

***HORISME CORTICATA* (TREITSCHKE, 1835) AND *CIRRHIA OCELLARIS* (BORKHAUSEN, 1792) – THE NEW SPECIES FOR LITHUANIAN FAUNA**

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Introduction

In recent years the Central and Western European lepidopteran fauna species are increasingly found in Lithuania. For example, there is a marked increase in numbers of observations of noctuid moths *Noctua interjecta* and *Noctua janthina* (Švitra *et al.*, 2003; Kaupys, 2020). Once rare satyrid species *Melanargia galathea* now became common in southern and central parts of Lithuania (Švitra *et al.*, 2022). The nymphalid species *Brenthis daphne* is spreading throughout country from western to central part of Lithuania (Ūsaitis *et al.*, 2021).

Here we report the findings of two lepidopteran species, typical representatives of Central and Western European fauna new to Lithuanian list of Lepidoptera: the geometrid moth *Horisme corticata* (Treitschke, 1835) and the noctuid moth *Cirrhia ocellaris* (Borkhausen, 1792).

Material and Methods

The moths were attracted to artificial light sources at nights in August and September 2023. Specimen of *Horisme corticata* was attracted to UV LED funnel trap. This funnel-based trap functions with 395-405 SMD 2835 LED strip. Specimen of *H. corticata* was caught outside of the trap bucket in sandy environment of coastal bushes. Specimen of *Cirrhia ocellaris* was caught by the aid of 250W mercury blended light lamp (Bellight, Poland) set up by white cloth in urban area of Radviliškis gardens, close to Antaniškiai forest.

The criteria for identification of *H. corticata* were the patterns of lines of wings and abdomen (Fig. 1a). Among other *Horisme* species, upper side of forewings of *H. corticata* exhibits pronounced dark antemedian and postmedian lines that converge approaching the dorsum (Fig. 1a.). The criteria for separation of *C. ocellaris* from similar species *C. gilvago* were the hooked forewing apex, slightly concave forewing termen, white scaling of veins and white spot at reniform stigma (Fig. 2a–b). Identifications of *H. corticata* and *C. ocellaris* were confirmed by inspecting their genitals (Figs 1b–d, 2c–e). Collected moths, genital preparations and their photos are kept in private collection of the first author (D. B.).

List of localities

Locality	Administrative district	Coordinates (LAT, LONG)
Palanga	Palanga distr.	55.92203, 21.05382
Radviliškis gardens	Radviliškis distr.	55.80158, 23.58264

List of species

Horisme corticata (Treitschke, 1835)

Palanga, 24 08 2023, 1 ♂ spec. (D. B.)

Cirrhia ocellaris (Borkhausen, 1792)

Radviliškis gardens, 16 9 2023, 1 ♂ spec. (D. B.)

Discussion

The published data on the distribution and biology of *Horisme corticata* and *Cirrhia ocellaris* are scanty. Thus, we briefly review the available publications on the distribution and biology of *H. corticata* and *C. ocellaris* with focus to Nordic-Baltic region and to several other countries the reports came from.

Distribution of *H. corticata* ranges from southern Sweden to Denmark, Germany, Belgium, and from Poland to Romania, Hungary, Bulgaria, southern Ukraine (Global Biodiversity Information Facility, 2023). According to the Nordic-Baltic checklist of Lepidoptera by Aarvik *et al.* (2017), *H. corticata* is found in Denmark, but no records from Baltic States, Sweden and Norway. Nonetheless, observations of G. Palmqvist & N. Ryrholm (2022) suggest that *H. corticata* has been found in southern Sweden already from 2010. According to these authors, *H. corticata* is migrant and was included among other lepidopteran migrants to Sweden from August to October 2021 (Palmqvist & Ryrholm, 2022).

In Poland *H. corticata* is considered as a rare and local species, recorded so far in 8 out of 16 regions of country (Buszko & Nowacki, 2017; Larysz *et al.*, 2022). Locations of *H. corticata* are scattered in the southern and western parts of Poland (Buszko & Nowacki, 2000; Dawidowicz & Kucharczyk, 2016). The species is connected to thermophilous scrubs on sunny slopes, forest edges, parks and gardens (Dawidowicz & Kucharczyk, 2016).

In Germany *H. corticata* has been found for the first time in 1937 near Dresden (Koch *et al.*, 1976). Since then the moth spread throughout the eastern part of country (Ebert, 2003). In Germany *H. corticata* flies in two generations from mid-April to early July and from late July to late September. The caterpillars can be observed from August to September and from June to July (Koch *et al.*, 1976).

