

Additions and corrections to the Nordic-Baltic Checklist of Lepidoptera

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Additions and corrections to the Nordic-Baltic Checklist of Lepidoptera (Aarvik *et al.* 2017) are presented. 44 species new to the Nordic-Baltic area as well as numerous new country records are added. Two misspellings and 14 other mistakes of various types are corrected. The genus name *Tuta* Kieffer & Jørgensen, 1910 is recombined with the species name *absoluta* Meyrick, 1917 as *Tuta absoluta* (Meyrick, 1917) comb. rev.

Key words: Lepidoptera, checklist, Nordic-Baltic, additions, corrections.

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Introduction

The authors present faunistic and taxonomic updates to the Nordic-Baltic Checklist of Lepidoptera (Aarvik *et al.* 2017). In the past three

years, numerous publications on Lepidoptera have appeared which have added to the knowledge of the fauna present in the area. The studies on phylogeny using molecular methods are continuing and recently this has affected particularly the

classification of Gelechioidea (Wang & Li 2020) and Geometridae (Murillo-Ramos *et al.* 2019, Müller *et al.* 2019, Sihvonen *et al.* 2020). New monographs covering Europe or the whole Palaearctic region give an extended perspective at the genus level and inevitably lead to changes. An example is the monograph on the noctuid genus *Agrochola* Hübner, 1821 and allies (Ronkay *et al.* 2017). At the national level numerous new records have been made. This reflects the interest in Lepidoptera in each of the countries, but also to some extent a warmer climate.

It has recently been suggested (Wiemers *et al.* 2018) that Linnaeus' Fauna Svecica was published in 1760, not 1761. However, it seems that Linnaeus in 1760 was only circulating a proof version of Linnaeus (1761) and not a publication. The suggested change would affect the year of description for a number of species. Until more evidence eventually appears, we consider the year of publication to be 1761.

Material and methods

New country records are based on publications referred to in each case. In cases where there is no reference to a publication, the information was gathered by the authors from the different countries. A new version of the checklist in the form of an excel sheet is available on the website of the Norwegian Entomological Society: <http://www.entomologi.no/index.htm>

The new country records are the responsibility of the authors representing their own country. New species for the list is the responsibility of the contributor from the country where the species was discovered, but has also been accepted by the rest of the authors. Some of the records have been published in entomological journals, some have been presented on the internet and others are presented for the first time here. In case of unpublished records, they are given with the permission of the discoverer/collector. New species for Finland are recorded on the website «Laji» which is provided by The Finnish Biodiversity Information Facility (FinBIF): <https://laji.fi/en>. The word 'omitted' is used in

cases when a record was omitted by mistake in the checklist (Aarvik *et al.* 2017). The number before the name of the taxon is the same as the one used in the checklist. A new taxon takes the number of the taxon preceding it, adding a letter after the number, as in the example: 4178a. *Spodoptera cilium* Guenée, 1852 **D** (Hviid 2018). This means that *Spodoptera cilium* is a species new to Denmark as well as the whole region, and that it should be inserted after *Spodoptera exigua*, which has number 4178.

New country records

ERIOCRANIIDAE

0020. *Eriocrania salopiella* (Stainton, 1854) **Lt** (Ivinskis *et al.* 2018).

NEPTICULIDAE

0047. *Stigmella freyella* (Heyden, 1858) **S** (Bengtsson 2020).

0051. *Stigmella sakhalinella* Puplesis, 1984 **F**.

0129. *Trifurcula immundella* (Zeller, 1839) **N** (Aarvik *et al.* 2021), **Lt** (Ivinskis *et al.* 2018).

0136. *Etainia louisella* (Sircom, 1849) **S** (Bengtsson 2019).

INCURVARIIDAE

0185. *Incurvaria masculella* (Denis & Schiffermüller, 1775) **Lt** (Ivinskis & Rimšaite 2017).

ADELIDAE

0216. *Nemophora minimella* (Denis & Schiffermüller, 1775) **F, E**.

0220. *Adela reaumurella* (Linnaeus, 1758) **F**.

TISCHERIIDAE

0245. *Coptotriche marginea* (Haworth, 1828) **N** (Aarvik *et al.* 2019).

PSYCHIDAE

0308. *Apterona helicoidella* (Vallot, 1827) **D** (Buhl *et al.* 2018).

TINEIDAE

0368. *Trichophaga scandinaviella* Zagulajev, 1960 **E**.

0370. *Elatobia fuliginosella* (Lienig & Zeller, 1846) **Lt** (Ivinskis & Rimšaite 2017).
0382. *Tinea svenssoni* Opheim, 1966 **Lt**.
- GRACILLARIIDAE
0473. *Caloptilia fidella* (Reutti, 1853) **F, Lv, Lt** (Ivinskis *et al.* 2020).
0536. *Phyllonorycter emberizaepenella* (Bouché, 1834) **I** (Ólafsson 2018).
0556. *Phyllonorycter viminetorum* (Stainton, 1854) **E**.
0557. *Phyllonorycter connexella* (Zeller, 1846) **N** (Aarvik *et al.* 2019).
- YPONOMEUTIDAE
0595. *Euhyponomeutoides ribesiella* (Joannis, 1900) **Lt** (Ivinskis *et al.* 2020).
0604. *Swammerdamia passerella* (Zetterstedt, 1839) **Lt** (Ivinskis *et al.* 2018).
- ARGYRESTHIIDAE
0626. *Argyresthia trifasciata* (Staudinger, 1871) **E**.
- GLYPHIPTERIGIDAE
0673. *Digitivalva reticulella* (Hübner, 1796) **Lt** (Paulavičiūtė *et al.* 2017).
- YPSOLOPHIDAE
0691. *Ypsolopha mucronella* (Scopoli, 1763) **F**.
- LYONETIIDAE
0734. *Leucoptera laburnella* (Stainton, 1851) **F**.
0737. *Leucoptera lathyriifoliella* (Stainton, 1866) **D** (omitted).
- CHOREUTIDAE
0768. *Choreutis diana* (Hübner, 1822) **Lt** (Ivinskis *et al.* 2019).
- TORTRICIDAE
0797. *Sparganothis pilleriana* (Denis & Schiffmüller, 1775) **Lv**.
0973. *Eupoecilia sanguisorbana* (Herrich-Schäffer, 1856) **E**.
1001. *Cochylis roseana* (Haworth, 1811) **S** (Bengtsson 2019).
1006. *Cochylichroa atricapitana* (Stephens, 1852) (= *Cochylis atricapitana*) **Lt** (Ivinskis & Rimšaite 2017).
1030. *Apotomis lineana* (Denis & Schiffmüller, 1775) **Lt** (Ivinskis *et al.* 2018).
1062. *Celypha woodiana* (Barrett, 1882) **Lt** (Ivinskis *et al.* 2020, Paulavičiūtė *et al.* 2020).
1115. *Endothenia gentianaeanana* (Hübner, 1799) **Lt** (Ivinskis *et al.* 2020).
1142. *Ancylis comptana* (Frölich, 1828) **D** (P. Falck pers. comm.).
1193. *Epinotia tedella* (Clerck, 1759) **I** (E. Ólafsson *in litt.*).
1195. *Epinotia pusillana* (Peyerimhoff, 1863) **S** (Bengtsson 2019).
1212. *Crociosema plebejana* Zeller, 1847 **I** (omitted).
1257. *Epiblema junctana* (Herrich-Schäffer, 1856) **Lv**.
1270. *Notocelia rosaecolana* (Doubleday, 1850) **I** (E. Ólafsson *in litt.*).
1277. *Retinia perangustana* (Snellen, 1883) **Lt** (Paulavičiūtė *et al.* 2020).
1323. *Cydia conicolana* (Heylaerts, 1874) **F**.
1330. *Cydia grunertiana* (Ratzeburg, 1868) **Lv**.
1336. *Cydia leguminana* (Lienig & Zeller, 1846) **N** (Gustad & Aarvik *in prep.*)
1341. *Cydia amplana* (Hübner, 1799) **Lv**.
1354. *Grapholita gemmiferana* Treitschke, 1835 **Lt** (Ivinskis *et al.* 2019).
1358. *Grapholita lobarzewskii* (Nowicki, 1860) **Lt**.
1370. *Pammene albuginana* (Guenée, 1845) **Lt** (Ivinskis & Rimšaite 2017).
1381. *Pammene trauniana* (Denis & Schiffmüller, 1775) **S** (Bengtsson 2018).
1383. *Pammene aurita* Razowski, 1992 **Lv**.
- SESIIDAE
1443. *Synanthedon flaviventris* (Staudinger, 1883) **N** (Aarvik *et al.* 2021).
1445. *Synanthedon myopaeformis* (Borkhausen, 1789) **F**.
- AUTOSTICHIDAE
1476. *Oegoconia deauratella* (Herrich-Schäffer, 1854) **Lt** (Ivinskis & Rimšaite 2017).

