NEW DATA ON 2 NEW AND 42 RARE TORTRICIDAE (LEPIDOPTERA) SPECIES FOR LITHUANIAN FAUNA

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Introduction

Tortricidae, commonly known as leaf rollers or leaf twisters, are the largest family of microlepidoptera with more than 10000 species (Regier *et al*., 2012). The family is worldwide in distribution but reaches its greatest species-richness in temperate and tropical regions (Scoble, 1992). Tortricidae adults are characterized by a combination of the following characters: head has rough-scale above; scaling of lower frons is short, appressed and upwardly are directed; proboscis is well developed and unscaled; labial palpi is three-segmented and generally held horizontally or porrect, with apical segment which is short and blunt; maxillary palpi is reduced; ocelli and chaetosema are present; ovipositor is lobes flat (Horak, 2006). The family is divided into three subfamilies: Tortricinae, Olethreutinae, and Chlidanotinae (Horak, 1998). Tortricid moths include numerous major pests of crops, forests, and ornamental plants, therefore their research is very significant.

This report represents data on 2 new (*Celypha woodiana* and *Retinia perangustana*) and 42 rare for the Lithuanian fauna Tortricidae species. Species were collected from 11 administrative districts of Lithuania.

Material and Methods

The material was collected in different parts of Lithuania: Alytus, Jonava, Jurbarkas, Kaišiadorys, Kaunas, Molėtai, Šakiai, Trakai, Vilnius, Varėna and Zarasai administrative districts. Lepidoptera was collected using an entomological net and light trapping at night (160W–500W DRL type bulb lamp was used). The species were collected by the authors of this report Brigita Paulavičiūtė (B.P.), Vytautas Inokaitis (V.I.), Giedrius Švitra (G.Š.) and Vitalijus Bačianskas (V.B.). The rest species were collected by Romas Ferenca (R.F.). The material was identified by Brigita Paulavičiūtė.

The geographical coordinates were measured using a Garmin eTrex GPS receiver. The material is deposited in the collection of the Kaunas T. Ivanauskas Museum of Zoology. Species were identified using the following sources: Razowski (2001, 2008, 2009). Rarity categories have been established according to the checklist of Lepidoptera of Lithuania (Ivinskis, 2004; Ivinskis & Rimšaitė, 2018).

List of localities

Locality	Administrative district	Coordinates (LAT, LONG)
Antalieptė	Zarasai district	55.648063, 25.95583
Bradeliškės	Vilnius district	54.82452, 24.94517
Braziūkai	Kaunas district	54.907783, 23.474718
Čepkeliai Nat. R.	Varėna district	54.027725, 24.446538
Gaižiūnų Miškas f.	Jonava district	55.018901, 24.336945
Jiesia	Kaunas mun.	54.856831, 23,935475
Jovariškės	Trakai district	54.65241, 24.87764
Katra	Varėna district	53.992694, 24.586032
Kaunas (1) (Žaliakalnis)	Kaunas district	54.905006, 23,91361
Kaunas (2) (Palemonas)	Kaunas district	54.91942, 24.081384
Kaunas (3) (Taikos pr.)	Kaunas district	54.92227, 24.037777
Laumikoniai	Molėtai district	55.05167, 25.445835
Lomankos Miškas f.	Kaunas district	54.96334, 23.76999
Netoniai	Kaunas district	54.938693, 23.728889
Patamušėlis	Kaunas district	54.815615, 24.012222
Piktavyžis	Kaišiadorys district	54.894895, 24.264184
Punios Šilas f.	Alytus district	54.515421, 24.085327
Stražiškės (1)	Alytus district	54.551952, 24.076944
Stražiškės (2) (Romo)	Alytus district	54.551395, 24.075834
Šilelis	Kaunas district	54.938339, 23.759441
Tervydoniai	Šakiai district	55.027153, 23.448243
Viečiūnų Miškas f.	Varėna district	54.05111, 24.06667
Viešvilė Nat. R.	Jurbarkas district	55.094175, 22.411634

List of species

TORTRICIDAE

***Gynnidomorpha alismana* (Ragonot, 1883)**

Lomankos Miškas f., 30 07 2018, 1 ♂ (B.P.).

***Eupoecilia angustana* (Hübner, 1799)**

Kaunas (1), 04 08 2018, 1 ♀ (V.I.); Katra, 05 08 2018, 1 ♀ (G.Š.).

***Eupoecilia ambiguella* (Hübner, 1799)**

Kaunas (1), 22 07 2018, 1 ♀ (V.I.).

***Aethes fennicana* (M. Hering, 1924)**

Kaunas (2), 13 06 2018, 1 ♀ (V.I.).

***Aethes cnicana* (Westwood, 1854)**

Kaunas (1), 19 07 2018, 1 ♂ (V.I.)

***Aethes rubiginana* (Walsingham, 1903)**

Katra, 05 08 2018, 1 ♂ (G.Š.).