In Volgo-Ural region of Russia *H. corticata* is found in dry steppes and is considered as rare (Anikin *et al.*, 2000). The species resides both in southern and western parts of Bulgaria and on the Black Sea coast (Goater, 1996; Beshkov *et al.*, 1999). In North Macedonia *H. corticata* has been described as one of most frequent geometrids (Shemshiu *et al.*, 2022).

The host plants of *H. corticata* are reported as *Clematis vitalba*, *C. viticella* and *Anemone sylvestris* (Jonko, 2023). According to the report from Poland, main host plant is *C. vitalba*, caterpillars rarely choose other *Clematis* species (Dawidowicz &

Kucharczyk, 2016). *Clematis* plants are frequently cultivated in gardens, towns and resorts in Lithuania. However, it is not yet known if *Clematis* plants grow in wildlife on the Lithuanian coast line (personal communications of Mindaugas Ryla and Erlandas Paplauskis). In western part of Lithuania *A. sylvestris* is infrequent, but *Clematis* plants that escaped gardens occur in wildlife (Kęstutis Obelevičius, personal communication). Presence of host plants indicates that *H. corticata* may form breeding population in Lithuania.

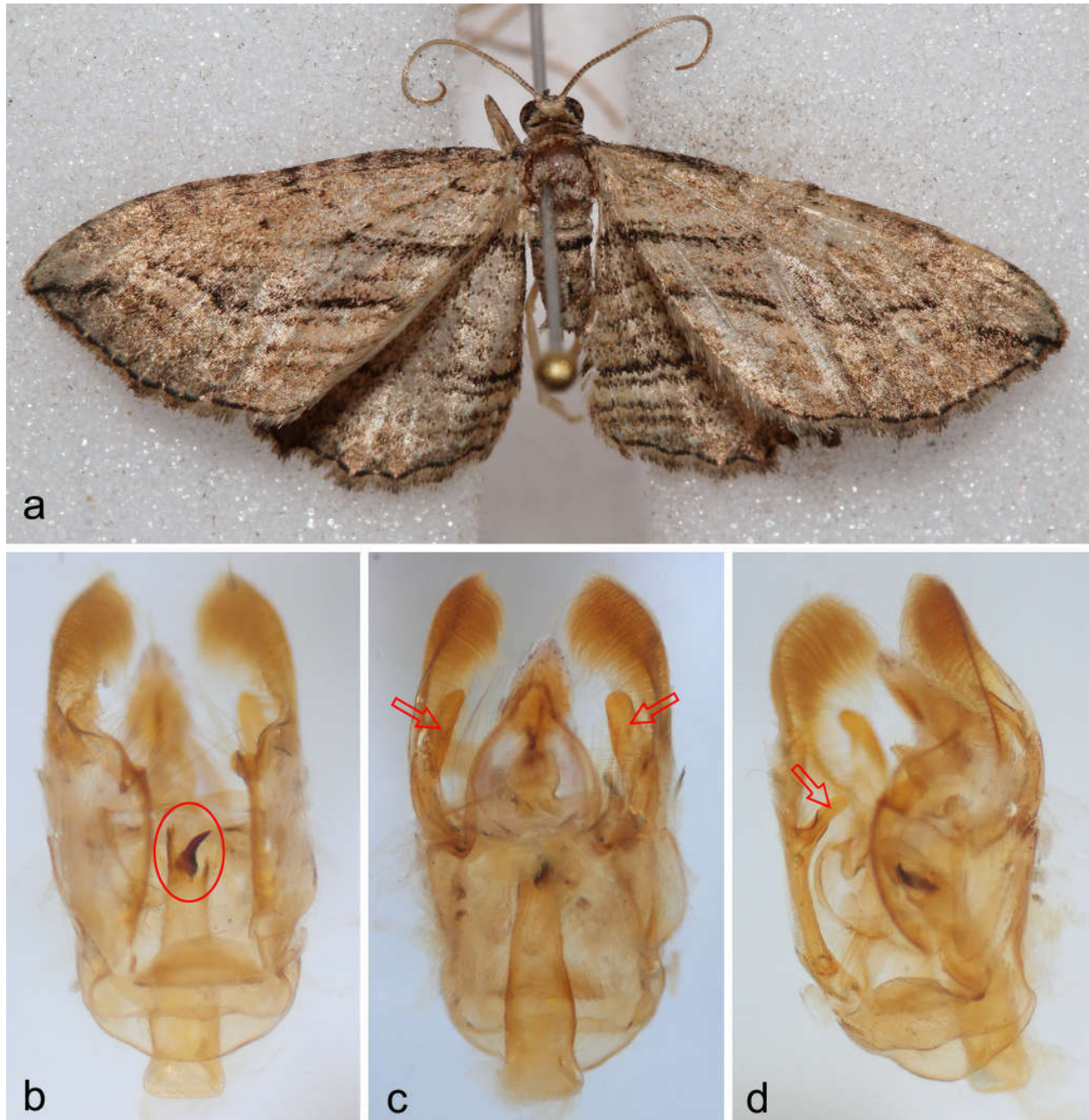


Fig. 1. *Horisme corticata* (Treitschke, 1835): **a)** upper side of forewings exhibits pronounced dark antemedian and postmedian lines that converge approaching the dorsum with no dark area between them; **b)** male has a prominent cornutus in apical part of aedeagus (shown by red oval) while other parts of aedeagus do not have cornuti; **c)** valves have characteristic club-shaped processes (arrows); **d)** arches of valves have short processes that are directed inwards (arrow).

Cirrhia ocellaris is distributed widely throughout Europe. Distribution ranges from Finland to UK, South Spain, Central Italy, from Poland to Romania, North Macedonia, and from Ukraine to Kazakhstan, Turkey and East Mongolia (Global Biodiversity Information Facility, 2023). According to the Nordic-Baltic checklist of Lepidoptera, *C. ocellaris* is found in Denmark, Latvia, Estonia, Finland, but no records from Lithuania and Norway (Aarvik *et al.*, 2017). In this respect, finding of *C. ocellaris* in Lithuania fills the gap of its known range in Nordic-Baltic region.

In Poland *C. ocellaris* is found throughout the country but occurrence is sporadic (Buszko & Nowacki, 2017; Nowacki *et al.*, 2018) In Subcarpathia region of southeast Poland *C. ocellaris* was first found in 2006 and then was recorded 8 times to 2023 (Bury *et al.*, 2023).