OECOPHORIDAE

1486. *Denisia albimaculea* (Haworth, 1828) **N**
(Aarvik et al. 2021).
1488. *Denisia luticiliella* (Erschoff, 1877) **D**
(Buhl et al. 2018).
1512. *Batia internella* Jäckh, 1972 **F**.
1520. *Oecophora bractella* (Linnaeus, 1758) **Lv**.

COSMOPTERIGIDAE

1649. *Panccalia nodosella* (Bruand, 1851) **Lt**
(Ivinskis & Rimšaite 2017).

GELECHIIDAE

1678. *Aproaerema larseniella* Gozmány, 1957 **Lt**
(Paulavičiūtė 2019).
1700. *Nothris gregersenii* Karsholt & Šumpich,
2015 **Lt** (Ivinskis & Rimšaite 2017).
1719. *Dichomeris latipennella* (Rebel, 1937) **D**
(Buhl et al. 2020).
1733. *Helcystogramma albinervis* (Gerasimov,
1929) **F**.
1803. *Monochroa divisella* (Douglas, 1850) **E**.
1866. *Gelechia scotinella* Herrich-Schäffer, 1854
N (Aarvik et al. 2019).
1902. *Scrobipalpa bryophiloides* Povolný, 1966
E, D (Buhl et al. 2020).
1905. *Scrobipalpa ocellatella* (Boyd, 1858) **S**
(Bengtsson 2019).
1908. *Scrobipalpa salicorniae* (E. Hering, 1889)
N (Aarvik et al. 2019).
1913. *Scrobipalpula tussilaginis* (Stainton, 1867)
Lv.
1924. *Caryocolum alsinella* (Zeller, 1868) **N**
(Aarvik et al. 2019), **Lt** (Ivinskis & Rimšaite
2017).
1936. *Caryocolum blandelloides* Karsholt, 1981
Lv.
1937. *Caryocolum proxima* (Haworth, 1828) **Lt**
(Paulavičiūtė et al. 2017).
1938. *Caryocolum blandulella* (Tutt, 1887) **Lv**.
1957. *Carpatolechia fugacella* (Zeller, 1839) **S**.

ELACHISTIDAE

2006. *Elachista dispilella* Zeller, 1839 **Lt** (Sruoga
et al. 2019).
2011. *Elachista dispunctella* (Duponchel, 1843)
Lt (Sruoga et al. 2019).
2041. *Elachista poae* Stainton, 1855 **N**.

2042. *Elachista atricomella* Stainton, 1849 **F**.
2052. *Eachista deriventa* Kaila & Mutanen, 2008
Lv.
2058. *Elachista bifasciella* Treitschke, 1833 **N**
(Aarvik et al. 2019).
2081. *Elachista consortella* Stainton, 1851 **Lv**.
2091. *Blastodacna hellerella* (Duponchel, 1838)
Lv.

COLEOPHORIDAE

2132. *Coleophora amellivora* Baldizzone, 1979
Lt (Ivinskis et al. 2019).
2138. *Coleophora asteris* Mühlhlig, 1864 **F**.
2161. *Coleophora jaernaensis* Björklund &
Palmqvist, 2002 **E**.
2188. *Coleophora chalcogrammella* Zeller, 1839
Lt.
2207. *Coleophora vulnerariae* Zeller, 1839 **F**.

BLASTOBASIDAE

2308. *Hypatopa segnella* (Zeller, 1873) **Lt**
(Ivinskis et al. 2018).

EPERMENIIDAE

2357. *Epermenia aequidentellus* (E. Hofmann,
1867) **D** (Buhl et al. 2018).

PTEROPHORIDAE

2390. *Stenoptilia veronicae* Karvonen, 1932
(*eborinodactyla* auct.) **D** (Buhl et al. 2017,
2020).
2392. *S. mariaeluisae* Bigot & Picard, 2002
(*inopinata* auct.) **I** (E. Ólafsson *in litt.*).
2419. *Oxyptilus tristis* (Zeller, 1841) **N** (Aarvik et
al. 2019).
2427. *Hellinsia inulae* (Zeller, 1852) **S** (Bengtsson
2020).

NYMPHALIDAE

2556. *Araschnia levana* (Linnaeus, 1758) **N**
(Aarvik et al. 2019)
2589. *Apatura iris* (Linnaeus, 1758) **N** (Aarvik et
al. 2021).
2594. *Lasiommata megera* (Linnaeus, 1767) **E**.

LYCAENIDAE

2664. *Aricia agestis* (Denis & Schiffermüller,
1775) **Lv**.

PYRALIDAE

2729. *Sciota rhenella* (Zincken, 1818) **S** (Bengtsson 2020).
 2769. *Delplanqueia inscriptella* (Duponchel, 1836) **F, Lt** (Ivinskis *et al.* 2018).
 2775. *Nephoterix angustella* (Hübner, 1796) **E**.
 2804. *Eccopisa effractella* Zeller, 1848 **E**.
 2809. *Euzophera bigella* (Zeller, 1848) **F**.
 2816. *Ancylosis oblitella* (Zeller, 1848) **N** (Aarvik *et al.* 2019), **F, E**.
 2824. *Phycitodes lacteella* (Rothschild, 1915) **Lv, Lt** (Ivinskis *et al.* 2018).
 2838. *Cadra cautella* (Walker, 1863) **Lt** (omitted).
 2853. *Endotricha flammealis* (Denis & Schiffermüller, 1775) **E**.

CRAMBIDAE

2885. *Sclerocona acutella* (Eversmann, 1842) **Lv**.
 2923. *Spoladea recurvalis* (Fabricius, 1775) **N** (Aarvik *et al.* 2019), **S** (Bengtsson 2020), **F**.
 2941. *Cydalima perspectalis* (Walker, 1859) **F, E, Lt** (Paulavičiūtė & Mikalauskas 2018).
 2950. *Cynaeda pustulalis* (Hübner, 1823) **D** (Buhl *et al.* 2020).
 3020. *Pediasia luteella* (Denis & Schiffermüller, 1775) **S** (Bengtsson 2017).
 3028. *Agriphila latistria* (Haworth, 1811) **F**.
 3029. *Agriphila aeneociliella* (Eversmann, 1844) **F**.
 3033. *Agriphila biarmicus* (Tengström, 1865) **Lt** (Ivinskis *et al.* 2018).