***Cochylidia moguntiana*(Rössler, 1864)**

Braziūkai, 07 08 2008, 2 ♂ (B.P.), Kaunas (3), 06 06 2017, 1 ♂ (V.I.).

***Cochylis hybridella* (Hübner, 1813)**

Braziūkai, 20 07 2011, 2 spec. (B.P.); Kaunas (2), 09 07 2018, 1 ♂ (V.I.); Lomankos Miškas f., 30 07 2018, 1 ♂ (B.P.).

***Cochylis dubitana* (Hübner, 1799)**
Gaižiūnai Miškas f., 26 07 2016, 1 spec. (B.P.).
***Cochylis atricapitana* (Stephens, 1852)**
Kaunas (3), 16 07 2017, 1 ♀ (V.I.).
***Acleris laterana* (Fabricius, 1794)**
Netoniai, 01 10 2016, 1 ♀; Straižiškės, 11 09 2018, 1 spec. (V.I.).
***Acleris shepherdana* (Stephens, 1852)**
Lomankos Miškas f., 30 07 2018, 1 ♂ (B.P.).
***Acleris kochiella* (Goeze, 1783)**
Šilelis, 20 04 2018, 2 ♀ (V.I.).
***Acleris rufana* (Denis & Schiffermüller, 1775)**
Bradeliškės, 25 07 2015, 1 ♂; Katra, 24 08 2018, 1 ♀ (G.Š.); Braziūkai, 30 08 2018, 1 spec.; Netoniai, 12 10 2018, 2 spec.; Kaunas (2), 13 10 2018, 2 spec. (V.I.).
***Cnephasia incertana* (Treitschke, 1835)**
Kaunas (1), 20 06 2016, 1 ♀; 24 05 2018, 2 ♀; 05 06 2018, 1 ♂ (V.I.).
***Dichelia histrionana* (Frölich, 1828)**
Viešvilė Nat. R., 28 07 2008, 1 ♀; 01 08 2008, 4 spec.; Braziūkai, 30 06 2009, 1 spec. (B.P.); Kaunas (3), 25 07 2017, 2 ♂ (V.I.).
***Bactra lancealana* (Hübner, 1799)**
Kaunas (1), 22 07 2018, 1 ♀ (V.I.).
***Bactra robustana* (Christoph, 1872)**
Lomankos Miškas f., 30 07 2018, 2 spec. (1 ♂) (B.P.).
***Endothenia pullana* (Haworth, 1811)**
Kaunas (1), 01 06 2016, 1 ♂ (V.I.).
***Eudemis profundana* (Denis & Schiffermüller, 1775)**
Patamušėlis, 21 07 2018, 1 spec. (V.I.).
****Celypha woodiana* (Barrett, 1882)**
Kaunas (1), 28 08 2018, 2 spec. (1 ♂) (V.I.) (Fig. 1).
***Phiaris dissolutana* (Stange, 1866)**
Kaunas (1), 27 07 2018, 1 ♂ (V.I.); Lomankos Miškas f., 30 07 2018, 1 ♂ (B.P.).
***Phiaris schulziana* (Fabricius, 1777)**
Braziūkai, 07 08 2008, 1 spec.; 30 07 2009, 1 spec.; 20 07 2011, 1 ♂ (B.P.); Gaižiūnų Miškas f., 17 07 2018, 1 spec. (V.I.); Katra, 05 08 2018, 1 ♀ (G.Š.).
***Phiaris bipunctana* (Fabricius, 1794)**
Kaunas (1), 18 06 2017, 1 ♂ (V.I.).
***Lobesia abscisana* (Doubleday, 1849)**
Piktavyžis, 21 05 2007, 1 ♂ (B.P.); Tervydoniai, 22-23 07 2018, 2 ♂ (R.F.).
***Lobesia reliquana* (Hübner, 1825)**
Čepkeliai Nat. R., 09 06 2004, 1 spec. (B.P.).
***Epinotia rubiginosana* (Herrich-Schäffer, 1851)**
Laumikoniai, 28 05 2018, 1 ♂ (V.I.).
***Eucosma hohenwartiana* (Denis & Schiffermüller, 1775)**
Jovariškės, 12 05 2018, 1 ♀ (G.Š.).
***Eucosma campoliliana* (Denis & Schiffermüller, 1775)**
Tervydoniai, 16 08 2008, 1 ♀ (R.F.); Braziūkai, 30 06 2010, 2 ♂ (B.P.); Antalieptė, 02 07 2016, 1 ♀ (V.I.).

