16, Sh2, So5–6, Us4–5, Ve1, Ve8, Vi6.

**C. frischella* (L.). Ka10.

**C. mayrella* (Hbn.). Ka1, Ka8.

- **C. adjunctella* (Hodgkinson). So6.
- **C. alticolella* Z. Ka1, Ka11, Ka13, Me2, So5, So7, Pl3, Ve1.
- **C. glaucicolella* Wood. Ka1, Ka11, Ve1, Vi2, Vi8.
- C. directella* Z. Kt1 (Krulikovsky 1909).
- **C. striatipennella* Nyl. So5–6, Ve8.
- **C. atriplicis* (Meyr.). So5, So7.
- **C. sternipennella* (Zett.). Ve1.
- **C. virgaureae* (Stt.). So6.

Momphidae

- Mompha idaei* (Z.). Kt1, Ko3, Pr16, So6, Us5, Vi7.
- **M. conturbatella* (Hbn.). Kh8, Pi4, Pl7.
- **M. sturnipennella* (Tr.). Ka10, Pr1, Pr16.
- **M. locupletella* (Den. & Schiff.). Pl2.
- **M. raschkiella* (Z.). Ka6, Ka11, Kh4, Kh12, So6–7.

Scythrididae

- **Scythris disparella* (Tengstr.). Ka12.
- **S. inspersella* (Hbn.). Ka11, Pl2.
- **S. limbella* (F.). Ka1.
- S. noricella* (Z.). Kt1, Pl7.
- S. obscurella* (Scop.). Ka1, Ka7, Ka10, Ka12, Ka14, Ko2, Kt1, Us4–5, Ve1, Ve8.
- **S. palustris* (Z.). Vt5.

Cosmopterigidae

- **Pancalia leuwenhoekella* (L.). Pr16.
- **Cosmopterix orichalcea* Stt. Ka7, Ka10, Ka12, Ko3, Us4.
- **C. sibirica* Sinev. Ka14. A recently described species which has been recorded in Central Volga region (Sinev 2008) and found as far west as in Latvia and Estonia (Savenkov & Šulcs 2010, Jürivete 2012).

Gelechiidae

- Metzneria lappella* (L.). Ka1, Kt1.
- **M. metzneriella* (Stt.). Ka1, Ka11, Ko2–3.
- M. neuropterella* (Z.). Kt1 (Krulikovsky 1909).
- Isophrictis striatella* (Den. & Schiff.). Kt1 (Krulikovsky 1909).
- **Argolamprotes micella* (Den. & Schiff.). Kb4, Vi3.
- **Eulamprotes unicolorella* (Dup.). Ka8, Ka12, Us4–5.

- **Xystophora pulveratella* (H.-S.). Ka7, Ka10, Ka14, Us4.

- **Bryotropha senectella* (Z.). Kb4, Kt5, Pr16, Vi5, Vt6.

- **B. similis* (Stt.). Ka1, Pi4, Pr16, Vi8.

- **Gelechia sororculella* (Hbn.). Ka1, Kt4, Ve1, Vi3.

- Chionodes continuella* (Z.). Ko2, Kt1.

- Ch. distinctella* (Z.). Kt1, So4, So6.

- **Ch. fumatella* (Douglas). Pr16.

- **Ch. holosericea* (H.-S.). Pl2.

- **Ch. lugubrella* (F.). Pl2, Pr16.

- Ch. viduella* (F.). Pl2, Pr16, Kt1.

- Aroga velocella* (Z.). Kt1, Vi3.

- Filatima incomptella* (H.-S.). Pl2, Pr16.

- **Athrips tetrapunctella* (Thnbg.). Ka10, Ka12.

- **Gnorimoschema robustella* (Stgr.). Kt4. This is one of the most interesting records of this study. The only specimen, a male, was collected running on bare sandy shore on the riverside. The species is previously known only from the steppe zone in Krasnoarmeysk, Saratov oblast of Russia and Uralsk (Lake Indersky) in Kazakhstan (Huemer & Karsholt 2010).

- **Scrobipalpa atriplicella* (F. v. R.). Ka1, Ve1, Vi3.

- **Klimeschiopsis kingerella* (Dup.). Pr16.

- **Caryocolum blandella* (Douglas). Pr16.

- **C. cassella* (Walk.). Pl10.

- **C. petrophila* (Priessecker). Pl10.

- **C. leucomelanella* (Z.). Pi4. This is the northernmost record of this Euro-Siberian species, which is widely distributed in Central Europe, but does not occur in the Nordic countries (Huemer & Karsholt 2010). The nearest records are from north-western region of Russia (Sinev 2008).

- **C. vicinella* (Douglas). Ka11.

- Exoteleia dodecella* (L.). Kt1 (Krulikovsky 1909).

- Carpatolechia alburnella* (Z.). Kt1 (Krulikovsky 1909).

- **C. epomidella* (Tengstr.). Pl3.

- **C. notatella* (Hbn.). Ka7, Pr16.

- C. proximella* (Hbn.). Ka6, Pl3, Pr1, Pr16, So6.

- **Pseudotelphusa paripunctella* (Thnbg.). Pl3, Pr1, Ve8.

- Syncopacma cinctella* (Cl.). Ka1, Ka12, Ka14, Kb4, Kt1, Pl3, Pr1, Pr16, So4, So6, Vi7, Vt4, Vt6.

- **S. karvoneni* (Hackman). Ka1, Ka7, Ka10, Ka12, Ka14.
 **S. sangiella* (Stt.). Kh8, Kt5.
 **Anacamptis blattariella* (Hbn.). Kt4, Pl10, Pr1, Pr16.
A. populella (Cl.). Kb2, Kt1, Kt4–5, Kt7, On6, Pl4, Pr1, Pr16, Ve3, Vt3.
 **A. tenerella* (Lienig & Z.). Ka1, Kh10, Kt5, Pi6, Pl3, Pr16, Vt3.
 **Prolita sexpunctella* (F.). Pr1, Pr16, So1, Us3.
 **Helcystogramma lineolella* (Z.). Pl3, Pr16.
Acompsia cinerella (Cl.). Ka14, Ko2, Kt1, Pl3, Pr16, Ve8.
 **A. subpunctella* Svensson. Pr16, Vi2, Vi8.
 **Dichomeris juniperella* (L.). Pl2.
 **Neofaculta infernella* (H.-S.). Pl2–3, Pr1, Pr16, So4, So6–7.
 **Hypatima rhomboidella* (L.). Kh9, Pr16.

Pterophoridae

- **Gillmeria pallidactyla* (Haw.). Ka5, Kb4, Kh3, Pl7–8, Pr9, Pr12, Pr28, So8, Ve3, Vi3, Vi5, Vi8, Vt4, Vt6.
 **G. tetradactyla* (L.). Kh8, On3, Pi4, Pl7, Pr12, Ve5, Vi2, Vi8, Vt6.
Platyptilia calodactyla (Den. & Schiff.). Kh6, Kt1, Kt5, Kt7, On6, Pi4, Pr10, Ve1, Vi7.
P. gonodactyla (Den. & Schiff.). Ka11, Ka13–14, Kh12, Ko3, Kt1–2, Ny1, Pi4, Pr1, Pr28, Ve8, Vi5–6.
 **P. tesseradactyla* (L.). So0.
 **Amblyptilia punctidactyla* (Haw.). Ka13, Kt2, Ny1, Pi6, Pl8, Pr16, Sh2, So5–6, Us3–4, Us6.
 **Stenoptilia bipunctidactyla* (Scop.). Ka7, Vi3, Vi5.
 **S. pterodactyla* (L.). Kb2, Kb4, Kh6, Kh8, Kt4–5, Pi4, Pl10, Pr12, Vi5, Vi8, Vt3, Vt6.
 **Geina didactyla* (L.). Ka11.
Pterophorus pentadactyla (L.). Kt1 (Krulikovsky 1909).
 **Hellinsia didactylites* (Ström). Ka8, Ka11, Ka14, Kb4, Kh15, Ko2–3, Ny1, Pr28, So5–6, Us4, Ve4, Ve7, Vi6.
 **H. osteodactylus* (Z.). Kh15, Kt5, Pi2, Pr16, So4–6, Vi3, Vi5, Vi8.
 **H. tephrodactyla* (Hbn.). Pl2, Ve8.
Emmelina monodactyla (L.). Kt1 (Krulikovsky 1909).

Schreckensteiniidae

- **Schreckensteinia festaliella* (Hbn.). Pr16.

Epermeniidae

- **Phaulernis fulviguttella* (Z.). Pr16.
 **Epermenia chaerophyllella* (Goeze). So5–6.
 **E. illigerella* (Hbn.). Pr16.

Choreutidae

- **Anthophila fabriciana* (L.). Ka5, Kh8, On3, Pi4, Pl7, Pl10, Pr1, Pr9, Pr16, Vi6.
 **Prochoreutis ultimana* (Krul.). Ka11, Vi2, Vi8.
 **Tebenna bjerkanarella* (Thnbg.). Pl7.
Choreutis diana (Hbn.). Ka4, Kb4, Kh6, Kt1, Kt7, Le2, On3, Pi5–6, Pl2, Pl8, Pr10, Sh2, So0, Ve2, Vi5, Vt3.

Tortricidae

- Acleris aspersana* (Hbn.). Pr1, Pr6, Pr16.
 **A. comariana* (Lienig & Z.). Pl3, Vi3, Vi6.
A. emargana (F.). Pl2, Pr1, Pr16, Vi3.
 **A. effractana* (Hbn.). Pl2, Pr1.
A. hastiana (L.). Le2, Pr16, Vi3.
 **A. hyemana* (Haw.). Pr16.
A. laterana (F.). Pr1, Pr16, Vi3.
A. lipsiana (Den. & Schiff.). Pr1, Pr16, Vi3.
A. logiana (Cl.). Kt1, Pr1, Pr23, So1, Vi3.
A. maccana (Tr.). Pr16.
A. notana (Don.). Kt1, Pr1, Pr16, Pr23.
 **A. rufana* (Den. & Schiff.). Vi3.
A. variegana (Den. & Schiff.). Pr1, Pr16.
A. bergmanniana (L.). Kt1, Pl3, Pr1, Pr16.
Phtheochroa inopiana (Haw.). Ka1, Kt1, Pr16.
Agapeta hamana (L.). Kt1 (Krulikovsky 1909).
 **Aethes cnicana* (Westwood). Ka11.
 **A. deutschiana* (Zett.). Pr16.
A. hartmanniana (Cl.). Kt1, Us4, Ve7.
 **A. rutilana* (Hbn.). Pl2.
 **A. smeathmanniana* (F.). Pr1, Pr16, So6, Ve8.
 **A. triangulana* (Tr.). Pl3, Pr16.
 **Cochylidia implicitana* (Wck.). Pr16.
 **C. subroseana* (Haw.). Pi2, Pl2–3, Pr9, Pr16, So5.
 **Cochylis dubitana* (Hbn.). Pl2, Pr16.
 **C. nana* (Haw.). Pl2, Pr1, So6–7.
 **C. pallidana* Z. Ka10, Ka14, Pr16.
Eulia ministrana (L.). Ka1, Kt1, Pl2–3, Pr1–2, Pr16, So1, So4–6, Vi6.
 **Sparganothis rubicundana* (H.-S.). Kh6, Pr16.
 **Eana argentana* (Cl.). Kb4, Kt4–5, On5–6, Pr1,

