

## RARE LEPIDOPTERA SPECIES FOUND IN NORTHWEST AND NORTH LITHUANIA

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### Introduction

This paper provides information on 53 rare species of Lepidoptera found in six districts of northwestern and northern Lithuania. Two of them – *Parnassius mnemosyne* and *Melitaea diamina* are included into the Red Data Book of Lithuania (Rašomavičius, 2007). Information on the locality, finding date and the number of the recorded individuals is provided for every species.

### Material and Methods

Most of the data was collected during field trips in 2017. Part of the data was collected in 2010 and 2016. Observations were carried out in 26 locations in Klaipėda, Kretinga, Skuodas, Plungė, Mažeikiai districts and Palanga municipality. Standard entomological methods were used for the collecting of specimens: sugaring, netting and light-trapping with the help of 500 W blended mercury lamp bulb. Automatic light trap with 250 W blended mercury lamp bulb was used in the research area of Ylakiai from mid-August until mid-September 2017.

The material was identified using identification guides of Kazlauskas (1984, 2008) and Koch (1991). Most of the collected specimens are preserved in the private collection of the author. The collected information is stored in a private database of Giedrius Švitra - LepiBase.

### List of localities

Locality	Administrative district	Coordinates (LAT, LONG)
Antroji Melnragė, dunes	Klaipėda district	55.75702, 21.08334
Aukštkalvių Miškas f. (1)	Kretinga district	55.93290, 21.38789
Aukštkalvių Miškas f. (2)	Kretinga district	55.93150, 21.39488
Barstyčių Miškas f.	Skuodas district	56.13853, 21.85290
Barstytaliai.,	Skuodas district	56.14848, 21.86330
Būtingė, dunes	Palanga mun.	56.05908, 21.06962
Falsbergo Miškas f. (1)	Mažeikiai district	56.33953, 22.29963
Falsbergo Miškas f. (2)	Mažeikiai district	56.33892, 22.29604
Falsbergo Miškas f. (3)	Mažeikiai district	56.33935, 22.29159
Gečaičiai	Plungė district	56.13074, 21.99022
Gedrimai, open pit	Skuodas district	56.29899, 21.88891
Giruliai, dunes	Klaipėda district	55.76907, 21.07853
Ylakiai	Skuodas district	56.27782, 21.84757
Jautakiai, Venta river valley	Mažeikiai district	56.32150, 22.26019

Kalnėnai botanical park	Skuodas district	56.29715, 21.81326
Kiškėnai, Mažeikių Miškas f. (1)	Klaipėda district	55.69559, 21.25414
Kiškėnai, Mažeikių Miškas f. (2)	Klaipėda district	55.69883, 21.26271
Kuksinė, Margininkai botanical - zoological reserve	Skuodas district	56.17335, 21.27746
Miesto Medės Miškas f.	Skuodas district	56.21262, 21.40971
Kražiškiai, Varduva river valley	Mažeikiai district	56.27569, 22.07338
Kruopiai	Skuodas district	56.14343, 21.82879
Padegimė	Skuodas district	56.12366, 21.93652
Skuodas	Skuodas district	56.26443, 21.50888
Šulpetriai, Luoba river valley	Skuodas district	56.25309, 21.81100
Šventoji, Šventoji river valley	Palanga mun.	56.03063, 21.10214
Viršilai, Gėsalai geomorfological reserve	Skuodas district	56.32863, 21.77513

### List of records

#### NOLIDAE

##### ***Bena bicolorana* (Fuessly, 1775)**

Falsbergo Miškas f. (2), 23 07 2017, 1 spec.

#### NOCTUIDAE

##### ***Amphipyra berbera* (Rungs, 1949)**

Barstyčiai, 14 08 2017, 1 spec.

##### ***Apamea rubrarena* (Treitschke, 1825)**

Aukštkalvių Miškas f. (1), 25 07 2017, 1 spec.

##### ***Aporophyla lueneburgensis* (Freyer, 1848)**

Jautakiai, Venta river valley, 30 08 2017, 1 spec.