GEOMETRIDAE

3121. *Idaea ochrata* (Scopoli, 1763) **Lv, Lt** (Švitra *et al.* 2017).
 3124. *Idaea fuscovenosa* (Goeze, 1781) **E**.
 3144. *Scopula virgulata* (Denis & Schiffermüller, 1775) **D** (omitted).
 3307. *Pareulype berberata* (Denis & Schiffermüller, 1775) **E**.
 3361. *Eupithecia abbreviata* Stephens, 1831 **Lt** (Švitra *et al.* 2018).
 3387. *Eupithecia insigniata* (Hübner, 1790) **F**.
 3402a. *Eupithecia addictata* Dietze, 1908 **Lt** (Ūsaitis *et al.* 2019).
 3458. *Isturgia arenacearia* (Denis & Schiffermüller, 1775) **S** (Palmqvist & Ryrholm 2020), **D** (Larsen *et al.* 2020), **E, Lv**.

3473. *Apocheima hispidaria* (Denis & Schiffermüller, 1775) **N** (Aarvik *et al.* 2021).
 3493. *Peribatodes rhomboidaria* (Denis & Schiffermüller, 1775) **Lv, Lt** (Švitra *et al.* 2017).

3548. *Ennomos quercinaria* (Hufnagel, 1767) **F**.
 3623. *Chlorissa cloraria* (Hübner, 1813) **F**.

URANIIDAE

3636. *Eversmannia exornata* (Eversmann, 1837) **Lt** (Švitra *et al.* 2018).

SPHINGIDAE

3714. *Hyles euphorbiae* (Linnaeus, 1758) **N**.

NOTODONTIDAE

3745. *Drymonia obliterated* (Esper, 1785) **Lt** (Kaupys 2019).

EREBIDAE

3797. *Hypena lividalis* (Hübner, 1790) **E**.
 3819. *Laelia coenosa* (Hübner, 1808) **F**.
 3863. *Utetheisa pulchella* (Linnaeus, 1758) **F**.
 3955. *Eublemma parva* (Hübner, 1808) **N** (Aarvik *et al.* 2021).
 3957. *Eublemma purpurina* (Denis & Schiffermüller, 1775) **N** (Aarvik *et al.* 2021), **S** (Palmqvist & Ryrholm 2020), **D** (Larsen *et al.* 2019).
 3977. *Catocala elocata* (Esper, 1787) **E, Lv**.

NOCTUIDAE

4001. *Chrysodeixis chalcites* (Esper, 1789) **F, Lv**.
 4067. *Cucullia verbasci* (Linnaeus, 1758) **F, E**.
 4166. *Bryopsis muralis* (Forster, 1771) (= *Nyctobrya muralis*) **N, F**.
 4185. *Caradrina kadenii* Freyer, 1836 **S** (Palmqvist & Ryrholm 2020), **D** (Larsen *et al.* 2019).
 4187. *Caradrina albina* Eversmann, 1848 **S** (Palmqvist 2018).
 4296. *Apamea remissa* (Hübner, 1809) **I** (omitted).
 4299. *Apamea crenata* (Hufnagel, 1766) **I** (omitted).
 4321. *Resapamea vulpecula* (Eversmann, 1852) (= *R. hedeni*) **Lv**.
 4328. *Xylomoia graminea* (Graeser, 1889) **E, Lv**.
 4373. *Conistra rubiginosa* (Scopoli, 1763) **E, Lv**.
 4384. *Lithophane ornitopus* (Hufnagel, 1766) **N**.

- (Aarvik et al. 2019).
4409. *Atethmia centrago* (Hübner, 1809) **N**
(Aarvik et al. 2021). **Lv.**
4423. *Aporophyla lueneburgensis* (Freyer, 1848)
E.
4429. *Polymixis lichenea* (Hübner, 1813) **N**
(Aarvik et al. 2019).
4476. *Polia lamuta* (Herz, 1903) **N** (Saarenmaa
2020).
4486. *Lacanobia amurensis* (Staudinger, 1901)
Lv.
4496. *Hyssia cavernosa* (Eversmann, 1842) **Lv.**
4507. *Conisania leineri* (Freyer, 1836) **E.**
4509. *Hecatera dysodea* (Denis & Schiffermüller,
1775) **F, E.**
4536. *Mythimna l-album* (Linnaeus, 1767) **N**
(Aarvik et al. 2021), **E.**
4540. *Leucania loreyi* (Duponchel, 1827) **N, S**
(Palmqvist & Ryrholm 2020).
4571. *Euxoa vitta* (Esper, 1789) **E.**
4581. *Agrotis bigramma* (Esper, 1790) **Lv.**
4591. *Agrotis puta* (Hübner, 1803) **F.**
4602. *Diarsia florida* (F. Schmidt, 1859) **F.**
4626. *Noctua comes* Hübner, 1813 **I** (E. Ólafsson
in litt.).
4655. *Xestia distensa* (Eversmann, 1851) **N**
(Aarvik et al. 2019).

NOLIDAE

4697. *Nola cristatula* (Hübner, 1793) **Lv.**

New taxa to the Nordic-Baltic area

DRYADAULIDAE

- 0312a. *Dryadaula heindeli* Gaedike & Scholz,
1998 **N** (Gustad & Aarvik 2017).

TINEIDAE

- 0324a. *Triaxomera baldensis* G. Petersen, 1983
Lt (Ivinskis & Rimšaite 2017).
0345a. *Neurothaumasia* Le Marchand, 1934.
0345b *ankerella* (Mann, 1867) **D** (P. Falck pers.
comm.).
0391a. *Monopis jussii* Kaila, Mutanen, Huemer,
Karsholt & Autto, 2020 **N, S, F** (Mutanen et
al. 2020).

GRACILLARIIDAE

- 0439a. *Micrurapteryx kollariella* (Zeller, 1839) **D**
(Buhl et al. 2019).
0441a. *Parectopa robiniella* Clemens, 1863 **Lv,**
Lt (Ivinskis et al. 2019).
0462a. *Calybites quadrisignella* (Zeller, 1839)
Lv.
0474a. *Caloptilia honoratella* (Rebel, 1914) **D**
(Buhl et al. 2019).

CHOREUTIDAE

- 0766a. *Tebenna micalis* (Mann, 1857) **N** (Aarvik
et al. 2021). In 2014 imported to Denmark as
larvae on *Helichrysum italica* in several
places; a single specimen was found in a light
trap. Since it has not been recorded, and the
species is considered introduced to Denmark.

TORTRICIDAE

- 0834a. *Clepsis peritana* (Clemens, 1860) **D** (Buhl
et al. in press).
0985a. *Aethes bilbaensis* (Rössler, 1877) **D** (Buhl
et al. 2020).
1222a. *Eucosma albidulana* (Herrich-Schäffer,
1851) **S** (Ohlsson 2020).
1360a. *Grapholita inopinata* Heinrich, 1928 **F**
(<https://laji.fi/en/taxon/MX.5076585>).

SESIIDAE

- 1454a. *Chamaesphecia* Spuler, 1910
1454b. *nigrifrons* (Le Cerf, 1911) **Lt** (Švitra et al.
2017).

OECOPHORIDAE

- 1518a. *Esperia* Hübner, 1825
1518b. *sulphurella* (Fabricius, 1775) **D** (Buhl et
al. 2018).

COSMOPTERIGIDAE

- 1668a. *Ascalenia* Wocke, 1876
1668b. *viviparella* Kasy 1969 **Lt** (Ivinskis et al.
2019).

GELECHIIDAE

- 1704a *Neofaculta taigana* Ponomarenko, 1998 **N**
(Aarvik et al. 2021), **S, F.**
1914a. *Tuta* Kieffer & Jørgensen, 1910
1914b. *absoluta* (Meyrick, 1917) **N** (Aarvik et al.

