CARPATOLECHIA AENIGMA (LEPIDOPTERA, GELECHIIDAE) – A NEW SPECIES FOR THE LITHUANIAN FAUNA

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Introduction

The Gelechiidae (Lepidoptera: Gelechioidea) is one of the largest families of microlepidoptera and include more than 4600 described species in the world referred to about 500 genera in four subfamilies (Hodges, 1999). The family has a worldwide distribution and is among the most diverse Lepidoptera fauna in many regions and habitats. Gelechiids are small-to medium-sized, often grey or brown moths (Powell, 1980, Karsholt *et al*., 2013) and differ from other families by the following characters: 1) hindwings subrectangular to trapezoidal with sinuous or concave termen and prominent apex; 2) forewings lanceolate to elongate – ovate with CuP absent; 3) retinaculum of the wing–coupling mechanism situated on the radial vein of the forewing in the female; 4) labial palpi long, reaching vertex of head, second segment often with ventral brush, third segment subequal in length with second, acute, rarely with dorsal brush of rough scales; 5) male gnathos forming a pair of lateral, articulated, symmetrical sclerites and usually with an articulated, mesial hook (Hodges, 1986, 1999; Lee & Brown, 2008; Bidzilya & Li, 2010). Larvae feed on various plants, spinning, rarely mining the leaves or boring into shoots and other plant parts (Patočka & Turčani, 2005).

Carpatolechia genus moths are rather small to rather large gelechiids. Labial palps are slender. Antenna simple. Forewings lanceolate to rather slender with tufts of erect scales. Hindwings rather broad with slightly emarginate termen before short apex. Abdomen with three basal tergites more or less yellowish (Huemer & Karsholt, 1999). *Carpatolechia aenigma* is found in France, Germany, the Netherlands, Italy, Austria, the Czech Republic, Slovakia, Poland, Hungary, Romania, Greece, Ukraine and Russia (the Ural Mountains and Lower Volga). Until now data on this species from Lithuania has not been known. At present, this is the northernmost area of distribution of this species.

Material and Methods

The material was collected using light trapping at night (160W DRL type bulb lamp was used). One specimen was caught in Kaišiadorys district, Neprėkšta, Gegužinės Miškas forest, 54.98667 N, 24.46861 E, 29 04 2014 by Vitalijus Bačianskas.

The species was identified using external appearance and genitalia. The terminology used for morphological structures mostly follows that of Huemer & Karsholt (1999). The appearance of moths was studied with a stereo microscope MOTIC SMZ–168. The forewing length was measured from the base of the wing to the end of its terminal fringe scales. The genitalia slides have been prepared mostly using the methods described by G. S. Robinson (1976) and E. Traugott-Olsen & E. S. Nielsen (1977). The genitalia were studied and some morphological structures sketched in glycerol prior to permanent mounting in Euparal. Aedeagus in male genitalia is shown with the genital capsule. The

specimen is deposited in the collection of Tadas Ivanauskas Zoological Museum in Kaunas (Lithuania).

Results and Discussion

Carpatolechia aenigma (Sattler, 1983) syn. *Teleiodes aenigma* Sattler, 1983; Huemer, Karsholt, 1999: 68; Elsner *et al*., 1999: 33; Lee, Brown, 2008: 49. The species is refered in the check-lists of many countries: Rakosy & Wieser, 2000: 32; Huisman *et al*., 2003: 95; Koster & Nieukerken, 2003: 35; Huemer, 2004: 187; Zlacká & Sádovský, 2005: 47; Saranova & Anikin, 2005: 257; Šumpich *et al*., 2011: 90.

Wingspan of moth is 10–13 mm (Fig. 1). Labial palps ringed light and dark. Head light greyish or brownish. Thorax and tegula are greyish brown. Antenna weakly ringed. Forewings are lanceolate to elongate-ovate, with wide variety of wing patterns. Hindwings are sub-rectangular to trapezoidal, with sinous or concave termen and prominent apex. Forewings are brownish grey with three pairs of black dots and 3–4 dark costal spots. Some specimens have many dark scales scattered over the forewings, especially in apical area (Huemer & Karsholt, 1999).