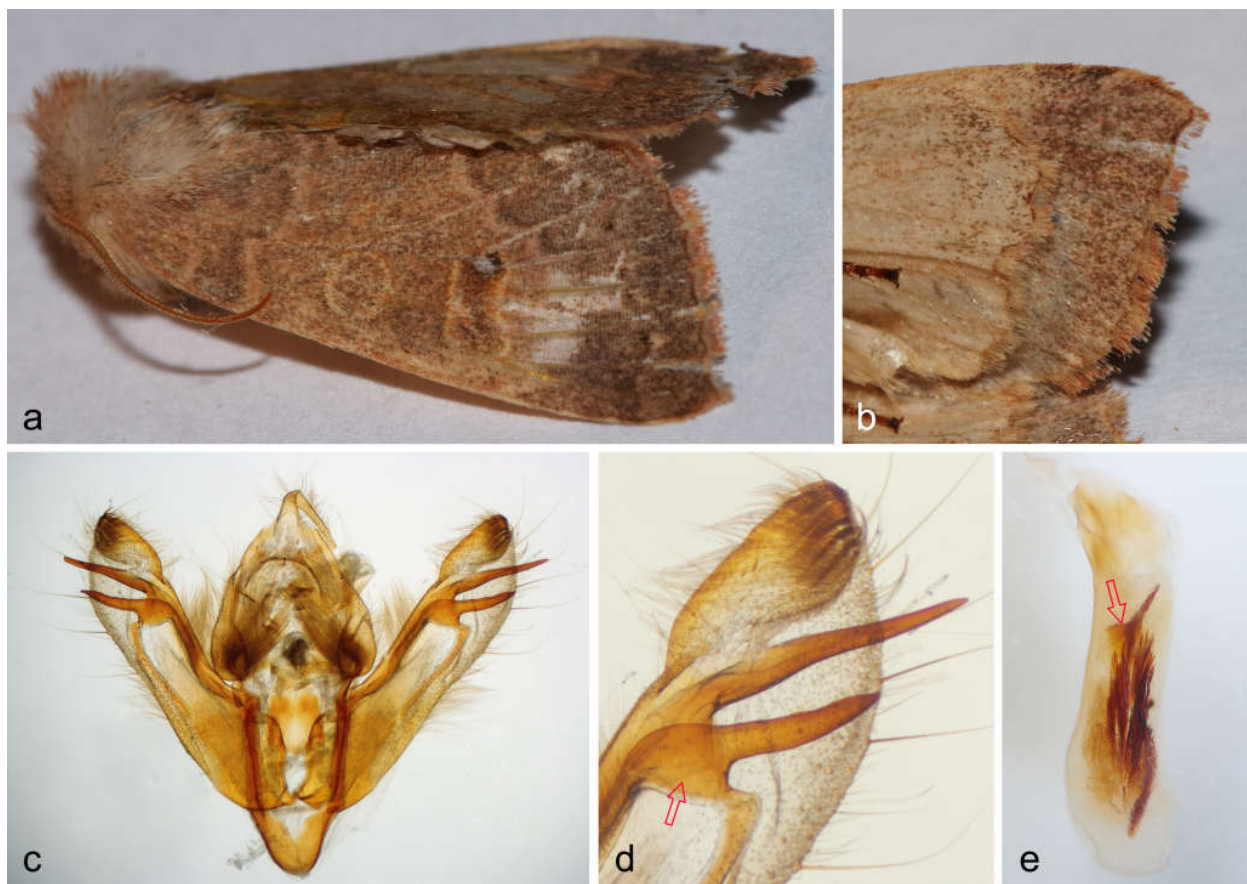


Fig. 2. *Cirrhia ocellaris* (Borkhausen, 1792): **a)** forewings have white scaling of veins and white spot at reniform stigma; **b)** the hooked forewing apex and slightly concave forewing termen of viewed from under side; **c)** flattened preparation of male genitalia. **d)** valves have forceps-like processes (thickened base of one such process is shown by arrow); **e)** aedeagus of has a characteristic cornutus with the wide base (arrow).

In Germany *C. ocellaris* is found both in eastern and western parts of the country. The number of locations increased dramatically from 2001 (Steiner *et al.*, 2023). There is one generation per year, with adults flying from August to October. It overwinters as an egg. Larvae can be found from April to June. *Cirrhia ocellaris* inhabits river basins, floodplains, poplar avenues, and urban areas as well as gardens and parks (Koch, 1972). Food of young caterpillars is catkins of poplar trees. The caterpillars prefer *Populus* × *canadensis*. Another food plant is *Populus nigra*. Older caterpillars drop to the ground

with the catkins and then feed on grass plants, e.g. common dandelions, *Taraxacum officinale* (Ebert, 1997).

In UK *C. ocellaris* is a local species occurring sparsely in the southern counties of England (Kimber, 2023). It is also found in Donbas region of Ukraine (Геряк *et al.*, 2018). Recently, *C. ocellaris* was recorded for the first time in Calabria region, South Italy (Zucco & Scalercio, 2023). In South-East Romania *C. ocellaris* is considered as relatively common (Szekely, 2016).