- Pr16, So6, Ve5, Vi3, Vt3, Vt5–6.
E. osseana (Scop.). Kh3, Kt1, On2, On7, Pi4, Pi2, Pi7, Pr11–12, So0, Vi3, Vi8.
 **E. incanana* (Steph.). Kt5.
 **E. penziana* (Thnbg.). Pi2, Pr16, Vi3.
Exapate congelatella (Cl.). Pi2, Pr1, Pr16.
Archips rosana (L.). Pr1, Pr12, Pr15–16, Pr24.
Argyrotaenia ljugiana (Thnbg.). Pr16.
Choristoneura albaniana (Walk.). Pr16.
Pandemis cerasana (Hbn.). Pr1, Pr16, So5.
 **P. cinnamomeana* (Tr.). Pr1.
P. heparana (Den. & Schiff.). Pi3, Pr1, Pr16.
Syndemis musculana (Hbn.). Ka11, Kt1, Pi2–3, Pr1–2, Pr16, So6.
Lozotaenia forsterana (F.). Pi2, Pr16, So1.
 **Aphelia paleana* (Hbn.). Ka1, Ka11–12, Kb2, Kh8, Pi6, Pr1, Pr16, Ve3, Vi3, Vi5, Vi8, Vt4, Vt6.
 **A. unitana* (Hbn.). Ve1, Ve4.
 **A. viburnana* (Den. & Schiff.). On3, Vi3, Vi6–7.
 **Clepsis rogana* (Guenée). Ka1, Ka7–8, Ka10–12, Ka14, Ko2, Kh8, Us3–5, Ve4, Ve7, Vi5–6. A boreomontane Euro-Siberian species (or a group of closely related species) found also in the Kola Peninsula (Kozlov & Jalava 1994) but not elsewhere in the Nordic countries, except a few specimens from southeastern Finland (*Ka*: Virolahti). The latter record was published as *Clepsis* sp. nr. *rogana* (Kullberg et al. 2002, Hyönteistietokanta 2014).
C. senecionana (Hbn.). Kt1, Pi3, Pr1, Pr16, So4.
 **Adoxophyes orana* (F. v. R.). Pi9, Pr1.
 **Epagoge grotiana* (F.). So4, So6–7.
 **Philedone gerningana* (Den. & Schiff.). Kh4, On3, Pr1, Vt5.
 **Philedonides lunana* (Thnbg.). Pr16.
 **Endothenia ericetana* (Humph. & Westw.). Vi3, Vi5–6, Vt6.
 **E. marginana* (Haw.). Ka1.
 **E. quadrimaculana* (Haw.). Kt7, Pi4, Pr1, Vi3.
 **Bactra furfurana* (Haw.). Pi4, Pr11, Vi8, Vt4.
 **B. lacteana* Caradja. Pi3.
 **B. lancealana* (Hbn.). Kt4, Ve1, Ve2–3, Vi8.
Apotomis betuletana (Haw.). Kt1, Pr1, Pr16.
A. capreana (Hbn.). Kt1, Pi7, Pr9–10, Pr16, Ve1.
A. infida (Heinrich). Pr1, Pr6, Pr16, Pr23.
 **A. imundana* (Den. & Schiff.). Kt5.
 **A. semifasciana* (Haw.). Pr16.
A. sororculana (Zett.). Kt1, Pi2, Pr1, Pr16, Ve1.
A. turbidana Hbn. Pi2, Pi2, Pr1, Pr16.
Orthotaenia undulana (Den. & Schiff.). Ka11, Kh15, Pi2–3, Pr1, Pr16, Us4, Ve1.
 **Pseudohermenias abietana* (F.). Pi2–3.
 **Hedya dimidiana* (Cl.). Ka11, Ka14, Pr1.
H. nubiferana (Hw.). Pi2, Pr1, Pr16, Vi7.
 **H. ochroleucana* (Frölich). Kt5.
H. salicella (L.). Kt4, Pr1, Vi8.
H. atropunctana (Zett.). Ka1, Pi2–3, Pr1, So4, So6–7.
 **Argyroploce arbutella* (L.). So7.
 **A. lediana* (L.). Pi3, Us3, Vi5.
A. roseomaculana (H.-S.). Pi3, Pr16.
Olethreutes arcuella (Cl.). Ka13, Kh12, Kt1, Ny1, Pi4, Pr16, Us4–5, Ve8, Vi6.
 **Capricornia boisduvaliana* (Dup.). Ka14.
Phiaris bipunctana (F.). Pi2–3, Pr16, Pr24, So1, So4, So6–8, Us3.
 **Ph. dissolutana* (Stange). Pi2.
Ph. metallicana (Hbn.). Kt1, Pi2, Pr16.
Ph. micana (Den. & Schiff.). Kt1, Pr16, Vt5.
 **Ph. obsoletana* (Zett.). So6, So8.
Ph. palustrana (Lienig & Z.). Kt1 (Krulikovsky 1909).
 **Ph. schulziana* (F.). So1, So4, So6–8.
Ph. turfosana (H.-S.). Me1, Pi2, Pr16, So1.
 **Ph. umbrosana* (Freyer). Kb4, Pr16, So4, So6–7, Vi5.
Celypha cespitana (Hbn.). Kt1, Kt7, Vt5–6.
 **C. rufana* (Scop.). Kb2, Kb4, Kt4, Pi3, Pr16, Sh3, So6, Vi5, Vt3, Vt5.
 **C. rurestrana* (Dup.). Pr16.
C. striana (Den. & Schiff.). Kb4, Kt4–5, Me1, Pi2, Pr1, Pr16, Us6, Ve1.
Loxoterma bipunctana (F.). Pi2–3, Pr16, Pr24, So1, Us3.
L. lacunana (Den. & Schiff.). Ka4, Ka6–8, Ka10–11, Ka13–14, Kb2, Kb4, Kh6, Kh8, Kh10, Kh12, Kh15, Ko2–3, Kt1, Kt7, On3–4, On6, Pi4, Pi6, Pi2–3, Pi7, Pi10, Pr1, Pr10, Pr16, Pr24, Sh2, So4, So6, Us3–4, Ve1–5, Ve8, Vi2–3, Vi5, Vi7, Vt3–4.
L. rivulana (Scop.). Kb4, Kh3–4, Kt1, Kt5, Kt8, On3, On6, Pi3, Pi8, Pr12, Pr16, Ve2, Ve5, Vi5, Vi7–8, Vt3–6.
Pseudosciaphila branderiana (L.). Kt1 (Krulikovsky 1909).
 **Eudemis porphyrana* (Hbn.). Ka1, Kb4.
 **Lobesia virulenta* Bae & Komai. Ka11, Pr16.
 **Ancylis apicella* (Den. & Schiff.). Ka1, Ka8, Ka11, Ko3.

- A. badiana* (Den. & Schiff.). Ka8, Ka10–11, Ka14, Kb4, Kh6, Kh12, Ko2–3, Kt1, Me3, Ny1, Pi2–3, Pr1–2, Pr9, Pr16, So4, So6–7, Us3–4, Us6, Ve1, Ve4, Ve7, Vi6.
- **A. comptana* (Frölich). Ko2, Pi2, Pr1, Ve1.
- **A. diminutana* (Haw.). Pi3, Pr1, Pr16.
- A. geminana* (Don.). Pr1, Pr16.
- A. laetana* (F.). Pi2–3, Pr16, So4, So6, Ve1, Ve4.
- A. myrtillana* (Tr.). Pi3, Pr1–2, Pr16, So4, So6.
- **A. subarcuana* (Douglas). Ka11, Pr16.
- A. uncella* (Den. & Schiff.). Pi3, Pr16.
- **A. unculana* (Haw.). Ka11.
- A. unguicella* (L.). Ka7, Kt1, Pi2–3, Pr1–2, Pr16, So7, Ve7–8.
- **Eucosmomorpha albersana* (Hbn.). Ka1.
- **Gypsonoma nitidulana* (Lienig & Z.). Pr16, Ve2.
- G. sociana* (Haw.). Pr1, Pr16.
- Epinotia bilunana* (Haw.). Pr1, Ve1.
- E. brunnichiana* (L.). Pi2, Pr16.
- **E. caprana* (F.). Pr1, Pr6, Pr16.
- E. crenana* (Hbn.). Pi5, Pi2, Pr1, Pr6, Pr16.
- E. cruciana* (L.). Pi4, Pi2–3, Pr1, Pr11, Pr16, Pr24, Vt3.
- E. gimmerthaliana* (Lienig & Z.). Pi2–3, Pr16.
- E. immundana* (F. v. R.). Pi2–3, Pi7, Pr1, Pr16.
- E. maculana* (F.). Pi2, Pr6, Pr16.
- E. nanana* (Tr.). Pi6, Pi2–3, Pr10, Pr16, Pr24.
- E. nisella* (Cl.). Ka1, Ka6, Kt1, Kt5, Pi4, Pr1, Pr16, Vi3.
- E. ramella* (L.). Pr1, Pr6, Pr16.
- **E. signatana* (Douglas). Ve3.
- E. solandriana* (L.). Pi3, Pr1, Pr6, Pr16, Vi3.
- E. subocellana* (Don.). Kh2, Me3, Pi2, Pi3, Pr1, Pr16, So6–7.
- E. tedella* (Cl.). Kh12, Pi4, Pi2–3, Pr16, Pr24, Us3, Ve8.
- E. tenerana* (Den. & Schiff.). Ka5–6, Kb2, Kt4, On4, Pi6, Pi2, Pr1, Pr9, Pr16, Ve3, Vi8.
- E. tetraquetrana* (Haw.). Ka7, Ka11, Kh2, Me3, Pi2, Pi2–3, Pr1–2, Pr16, So1, So5, Ve1.
- **E. trigonella* (L.). Pi2.
- **Spilonota laricana* (Hein.). Pr16.
- Rhopobota naevana* (Hbn.). Ka1, Kh4, Kh6, On3, Pi4, Pi4, Pr10, Pr16, Sh1, Ve5, Vi3.
- Rh. ustomaculana* (Curtis). Kh13, Pi2, Pr10, Pr16, Sh2, Vi2–3, Vi7.
- Retinia resinella* (L.). Pr16, So6.
- Coccyx posticana* (Zett.). Pr16.
- C. turionella* (L.). Pi3, Pr16.
- **Eriopsela quadrana* (Hbn.). Pi3, Pr16.
- **Thiodia citrana* (Hbn.). So6.
- Notocelia cynosbatella* (L.). Ka8, Pi3, Pr1, Pr16, So5, Us4.
- N. incarnatana* (Hbn.). Kt5, Pi4, Pr16.
- **N. roborana* (Den. & Schiff.). Ka1, Kb2, Kt5, Pr1, Pr16.
- N. tetragonana* (Steph.). Pi6, Pr16.
- N. uddmanniana* (L.). Kt1 (Krulikovsky 1909).
- **Epiblema cirsiiana* (Z.). Pi6, Pi3, Pr10, Pr16, Vi2, Vi7.
- E. foenella* (L.). Ka1, Kt1, Vi3.
- **E. grandaevana* (Lienig & Z.). Kt4.
- **E. scutulana* (Den. & Schiff.). Ka11.
- E. similana* (Den. & Schiff.). Kt1 (Krulikovsky 1909).
- **E. sticticana* (F.). Ka8, Ka13–14, Kh12, Ko3, Ny1, Pi3, Pr1, Pr16, Sh2, Us3, Us6.
- **Eucosma aspidiscana* (Hbn.). Pi2–3, Pr16, So1, Ve7.
- E. cana* (Haw.). Ka1, Kb4, Ko2, Kt1, Kt5, Pr16, So5, Us4, Ve5.
- **E. hohenwartiana* (Den. & Schiff.). Pr16, Vi3.
- **E. obumbratana* (Lienig & Z.). So8, Vi5.
- **Dichrorampha acuminatana* (Lienig & Z.). Pi7, Vi2, Vt3, Vt6.
- **D. aeratana* (Pierce & Metcalfe). Ve8.
- **D. agilana* (Tengstr.). Ka12, Kb2, Kh10, Kt4, Pi4, Pi7, Us5, Vi2, Vi5, Vi8.
- **D. consortana* (Steph.). Vt3.
- **D. flavidorsana* Knaggs. Kh3, Pr10, Vi8.
- **D. vancouverana* McDunn. Kb4, Kt8, On7, Pi4, Pr16, So6, Ve5, Vi5, Vi8.
- **D. nigrobrunneana* (Toll). Kb4, Ve4. This is the northernmost record of this rare Euro-Siberian species which does not occur in Fennoscandia. The nearest records are from Estonia (Karsholt et al. 2013) and from the central European region of Russia (Sinev 2008).
- **D. obscuratana* (Wolff). So7–8.
- D. petiverella* (L.). Ka5, Ka7, Ka10, Kb4, Kh3, Ko3, Kt1, Kt4, Kt6, Pi7, Sh2, Ve8, Vt6.
- **D. plumbagana* (Tr.). Ka8, Ka10, Ka12, Ka14, Pr16, So5, So8, Ve8, Vi5.
- D. plumbana* (Scop.). Ko2, Kt1, Pi2, Pr16, Sh2–3, Us5, Ve1.
- **D. sequana* (Hbn.). Ka14. This is the northernmost record of the species. The species has been recorded also in the southern taiga region of Russia south of Arkhangelsk oblast