##### ***Catocala promissa* (Denis & Schiffermuller, 1775)**

Ylakiai, 28 08 2017, 1 spec.; Padegimė, 15 08 2017, 1 spec.; Skuodas, 29 08 2017, 1 spec.

##### ***Catocala sponsa* (Linnaeus, 1767)**

Viršilai, Gėsalai geomorfological reserve, 18 08 2017, 1 spec.

##### ***Chilodes maritima* (Tauscher, 1806)**

Padegimė, 21 07 2017, 1 spec.

##### ***Coenophila subrosea* (Stephens, 1829)**

Falsbergo Miškas f. (3), 16 08 2017, 1 spec.

##### ***Crypsedra gemmea* (Treitschke, 1825)**

Padegimė, 25 08 2017, 1 spec.; Viršilai, Gėsalai geomorfological reserve, 18 08 2017, 6 spec.

##### ***Cucullia asteris* (Denis & Schiffermüller, 1775)**

Padegimė, 20 06 2017, 1 spec.

##### ***Dryobotodes eremita* (Fabricius, 1775)**

Aukštkalvių Miškas f. (2), 24 09 2017 1 spec.; Ylakiai, 30 08 2017, 1 spec. 23 09 2017, 1 spec.

##### ***Eriopygodes imbecilla* (Fabricius, 1794)**

Padegimė, 10 07 2017, 1 spec.

##### ***Eucarta virgo* (Treitschke, 1778)**

Aukštkalvių Miškas f. (1), 25 07 2017, 1 spec.; Falsbergo Miškas f. (1) 20 07 2017, 1

spec., 02 08 2017, 3 spec.; Falsbergo Miškas f. (2), 23 07 2017, 1 spec.; Padegimė, 21 07 2017, 2 spec.

***Hadena perplexa* (Denis & Schiffermüller, 1775)**

Falsbergo Miškas f. (1), 20 07 2017, 1 spec.; Viršilai, Gėsalai geomorfological reserve, 16 07 2017, 1 spec.

***Hecatera dysodea* (Denis & Schiffermüller, 1775)**

Ylakiai, 03 07 2010, 2 spec.

***Hyppa rectilinea* (Esper, 1788)**

Padegimė, 10 06 2017, 1 spec.

***Helicoverpa armigera* (Hübner, 1808)**

Antroji Melnragė, dunes, 25 09 2017, 6 spec., 27 09 2017, 10 spec.; Giruliai, dunes, 26 09 2017, 4 spec.

***Lenisa geminipuncta* (Haworth, 1809)**

Jautakiai, Venta river valley, 20 08 2017, 2 spec.

***Leucania obsoleta* (Hübner, 1803)**

Gedrimai, open pit, 06 09 2017, 1 spec., 28 06 2017, 3 spec.

***Mythimna pudorina* (Denis & Schiffermüller, 1775)**

Aukštkalvių Miškas f. (2), 22 06 2017, 1 spec.; Falsbergo Miškas f. (2), 23 07 2017, 2 spec.

***Mythimna straminea* (Treitschke, 1825)**

Falsbergo Miškas f. (2), 23 07 2017, 1 spec.

***Mniotype adusta* (Esper, 1790)**

Viršilai, Gėsalai geomorfological reserve, 11 06 2017, 1 spec.

***Noctua interposita* (Hübner, 1790)**

Viršilai, Gėsalai geomorfological reserve, 18 08 2017, 1 spec.

***Noctua janthe* (Borkhausen, 1792)**

Padegimė, 15 08 2017, 1 spec.

***Noctua janthina* (Denis & Schiffermüller, 1775)**

Miesto Medės Miškas f., 10 08 2017, 1 spec.

***Orthosia miniosa* (Denis & Schiffermüller, 1775)**

Aukštkalvių Miškas f. (2), 18 05 2017 1 spec.

***Phragmatiphila nexa* (Hübner, 1808)**

Skuodas, 29 08 2017, 2 spec.

***Rhyacia simulans* (Hufnagel, 1766)**

Ylakiai, 31 08 2017, 1 spec.; Jautakiai, Venta river valley, 30 08 2017, 2 spec.