2021), **S, F, D** (Buhl *et al.* in press). Placed on the list due to numerous recent records in nature.

1955a. *Carpatolechia aenigma* (Sattler, 1983) **Lt** (Paulavičiūtė 2017).

COLEOPHORIDAE

2212a. *Coleophora variicornis* Toll, 1952 **Lv**.

2237a. *Coleophora sirella* Tabell & Mutanen, 2019 **F** (Tabell *et al.* 2019).

SCYTHRIDIDAE

2332a. *Scythris penicillata* (Chrétien, 1900) **E** (omitted).

PYRALIDAE

2737a. *Gymnancyla hornigii* (Lederer, 1852) **D** (Buhl *et al.* 2018).

CRAMBIDAE

2865a. *Paracorsia* Marion, 1959

2865b. *repandalis* (Denis & Schiffermüller, 1775) **F**.

2906a. *Udea costalis* (Eversmann, 1852) **Lv, Lt** (omitted).

2939a. *Hodebertia* Leraut, 2003

2939b. *testalis* (Fabricius, 1794) **D** (Buhl *et al.* 2020).

2978a. *Eudonia angustea* (Curtis, 1827) **D** (Buhl *et al.* 2018).

3034a. *Agriphila tolli* (Błeszyński, 1952) **F**.

GEOMETRIDAE

3185a. *Xanthorhoe uralensis* Choi, 2003 **F**.

3329a. *Perizoma saxicola* Tikhonov, 1994 **E**.

3497a. *Ascotis* Hübner, 1825

3497b. *selenaria* (Denis & Schiffermüller, 1775) **S** (Palmqvist & Ryrholm 2020), **Lt** (Ivinskis *et al.* 2020).

3583a. *Pungeleria* Rougemont, 1903

3583b. *capreolaria* (Denis & Schiffermüller, 1775) **D** (Skule & Hviid 2019).

SPHINGIDAE

3692a. *Smerinthus caecus* Ménétériés, 1857 **Lv**.

NOTODONTIDAE

Pygaerinae

3773a. *Spatalia* Hübner, 1819

3773b. *argentina* (Denis & Schiffermüller, 1775) **F**.

3782a. EUTELIIDAE

3782b. *Eutelia* Hübner, 1823

3782c. *adulatrix* (Hübner, 1813) **D** (Larsen *et al.* 2020).

EREBIDAE

3850a. *Eilema caniola* (Hübner, 1808) **D** (Larsen 2020).

NOCTUIDAE

4063a. *Cucullia virgaureae* Boisduval, 1840 **F**.

4068a. *Phyllophila* Guenée, 1852

4068b. *obliterata* (Rambur, 1833) **F**.

4178a. *Spodoptera cilium* Guenée, 1852 **D** (Hviid 2018).

4189a. *Caradrina flavirena* Guenée, 1852 **D** (Bech *et al.* 2017).

4387a. *Lithophane leautieri* (Boisduval, 1829) **D** (omitted).

4422a. *Aporophyla australis* (Boisduval, 1829) **D** (Larsen *et al.* 2019).

4531a. *Mythimna alopecuri* (Boisduval, 1840) **D** (Larsen *et al.* 2019).

4629a. *Noctua tertia* von Mentzer, Moberg & Fibiger, 1991 **S** (Palmqvist 2018).

Taxonomic changes

0029. *Gazoryctra fuscoargenteus* (O. Bang-Haas, 1927) is a junior synonym. Replace with *G. uralensis* (Grum-Grshimailo, 1899) (Kallies & Farino 2018).

0259–0261, 0263–0264. According to Weidlich & Arnscheid (2017) the parthenogenetic *D. lichenella* (Linnaeus, 1761) is synonymous with the bisexual *D. fumosella* (Heinemann, 1870). Robinson & Nielsen (1983) synonymized *D. lazuri* (Clerck, 1759) with *D. fumosella*. Consequently, the three names *lazuri*, *lichenella* and *fumosella* represent

- the same species. In addition, Weidlich & Arnscheid (2017) synonymized *D. norvegica* (Strand, 1919) with *D. lichenella*. These authors overlooked the synonymy established by Robinson & Nielsen (1983) and used the name *lazuri* for a different Finnish species. The latter is actually without name. Arnscheid & Weidlich (2017) stated that it may represent a bisexual form of *D. fennicella* (Suomalainen, 1980).
- 0346–0357. Regier *et al.* (2015) erected the family Meessiidae for some genera which until then had been placed in the subfamily Meessiinae in Tineidae. In recent publications on European Tineoidea the family Meessiidae has become accepted (Budashkin & Bidzilya 2018, Gaedike 2019, Gaedike & Falck 2019). The four genera of Meessiinae are placed in the separate family Meessiidae before Psychidae. However, it is still not certain if the three genera *Stenoptinea* Dietz, 1905, *Karsholtia* Gaedike, 1986 and *Agnathosia* Amsel, 1954 really belong in Meessiidae.
0362. *Haplotinea* Diakonoff & Hinton, 1956 belongs to Myrmecozelinae (Gaedike 2019).
0361. The subfamily name Perissomasticinae should be removed.
0664. *Rhigognostis hufnagelii* (Zeller, 1839) was placed in the genus *Eidophasia* Stephens, 1842 (Baraniak 2020).
- 0992–1011. A molecular phylogeny of the subtribe Cochyliina was recently published (Brown *et al.* 2020). These authors also indicated that *Cochylis epilina* (Duponchel, 1842) should be placed in a genus of its own, but it was overlooked that *Longicornutia* Razowski, 1960 was available (Brown 2005, Kovács & Kovács 2020). The reclassification of species hitherto placed in *Cochylidia* Obraztsov, 1956; *Cochylis* Treitschke, 1829 and *Falseuncaria* Obraztsov & Swatschek, 1958 is presented here:
- Thyraylia* Walsingham, 1897
nana (Haworth, 1811)
Cochyllichroa Obraztsov & Swatschek, 1958
atricapitana (Stephens, 1852)
Pontoturania Obraztsov, 1943
posterana (Zeller, 1847)
Brevicornutia Razowski, 1960
pallidana (Zeller, 1847)
Cochylis Treitschke, 1829
roseana (Haworth, 1811)
flaviciliana (Westwood, 1854)
Longicornutia Razowski, 1960
epilinana (Duponchel, 1842)
Neocochylis Razowski, 1960
hybridella (Hübner, 1813)
dubitana (Hübner, 1799)
Falseuncaria Obraztsov & Swatschek, 1958
degreyana (McLachlan, 1869)
ruficiliana (Haworth, 1811)
Cochylidia Obraztsov, 1956
subroseana (Haworth, 1811)
richteriana (Fischer von Röslerstamm, 1837)
moguntiana (Rössler, 1864)
heydeniana (Herrich-Schäffer, 1851)
implicitana (Wocke, 1856)
rupicola (Curtis, 1834)
0926. *Acleris implexana* (Walker, 1863) is Nearctic (Gilligan *et al.* 2020). Replace with *A. ferrumixtana* (Benander, 1934).
0987. *Aethes adelaidae* (Toll, 1955) raised to species rank: (<https://laji.fi/en/taxon/MX.5013777>) **F, Lv.**
1471. *Holcopogon bubulcellus* (Staudinger, 1859) is a junior synonym and is replaced by *H. adsecllella* (Eversmann, 1844) (Sinev *et al.* 2017).
1629. Peleopodinae upgraded to family level. In our area only the genus *Carcina* is represented (Wang & Li 2020).
1635. Ethmiinae upgraded to family level and placed close to Elachistidae (Wang & Li 2020).
- 1704a. *Neofaculta taigana* Ponomarenko, 1998 is

a cryptic species which has been confused with *N. infernella*. It is a northern Holarctic species and has been found in N, S and F (Aarvik *et al.* 2021).