- (Sinev 2008) and in southern Sweden (Gustafsson 2014), but not in the Baltic countries (Karsholt *et al.* 2013).
- **D. uralensis* (Danilevsky). Us3–5. The earlier published records from Russia are from more southern regions (Sinev 2008), but the species was collected also near Krasnyi Kamen in Polar Ural (J.K., pers. obs.). In Northern Europe, the only record is from Latvia (Karsholt *et al.* 2013).
- **Grapholita compositella* (F.). Ka10–12, Ka14, Kb4, Kh8, Ko2, Kt3, Me3, Pi2, Pi4, Pl23, Pr1, Pr9, Pr16, So4–6, So8, Pr16, Us4–5, Ve5, Vi8, Vt3.
- **G. jungiella* (L.). Pl2, Pr16.
- **G. orobana* (Tr.). Kh3, Pr16, So6.
- **Pammene aurana* (F.). Ka14, So4.
- **P. clanculana* (Tengstr.). Ve1.
- **P. gallicana* (Guenée). Pl2, Pl10.
- P. germmana* (Hbn.). Pr1, Pr16, Us6.
- P. luedersiana* (Sorh.). Pr16.
- **Cydia cognatana* (Barrett). Pr16.
- **C. coniferana* (Saxesen). Pl3, Pr16.
- C. cornucopiae* (Tengstr.). Pr16.
- C. cosmophorana* (Tr.). Pr16.
- **C. illutana* (H.-S.). Pr16, So1, So7.
- C. indivisa* (Danilevsky). Pr16.
- **C. nigricana* (F.). Ka7, Ka10, Ka14, Kh8, Ve1, Ve4–5, Vi8.
- **C. pactolana* (Z.). Pl3, Pr16.
- **C. pomonella* (L.). Ar0.
- C. strobilella* (L.). Pl2, Pr16.
- C. zebeana* (Ratz.). Ar0 (Danilevsky & Kuznetsov 1968). This is the westernmost North European record of this Euro-Siberian species that occurs in Central Europe (Karsholt *et al.* 2013) and in Ural Mts. (Sinev 2008).
- Lathronympha strigana* (F.). Ka1, Ka14, Kb2, Kb4, Kh8, Kt1, On6, Pl10, Pr16, Vi3, Vi5, Vi8, Vt6.
- Cossidae
- Cossus cossus* (L.). Kh15, Kt1, Pl3, Pr1, Vt2.
- Sesiidae
- Paranthrene tabaniformis* (Rott.). Pr1 (Zelenova 1972).
- **Synanthedon formicaeformis* (Esp.). Pr16, Pr28, Us4.
- S. scoliaeformis* (Borkh.). Pr1 (Zelenova 1972).
- S. spheciformis* (Den. & Schiff.). Pr16 (Zelenova 1972).
- S. tipuliformis* (Cl.). Pr1, Pr16 (Zelenova 1972).
- Zygaenidae
- Zygaena osterodensis* Reiss. Ka15, Pi4.
- **Z. viciae* (Den. & Schiff.). Kb4.
- **Z. filipendulae* (L.). Ka0.
- **Z. lonicerae* (Scheven). Kb4, Pr11.
- Thyrididae
- **Thyris fenestrella* (Scop.). Pr16. This is the northernmost record of the species.
- Papilionidae
- Parnassius mnemosyne* (L.). Ko2, Le3, Me5, Me6, Pi4, Pi8, Pr35, Us1, Us3–5, Vi9.
- Papilio machaon* L. Ka14, Kh15–16, Kt1, Me5, On0, Pi3–4, Pi7, Pr1, Pr5, Pr9, Pr16–17, Pr19, Pr22, Pr29–30, Pr32, Sh4, So0, Vi4.
- Hesperiidae
- **Pyrgus alveus* Hbn. Ve8.
- **P. centaureae* (Rambur). Pl3, So0.
- P. malvae* (L.). Ka10, Kt1, Us3, Us4.
- P. serratulae* (Rambur). Kt1 (Krulikovsky 1909). The nearest records are from Vologda and Ukhta (Lvovsky & Morgun 2007). The species is present in Baltic countries, but does not occur in Fennoscandia (the record by Karsholt *et al.* [2013] from Sweden is erroneous).
- Carterocephalus palaemon* (Pallas). Pi4, Pl3, Pr1, Pr5, Pr13, Pr16–18, Pr32.
- C. silvicola* (Meigen). Pr0, Us4–5.
- Thymelicus lineola* (Ochs.). Ka5, Kb2, Kb4, Kh8, Kh10, Kt1, Kt3–5, Kt8, On6–7, Pl4, Pl8, Pr1, Pr12, Sh2, Sh4, Ve2–3, Ve5, Vi2–3, Vi5, Vi7–8, Vt3, Vt5–6.
- Ochlodes sylvanus* (Esp.). Ka7–8, Ka10–12, Ko2, Kt1, Pr0, Ve4.
- Hesperia comma* (L.). Kt1 (Krulikovsky 1909).
- Pieridae
- Leptidea morsei* (Fenton). Ka11, Ka14, Kh8, Pi4, Pr1, Pr9, Pr16, Pr17, Us2–3, Us5–6, Ve6, Ve8, Vi10. This Euro-Siberian species has not been recorded west of Arkhangelsk oblast in

- the northern Europe (Sinev 2008, Karsholt et al. 2013).
- L. sinapis* (L.). Ka13, Kh12, Kh15, Me2, On8, Pi4, Pi9, Pr1, Pr9, Pr13, Pr16–18, Sh4, So1, So6, Us3–6, Ve8, Vi10.
- Anthocharis cardamines* (L.). Ka14, Kh15–16, Kt1, Pi4, Pr1, Pr12–13, Pr26, So0, So6, Us5.
- Aporia crataegi* (L.). Ka7, Ka10–14, Kb3, Kh16, Ko2, Kt1, On0, Pi4, Pl2, Pl6, Pr1, Pr16, Sh4, So0, So6, Us3–6, Ve5, Vt2.
- Pieris brassicae* (L.). Le3, Pi4, Pl0, Pr16, Vi4.
- P. napi* (L.). Ka1, Ka4, Ka6, Ka15, Kb4, Kh8, Kh15, Ko2, Kt1, On6, Pi4, Pr1, Pr9, Pr13–14, Pr16, Sh2, Sh4, So0, So8, Us4, Us6, Ve3, Vg1.
- P. rapae* (L.). Ka15, Kh7, Kh15, Kt1, On7, Pi4, Pl6, Pr1, Pr3, Pr5, Pr12, Pr14, Pr16–17, Pr21, So0, Us4, Ve1, Vg1, Vi3.
- Pontia daplidice* (L.). Ka4, Ka6, Kh15, Kt1, On7, Pl8, Pl10, Sh2, So0, Vi3.
- Colias hyale* (L.). Kt1, On6, Pi4.
- C. palaeno* (L.). Ka2, Kh7, Kh15, Kt1, Me4, Pi3, Pi4, Pr4, Pr21, So0, So4, So6–8, Vt2.
- Gonepteryx rhamni* (L.). Ka2, Ka4–6, Ka15, Kb2, Kh8, Kh10, Kh15, Kt1, Kt3–5, Kt7, On3–4, On6–7, Pi4, Pi6, Pl4, Pl6–8, Pl10, Pr10–12, Sh2, Sh4, So0, Us4–6, Ve2–3, Ve5, Vg1, Vi2–3, Vt2.
- Lycaenidae**
- Thecla betulae* (L.). Kt1 (Krulikovsky 1909).
- Satyrrium pruni* (L.). Kt1 (Krulikovsky 1909).
- Callophrys rubi* (L.). Le3, Pr1, Pr12–13, Pr16, Pr27–28, So1, So6, Us3, Vt2.
- Lycaena helle* (Den. & Schiff.). Ka14, Kh16, Le3, Pi4, Pl3, Pr5, Pr13, So1, Vt2.
- L. hippothoe* (L.). Kh16, Kt1, Le3, Pr26, So0, So4, So6, Ve5.
- L. phlaeas* (L.). Kt1, Sh4, Vg1.
- L. virgaureae* (L.). Kb4, Kh15–16, Kt1, Le3, On4, On6, Pi4, Pl7–8, Pr1, Pr9, Pr11–12, Sh2, Sh4, So1, Vi3, Vt3, Vt6.
- Cupido minimus* (Fuessly). Kh15–16, Pi4, Pr27.
- C. alcetas* (Hoffmannsegg). Pi4, Vi3. These are the northernmost records of this boreo-montane Euro-Siberian species, which has only once been found in Fennoscandia (SE Finland: Kolev & Kullberg 2000).
- **C. argiades* (Pallas). Sh4, Us4.
- Celastrina argiolus* (L.). Kh16, Me3, Pi3–4, Pr1, Pr16, Pr19, Pr26–27, Pr32, So1.
- Glaucopteryche alexis* (Poda). Kh16, Pr9, Pr12, So0, Us3.
- Plebeius argus* (L.). Kb4, Kh4, Kh16, Kt1, Le3, On3–4, Pr3, Pr27, So0, Ve2, Ve4, Vt5.
- P. idas* (L.). Kb4, Kh15, Kt4, Le3, On3, Pi6, Pr10, Pr12, Pr27, So1.
- P. optilete* (Knoch). Kb2, Kh10, Kh15, Le3, Pi4, Pr3, Pr11, Pr26, So4, So6–8, Ve4, Vi2, Vt5.
- Aricia agestis* (Den. & Schiff.). Kt1 (Krulikovsky 1909).
- A. artaxerxes* (F.). Kh8, Kh15, On6, Pi4, Pr16, So1.
- A. eumedon* (Esp.). Pi4, So0, Ve4.
- A. nicias* (Meig.). Pi4 (Tikhomirov & Bolotov 2000).
- Polyommatus amandus* (Schn.). Ka14, Kb4, Kh5–8, Kh15, Ko2, Pi4, Pi6, Pr1, Pr3, Pr5, Pr12, Pr17, Pr21, Sh2, Us4, Ve1, Ve5, Vi2, Vi8.
- P. icarus* (Rott.). Ka5, Kb2, Kb4, Kh3, Kh5–10, Kh16, Ko2, Kt1, Kt4, Le3, On3–4, On6, Pi4, Pi6, Pl2, Pl4, Pl6, Pl8, Pl10, Pr1, Pr9–10, Pr16, Pr21, Sh2, Sh4, So1, So4, So6, Us3–4, Ve1, Vi3, Vt3, Vt5–6.
- Cyaniris semiargus* (Rott.). Ka6–7, Ka11, Ka14, Kb2, Kb4, Kh10, Kh16, Kt1, Kt4, Le3, On4, Pi4, Pr1, Pr12, Pr17, Pr21, Pr26, So4, So6, So8, Us5, Ve1, Ve5, Vi2–3, Vi8, Vt3, Vt6.
- Nymphalidae**
- Limnitis populi* (L.). Kh15, On0, Pi4, Pl4, Pl6, Pr3, Pr21, Vi4.
- **Neptis rivularis* (Scop.). Kb4, Us3–4, Vg1. The species is locally abundant in habitats where its foodplant *Spiraea* is present. The species has been reported from north-western and Kaliningrad regions of Russia (Sinev 2008), but it is absent from the Baltic and the Nordic countries (Karsholt et al. 2013).
- Neptis sappho* (Pallas). Vt2 (Filippov 2009). The distribution of the species is very similar to that of the previous species, although *N. sappho* is absent from the north-western region of Russia (Sinev 2008). The species is much scarcer than the similar *N. rivularis*, probably due to the scarcity of its food plants *Lathyrus vernus* and *L. niger*.