***Sedina buettneri* (Hering, 1858)**

Falsbergo Miškas f. (1), 23 09 2017, >5 spec.; Padegimė, 22 09 2017, >5 spec.

***Senta flammea* (Curtis, 1828)**

Aukštkalvių Miškas f. (2), 22 06 2017, 1 spec.

***Staurophora celsia* (Linnaeus, 1758)**

Padegimė, 25 08 2017, 1 spec.

***Tiliacea citrigo* (Linnaeus, 1758)**

Giruliai, dunes, 06 09 2017, 1 spec.

PSYCHIDAE

***Pachythelia villosella* (Ochsenheimer, 1810)**

Kiškėnai, Mažeikių Miškas f. (2), 01 07 2016, 1 spec.

COSSIDAE

***Acossus terebra* (Denis & Schiffermüller, 1775 )**

Aukštkalvių Miškas f. (1), 25 07 2017, 1 spec.; Aukštkalvių Miškas f. (2), 06 08 2017, 1 spec.

GEOMETRIDAE

***Apeira syringaria* (Linnaeus, 1758)**

Falsbergo Miškas f. (2), 23 07 2017, 1 spec.

***Campaea margaritata* (Linnaeus, 1761)**

Antroji Melnragė, dunes, 25 09 2017, 1 spec.; Giruliai, dunes, 06 09 2017, 5 spec., 26 09 2017, 1 spec.; Padegimė, 22 09 2017, 2 spec.

***Cleorodes lichenaria* (Hufnagel, 1767)**

Barstyčių Miškas f. 24 07 2017, 1 spec.; Barstyčiai, 19 07 2017, 3 spec.; Falsbergo Miškas f. (1), 02 08 2017, 1 spec.; Falsbergo Miškas f. (2), 23 07 2017, 1 spec.; Kruopiai, 18 07 2017, 1 spec.; Padegimė, 21 07 2017, 2 spec., 05 08 2017, 1 spec.; Šventoji, Šventoji river valley, 30 07 2017, 1 spec.

***Eupithecia insigniata* (Hübner, 1790)**

Gedrimai, open pit, 19 05 2017, 1 spec.; Ylakai, 03 06 2017, 1 spec.

***Hydria cervinalis* (Scopoli, 1763)**

Kalnėnai botanical park, 20 05 2017, 1 spec.

***Stegania cararia* (Hubner, 1790)**

Falsbergo Miškas f. (2), 23 07 2017, 1 spec.; Padegimė, 10 07 2017, 2 spec.

***Macaria artesiaria* (Denis & Schiffermüller, 1775)**

Būtingė, dunes, 30 07 2017, 4 spec.

***Ourapteryx sambucaria* (Linnaeus, 1758)**

Aukštkalvių Miškas f. (1), 25 07 2017, 1 spec.; Falsbergo Miškas f. (1), 20 07 2017, 1 spec.; Padegimė, 21 07 2017, 1 spec.

***Perizoma affinitata* (Stephens, 1831)**

Padegimė, 10 06 2017, 1 spec.

***Triphosa dubitata* (Linnaeus, 1758)**

Gečaičiai 17 08 2017, 1 spec.; Padegimė, 05 08 2017, 1 spec.

SPHINGIDAE

***Agrius convolvuli* (Linnaeus, 1758)**

Antroji Melnragė, dunes, 05 09 2017, 1 spec.

***Hemaris tityus* (Linnaeus, 1758)**

Kražiškiai, Varduva river valley, 16 07 2017, 1 spec.

LASIOCAMPIDAE

***Gastropacha populifolia* (Esper, 1784)**

Aukštkalvių Miškas f. (1), 25 07 2017, 2 spec.

NOTODONTIDAE

***Clostera anastomosis* (Linnaeus, 1758)**

Barstyčių Miškas f. 24 07 2017, 1 spec.

***Pygaera timon* (Hübner, 1803)**

Kiškėnai, Mažeikių Miškas f. (2), 08 06 2017, 1 spec.

DREPANIDAE

***Polyploca ridens* (Fabricius, 1787)**

Viršilai, Gėsalai geomorfological reserve, 06 05 2017, 1 spec.