1708. *Anarsia lineatella* Zeller, 1839 is to be replaced by *A. innoxiiella* Gregersen & Karsholt, 2017 (Gregersen & Karsholt 2017).

1784. *Apodia bifractella* (Duponchel, 1843) is to be replaced by *Apodia martinii* Petry, 1911. The former has a more southern distribution in Europe, but the ranges of the two species are not known in detail (Huemer & Karsholt 2020).

1812. *Monochroa parvulata* (Gozmány, 1957) was transferred to the genus *Pragmatodes* Walsingham, 1908 (Huemer & Karsholt 2020).

1813. *Eulamprotes* Bradley, 1971 is a synonym of *Oxypteryx* Rebel, 1911 (Bidzilya *et al.* 2019, Huemer & Karsholt 2020). Its constituent species are transferred to *Oxypteryx*.

1914a. Corro Chang & Metz (2021) recently transferred *Tuta absoluta* to *Phthorimaea*, based on a phylogenetic analysis of 22 morphological characters of eight species. We agree that *T. absoluta* is more closely related to *Phthorimaea operculella* than to *Tuta atriplicella* Kieffer & Jörgensen, 1910. However, their male genitalia are distinctly different – much more than between many genera of Gnorimoschemini. The latter may be oversplit, and the generic structure of Gnorimoschemini should be analysed based on a larger number of taxa from different genera and with a character set that includes both morphological and molecular characters.

T. absoluta is a serious pest on tomatoes etc., and the literature on it, since it was introduced to the Old World, runs to thousands of publications. Most of these are on applied entomology, and researchers in that field are notoriously unhappy about changes in nomenclature. Seen in the light of the uncertainty of the generic placement of *T. absoluta*, which is also admitted by Corro

Cheng & Metz (op. cit.: 51) who write: «Our results support a need for generic reclassification of the taxon *absoluta* under its original genus, *Phthorimaea*», we find it premature to change its generic name. We are of the opinion that for the time the stability of nomenclature is best served by not changing the generic combination, and we therefore recombine it as *Tuta absoluta* (Meyrick), comb. rev.

2053. *Elachista zernyi* Hartig, 1941 is a junior synonym of *E. stelviella* Amsel 1932 (Kaila 2019).

2392. DNA barcoding shows that Danish specimens identified as *Stenoptilia inopinata* Bigot & Picard, 2002 is conspecific with barcoded specimens of *S. mariaehuisae* Bigot & Picard, 2002 from Iceland.

2548–2553. A revised classification of *Argynnis* Fabricius, 1807 aiming at reconciling the systems used in Europe and North America was recently published (De Moya *et al.* 2017). The new system was adopted in the new European butterfly checklist (Wiemers *et al.* 2018). This results in the following updated classification of the Nordic-Baltic species:

- Argynnis* Fabricius, 1807
 - paphia* (Linnaeus, 1758)
 - laodice* (Pallas, 1771)
- Fabriciana* Reuss, 1920
 - niobe* (Linnaeus, 1758)
 - adippe* (Denis & Schiffermüller, 1775)
- Speyeria* Scudder, 1872
 - aglaja* (Linnaeus, 1758)

2650. *Scolitantides vicrama* (Moore, 1865) is transferred to *Pseudophilotes* Beuret, 1958 (Wiemers *et al.* 2018).

2654. *Phengaris* Doherty, 1891 has been given priority over *Maculinea* Van Eecke, 1915 (ICZN 2017). This means that the nomenclature used in our checklist can continue.

2763. *Khorassania* Amsel, 1951 is a synonym of 2734 *Pempelia* Hübner, 1825. The species *Khorassania compositella* is combined with *Pempelia* as *Pempelia compositella* (Treitschke, 1835) (Slamka 2019).
2765. *Moitrelia* Leraut, 2001 is a synonym of *Uncinus* Amsel, 1951. The species *Moitrelia obductella* is combined with *Uncinus* as *Uncinus obductella* (Zeller, 1839) (Slamka 2019).
2836. *Ephestia unicolorella* Staudinger, 1881 is to be replaced by *E. woodiella* Richards & Thomson, 1932. The former is a southern species known from Turkey and Syria (Leraut 2014, Buhl et al. 2020).
2843. *Pyralis regalis* (Denis & Schiffermüller, 1775) is to be replaced by *P. cardinalis* Kaila, Huemer, Mutanen, Tyllinen & Wikström, 2020 which was recently separated from the former (Wikström et al. 2020).
- 3101–3609. The classification of Geometridae has recently undergone numerous changes, and a system which includes tribes is emerging. The new system is presented in the 6th volume of Geometrid Moths of Europe (Müller et al. 2019). Some additions and modifications can be found in Brehm et al. (2019), Murillo-Ramos et al. (2019) and Sihvonen et al. (2020).
3604. *Elophos* Boisduval, 1840 is replaced by *Yezognophos* Matsumura, 1927 (Müller et al. 2019).
3606. *Glacies* Millière, 1874 is a synonym of *Psodos* Treitschke, 1825 (Müller et al. 2019).
- 3960a. *Euclidia mi* (Clerck, 1759) is placed in the genus *Callistege* Hübner, 1823. *Callistege* was upgraded from status as subgenus of *Euclidia* Ochseneimer, 1816 to status as a separate genus by Lafontaine & Schmidt (2010). Treating the two genera as synonyms would also mean having to synonymize the genus *Mocis* Hübner, 1823 (Zahiri et al. 2012: fig. 6).
4070. *Protodeltote* Ueda, 1984 was upgraded from status as subgenus of *Deltote* Reichenbach, 1817 to full generic status by Schmidt et al. (2018). This results in the combination *Protodeltote pygarga* (Hufnagel, 1766).
4165. *Nyctobrya* Boursin, 1957 is replaced by *Bryopsis* Boursin 1970 (Vargas-Rodríguez et al. 2020).
4321. *Resapamea hedeni* (Graeser, 1888) is a junior synonym. Replace with *R. vulpecula* (Eversmann, 1852) (Kononenko 2005).
4345. Some of the genera proposed by Beck (1992) were treated inconsistently in the checklist. With some doubt we accept the diagnosis given by Beck (1992) for *Fissipunctia* as nomenclaturally valid. The publication by Beck is part of the 1991 volume of the journal *Atalanta*. It was, however, printed in 1992.
- 4360–4370. The monographic treatment of the Eurasian and North African *Agrochola* Hübner, 1821 generic complex (L. Ronkay et al. 2017) has led to a revised classification of the group:
- Agrochola* Hübner, 1821
lychnidis (Denis & Schiffermüller, 1775)
Anchoscelis Guenée, 1839
Omphaloscelis Hampson, 1906 syn.
nitida (Denis & Schiffermüller, 1775)
lunosa (Haworth, 1809)
litura (Linnaeus, 1758)
helvola (Linnaeus, 1758)
Leptologia L.B. Prout, 1901
lota (Clerck, 1759)
macilenta (Hübner, 1809)
Sunira Franclemont, 1950
circellaris (Hufnagel, 1766)
Propenistra Berio, 1980
laevis (Hübner, 1803)
4468. We consider the diagnosis given by Beck (1992) as valid. Thus the genus should be cited as *Coranarta* Beck, 1992.