- Nymphalis antiopa* (L.). Ka2–5, Kh15, Kt1, Pi4, Pl6, Pr8, Us4, Vi3–4, Vt2.
- Nymphalis xanthomelas* (Esp.). Kt1, Sh4.
- Aglais urticae* (L.). Ka1, Ka3, Ka7, Kb2, Kh3, Kh5, Kh15, Kt1, On0, Pi3–4, Pl4, Pl6, Pr1, Pr12, Pr21, Sh3–4, So0, So6, Vi1, Vg1, Vi3, Vt2, Vt6.
- A. io* (L.). Ka3, Ka5, Kh15–16, On6, Pi3–4, Pl0, Pr28.
- Polygonia c-album* (L.). Ka4, Ka15, Kb4, Kh5, Kh16, Kt1, On6, Pi4, Pl4, Pl6, Pl8, Pr8, Sh4, So0, Ve9, Vg1, Vi3.
- Vanessa atalanta* (L.). Kh15–16, On0, Pi3–4, Pl0, Pr1, Pr5, Pr17, So0, So4.
- V. cardui* (L.). Ka14, Kh15, Kt1, Pi4, Pr1, Pr3, Pr5, Pr16–17, Pr19, Pr21, Pr32, So0, So4, So8.
- Araschnia levana* (L.). Ka13, Kh7, Kh15, On3, On6, Pr20, Pr26, Sh4, So0, So4, Vi3.
- Euphydryas maturna* (L.). Kh15–16, Ko2, Pi3–4, Pr1, Pr9, Pr21, Us3–5, Vt2.
- Melitaea diamina* (Lang). Ka12, Ka14, Ko2, Kt1, Us3, Ve8.
- **M. phoebe* (Den. & Schiff.). Ve8. This is the northernmost record of the species. It has been reported from all Baltic countries, but not from north-western region of Russia (Sinev 2008, Karsholt *et al.* 2013).
- M. athalia* (Rott.). Kh15, Ko2, Kt1, Pi4, Ve8.
- **Boloria dia* (L.). Sh4. This is the northernmost record of the species. It was reported as expansive in the Baltic countries (Jürivete & Öunap 2008).
- B. eunomia* (Esp.). Ka14, Pr1, Pr18, Sh1.
- B. euphrosyne* (L.). Ka7, Kh15, Ko3, Kt1, Pi4, Pr1, Pr13, So0, So6–7, Us3–4, Ve4.
- **B. freija* (Thnbg.). Ve4.
- B. selene* (Den. & Schiff.). Ka11, Kb4, Kh7, Kh15, Ko3, Kt1, Le3, Pi4, Pr0, So0, So4, Us3–4, Ve5, Vi2.
- B. titania* (Esp.). Ka15, Kt1, Le3, Pi4, Pr0, Ve2.
- B. aquilonaris* (Stich.). Kh15, Le3, Pi4, Pr5, Pr13, So0.
- Brenthis ino* (Rott.). Ka5, Kb4, Kh7–8, Kh10, Kh15–16, Kt1, Le3, On4, On6, Pi4, Pi6, Pl4, Pl6–7, Pr3, Pr5, Pr9–10, Pr14, Pr21, Sh2, Ve2–5, Vi2–3, Vi8, Vt3–4, Vt6.
- Issoria lathonia* (L.). Kt1, Pr0.
- Argynnis adippe* (Den. & Schiff.). Ka2, Kh16, Pl4, Pr0, Sh4, Vi3, Vt6.
- A. aglaja* (L.). Ka6, Kh16–17, Kt1, Kt4–5, Le3, On6, Pi3, Pl4, Pl6, Pr17, Pr21, Pr32, Ve5, Vi2–3, Vt3.
- A. niobe* (L.). Pr0.
- A. paphia* (L.). Ka2, Ka4, Ka15, Kb2, Kb4, Kh7, Kh16, Kt1, Kt4, On6, Pi4, Pl4, Pr16, Pr32, Sh4, Vi2, Vt3.
- Pararge aegeria* (L.). Kt1 (Tatarinov & Dolgin 1999), So0 (Bolotov *et al.* 2013a).
- Lasiommata maera* (L.). Kh16, Kt1, Pi4, Vi7.
- L. petropolitana* (F.). Pi4, Pr1, Pr13, So0.
- Coenonympha glycerion* (Borkh.). Ka7, Ka14, Kb4, Kh16, Ko2, Kt1, Pl9, Pr11, Ve8.
- C. pamphilus* (L.). Kt1, Pr11.
- C. tullia* (Müll.). Le3, Pi4, Pr1.
- Aphantopus hyperantus* (L.). Ka1, Kb2, Kb4, Kh7–8, Kh16, Kt1, Kt5, On3, Pl4, Pl8, Sh2, Sh4, Ve1, Ve5, Vg1, Vi3, Vi8, Vt3, Vt6.
- Maniola jurtina* (L.). Kb2, Kb4, Kh15–16, Kt1, Kt4, Pl6, Sh2, Vt3.
- **Hyponephele lycaon* (Rott.). Kt5.
- Erebia disa* (Thnbg.). Me1 (Poppius 1906).
- E. embla* (Thnbg.). Kh5, Kt1, Pr0, So0.
- E. euryale* (Esp.). Ka15, Kh15, Kt1, Le3, Pi4, Pr17, Vi2–3. This is a boreomontane species, which does not occur in western Fennoscandia. From the Russian Karelia eastwards it occurs as ssp. *euryaloides* Tengström. There is only one record inside the current borders of Finland (*Sb*: Lieksa, Välimäki *et al.* 2008).
- E. ligea* (L.). Ka6, Kb4, Kh5–6, Kh8, Kh15–16, Le3, On6, Pi3–4, Pl4–5, Pl7, Pr3, Pr10–11, Pr16–17, Pr21, So0, Ve2, Vi2–3, Vi7, Vt3.
- Oeneis bore* (Schn.). Pr0 (Tuzov *et al.* 1997).
- O. jutta* (Hbn.). Pi4, Pr16–18, So0.
- Pyralidae
- Aphomia sociella* (L.). Ka1, Kt1.
- Pyralis farinalis* (L.). Kt1, Pr16.
- Aglossa pinguinalis* (L.). Kt1, Ve1.
- Ortholepis betulae* (Goeze). Ka1, Kt1, Pl3, Pr1, Pr16.
- **Pyla fusca* (Haw.). Ka1, Ka6, So6, Ve1.
- **Catastia marginea* (Den. & Schiff.). Ka7, Ka14.
- **Sciota fumella* (Ev.). Ka1, Ka6, Ka11, Ve1.
- **S. rhenella* (Zinck.). Ve1.
- Oncocera semirubella* (Scop.). Ka1, Kt1, Kt4, On4, Vi3, Vt6.
- **Dioryctria abietella* (Den. & Schiff.). Ka1.
- **D. schuetzeella* Fuchs. Vi3.

- Hypochalcia ahenella* (Den. & Schiff.). Ka12, Kb4, Kt1, Kt4.
 **Episcythrastis tetricella* (Den. & Schiff.). Ka1.
 **Phycitodes binaevella* (Hbn.). Ka1, Ve1, Vi3.
 **Ph. maritima* (Tengstr.). Pr9.
 **Plodia interpunctella* (Hbn.). Pr1 (B. Yu. Filippov, pers. comm.).
 **Ephestia elutella* (Hbn.). Pr1, Pr16.
Scoparia ambigualis (Tr.). Kt1 (Krulikovsky 1909).
 **S. ancipitella* (La Harpe). Ka1, Ka6, Kh6, Kt4, Kt7–8, On6, Pl7, Pl10, Sh2, Ve2–3, Vi3, Vi5, Vi7–8, Vt3, Vt5.
 **Eudonia alpina* (Curt.). So6.
E. lacustrata (Panz.). Ka1, Ka4, Kt1.
 **E. murana* (Curt.). Ka1.
 **E. pallida* (Curt.). Ka1.
Gesneria centuriella (Den. & Schiff.). Kt1 (Krulikovsky 1909).
 **Donacaula mucronella* (Den. & Schiff.). Ka1.
Elophila nymphaeata (L.). Kt1, Vi8, Vt4.
 **Parapoxyn stratiotata* (L.). Vt4.
Nymphula nitidulata (Hufn.). Ka1, Ka4–6, Kt1, Kt4, On4, Pi4, Pl8, Pr3, Pr10, Pr16, Vt6.
 **Evergestis extimalis* (Scop.). Pl3.
 **E. forficalis* (L.). Ka1.
 **E. pallidata* (Hufn.). Kb2, Kh3, On6–7, Pr3, Vi3, Vi5, Vt3–4.
Udea decrepitalis (H.-S.). Kt1, Pl2–3, Pr16, So4, So6–7.
 **U. hamalis* (Thnbg.). Pl2, Pr1, Pr24, So5–6.
 **U. inquinatalis* (Lienig & Z.). So4, So7.
 **U. lutealis* (Hbn.). Ka1, Ka4–5, Kb2, Kb4, Kh3, Kh5, Me2, On3–4, On6–7, Pi4, Pi6, Pl4–5, Pl7, Pl8, Pl10, Pr1, Pr3, Pr9, Pr12, Pr16–17, Sh2, Ve1–2, Ve5, Vi2–3, Vi5, Vi8, Vt4, Vt6.
U. prunalis (Den. & Schiff.). Kb4, Kt1, On6, So1, Ve5, Vi3.
Opsibotys fuscalis (Den. & Schiff.). Ka8–11, Ka13, Kb4, Kh6, Kh15, Ko3, Kt1–3, Me3, Pr16, Sh2, So5–6, Ve4–5, Ve8, Vi6.
Loxostege sticticalis (L.). Kt1 (Krulikovsky 1909).
Pyrausta despicata (Scop.). Kt1 (Krulikovsky 1909).
P. porphyralis (Den. & Schiff.). Pr16.
P. purpuralis (L.). Ka1, Ka5, Kb2, Kt1, Kt4, Kt8, Pi4, Pl3, Pl7, Pl10, Pr16, Sh2, So5, Us4, Ve7–8, Vt6.
 **Nascia ciliaris* (Hbn.). Ka11, Pr1.
Sitochroa verticalis (L.). Ka1, Ka9, Kb4, Ko2, Kt1, Pr1, Ve4–5, Vi5.
 **Phlyctaenia coronata* (Hufn.). Pr16, So6, Vi2.
 **Ph. perlucidalis* (Hbn.). Ka8, Ko3, Ve4.
 **Psammotis pulveralis* (Hbn.). Kh8, Kt4, On7, Pr16, Vi8, Vt3–4, Vt6.
 **Ostrinia nubilalis* (Hbn.). Ka1, Ka12, Ka14, Ko2, Pr17.
 **Anania funebris* (Ström). Pr2, Pr16, So4–7.
 **A. terrealis* (Tr.). So5, So6.
A. hortulata (L.). Ka1, Ka13, Kt1, Pr1, Pr5, Pr9, Pr17, Sh3, So6.
 **Paratalanta pandalis* Hbn. Ka11, Pr16, Us6, Ve7.
 **Pleuroptya ruralis* (Scop.). Ka1, Ka5–6, Kb2, On6, Pl10, Ve5, Vi3.
 **Diasemia reticularis* (L.). Ka14.
Nomophila noctuella (Den. & Schiff.). Kt1 (Krulikovsky 1909).
 Crambidae
 **Calamotropha paludella* (Hbn.). Ve5.
Chrysoteuchia culmella (L.). Ka1, Ka7, Ka9–12, Ko2, Kt1, Ny1, Pr1, Pr9, Pr16, So4, So8, Us3–5, Ve1, Ve4, Ve7–8, Vi6.
 **Crambus alienellus* (Germar & Kaulfuss). Pl2, Pr16, So4, So6–7, Us3, Ve2, Vt5.
 **C. ericella* (Hbn.). Ka1, So8, Ve4.
 **C. hamella* (Thnbg.). Ka1, Kh4.
 **C. lathoniellus* (Zinck.). Ka1, Ka7–8, Ka10, Ka13, Kh15, Ko2–3, Pl3, Pr1, Pr9, Pr16, Sh2, So4–6, Us4, Us6, Ve1–2, Ve4, Ve7, Vi3, Vt3.
C. pascuella (L.). Kt1 (Krulikovsky 1909).
C. perlilla (Scop.). Kb2, Kb4, Kh10, Ko2, Kt1, Kt4–5, Pi4, Pr10–11, So1, So5–7, Ve2, Ve5, Ve8, Vi3, Vi5, Vi8, Vt3–4, Vt6.
C. pratella (L.). Kt1, On2.
 **Agriphila inquinatella* (Den. & Schiff.). Kb4, Kt8.
 **A. selasella* (Hbn.). Ka1, Ka5–6, On3–4, On7, Pl4, Pl7–8, Pl10, Ve2, Vt3.
 **A. straminella* (Den. & Schiff.). Ka6, Kb2, Kb4, Kh3, Kh6, Kh8, Kh10, Kt4–5, Kt7, On3–4, On6, Pl7–8, Pl10, Pr1, Pr12, Sh2, So5, Ve1–2, Ve5, Vi2–3, Vi5, Vi7–8, Vt4–6.
A. tristella (Den. & Schiff.). Ka1, Ka6, Kb2, Kb4, Kt1, On4, Pl4, Pl7–8, Sh2, Vi3, Vi5, Vt3–4.
 **Pediasia truncatella* (Zett.). Pl3, Pr16.
 **Catoptria maculalis* (Zett.). So7.
 **C. margaritella* (Den. & Schiff.). Ka4, Kh6,

Kt7–8, On3, Pi4, Pl2, Ve2, Vi2, Vt3.