## PAPILIONIDAE

***Parnassius mnemosyne* (Linnaeus, 1758)**

Šulpetriai, Luoba river valley, 10 06 2017, 3 spec.

## SESIIDAE

***Synansphecchia triannuliformis* (Freyer, 1843)**

Kražiškiai, Varduva river valley, 16 07 2017, 1 spec.

## NYMPHALIDAE

***Melitaea diamina* (Lang, 1789)**

Kuksinė, Margininkai botanical - zoological reserve, 28 06 2017, 1 spec.

**Discussion**

In the recent years there has been noticed a tendency for climate warming (An, Choi, 2013). It is believed that climate change will have a significant influence on pest spreading to the northern regions in the future (Macfadyen *et al.*, 2016). In the end of September, 2017 *Helicoverpa armigera* was frequently found in the seaside dunes between Klaipėda and Giruliai. It is a migrant very rarely coming to the Baltic States and is widespread all over the world in subtropical steppe regions (Kazlauskas, 1984). According to the latest data, single individuals were recorded in Vilnius and Meškerinė (Švitra *et al.*, 2015). In southern Europe and Asia *H. armigera* is considered to be a dangerous agriculture pest causing economic losses for cotton, corn, tomatoe and legume producers (Riley *et al.*, 1992). Due to the climate warming, appearance of this species in Lithuania can be expected more often.

*Eupithecia insigniata* is a species common in central and southern Europe and in Asia Minor. Moths are found in sunny forests, bushes and abandoned gardens (Buszko, 2000). In southern Europe this species is usually found in fruit plantations (Koch, 1991). In Lithuania it was discovered for the first time in 1928 in Žuvintas (Kazlauskas, 1984). According to the data in literature it was also found in Tauragė and Varėna districts (Ivinskis, 2004). In 2017 two moths were caught in Gedrimai and Ylakai (Skuodas district). In the research areas foodplants of the species are present: raspberry (*Rubus*), apple trees (*Malus*), hawthorn (*Crataegus*), plum (*Prunus*). Foodplants and typical habitats for *E. insigniata* are widespread throughout the territory of Lithuania, therefore, it can be assumed that the spread of the species is limited by climatic factors.

During the research other rare southern species were found, such as *Bena bicolorana*, *Noctua interposita*, *N. janthina*, *N. janthe*, *Staurophora celsia*, *Pygaera timon*, *Gastropacha populifolia* and others.

The research revealed some typical species of northern regions, *Apamea rubrivena* is one of them. This species is common only in tundra and taiga zones, in the mountains of Central Europe and its southern boundary of the boreal area reaches Lithuania (Kazlauskas, 1984). This is a very rare species in Lithuania which was found in Šiauliai, Radviliškis, Mažeikiai districts (Ivinskis, 2004). During this research one moth was caught in Kretinga district, in a mixed forest. The location of finding is abundant with sedges (*Carex*), that are foodplants for *A. rubrivena* (Ivinskis, 2004).

*Parnassius mnemosyne* is a species protected throughout Europe and is also included in the Lithuanian Red Data Book (Rašomavičius, 2007). Since 2010 a viable population of these butterflies has been observed in Šulpetriai, Luoba river valley. It has been noticed that this habitat tends to overgrow with bushes rapidly. It may have a negative

impact on the viability of this population in the future. According to the data from literature, population of *P. mnemosyne* start to increase when bushes are cut out in its habitat and open space is formed (Rašomavičius, 2007). To save the habitat in Šulpetriai an extensive meadow grazing or thinning regrowing bushes should be applied.

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### Retos drugių rūšys rastos šiaurės vakarų ir šiaurės Lietuvoje

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### Santrauka

Straipsnyje pateikiami duomenys apie 53 retas drugių rūšis, rastas šiaurės vakarų ir šiaurės Lietuvoje. Dvi rastos rūšys – *Parnassius mnemosyne* ir *Melitaea diamina* – įrašytos į Lietuvos Raudonąją knygą. Kiekvienai rūšiai pateikiama gaudymo data, individų skaičius ir tyrimo vieta su koordinatėmis.

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