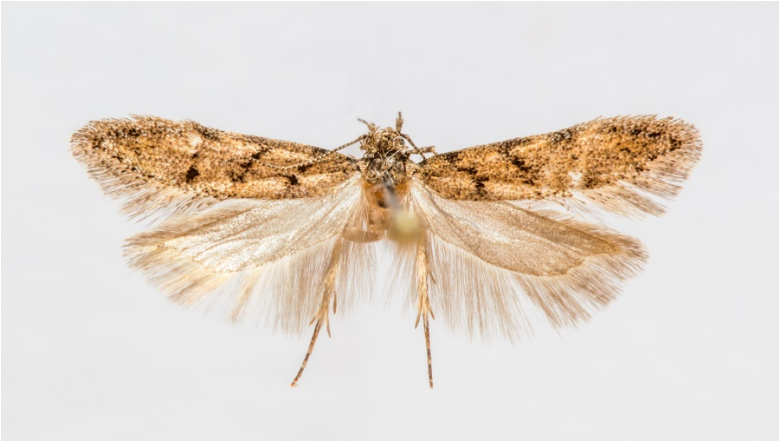

Fig 1. *Carpatolechia aenigma* (Stt.), male, Neprėkšta, Gegužinės Miškas forest, Kaišiadorys district, Lithuania.

Male genitalia (Fig. 2–3) were figured by Huemer & Karsholt, 1999. Uncus is moderately long, spatulate, with slightly rounded apex; gnathos absent; tegumen deeply emarginated anteriorly; valva slender, digitate to completely reduced; processes of juxta broadly thumb-shaped, moderately short with pair of processes; aedeagus moderately long.

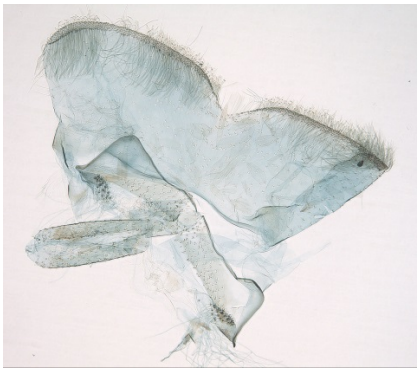

Fig. 2. Male abdominal segment VIII of *Carpatolechia aenigma* (Stt.)

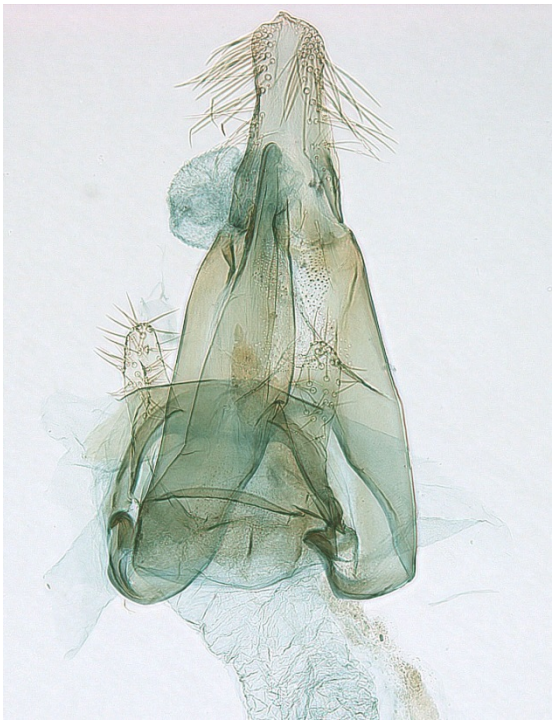

Fig. 3. *Carpatolechia aenigma* (Stt.) male genitalia general view

Early stages. Body of larva is light green, sometimes tinged with pink or red; head and prothoracic shield yellow, light brown, or black; pinacula black (Emmet, 2002). Pupa is less than 6 mm in length; maxillary palpi touching or adjacent to genae; antennae adjacent to each other for about 3 x greater distance than the length of visible ends of metathoracic legs; pronotum with the midline length at least 1/3 its greatest length; prothoracic legs separated from oculi; abdomen usually lacking setae (Patočka & Turčáni, 2005).

Biology. Host-plant unknown. They occur in forest-steppe habitats. The adults have been recorded from May to August. *Carpatolechia aenigma* is distributed in Southern parts of Central Europe and eastern Europe to south-western Russia, not yet recorded from most of the Mediterranean countries (Huemer & Karsholt, 1999).

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Carpatolechia aenigma (Lepidoptera, Gelechiidae) - nauja Lietuvos faunos rūšis

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Santrauka

Lietuvoje pirmą kartą aptikta Gelechiidae šeimos drugių rūšis *Carpatolechia aenigma* (Satt.). Tai šiauriausia šios rūšies paplitimo vieta. Nurodyti rūšiai būdingi morfologiniai požymiai, pagrindiniai biologijos bruožai, pateiktos Lietuvoje sugauto viso drugio bei patino lytinio aparato nuotraukos.

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