**C. permutatella* (H.-S.). Ka1.

**C. pinella* (L.). Kb4.

Drepanidae

Falcaria lacertinaria (L.). Pi4, Pl3, Pr1, Pr16, So6, Vi6.

Drepana falcataria (L.). Kt1, Pi2, Pi4, Pl3, Pr1, Pr16, So0.

Thyatira batis (L.). Pr16, Sh4, Ve9.

**Habrosyne pyritoides* (Hufn.). Sh4, Ve9.

**Tethea ocularis* (L.). Sh4.

T. or (Den. & Schiff.). Pr1, Pr16, Sh4.

Ochropacha duplaris (L.). Pi4, Pl3, Pr16.

Lasiocampidae

Trichiura crataegi (L.). Ka15, Kt1, Pl2, Pr16.

Poecilocampa populi (L.). Pi4, Vi3.

Lasiocampa quercus (L.). Pr1, Pr11–12.

Macrothylacia rubi (L.). Kt1 (Krulikovsky 1909), Pr1, Pr13 (Bolotov *et al.* 1998).

Euthrix potatoria (L.). Ka15, Kt1.

**Gastropacha quercifolia* (L.). Ar0.

Phyllodesma japonica (Leech). Pr16 (Zelenova 1972). This is a rare Euro-Siberian species occurring eastwards from the Baltic countries, in Karelian Isthmus, but not in Russian Karelia or Nordic countries (Kaisila 1962, Sinev 2008, Karsholt *et al.* 2013).

Endromididae

Endromis versicolora (L.). Kh15, Pr13.

Saturniidae

**Aglia tau* (L.). Pl0.

Saturnia pavonia (L.). Pr16 (Zelenova 1972), Pr1, Pr17, Pr19, Pr21, Pr32 (Bolotov *et al.* 1998).

Sphingidae

Acherontia atropos (L.). Ar0, Pi0.

Sphinx pinastri (L.). Ar0.

**Smerinthus caecus* Ménériés. Ar0. This is the northernmost record of this Euro-Siberian species which is distributed from north-western Russia eastwards (Sinev 2008) but has not found in the Baltic countries or Fennoscandia.

Smerinthus ocellatus (L.). Pr1 (Bolotov *et al.* 1998).

Laothoe populi (L.). Pl2, Pr1, Pr3, Pr9, Pr16.

Hyles gallii (Rott.). Kt1, Pi3, Pi4, Pi7, Pr1, Pr5,

Pr16, Pr19, Pr33–34, So3.

Deilephila elpenor (L.). Kt1, Pi3, Pi4, Pr5, Pr17, Sh4, Ve9.

D. porcellus (L.). Ve1, Sh4.

Macroglossum stellatarum (L.). Pr1, Pr12.

Hemaris fuciformis (L.). Kt1, Pi4, Pr1, Pr13, Pr16, Pr32, Us6.

Geometridae

Archiearis parthenias (L.). Kh11, Kt1, Pr16.

**Abraxas sylvata* (Scop.). Ka7–8, Ka11, Kb4, Sh4, Us2, Ve8.

Lomaspilis marginata (L.). Ka6–8, Ka10–14, Kh2, Ko2–3, Kt1, Ny1, On1, Pi4, Pl2–3, Pr1, Pr9, Pr16, Pr24, Pr28, So1, So4, So6, Us2–4, Us6, Ve1, Ve4, Ve7–8, Vi6.

**L. opis* Butler. Us2.

**Lomographa bimaculata* (F.). Ka13, Us4, Ve1.

**L. temerata* (Den. & Schiff.). Pr1, Sh4.

Cabera exanthemata (Scop.). Ka8, Ka11, Ka13, Kb2, Kh2, Kh12, Kt5, Kt7, Me3, Ny1, On3, Pi4, Pl2–3, Pl4, Pl7, Pr1, Pr9, Pr16, Sh2, So1, So4, So6–8, Us2–4, Us6, Ve1, Vi3, Vi5–6.

**C. leptographa* Wehrli. Ka13. This is the northernmost record of this rare Euro-Siberian species. It has been previously recorded in the Baltic countries and in the north-western and north-central regions of Russia (Sinev 2008). In 2012, a single specimen was found in Finland (*Ka*: Virolahti; Hyönteistietokanta 2014).

C. pusaria (L.). Ka1, Ka7–8, Ka13–14, Ko2, Kt1–2, Pi2, Pi4, Pl2–3, Pr1, Pr9, Pr16, Pr24, So1, So4, So6–7, Us4, Us6, Ve1, Ve7.

**Ennomos autumnaria* (Werneburg). Kh15.

Selenia dentaria (F.). Kt1, Pl2, Pr2, Pr16, Pr23, So1.

**S. lunularia* (Hbn.). Pr2.

S. tetralunaria (Hufn.). Pl2, Pr1, Pr16.

**Crocallis elinguaris* (L.). Ka15, Sh4, Vi3.

Opisthograptis luteolata (L.). Kt1, On0, Pr1, So1, So6, Us3.

Plagodis pulveraria (L.). Kh15, Pi4, Pl2–3, Pr1–2, Pr16, So1, So4–7, Us3, Ve6.

**Cepphis advenaria* (Hbn.). Ka7–8, Ka13, Ko2, Us2, Us6, Ve6.

Pseudopanthera macularia (L.). Ko2, Kt1.

Epione repandaria (Hufn.). Ka1, Ka6, Kh16, Pi4, Pl2, Pl7, Pr16.

E. vespertaria (L.). Ka15, Kb4, Pl2, Pr16.

- **Epirranthis diversata* (Den. & Schiff.). Kh11, Pr16.
- **Hylaea fasciaria* (L.). Ka15.
- Macaria alternata* (Den. & Schiff.). Ka1, Ka4, Ka8, Ka15, Kt1, Pi4, Pl10, Pr1, Pr4, Pr16, Sh4, Vi3.
- M. brunneata* (Thnbg.). Ka3, Kh6, Kt1, On3, Pi4, Pi6, Pl2, Pr1, Pr15–16, Pr24, Sh2, So1, Ve2, Vi7, Vt5.
- M. carbonaria* (Cl.). Me1, Pr2.
- M. liturata* (Cl.). Pi4, Pr12, Pr16.
- M. loricaria* (Ev.). Kb4, Kt1, Pi4, Pl2, Pr1, So0.
- M. notata* (L.). Ka1, Kh15, Ko2–3, Kt1, Pi4, Pr16, So6–7, Us3, Us6, Vi3.
- M. signaria* (Hbn.). Pr16, So6.
- M. wauaria* (L.). Ka1, Ka12, Ka15, Kb4, Kt5, Pi4, Pl2, Pr1, Pr16, Sh4, Vi3.
- Chiasmia clathrata* (L.). Ka7–8, Ka10–12, Ka14, Kb2, Kh2, Kh15–16, Ko2–3, Kt1–3, Pi2, Pi4, Pr1, Pr16–17, Pr25, Sh4, So1, So4, So6, Us2–6, Ve1, Ve4–6, Ve8, Vi6.
- Hypoxystis pluviana* (F.). Kt1 (Kruikovskiy 1909).
- Siona lineata* (Scop.). Ka7, Ka9–12, Ka14, Ko3, Kt1, Sh4, Us3–5, Ve1, Ve4, Ve6, Ve8.
- **Deileptenia ribeata* (Cl.). Ve9.
- **Elophos vittaria* (Thnbg.). So0.
- Ematurga atomaria* (L.). Ka8–11, Ka13, Kh15, Ko2–3, Kt1, Kt3, Me3, Pi4, Pl2–3, Pr1–2, Pr9, Pr16, Sh4, So1, So4, So6–7, Us2–5, Ve6–8.
- Angerona prunaria* (L.). Ka8, Ka10–12, Ka14, Kh16, Ko2–3, Kt1, Us5.
- Arichanna melanaria* (L.). Ka15, Kh6, On3, Pl2, Pr1.
- **Alcis jubata* (Thnbg.). Pi4.
- A. repandata* (L.). Ka15, Kh8, Kt1, Pl2, Ve9.
- **Hypomecis roboraria* (Den. & Schiff.). Sh4, Ve9.
- **Paradarisa consonaria* (Hbn.). Us2, Ve6.
- Ectropis crepuscularia* (Den. & Schiff.). Kh15, Pl2, Pr1, Ve6.
- **Biston betularia* (L.). Ve1.
- Lycia hirtaria* (Cl.). Pr16 (Zelenova 1972).
- L. pomonaria* (Hbn.). Pl2, Pr16 (Zelenova 1972).
- Geometra papilionaria* (L.). Ka15, Kh6, Kh11, Kt1, Kt5, Pi4, Pl2, Pr10, Pr16–17, Pr20–21, Pr31, Ve3, Vg1, Vi3, Vt4.
- **Thetidia smaragdaria* (F.). Ve8.
- Jodis lactearia* (L.). Pl2, So1, Us2.
- J. putata* (L.). Kh9, Ko3, Kt1, Me3, Pi2, Pi4, Pl2–3, Pr11, Pr16, Pr25, So1–2, So4–6, Us2, Ve6–7, Vi6.
- **Chlorissa viridata* (L.). Us2, Us6, Ve6.
- Idaea aversata* (L.). Kt1 (Kruikovskiy 1909), Pi4 (Antonova & Tikhomirov 2002).
- **I. biselata* (Hufn.). Ka15, Kb2, Kb4, Kt7, Sh4, Vi3, Vi7, Vi8.
- I. pallidata* (Den. & Schiff.). Ka8, Ka11, Ka14, Ko2, Kt1, Pl3, Pr1, Pr9, Pr16, Us3–4, Ve6–8, Vt5.
- **I. serpentata* (Hufn.). Kb4, Kt4, Kt5.
- Scopula floslactata* (Haw.). Ka14, Kh15, Ko2, Kt1, Pr16, So1, Us2–3, Ve4, Ve6–7.
- S. frigidaria* (Möschl.). Pi4 (Antonova & Tikhomirov 2002).
- S. immorata* (L.). Ka7–10, Ka12, Ka14, Ko2, Kt1, Sh4, Us3–5, Ve1, Ve4, Ve8.
- **S. immutata* (L.). Kb2, Pl3, So1, Us2.
- S. rubiginata* (Hufn.). Ka6, On4, Pi4, Pl2, Pr1, Pr16, Ve8.
- S. ternata* Schrank. Kh12, Pi4, Pl2–3, Pr1, Pr16, So1, So4, So6–7.
- Cyclophora albipunctata* (Hufn.). Pi4, Pl2, Pr1, Pr23.
- C. pendularia* (Cl.). Kt1, Pr1.
- **Timandra comae* Schmidt. Ve6. The species is probably a newcomer in Arkhangelsk oblast. It has recently been expanding northwards in Finland (Hyönteistietokanta 2014).
- T. griseata* W. Petersen. Ka11, Kh16, Kt1, Vi3.
- Scotopteryx chenopodiata* (L.). Ka4, Ka6, Ka15, Kb2, Kb4, Kh3–4, Kh6, Kh8, Kt1, Kt4–5, Kt7, On4, On6–7, Pi4, Pi6, Pl4–5, Pl7–8, Pr1, Pr3, Pr9–10, Pr12, Pr16–17, Sh2, Sh4, Ve1, Ve3, Ve5, Vi2, Vi5, Vi7–8, Vt3–4, Vt6.
- Catarhoe rubidata* (Den. & Schiff.). Kt1 (Kruikovskiy 1909).
- Camptogramma bilineata* (L.). Kb2, Kt1, Vt3.
- Ochyria quadrifasciata* (Cl.). Ka5, Kh15, Kt1, Pi4, Vt3.
- **Orthonama vittata* (Borkh.). Sh4.
- Xanthorhoe abrasaria* (H.-S.). So0.
- X. annotinata* (Zett.). Pi4, Pr2, Pr16, So6–7, Vi3.
- X. decoloraria* (Esp.). Pi4, Pl2.
- **X. designata* (Hufn.). Pr1, Pr16.
- X. ferrugata* (Cl.). Kh12, Kt1, Pi4, Pl3, Pr1, Pr9, Pr16, So1.
- X. fluctuata* (L.). Kh2, Kt1, Me3, Pi2, Pr1, Pr12, So1.