4486. *Lacanobia amurensis* (Staudinger, 1901). For this species the name *Lacanobia aliena* (Hübner, 1809) has been used in European literature. It was pointed out by Poole (1989) that *Noctua aliena* Hübner, 1809 (now in *Lacanobia*) is a primary homonym of *Noctua aliena* Hübner, 1808 (a synonym of *Eriopygodes imbecilla* (Fabricius, 1794)). In the Danish catalogue (Karsholt & Stadel Nielsen 1998) the name *Lacanobia amurensis* (Staudinger, 1901) was adopted as a replacement name. This was a nomenclatural act in accordance with the 3rd edition of the ICZN Code of 1985 which was in use at that time. Had it been after 1999 when the 4th edition of the ICZN Code was published, 'reversed precedence' could have been used to give *Noctua aliena* Hübner, 1809 precedence over *N. aliena* Hübner, 1808. With *Lacanobia amurensis* (Staudinger, 1901) now in prevailing usage, reversal of precedence is not permitted. Consequently, *Lacanobia aliena* (Hübner, 1809) cannot be used as the valid name for this species.

4474. *Polia conspicua* (A. Bang-Haas, 1912) is a junior synonym. Replace with *P. vesperugo* Eversmann, 1856 (Varga *et al.* 2017).

Corrections

0536. *Phyllonorycter emberizaepenella*. Spelling of species name.
 1339. *Cydia splendana*. Add parenthesis before Hübner, 1799.
 1480. *Deuterogetonia pudorina* (Wocke, 1857). Year of description.
 1538. *Agnoea elsae*. Add parenthesis before and after Svensson, 1982.
 1683. *Aproaerema vinella* Bankes, 1898. Remove parenthesis.
 2467. *Carcharodus alceae* (Esper, 1780). Year of description.
 2512. *Pontia chloridice* (Hübner, 1813). Year of description.
 2522. *Colias croceus* (Geoffroy, 1785). Author.
 2546. *Brenthis daphne* (Denis & Schiffermüller, 1775). Author and year.

2566. *Nymphalis xanthomelas* (Denis & Schiffermüller, 1775). Author and year.
 2630. *Chazara briseis*. Spelling of species name
 2666. *Aricia nicias* (Meigen, 1829). Year of description.
 2857. *Uresiphita gilvata* (Fabricius, 1794). Delete 'I' (E. Ólafsson *in litt.*).
 3396. *Eupithecia goossensata*. The reference in the comment on page 166 should be (Hausmann *et al.* 2011) (not Hausmann *et al.* 2013).
 3654. *Lasiocampa quercus* (Linnaeus, 1758). Delete 'I' (E. Ólafsson *in litt.*).
 4267. *Longalatedes* Beck, 1992. Year of description.

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References

- Aarvik, L., Bengtsson, B.Å., Elven, H., Ivinskis, P., Jürivete, U., Karsholt, O., Mutanen, M., & Savenkov, N. 2017. Nordic-Baltic Checklist of Lepidoptera. *Norwegian Journal of Entomology*. Supplement 3. 1–236.
 Aarvik, L., Berggren, K., Engdal, J., Slagsvold, P.K., Sørlibråten, O. & Voith, R. 2019. Nye funn av sommerfugler i Norge 11. *Insekt-Nytt* 44 (1), 5–54.
 Aarvik, L., Berggren, K., Slagsvold, P.K., & Voith, R. 2021. Nye funn av sommerfugler i Norge 12. *Insekt-Nytt* 46 (1), 5–41.
 Arnscheid, W.R. & Weidlich, M. 2017. Psychidae. In: Karsholt, O., Mutanen, M. & Nuss, M. (eds). Microlepidoptera of Europe 8. Brill, Leiden/Boston. 423 pp.
 Baraniak, E. 2020. *Eidophasia insulella* (Walsingham, 1900) and *Eidophasia hufnagelii* (Zeller, 1839), two rare European moths: description of genitalia confirms generic placement (Lepidoptera: Plutellidae). *The European Zoological Journal* 2020, 444–451.
 Bech, K., Helsing, F., Jensen, L., Kjeldgaard, S., Knudsen, K., Larsen, B.S., Larsen, E. S., Møller,

- H.E. & Szyska, P. 2017. Fund af storsommerfugle i Danmark 2016. *Lepidoptera* 11(3) (Tillæg), 1–80.
- Beck, H. 1992. Taxonomische Änderungen bei den Noctuidae, Cucullinae und Plusiinae (Noctuidae, Lepidoptera). *Atalanta* 22, 175–232.
- Bengtsson, B.Å. 2017. Anmärkningsvärda fynd av småfjärilar (Microlepidoptera) i Sverige 2016. *Entomologisk Tidskrift* 138, 1–24.
- Bengtsson, B.Å. 2018. Anmärkningsvärda fynd av småfjärilar (Microlepidoptera) i Sverige 2017. *Entomologisk Tidskrift* 139, 7–20.
- Bengtsson, B.Å. 2019. Anmärkningsvärda fynd av småfjärilar (Microlepidoptera) i Sverige 2018. *Entomologisk Tidskrift* 140, 1–18.
- Bengtsson, B.Å. 2020. Anmärkningsvärda fynd av småfjärilar (Microlepidoptera) i Sverige 2019. *Entomologisk Tidskrift* 141, 1–22.
- Bidzilya, O., Karsholt, O., Kravchenko, V. & Šumpich, J. 2019. An annotated checklist of Gelechiidae (Lepidoptera) of Israel with description of two new species. *Zootaxa* 4677, 1–68.
- Brehm, G., Murillo-Ramos, L., Sihvonen, P., Hausmann, A., Schmidt, B.C., Öunap, E., Moser, A., Mörtter, R., Bolt, D., Bodner, F., Lindt, A., Parra, L.E. & Wahlberg, N. 2019. New World geometrid moths (Lepidoptera: Geometridae): Molecular phylogeny, biogeography, taxonomic updates and description of 11 new tribes. *Arthropod Systematics & Phylogeny* 77 (3), 457–486.
- Brown, J.W. 2005. World catalogue of insects. Volume 5: Tortricidae (Lepidoptera). Apollo Books, Stenstrup. 741 pp.
- Brown, J., Aarvik, L., Heikkilä, M., Brown, R. & Mutanen, M. 2020. A molecular phylogeny of Cochyliina with confirmation of its relationship to Euliina (Lepidoptera: Tortricidae). *Systematic Entomology* 45, 160–174.
- Budashkin, Y.I. & Bidzilya, O. 2018. Four new species of the genus *Eudarcia* Clemens, 1880 (Lepidoptera: Meessiidae) from Crimea. *Zootaxa* 4446, 111–124.
- Buhl, O., Falck, P., Karsholt, O., Larsen, K. & Vilhelmsen, F. 2017. Fund af småsommerfugle fra Danmark 2016 (Lepidoptera). *Entomologiske Meddelelser* 85, 17–35.
- Buhl, O., Falck, P., Karsholt, O., Larsen, K. & Vilhelmsen, F., 2018. Fund af småsommerfugle fra Danmark i 2017 (Lepidoptera). *Entomologiske Meddelelser* 86, 13–26.
- Buhl, O., Falck, P., Karsholt, O., Larsen, K. & Vilhelmsen, F. 2020. Fund af småsommerfugle fra Danmark i 2018 (Lepidoptera). *Entomologiske Meddelelser* 87 (2019), 1–18.
- Buhl, O., Falck, P., Karsholt, O., Larsen, K. & Vilhelmsen, F. in press. Fund af småsommerfugle fra Danmark i 2019 (Lepidoptera). *Entomologiske Meddelelser* 88.
- Corro Chang, P. & Metz, M.A. 2021. Classification of *Tuta absoluta* (Meyrick, 1917) (Lepidoptera: Gelechiidae: Gelechiinae: Gnorimoschemini) based on cladistic analysis of morphology. *Proceedings of the entomological Society of Washington* 123, 41–54.
- De Moya, R.S., Savage, W.K., Tenney, C., Bao, X., Wahlberg, N. & Hill, R.I. 2017. Interrelationships and diversification of *Argynnis* Fabricius and *Speyeria* Scudder butterflies. *Systematic Entomology* 42, 635–649.
- Gaedike, R. 2019. Tineidae II (Myrmecozelinae, Perissomasticinae, Tineinae, Hieroxestinae, and Stathmopolitinae). In: Karsholt, O., Mutanen, M. & Nuss, M. (eds). *Microlepidoptera of Europe* 9. Brill, Leiden. 248 pp.
- Gaedike, R. & Falck, P. 2019. Tineoidea (Meessiidae, Tineidae) and Glyphipterigidae: Acrolepiinae from the Canary Islands, Spain (Insecta: Lepidoptera). *SHILAP Revista de lepidopterologia* 47, 507–517.
- Gilligan, T.M., Brown, J.W. & Baixeras, J. 2020. Immigrant Tortricidae: Holarctic versus Introduced Species in North America. *Insects* 11 (594), 1–59.
- Gregersen, K. & Karsholt, O. 2017. Taxonomic confusion around the Peach Twig Borer, *Anarsia lineatella* Zeller, 1839, with description of a new species (Lepidoptera, Gelechiidae). *Nota lepidopterologica* 40, 65–85.
- Gustad, J.R. & Aarvik, L. 2017. A remarkable extension of range, the fungivorous moth *Dryadaula heindeli* Gaedike & Scholz, 1998 (Lepidoptera, Dryadulidae) recorded in Norway. *Norwegian Journal of Entomology* 64, 138–142.
- Hausmann, A., Haszprunar, G. & Hebert, P. 2011. DNA Barcoding the Geometrid Fauna of Bavaria (Lepidoptera): Successes, Surprises, and Questions. *PLoS ONE* 6 (2) e17134, 1–9. DOI: 10.1371/journal.pone.0017134
- Huemer, P. & Karsholt, O. 2020. Commented checklist of European Gelechiidae (Lepidoptera). *ZooKeys* 921, 65–140.
- Hviid, C. 2018. *Spodoptera cilium* Guenée, ny ugle for Danmark. *Lepidoptera* 11, 160–164.
- ICZN 2017. Opinion 2399 (Case 3508) – *Maculinea* Van Eecke, 1915 (Lepidoptera: Lycaenidae): precedence over *Phengaris* Doherty, 1891 not granted. *Bulletin of Zoological Nomenclature* 74, 117–120.
- Ivinskis, P. & Rimšaitė, J. 2017. New and rare Lepidoptera for Lithuania, report of 2017. *Bulletin of the Lithuanian Entomological Society* 1 (29), 35–46.