Host plants of *C. ocellaris*, poplar trees *P. nigra* and *P. × canadensis*, are rare in Lithuania. Occasionally, these poplar trees have been planted many years ago in parks, tree alleys and roadsides. Poplar trees of these two species are no longer preferred in Lithuanian gardens and city parks. *Populus × canadensis* is regarded as alien species. It is not likely for *C. ocellaris* to form breeding population in Lithuania because of shortage of host plants.

In conclusion, we report the finding of two lepidopteran species new for Lithuanian fauna. Increasing availability of host plants of *H. corticata* suggests that this species may become permanent inhabitant in Lithuania.

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Horisme corticata* (Treitschke, 1835) ir *Cirrhia ocellaris* (Borkhausen, 1792) – naujos Lietuvos faunos rūšysD. BATULEVIČIUS, G. ŠVITRA***Santrauka**

Aptiktos dvi Lietuvos faunai naujos drugių rūšys – *Horisme corticata* (Treitschke, 1835) ir *Cirrhia ocellaris* (Borkhausen, 1792). Vienas *H. corticata* patinas buvo sugautas 2023 08 24 Palangoje ir vienas *C. ocellaris* patinas – 2023 09 16 Radviliškyje. Šios rūšys yra būdingos Vakarų ir Centrinei Europai, tačiau pastaraisiais metais jos jau aptinkamos ir Šiaurės Europos šalyse. Straipsnyje trumpai aptariamas šių drugių rūšių paplitimas, plitimo tendencijos ir biologija.

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