- X. montanata* (Den. & Schiff.). Ka1, Ka8–9, Ka11–14, Kb4, Kh2, Kh9, Kh12, Kh15, Ko2–3, Kt1–2, Pi4, Pl2–3, Pr1, Pr9, Pr16–17, So1, So4–6, Us3–4, Us6, Ve1, Ve4, Vi6.
- X. spadicearia* (Den. & Schiff.). Kh12, Ko3, Me3, Pi2, Pi4, Pl2, Pr2, Pr16, Sh2, So4–6, Ve8.
- **Euphyia unangulata* (Haw.). Ka13, Ko3, Us6.
- Epirrhoe alternata* (Müller). Kh16, Pi4, Pl3, So6, Us3.
- **E. pupillata* (Thnbg.). Pr28.
- E. tristata* (L.). Ka8, Ka14, Kh2, Ko3, Kt2, Pi4, Pl3, Pr9, Pr16, Us2, Us4, Ve4, Ve6.
- **Earophila badiata* (Den. & Schiff.). Kh15.
- **Anticlea derivata* (Den. & Schiff.). Kh15, Pl3.
- Mesoleuca albicillata* (L.). Ka11, Ka13, Kh16, Pi4, Pl2, Pr1, Pr16, Us3, Us5.
- Pelurga comitata* (L.). Ka1, Kh15, Kt1, Pr1, Vi3.
- Entephria caesiata* (Den. & Schiff.). Kt1, Pi4, Pl2, Pr1, Pr10, Pr16, Pr24, So1, So7.
- Spargania luctuata* (Den. & Schiff.). Pi4, Pl3, Pr16, So6.
- Hydriomena furcata* (Thnbg.). Ka1, Ka15, Pi4, Pl2–3, Pr1, Pr6, Pr9, Pr12, Pr16, Sh4, Vi3.
- H. impluviata* (Den. & Schiff.). Pi4, Pl2–3, Pr1–2, Pr16, Pr24, So1.
- H. ruberata* (Freyer). Pl2–3, Pr2, Pr16, Ve9.
- Colostygia aptata* (Hbn.). Pi4 (Antonova & Tikhomirov 2002).
- C. pectinataria* (Knoch). Ko2–3, Kt1, Pl3, Pr16.
- Electrophaes corylata* (Thnbg.). Kt1, Pi4, So6–7.
- **Chloroclysta miata* (L.). So1.
- Dyssstroma citrata* (L.). Ka15, Kt1, Pi4, Pl2, Pr1, Pr12, Pr16, Pr28, Sh2, Vi3.
- **D. latefasciata* (Stgr.). Pi4.
- D. truncata* (Hufn.). Kh6, On4, Pi4, Pi6, Pl2, Pl4, Pr9–10, Pr15–16, Sh4.
- Cidaria fulvata* (Forster). Pi4 (Antonova & Tikhomirov 2002).
- Plemyria rubiginata* (Den. & Schiff.). Pi4, Sh4.
- Thera juniperata* (L.). Pl2, Pr16.
- Heterothesa serraria* (Lienig & Z.). Pl2, Ve7.
- Eulithis mellinata* (F.). Kt1 (Krulikovsky 1909).
- E. populata* (L.). Kh8, Kh15, Kt1, Me2, On3, Pi4, Pl2, Pl5, Pr1, Pr9, Pr16, Pr23, So1, Vi3.
- E. prunata* (L.). Kh15, Pi4, Pi6, Pl3, Pr1, Pr9, Pr16–17, Pr23, Pr28, Sh4, Ve3, Vi3.
- **E. pyropata* (Hbn.). Ka1, Ka15.
- E. testata* (L.). Pi4, Pl2, Pr16, Vi3.
- **Gandaritis pyraliata* (Den. & Schiff.). Kt3, Pr9, Vt4.
- Ecliptopera capitata* (H.-S.). Pi4 (Antonova & Tikhomirov 2002).
- E. silaceata* (Den. & Schiff.). Kh15, Pi2, Pi4.
- Cosmorhoe ocellata* (L.). Kt1 (Krulikovsky 1909).
- **Lampropteryx otregiata* (Metcalfe). Pr16.
- **L. suffumata* (Den. & Schiff.). Pr1, Us2.
- **Operophtera brumata* (L.). Pr1.
- **O. fagata* (Scharfenberg). Pl2.
- Epirrita autumnata* (Borkh.). Kh15, Pr1, So1, Vi3.
- **Asthena albulata* (Hufn.). Vt6.
- **Euchoeca nebulata* (Scop.). Ka13, Ko3, Pl3, Pr16, Pr24, Ve1, Vi6.
- **Venusia cambrica* Curt. So6.
- Hydrelia flammeolaria* (Hufn.). Ka8, Ka13, Ko3, Kt1, Us3, Us6.
- **H. sylvata* (Den. & Schiff.). Ka11.
- Rheumaptera hastata* (L.). Ka7, Ka13, Kh5, Kh12, Kt1, Me1, Pi2, Pi4, Pl2–6, Pl10, Pr1–2, Pr16, Pr28, So4, So6–7, Us2, Us6, Ve6.
- Rh. subhastata* (Nolcken). Me3, Pi4, Pr1–2, Pr16, So1, So6.
- Hydria undulata* (L.). Kh9, Kt1, Pi4, Pr16, Ve2.
- Coenocalpe lapidata* (Hbn.). Kt1, Me2, Pi4, Vi3.
- Horisme aemulata* (Hbn.). Pi4 (Antonova & Tikhomirov 2002).
- Melanthia mandshuricata* (Bremer). Pi4 (Antonova & Tikhomirov 2002). This is the westernmost record of this Euro-Siberian species which was only recently reported as new to Europe from the South Ural Mts. (Ahola *et al.* 1997).
- **M. procellata* (Den. & Schiff.). Kh6. This is the northernmost record of the species.
- **Anticollix sparsata* (Tr.). Ka8, Ka13.
- Mesotype didymata* (L.). Kt1, Pi4, Pl2, Pr1, Pr16, Sh4.
- M. parallelolineata* (Retz.). Pi4 (Antonova & Tikhomirov 2002).
- Perizoma albulata* (Den. & Schiff.). Ka10, Kh15, On5, Pi4, Pl3, Pr16, So4, So6–7, Ve4, Ve8.
- P. alchemillata* (L.). Kh15, Kt1, On1, Pl3, Pr1.
- P. blandiata* (Den. & Schiff.). Pi4, Pr16, Vt3.
- Martania taeniata* (Steph.). Ka15, Pi4, Pl2–3, Pr16, Ve3.
- Gagitodes sagittata* (F.). Pi4 (Antonova & Tikhomirov 2002).

- **Pasiphila chloerata* (Mabille). Pr1.
 **P. debiliata* (Hbn.). Ka1, Pi6, Pr1, Pr16, Vi7.
P. rectangulata (L.). Kt1, Pr1, Pr16, Vi8.
Eupithecia abietaria (Goeze). Pi6, Pl2.
E. absinthiata (Cl.). Kt1 (Krulikovsky 1909).
E. actaeata Walderdorff. Pi4 (Antonova & Tikhomirov 2002).
 **E. analoga* Djak. Pr16.
E. assimilata Doubleday. Pi4 (Antonova & Tikhomirov 2002).
 **E. conterminata* (Lienig & Z.). On1, Pr2, So6.
 **E. exigua* (Hbn.). Ve1.
E. gelidata Möschl. Pi4 (Antonova & Tikhomirov 2002).
 **E. indigata* (Hbn.). Pr2, Pr16.
E. intricata (Zett.). Ka14, Kh12, Pi4, Pr9, Pr16, Ve1.
E. lariciata (Freyer). Pi4 (Antonova & Tikhomirov 2002).
 **E. plumbeolata* (Haw.). Kb4, Me3, Pl2, Pr1, Pr16, So7, Us3–4, Ve3–4.
E. pusillata (Den. & Schiff.). Ka15, Pi4, Pr1, Pr16, Vi3.
 **E. pygmaeata* (Hbn.). Pl2, Pr16, So4, So6, Us4, Us6.
E. satyrata (Hbn.). Ka10, Pi4, Pl2–3, Pr1–2, Pr9, Pr16, So4–6, Us2, Ve6.
E. sinuosaria (Ev.). Kt1 (Krulikovsky 1909).
E. subfuscata (Haw.). Kt1, Ny1, Pi4, Pr9, Pr16.
 **E. subumbrata* (Den. & Schiff.). Ka14, Ve1.
E. succenturiata (L.). Ka15, Pi4, Pr12, Pr16, So6, Ve1, Vi3.
 **E. tantillaria* Boisd. So6.
 **E. tenuiata* (Hbn.). Pr16.
 **E. valerianata* (Hbn.). Pr16, Vi6.
E. virgaureata Doubleday. Ka14, Pi2, Pi4, Pr16, Ve1.
E. vulgata (Haw.). Kh9, Me3, Pi4, Pl2–3, Pr1, Pr16, So5–7.
Odezia atrata (L.). Kb2, Kb4, Kh7, Kt1, Pi4, Pl6, Pr15–16, So0, Ve5.
Carsia sororiata (Hbn.). Kh4, Kh6, Kh10, On3, Pi4, Pr1, Pr16, So2, So9, Ve2, Vt5.
 **Aploclera praeformata* (Hbn.). Sh4.
Lobophora halterata (Hufn.). Pr16 (Zelenova 1972).
 **Pterapherapteryx sexalata* (Retz.). Ka11–12, Pr1, Pr28.
Trichopteryx carpinata (Borkh.). Kh15, Pl3, Pr1, Pr16, Sol.
- Notodontidae
Clostera anachoreta (Den. & Schiff.). Pr1, Pr16, Pr23.
C. curtula (L.). Pr1, Pr16.
C. pigra (Hufn.). Ka1, Pr1, Pr15–16.
Notodonta dromedarius (L.). Pr1, Pr16, Vi3.
N. torva (Hbn.). Pi4, Pl2, Pr1, Pr16.
N. tritophus (Den. & Schiff.). Pr0 (Zelenova 1976).
N. ziczac (L.). Kt1, Pr1.
Pheosia gnoma (F.). Kt1, Pr1, Pr16.
Ph. tremula (Cl.). Ka15, Pr1.
Pterostoma palpina (Cl.). Pl3, Pr1, Pr16.
Ptilodon capucina (L.). Pi4, Pl3, Pr16, Vi3.
Odontosia carmelita (Esp.). Kt1 (Krulikovsky 1909), Pr16 (Zelenova 1972).
Furcula bifida (Brahm.). Pl2, Pr16 (Zelenova 1972).
 **Furcula furcula* (Cl.). Pr1.
Cerura vinula (L.). Ka12, Kt1, Pl3, Pr1, Pr5, Pr16–18, Pr21.
Phalera bucephala (L.). Pl2, Pr1, Pr16.
- Erebidae
Scoliopteryx libatrix (L.). Kh15, Kt1, Pi4, Pl2–3, Pr1, Pr16, Sh4, Ve9.
 **Rivula sericealis* (Scop.). Ka15, Kh8, Sh4, Vt6.
 **Hypena crassalis* (F.). Kh9, So6–7.
H. proboscidalis (L.). Ka15, Kb4, Kh15, On3, Pi4, Sh4.
H. rostralis (L.). Kt1 (Krulikovsky 1909).
Leucoma salicis (L.). Kh14, Pr1, Pr16, So1.
 **Calliteara pudibunda* (L.). Ka1, Ve1.
Orgyia antiqua (L.). Kt3, Pi4, Pl2, Pr1, Pr16, Vgl.
Dicallomera fascelina (L.). Kt1 (Krulikovsky 1909).
Spilosoma lubricipeda (L.). Ka1, Ka7, Kh16, Kt1, Pi4, Sh4, Ve1, Vi3.
S. lutea (Hufn.). Ka1, Ka15, Kt1.
Diacrisia sannio (L.). Ka12, Ko2, Kt1, Pi4, Pr8, Pr12, So4, So6–8, Ve8.
Pararctia lapponica (Thnbg.). Me1 (Poppius 1906).
Borearctia menetriesii (Ev.). Pi3 (Bolotov et al. 2013c).
Phragmatobia fuliginosa (L.). Kt1 (Krulikovsky 1909).
 **Parasemia plantaginis* (L.). Kh15, Pi4, Pl3, Pr16, Sol.