- Ivinskis, P., Rimšaitė, J. & Eismantas, A. 2018. Rare and new for the Lithuanian fauna Lepidoptera species. *Bulletin of the Lithuanian Entomological Society* 2 (30), 30–37.
- Ivinskis, P., Rimšaitė, J., Pūtys, Ž. & Paznekaitė, V. 2019. Rare and new for the Lithuanian fauna species of Lepidoptera. *Bulletin of the Lithuanian Entomological Society* 3 (31), 48–56.
- Ivinskis, P., Rimšaitė, J., & Pūtys, Ž. 2020. Data on new and rare Lepidoptera, a report of 2020. *Bulletin of the Lithuanian Entomological Society* 4 (32), 25–34.
- Kaila, L. 2019. An annotated catalogue of Elachistinae of the World (Lepidoptera: Gelechioidea: Elachistidae). *Zootaxa* 4632, 1–231.
- Kallies, A. & Farino, T. 2018. A new species of *Pharmacis* Hübner, 1820 from Spain with a brief review of the genera *Pharmacis* and *Korscheltellus* Börner, 1920 (Lepidoptera, Hepialidae). *Nota lepidopterologica* 41, 225–249.
- Karsholt, O. & Stadel Nielsen, P. 2013. *Revideret fortægnelse over Danmarks Sommerfugle. Revised catalogue of the Lepidoptera of Denmark*. Lepidopterologisk Forening, København. 120 pp.
- Kaupys, M. 2019. One new and 88 rare for the Lithuanian fauna Lepidoptera species, recorded in 2018–2019. *Bulletin of the Lithuanian Entomological Society* 3 (31), 57–67.
- Kononenko, V. 2005. Noctuidae Sibiricae. Volume 1. An annotated checklist of the Noctuidae (s.l.) (Insecta, Lepidoptera) of the Asian part of Russia and the Ural Region. Entomological Press, Sorø. 243 pp.
- Kovács, Z. & Kovács, S. 2020. Tribul Cochylini în România. Partea V. (*Cryptocochylis*, *Pontoturania*, *Falseuncaria*, *Cochylis*, *Longicornutia*, *Diceratura*, *Brevicornutia*, *Cochylidia*, *Neocochylis*, *Cochylicroa*, *Thyraylia*, *Eulia*, completări, corectări, concluzii). *Buletin de Informare Entomologică* 31, 5–61.
- Lafontaine, J.D. & Schmidt, B.C. 2010. Annotated check list of the Noctuoidea (Insecta, Lepidoptera) of North America north of Mexico. *ZooKeys* 40, 1–239.
- Larsen, E. S. 2020. Fund af nye storsommerfugle for den danske fauna siden 2005. *Lepidoptera*, 11, 347–380.
- Larsen, E.S., Bech, K., Helsing, F., Jensen, L., Kjeldgaard, S., Knudsen, K., Larsen, B.S., Møller, H.E. & Szyska, P. 2019. Fund af storsommerfugle i Danmark 2018. *Lepidoptera* 11 (7) (Tillæg), 1–88.
- Larsen, E.S., Bech, K., Helsing, F., Jensen, L., Kjeldgaard, S., Knudsen, K., Larsen, B.S., Møller, H.E. & Szyska, P. 2020. Fund af storsommerfugle i Danmark 2019. *Lepidoptera* 11 (9) (Tillæg), 1–88.
- Leraut, P. 2014. Pyralids 2. Moths of Europe 4, 1–440. Verrières le Buisson.
- Linnaeus, C. 1761. *Fauna Svecica*. Stockholmiae [xlviii] + 578 pp.
- Müller, B., Erlacher, S., Hausmann, A., Rajaci, H., Sihvonen, P. & Skou, P. 2019. Ennominae II. The Geometrid Moths of Europe 6. Brill, Leiden 906 pp.
- Murillo-Ramos, L. Brehm, G., Sihvonen, P., Hausmann, A., Holm, S., Ghanavi, H.R., Öunap, E., Truuverk, A., Staude, H., Friedrich, E. Tammaru, T. & Wahlberg, N. 2019. A comprehensive molecular phylogeny of Geometridae (Lepidoptera) with a focus on enigmatic small subfamilies. *PeerJ* 7, e7386.
- Mutanen, M. & Kaila, L. 2019–2021. Perhoset – Lepidoptera. In: The Finnish Biodiversity Information Facility (FinBIF): <https://laji.fi/en>
- Mutanen, M., Huemer, P., Autto, J., Karsholt, O. & Kaila, L. 2020. *Monopis jussii*, a new species (Lepidoptera, Tineidae) inhabiting nests of the Boreal owl (*Aegolius funereus*). *ZooKeys* 992, 157–181.
- Ohlsson, A. 2020. *Eucosma albidulana* (Herrich-Schäffer, 1851) – en för Sverige ny vecklare funnen i Åhus, Skåne (Lepidoptera, Tortricidae). *Entomologisk Tidskrift* 141, 149–153.
- Ólafsson, E. 2018. Toppagullmölur (*Phyllonorycter emberizaepenellus*). <http://www.ni.is/biota/animalia/arthropoda/hexapoda/insecta/lepidoptera/gracillariidae/toppagullmolur-phyllonorycter> [accessed December 2020]
- Palmqvist, G. 2018. Intressanta fynd av storfjärilar (Macrolepidoptera) i Sverige 2017. *Entomologisk Tidskrift* 139, 75–85.
- Palmqvist, G. & Ryrholm, N. 2020. Intressanta fynd av storfjärilar (Macrolepidoptera) i Sverige 2019. *Entomologisk Tidskrift* 141, 65–80.
- Paulavičiūtė, B. 2017. *Carpatolechia aenigma* (Lepidoptera, Gelechiidae) – a new species for the Lithuanian fauna. *Bulletin of the Lithuanian Entomological Society* 1 (29), 53–57.
- Paulavičiūtė, B. 2019. Data on 3 new and 6 rare Gelechiidae moth species (Lepidoptera: Gelechiidae) for Lithuania. *Bulletin of the Lithuanian Entomological Society* 3 (31), 68–72.
- Paulavičiūtė, B., Bačianskas, V. & Inokaitis, V. 2017. Data on 2 new and 113 rare for the Lithuanian fauna moth (Lepidoptera) species. *Bulletin of the Lithuanian Entomological Society* 1 (29), 58–69.
- Paulavičiūtė, B. & Mikalauskas, D. 2018. First record of the box tree moth *Cydalima perspectalis* (Walker, 1859) (Lepidoptera: Crambidae) in Lithuania. *Bulletin of the Lithuanian Entomological Society* 2