***Eucosma conterminana* (Guenée, 1845)**
Jovariškės, 12 05 2018, 1 ♂ (G.Š.).
****Retinia perangustana* (Snellen, 1883)**
Punios Šilas f., 03 05 2018, 1 ♂ (V.B.) (Fig. 2).
***Gravitarmata margarotana* (Heinemann, 1863)**
Viečiūnų Miškas f., 03 05 2018, 3 spec. (V.I.)
***Ancylis achatana* (Denis & Schiffermüller, 1775)**
Kaunas (1), 14 06 2016, 1 spec.; Kaunas (2), 13 06 2018, 2 spec. (1 ♀) (V.I.).
***Grapholita funebrana* (Treitschke, 1835)**
Kaunas (1), 01 06 2016, 1 ♀; 31 07 2018, 1 ♀; Viečiūnų Miškas f., 03 05 2018, 1 ♂ (V.I.)
***Cydia inquinatana* (Hübner, 1799)**
Kaunas (1), 03 07 2017, 1 ♀ (V.I.).
***Pammene fasciana* (Linnaeus, 1761)**
Viečiūnų Miškas f., 03 05 2018, 1 ♂ (V.I.).
***Pammene insulana* (Guenée, 1845)**
Kaunas (1), 01 06 2016, 1 ♂ (V.I.).
***Pammene argyrana* (Hübner, 1799)**
Braziūkai, 25 04 2019, 1 ♀ (V.I.); Jiesia, 07 05 2019, 1 ♂ (R.F.).
***Pammene populana* (Duponchel, 1843)**
Braziūkai, 20 07 2011, 1 ♂ (B.P.).
***Pammene germmana* (Hübner, 1799)**
Viečiūnų Miškas f., 03 05 2018, 1 ♂ (V.I.).

Discussion

Tortricid moths are not comprehensively investigated in Lithuania, as. new species are registered every year. Up to now, 360 Tortricidae species were known in Lithuania (Ivinskis & Rimšaitė, 2018). This article presents data on two new species recently found in Lithuania. They are regarded as plant parasites in Europe: *Celypha woodiana* (Simson, 2005) and *Retinia perangustana* (Schaffers & Muus, 2018).

Celypha woodiana (Fig. 1) is widespread in continental Europe, including Austria, Belgium, Britain, Czech Republic, French mainland, Germany, Greek mainland, Hungary, Italia mainland, Luxembourg, Poland, Romania, Slovakia, Switzerland, and Ukraine (Aarvik, 2013, Razowski, 2001, Parson & McGill, 2010). Until now, it was not registered in Lithuania. At present, this is the northernmost area of distribution of this species.

This is rare and local species, confined to mature apple orchards. From September the larva feeds on mistletoe (*Viscum album*), mining the leaves and forming large blotch or blister mines (Parson & McGill, 2010). When quite young, the larva overwinters in the mine, continuing its feeding in the spring. The fairly distinctive adult moths are on the wing in July and August. They can be found resting on trunks during the day and later come to light.

Retinia perangustana (Fig. 2) has Palearctic distribution: east of Europe in Siberia, the Russian Far East, Mongolia and Northeast China (Razowski, 2003). In Europe *Retinia perangustana* is associated with European larch (*Larix decidua*) and *L. polonica*. The distribution of *R. perangustana* shows a remarkable similarity with the natural distribution of the European larch (*L. decidua*) in Europe (Schaffers & Muus, 2018). The moth is

widespread in Europe: Central European Russia, Czech Republic, East Palearctic, French mainland, Germany, Hungary, Italy, Netherlands, Poland, Romania, Slovakia, Switzerland, South European Russia, Sweden (Aarvik, 2003; Schaffers & Muus, 2018; Skrzypczynska, 1977; Kristek *et al.* 1976; Svensson 1980; Roques & Von Hirschheydt, 1990; Pastoralis *et al.* 2011; Buschmann 2014; Huemer 2016).

The moth lay round reddish yellow eggs, with a violet hue, between April and July. Oviposition takes place towards the end of the growth period of the seed-bearing cones. The young larva feeds on the tissue on the inside of the scales and later also on the seeds of the cone (Roques 1983, Schaffers & Muus, 2018). Frass from the larva is visible on the outside of an infested cone. After approximately five weeks the mature larva leaves the cone, pupating in a delicate whitish cocoon in litter on the ground, hibernating in this stage. The moth emerges in the following spring, flying between mid- April and July (at a higher altitude) (Schaffers & Muus, 2018).

Fig. 1. *Celypha woodiana*, Kaunas (1), 28 08 2018 (Photo: K. Martinaitis)

Fig. 2. *Retinia perangustana*, Punios Šilas f., 03 05 2018 (Photo: K. Martinaitis)

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Nauji duomenys apie 2 naujas ir 42 retas Tortricidae (Lepidoptera) Lietuvos faunos rūšis

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Santrauka

Straipsnyje pateikiami duomenys apie 2 naujas (*Celypha woodiana, Retinia perangustana*) ir 42 retas lapsukių (Tortricidae) šeimos rūšis, užregistruotas Lietuvoje. Drugiai buvo rinkti 11 Lietuvos rajonų. Straipsnyje pateikiama informacija apie rūšių radavietes, nurodant tyrimų koordinates, rinkimų datas ir užregistruotą aprašomų rūšių individų skaičių.

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