Tyria jacobaeae (L.). Kt1 (Tatarinov *et al.* 2003).

This is the northernmost record of the species.

Arctia caja (L.). Kh15–16, Kt1, Pi4, Pr1, Pr17, Pr28.

A. villica (L.). Kt1 (Tatarinov *et al.* 2003). This is the northernmost record of the species.

**Mitochondria miniata* (Forster.). Ka15, Sh4.

Cybosia mesomella (L.). Kt1, So7.

**Atolmis rubricollis* (L.). Sh4.

**Eilema depressa* (Esp.). Ka15, Kb4.

**E. griseola* (Hbn.). Ka15.

**E. lutarella* (L.). Kb4, Sh4, Vi3.

**E. sororcula* (Hufn.). Us5.

Setina irrorella (L.). Kt1 (Krulikovsky 1909).

**Calyptra thalictri* (Borkh.). Kh15, Vi3.

**Herminia tarsipennalis* (Tr.). Ka11, Ka13, Ka15.

**H. tarsicrinalis* (Knoch). Ka13, Us4.

Polypogon tentacularia (L.). Ka14, Kb4, Ko2, Kt1, Pi4, Pl2–3, Pr1, Pr16, Pr23, Us4, Ve1, Ve5, Ve8, Vi7, Vt3, Vt6.

**Pechipogo strigilata* (L.). Ve1.

**Hypenodes humidalis* Doubleday. Pr16, Ve2.

**Lygephila pastinum* (Tr.). Pr12, Vi3.

Parascotia fuliginaria (L.). Kt1 (Krulikovsky 1909).

**Phytometra viridaria* (Cl.). Pl3.

**Colobochoyla salicalis* (Den. & Schiff.). Ka1, Kh12, Ko3, Us4, Ve4.

**Laspeyria flexula* (Den. & Schiff.). Kb2.

**Trisateles emortualis* (Den. & Schiff.). Us3.

Catocala adultera Ménériés. Ka2, Kh7, Pi4, Pr1, Pr12.

C. fraxini (L.). Kh15, On0, Pi0, Pl9.

**C. fulminea* (Scop.). Kh15, Sh4.

C. nupta (L.). Pr1 (Bolotov *et al.* 1998).

Euclidia mi (Cl.). Kh16, Kt1.

E. glyphica (L.). Ka7, Ka11–14, Kh8, Kh15, Ko2–3, Kt1, Pi4, Pr12, Pr16–17, Sh4, So1, So3–4, So6, Us3–6, Ve1, Ve4–5, Ve8.

Nolidae

Nola aerugula (Hbn.). Kt1 (Krulikovsky 1909).

**Nycteola degenerana* (Hbn.). Ka1, Ka15, Kh3, Kh15, Vi3, Vt6.

N. revayana (Scop.). Kt1 (Krulikovsky 1909).

Noctuidae

**Abrostola tripartita* (Hufn.). Vi3.

**Macdunnoughia confusa* (Steph.). Ka1.

Diachrysia chrysitis (L.). Kh15, Kt1, Pi4, Vt3.

**D. stenochrysis* (Warr.). Vi3, Vt3.

Polychrysia moneta (F.). Pi4, Pr1, Vi3.

**Lamprotes c-aureum* (Knoch). Sh4.

**Autographa bractea* (Den. & Schiff.). Kt8.

**A. excelsa* (Kretschmar). Ka1, Ka15, Vi3.

A. gamma (L.). Ka12, Kh15, Ko2, Kt1, Pi4, So1, So6–7, Ve1, Ve4.

**A. macrogamma* (Ev.). Ar0.

**A. pulchrina* (Haw.). Kh15, So1.

Syngrapha ain (Hochenw.). Pi4. This record hints that the westernmost populations of this species may occur in Arkhangelsk oblast, far more westwards than earlier records made near the Ural Mts. (Sinev 2008). In Fennoscandia, a single migrant specimen was recorded in Finland (*St.* Nakkila; Repo 1995).

S. interrogationis (L.). Ka2, Kh6, Kt1, Pi4, Pl2, So1, Ve1, Vi3, Vi7, Vt6.

Plusia festucae (L.). Ka1, Pi4.

Plusia putnami (Grote). Pr1.

**Deltote pygarga* (Hufn.). Ka1, Ka5, Ka11, Ka13–15, Kb4, Ko2–3, Sh4, Us3, Ve4, Vt3.

**D. bankiana* (F.). Ka1, Ka14, Ve4.

D. uncula (Cl.). Kt1, Pl3, Pr16.

**Acontia trabealis* (Scop.). Vi3. This is most likely a migrant specimen, because it was collected in 2011, when hundreds of specimens originating presumably from SE part of European Russia were recorded in Finland (Hyönteistietokanta 2014).

Colocasia coryli (L.). Pl2, Pr16, Pr23, Vi6.

**Moma alpium* (Osbeck). Sh4, Ve9.

**Acronicta alni* (L.). Pr1, Pl7, Sh4.

A. auricoma (Den. & Schiff.). Pr16, So1.

A. leporina (L.). Pl2, Pr1, Pr23.

**A. menyanthidis* (Esp.). Ka1, Pr16.

**A. psi* (L.). Sh4, Ve9.

A. rumicis (L.). Kt1, Sh4, Ve1, Ve9.

**A. strigosa* (Den. & Schiff.). Sh4, Ve9.

Subacronicta megacephala (Den. & Schiff.). Pr1, Pr16, Pr23, Sh4, So0.

**Tyta luctuosa* (Den. & Schiff.). Ka1. This is most likely a migrant specimen, because it was collected in 2011, when hundreds of specimens originating presumably from SE part of European Russia were recorded in Finland (Hyönteistietokanta 2014).

Cucullia umbratica (L.). Kt1 (Krulikovsky 1909).

- Calophasia lunula* (Hufn.). Kt1 (Krulikovsky 1909).
- **Amphipyra perflua* (F.). Ka15, Sh4, Vi3.
- **A. tragopoginis* (Cl.). Kh15–16, Pr12.
- Pyrrhia exprimens* (Walk.). Pi4 (A. Tikhomirov, pers. comm.).
- Heliothis viriplaca* (Hufn.). Kt1 (Krulikovsky 1909).
- Caradrina clavipalpis* (Scop.). Ka1, Kt1, Le4, Me1, Pi10, Pl3, Pr1–2, Pr16, So0, Ve1.
- C. morpheus* (Hufn.). Ka1, Kh16, Kt1, Ve1, Vi3.
- C. petraea* Tengstr. Kt1 (Krulikovsky 1909). This Euro-Siberian species occurs in eastern Estonia and Eastern Karelia (Jürivete & Õunap 2008, Sinev 2008), but it has never been recorded in the Nordic countries.
- **Athetis pallustris* (Hbn.). Pl3.
- **Enargia paleacea* (Esp.). Ka2, Kh15, Pi4, Pl4, Pr12, Vi3.
- **Ipimorpha retusa* (L.). Vi3.
- **Cosmia pyralina* (Den. & Schiff.). Ka1, Sh4, Vi3.
- C. trapezina* (L.). Kt1, Pr1, Vi3.
- **Dypterygia scabriuscula* (L.). Sh4.
- **Hyppa rectilinea* (Esp.). Pr16, So6, Ve9.
- **Euplexia lucipara* (L.). Ka1, Sh4.
- Crypsedra gemmea* (Tr.). Ka2, Pi4, Vi3.
- **Stauropora celsia* (L.). Vi3.
- Celaena haworthii* (Curt.). Le2, Pi4, Vi3.
- **Helotropha leucostigma* (Hbn.). Vi3.
- Gortyna flavago* (Den. & Schiff.). Kt1, Vi3.
- Hydraecia micacea* (Esp.). Kh15–16, Kt1, Pi4, Pl2, Pr12, Sh4, Vi3.
- **H. ultima* Holst. Vi3.
- Amphipoea fucosa* (Freyer). Ka1–2, Pi4, Pr12, Pr16, Sh4, Vi3.
- **A. lucens* (Freyer). Vi3.
- A. oculea* (L.). Kt1, Pi4, Vi3.
- **Rhizedra lutosa* (Hbn.). Vi3.
- **Phragmatiphila nexa* (Hbn.). Pr12, Vi3.
- **Denticucullus pygmina* (Haw.). Vi3.
- Apamea crenata* (Hufn.). Kh15–16, Pr1.
- **A. remissa* (Hbn.). Pr1, Pr16, Sh4.
- **A. scolopacina* (Esp.). Ka15.
- A. sordens* (Hufn.). Kt1 (Krulikovsky 1909).
- **A. unanimitis* (Hbn.). Ka1, Sh4, Ve9.
- A. lateritia* (Hufn.). Kt1, Pi4, Pr1, Sh4, Vi3.
- A. monoglypha* (Hufn.). Ka1, Kt1, Sh4.
- **Lateroligia ophiogramma* (Esp.). Ka1, Vi3.
- **Mesapamea secalis* (L.). Ka2, Sh4.
- **Mesoligia furuncula* (Den. & Schiff.). Ka1, Sh4.
- **Oligia strigilis* (L.). Sh4.
- Brachylomia viminalis* (F.). Ka2, Ka15, Pi4, Pl2, Pr1, Pr16.
- Parastichtis suspecta* (Hbn.). Ka15, Kt1, Kt4, Pi4, Pl2, Pr1, Pr16, Vi3.
- Xanthia togata* (Esp.). Kh16, Pi4, Pr16, Vi3.
- X. icteritia* (Hufn.). Kh15, Pi4, Pl2, Pr16, Vi3.
- Agrochola helvola* (L.). On0, Pi4, Pr16, Vi3.
- Hillia iris* (Zett.). Kt1, Pi4, So1
- **Lithophane consocia* (Borkh.). Pr1, Vi3.
- L. lamda* (F.). Pl2.
- L. socia* (Hufn.). Kt1, Pr1.
- Xylena solidaginis* (Hbn.). Ka2, Kh15, Pi4, Pl2–3, Pr1.
- X. vetusta* (Hbn.). Kh15, Pl2, Pr1.
- Eupsilia transversa* (Hufn.). Kt1 (Krulikovsky 1909).
- Antitype chi* (L.). Ka2, Kt1, Pi4.
- Blepharita amica* (Tr.). Kh16, Kt1, Vi3.
- Orthosia gothica* (L.). Pr1, Pr16, So1.
- **Tholera cespitis* (Den. & Schiff.). Vi3.
- Th. decimalis* (Poda). Kt1 (Krulikovsky 1909).
- Cerapteryx graminis* (L.). Ka3, Pi4, Pl2, Pr1, Pr11, Pr16, Pr24, Sh4, Vi3.
- **Anarta myrtilli* (L.). So4.
- A. trifolii* (Hufn.). Ka1, Kt1, Vi3.
- **Coranarta cordigera* (Thnbg.). Pi10, Pr1.
- Polia bombycina* (Hufn.). Kt1, Sh4, Ve9.
- **P. nebulosa* (Hufn.). Sh4, Ve9.
- **Lacanobia contigua* (Den. & Schiff.). Ka1.
- **L. oleracea* (L.). Ka1, Sh4.
- L. suasa* (Den. & Schiff.). Kt1, Pr1.
- **L. thalassina* (Hufn.). Pr1, Pr16, Sh4, Us6, Ve1, Ve9.
- **Melanchra persicariae* (L.). Sh4, Ve9.
- Ceramica pisi* (L.). Kh9, Pi4, Pl2, Pr1, Pr16, Ve1.
- Papestra biren* (Goeze). Pr16.
- Hada plebeja* (L.). Ka1, Kt1, Pl2–3, Pr1, So0, Ve1.
- Mamestra brassicae* (L.). Kt1 (Krulikovsky 1909).
- **Sideridis reticulata* (Goeze). Ve1.
- S. rivularis* (F.). Kt1 (Krulikovsky 1909).
- Hecatera bicolorata* (Hufn.). Kt1 (Krulikovsky 1909).
- Mythimna conigera* (Den. & Schiff.). Ka1, Kt1.
- M. impura* (Hbn.). Ka1, Kh3, Kh16, Pi4, Sh4, Vi3, Vt3, Vt4.
- Leucania comma* (L.). Kh16, Kt1, Pr25.