- (30), 55–59.
- Paulavičiūtė, B., Inokaitis, V., Švitra, G. & Bačianskas, V. 2020. New data on 2 new and 42 rare Tortricidae (Lepidoptera) species for Lithuanian fauna. *Bulletin of the Lithuanian Entomological Society* 4 (32), 54–60.
- Poole, R.W. 1989. Noctuidae. Pars 1-3. Lepidopterorum Catalogus (N.S.). 118, i-xii., 1-1314.
- Robinson, G. & Nielsen, E.S. 1983. The Microlepidoptera described by Linnaeus & Clerck. *Systematic Entomology* 8, 191–242.
- Ronkay, L., Ronkay, G., Gyulai, P. & Varga, Z. 2017. The Witt Catalogue. A Taxonomic Atlas of the Eurasian and North African Noctuoidea. Vol. 9. Xyleninae I. Heterocera Press Ltd., Budapest. 342 pp.
- Saarenmaa, H. 2020. *Polia lamuta* (Herz, 1903) (Lepidoptera, Noctuidae) discovered in Norway, and notes on other boreo-montane species. *Norwegian Journal of Entomology* 67, 189–195.
- Schmidt, B.C., Lafontaine, J.D. & Troubridge, J.T. 2018. Additions and corrections to the check list of the Noctuoidea (Insecta, Lepidoptera) of North America north of Mexico IV. *ZooKeys* 788, 241–252.
- Sihvonen, P., Murillo-Ramos, L., Brehm, G., Staude, H. & Wahlberg, N. 2020. Molecular phylogeny of Sterrhinae moths (Lepidoptera: Geometridae): towards a global classification. *Systematic entomology* 45, 606–634.
- Sinev, S.Yu., Baryshnikova, S.V., Lvovsky, A.L., Anikin, V.V. & Zolotuhin, V.V. 2017. Volgo-Ural Microlepidoptera described by E. Eversmann. In: Anikin, V.V., Sachkov, S.A. & Zolotuhin, V.V. (eds.), Fauna Lepidopterologica Volgo-Uralensis: from P. Pallas to present days. *Proceedings of the Museum Witt Munich* 7, 374–379. [pls. 1, 2]
- Skule, B. & Hviid, C. 2019. Måleren *Pungeleria capreolaria* (Denis & Schiffermüller, 1775 – ny storsommerfugl for Danmark. *Lepidoptera* 11, 267–271.
- Slamka, F. 2019. Pyraloidea of Europe 4. Phycitinae – Part 1. František Slamka, Bratislava. 432 pp.
- Sruoga, V., Ivinskis, P. & Rimšaitė, J. 2019. New data on new and insufficiently known for Lithuanian fauna species of Elachistinae (Lepidoptera: Elachistidae). *Bulletin of the Lithuanian Entomological Society* 3 (31), 73–77.
- Švitra, G., Bačianskas, V., Kvietauskas, R., Mikalauskas, D. & Ūsaitis, T. 2017. 3 new and 159 rare for the Lithuanian fauna Lepidoptera species recorded in 2016–2017. *Bulletin of the Lithuanian Entomological Society* 1 (29), 77–104.
- Švitra, G., Bačianskas, V., Inokaitis, V., Mikalauskas, D. & Ūsaitis, T. 2018. Two new and 110 rare for the Lithuanian fauna Lepidoptera species recorded in 2018. *Bulletin of the Lithuanian Entomological Society* 2 (30), 78–102.
- Tabell, J., Mutanen, M. & Siloaho. 2019. *Coleophora sirella* Tabell & Mutanen, sp. n. from Finland (Lepidoptera: Coleophoridae). *Entomologica Fennica* 30, 49–56.
- Ūsaitis, T., Mikalauskas, D. & Bačianskas, V. 2019. New and rare for the Lithuanian fauna Lepidoptera species recorded in 2019. *Bulletin of the Lithuanian Entomological Society* 3 (31), 79–98.
- Varga, Z., Ronkay, G. & Ronkay, L. 2017. Revised taxonomic check list of the Eurasiatic species of the subtribe Poliina (Noctuidae, Noctuinae, Hadenini). *Deutsche Entomologische Zeitschrift* 64 (2), 133–160.
- Vargas-Rodriguez, S.M., Fibiger, M.(†), Honey, M.R., Ronkay, G., Yela, J.L., Zilli, A. & Ronkay, L. 2020. *Bryophila perloides* Guenée, 1852 (Lepidoptera: Noctuidae: Bryophilinae), an overlooked member of the European Noctuidae fauna, with upgrading of *Bryopsis* Boursin, 1970 to generic level (Taxonomic studies on the western Palaearctic Bryophilinae, No. 1). *Zootaxa* 4845 (1), 53–70.
- Wang, Q.-Y. & Li, H.-H. 2020. Phylogeny of the superfamily Gelechioidea (Lepidoptera: Obtectomera), with an exploratory application on geometric morphometrics. *Zoologica Scripta* 49 (3), 307–328.
- Wiemers, M., Balletto, E., Dincă, V., Fric, Z.F., Lamas, G., Lukhtanov, V., Munguira, M.L., Swaay, C.A.v., Vila, R., Vliegenthart, A., Wahlberg, N. & Verovnik, R. 2018. An updated checklist of the European Butterflies (Lepidoptera, Papilionoidea). *ZooKeys* 811, 9–45.
- Wikström, B., Huemer, P., Mutanen, M., Tyllinen, J. & Kaila, L. 2020. *Pyralis cardinalis*, a charismatic new species related to *P. regalis* [Denis & Schiffermüller], 1775, first recognized in Finland (Lepidoptera, Pyralidae). *Nota lepidopterologica* 43, 337–364.
- Zahiri, R., Holloway, J.D., Kitching, I.J., Lafontaine, J.D., Mutanen, M. & Wahlberg, N. 2012. Molecular phylogenetics of Erebidae (Lepidoptera, Noctuoidea). *Systematic Entomology* 37, 102–124.

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