- Lasionycta imbecilla* (F.). Kt1, Sh4.
Euxoa nigricans (L.). Kt1 (Krulikovsky 1909).
E. recussa (Hbn.). Kt1 (Krulikovsky 1909), Pi4
 (A. Tikhomirov, pers. comm.).
E. tritici (L.). Kt1 (Krulikovsky 1909).
Agrotis clavis (Hufn.). Kt1 (Krulikovsky 1909).
A. exclamationis (L.). Ka1, Kt1, Sh4, Ve1.
A. segetum (Den. & Schiff.). Kt1 (Krulikovsky
 1909).
 **Axylia putris* (L.). Sh4, Ve1.
Ochropleura plecta (L.). Kt1, Sh4.
 **Diarsia dahlia* (Hbn.). Ve9, Vi3.
D. mendica (F.). Kt1, Sh4, So6.
 **D. rubi* (Vieweg). Kh16.
Rhyacia simulans (Hufn.). Kt1 (Krulikovsky
 1909).
Chersotis cuprea (Den. & Schiff.). Ka3, Pi4, P17,
 Pr16, Sh4, So1, Vg1, Vi3.
 **Cryptocala chardinyi* (Boisd.). P17.
Spaelotis ravidia (Den. & Schiff.). Kt1
 (Krulikovsky 1909).
Eurois occulta (L.). Ka1, Kh15, Kt1, On0, P13,
 Pr1, Pr16, Sh4, Ve9, Vi3.
Graphiphora augur (F.). Kh13, Kh15–16, P13,
 Pr1, Pr12, Sh4.
Anaplectoides prasina (Den. & Schiff.). Pi4, Sh4.
Xestia alpicola (Zett.). Pi4 (A. Tikhomirov, pers.
 comm.).
X. baja (Den. & Schiff.). Ka1–2, Kt1, Pi4, P14,
 Sh4, Vi3.
 **X. ditrapezium* (Den. & Schiff.). Ka1, Sh4, Vi3.
 This is probably an expansive species. In Fin-
 land, the species has demonstrated a remark-
 able expansion with over 70 exx. reported
 since its first discovery in 2006 and having
 now reached as far north as *Kb*: Ilomantsi
 (Hyönteistietokanta 2014).
X. rhaetica (Stgr.). ssp. *fennica* (Brandt). Pi4,
 Pr10.
 **X. sexstrigata* (Haw.). Vi3, Sh4.
X. speciosa (Hbn.). Pi4, P12.
 **X. triangulum* (Hufn.). Vi3.
 **Protolampra sobrina* (Dup.). Sh4.

4. Excluded species

- Dahlica lichenella* (L.). Kt1 (Krulikovsky 1909).
 This record is very uncertain and, most likely,
 is based on misidentification of *D. lazuri* (Cl.)

which is the most common species. In Fin-
 land, *D. lichenella* is the rarest species of the
 genus and is found mainly on sea shores.

Ypsolopha ustella (Cl.), mentioned by Zelenova
 (1976) as *Cerostoma radiatella* Don., was
 reared from birch in Pr1. Since *Y. ustella* is a
 more southern species whose larvae feed on
 oak, we presume that this report actually re-
 refers to *Y. parenthesesella* (L.), which is common
 in the area.

Acleris ferrugana (Den. & Schiff.), mentioned by
 Zelenova (1976) as *A. tripunctana* Hb., had
 been reared from birch in Pr1. We attribute
 this record to *A. notana* (Don.), which is often
 confused with *A. ferrugana*.

Catoptria myella (Hbn.). Kt1 (Krulikovsky
 1909). This record is very uncertain and, most
 likely, is based on misidentification of *C.*
permutatella (H.-S.). *Catoptria myella* is gen-
 erally confined to mountain regions of Cen-
 tral Europe, and Slamka (2008) questioned
 correctness of identifications on which the re-
 cords from the northern Russia (Sinev 2008)
 are based.

Apatura iris (L.). Ar0 (Andreev 1995). Neither
 this species, nor the two following species
 have been recorded in Arkhangelsk oblast so
 far. Most likely, they were included into the
 cited publication on the basis of extrapolation
 of the species' distribution in Europe.

Coenonympha hero (L.). Ar0 (Andreev 1995).
 See the comment to *Apatura iris*.

Euplagia quadripunctaria (Poda). Ar0 (Andreev
 1995). See the comment to *Apatura iris*.

Catocala elocata (Esp.). P12 (Zelenova 1972).
 This record is presumably based on a mis-
 identified specimen, which had not been
 found in collections by L. F. Zelenova. The
 northernmost record in Russia is from St. Pe-
 tersburg region (A. Matov, pers. comm.); in
 Finland the species is reported from *N* only
 (Kullberg *et al.* 2014).

5. Discussion

This first regional checklist of moths and but-
 terflies of Arkhangelsk oblast includes 1,036 spe-
 cies (538 species of microlepidoptera and 498
 species of macrolepidoptera), 496 of which are

recorded from this area for the first time. Eight species reported from the oblast in earlier publications are excluded from the list. The records of 929 species are based on the material from 160 localities that was examined by the authors. We have not seen any specimens of 107 species reported from Arkhangelsk oblast in earlier publications. In line with the earlier practice (Kozlov & Jalava 1994) we consider these records as requiring confirmation. For seven species we do not have any information on sampling locality even at the level of an administrative unit within Arkhangelsk oblast. Six of these species were found in non-labelled student's samples in NArFU and one species was referred to in a publication that did not indicate exact sampling sites.

Although the fauna of Arkhangelsk oblast is clearly poorer than that of the Ural region due to the lack of higher mountain chains, it includes some Siberian taiga species which do not reach Fennoscandia. Also the northern distribution limits of several species extend further north in Arkhangelsk oblast than in the more western parts of Europe. A more continental climate is the likely reason for this pattern in some butterflies and larger moths. Similar patterns are seen in the distributions of several species of butterflies in Sweden and Finland, i.e. in the eastern regions they reach more northern latitudes. However, for other species the limited distribution can be explained by the current distribution of host plants as in the case of *Syngrapha ain* and *Cydia zebana* feeding on larch, continuous distribution of which lies well on the eastern side of Onega Lake. Similarly, the distribution of *Melanthia* spp., *Thyris fenestrella* and *Horisme aemulata* depends on *Clematis sibirica*, which is abundant in the taiga east of Onega Lake.

From our point of view, the most interesting species in our list are those which do not occur in either the Baltic countries or Fennoscandia (including the Russian Karelia). Twenty-three species recorded in Arkhangelsk oblast are not found in Finland. However, the following comparison is restricted to well known groups in order to get a reliable picture of the differences between the regions.

Six species of butterflies and skippers found in Arkhangelsk oblast are not found in Finland, and two more species (*Cupido alcetas*, *Erebia*

euryle) have been recorded in Finland only once. The families Erebidae, Lasiocampidae, Sphingidae and Noctuidae each had one species not found in Finland: *Arctia villica*, *Phyllodesma japonica*, *Smerinthus caecus* and *Caradrina petraea*, respectively; Geometridae add two species, *Melanthia procellata* and *M. mandshuricata*, to this list. Several of these species, in particular *A. villica*, *P. japonica* and *C. petraea*, have not demonstrated range expansion in northern Europe: they have been known to occur only few tens of kilometres SE of the Finnish-Russian border (Kaisila 1962, Marttila et al. 1996) for decades, but never expanded to Finland, although there is no limiting food plant or biotope preference as in the *Pulsatilla* and *Clematis* feeding species of *Melanthia*. Among butterflies, *Neptis rivularis* could have potential to disperse in rural areas in Finland where its food plants (*Spirea* spp.) are commonly cultivated. Also *Leptidea morsei*, which we found amazingly common in the Arkhangelsk oblast, may further expand westwards.

The composition of butterfly fauna hints that we may expect clearly more "exotic" southern and eastern species to be found in Arkhangelsk oblast, especially among microlepidoptera, as some interesting species have already popped up. The most striking faunistic record is *Gnorimoschema robustella*, previously known from the lowlands of the South Ural region only, but also findings of *Caryocolum leucomelanella* and *Dichrorampha sequana* are surprising as they lie quite far north of the known distribution ranges.

Clouded Apollo (*Parnassius mnemosyne*) is one of a few species of butterflies, the ecology and distribution of which is well studied in Arkhangelsk oblast (Rykov 2009, Bolotov et al. 2013b). We discovered several populations of *P. mnemosyne* in the southern part of the region (localities Ko2 and Us3–5), where this species had not previously been recorded. In all these localities, the species was common on meadows along the riverbanks: one observer recorded 1 to 12 specimens in each habitat (400 to 2,500 m²) during 45–60 min.

We classify the current level of knowledge of the lepidopteran fauna of Arkhangelsk oblast as modest. This conclusion is based on the comparison with the well-known fauna of Finland, which

amounts about 2,600 species (J.K., pers. obs.), and on the ratio between the numbers of collected micro- and macrolepidoptera (1.08) which is much lower than the value of 1.6 that is characteristic of well-studied faunas of boreal forest zone (Sinev 2008). However, the Arkhangelsk oblast lies outside the distribution range of numerous woody plants that are naturally growing in the hemiboreal zone in Finland, which excludes dozens of moth species from its fauna. Particularly, oak (*Quercus robur*), maple (*Acer platanoides*), lime (*Tilia* spp.), common buckthorn (*Rhamnus cathartica*) and blackthorn (*Prunus spinosa*) do not belong to the native flora of Arkhangelsk oblast, although some of these species are cultivated in urban parks. The lesser extent of the study region towards the North relative to Finland and absence of mountains further remove several arctic and montane species from the potential fauna. Still we estimate that 500 to 800 species of Lepidoptera remain to be found in the Arkhangelsk oblast.

Among the districts of Arkhangelsk oblast (Fig. 1), the fauna of the surroundings of Arkhangelsk is documented much better than the fauna of other regions, with 385 species recorded from Malye Karely (Pr16; 28 km S of Arkhangelsk), the favourite collecting site of L. F. Zelenova. In contrast, the fauna of south-western and north-eastern parts of the oblast remains clearly underexplored. In terms of phenological groups, spring, early summer and late autumn species are less recorded than mid-summer species.

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