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Research article

Klimeschia transversella (Zeller, 1839), a new species for Bulgaria (Insecta: Lepidoptera: Douglasiidae)

Tsvetomir Tsvetanov[1], Boyan Zlatkov[2]

(1) Lyulin 10, 1335 Sofia, Bulgaria, tsv_tsvetanov@abv.bg
(2) Institute of Biodiversity and Ecosystem Research, Bulgarian Academy of Sciences, 1 Tsar Osvoboditel Blvd, 1000 Sofia, Bulgaria, bzlatkov@gmail.com; https://orcid.org/0000-0002-5704-1634

Abstract: *Klimeschia transversella* (Zeller, 1839) is reported for the first time from Bulgaria. The species was found on *Thymus* plants in Vinarovo Village, Vidin Province, Northwestern Bulgaria. Moths and female genitalia are illustrated.

Keywords: faunistics, genitalia, Microlepidoptera

Introduction

Similarly to many Microlepidoptera families, the fauna of the family Douglasiidae is poorly known in Bulgaria. According to the Fauna Europaea web site (Gaedike, 2013), 13 species are listed for Europe – 10 from the genus *Tinagma* (Zeller, 1839) and 3 from the genus *Klimeschia* (Amsel, 1938). For the country, only *Tinagma anchusella* (Benander, 1936) is listed. The presence of this species in Bulgaria is confirmed by Gaedike (2009) and there is also a record by Šumpich & Skyva (2014). Two new species for Bulgaria have been recorded recently (Gaedike, 2018): *T. balteolella* (Fischer von Röslerstamm, 1841) and *T. ocnerostomella* (Stainton, 1850). In fact *T. balteolella* has been recorded for the first time by Drenowski from Lyulin (Drenowski, 1930) and Slavyanka mountains (Drenowski, 1936).

A single moth was observed and photographed by the first author in 2021 in a private yard in Vinarovo Village, Vidin Province. The specimen was found on *Thymus* plants and was not collected, which prevented its certain identification (Fig. 1A). One year later, in the same locality, another single moth was observed and collected by the first author, again on *Thymus* plants. The collected specimen confirmed the initial assumption that this is *K. transversella*. Keeping in mind that the family is poorly known in Bulgaria, other new species awaiting discovery may be expected.

This paper presents the first record of *Klimeschia transversella* (Zeller, 1839) in Bulgaria.

Methods

The living moth was photographed with an EOS 1200D (Canon) digital camera. The collected moth was set and photographed under a stereomicroscope Stemi 2000-c (Zeiss) equipped with an EOS 1300D (Canon) camera. The genitalia were prepared according to Robinson (1976), observed and photographed through an Amplival (Carl Zeiss Jena) compound microscope with an EOS 2000D (Canon) camera attached. The morphological description follows Gaedike (1974).

Results and discussion

Klimeschia transversella (Zeller, 1839)

Material: specimen not collected, Bulgaria, Vidin Province, Vinarovo Village, 44.0988° N, 22.8127° E,

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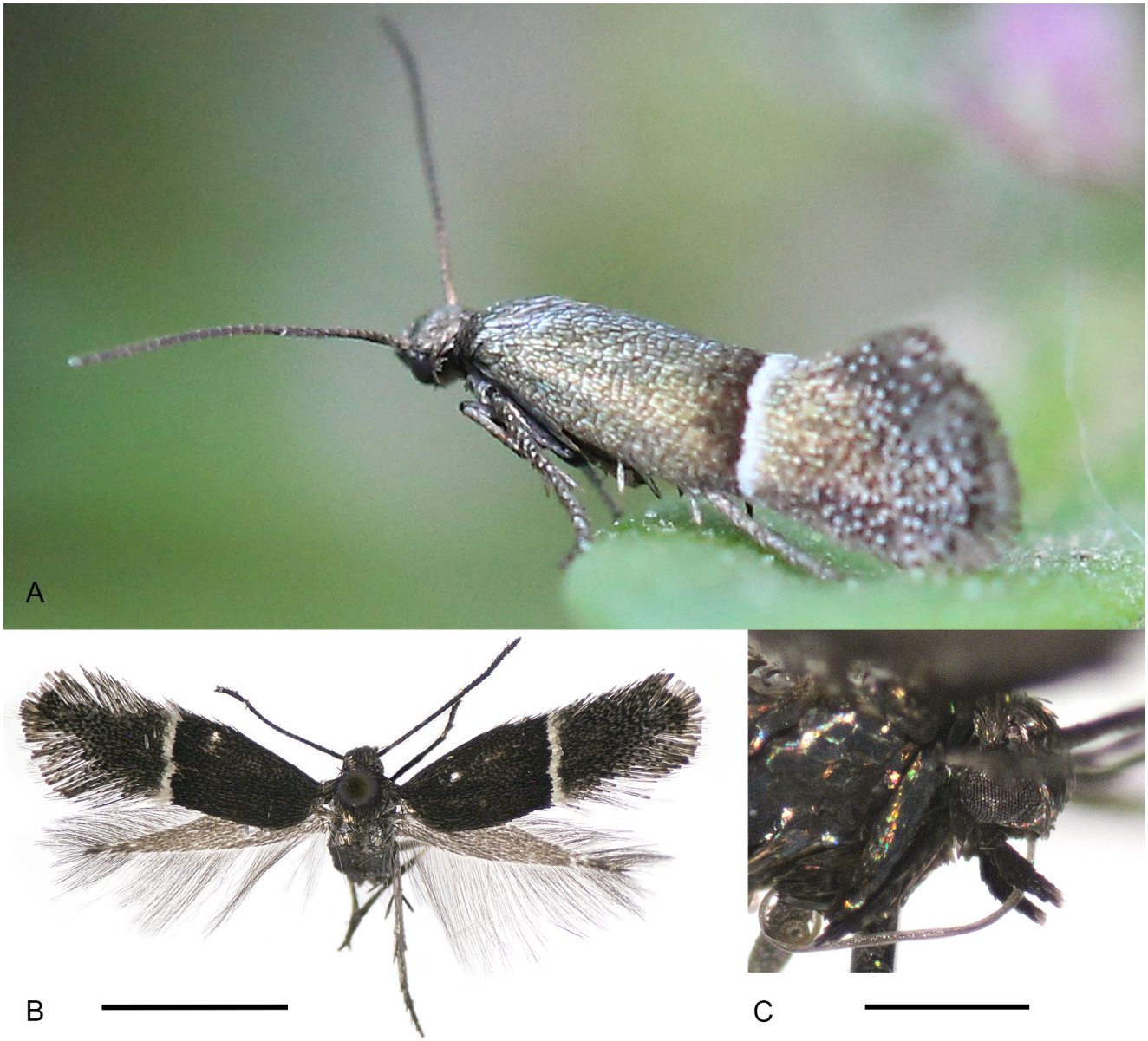

Fig. 1. *Klimeschia transversella*, Vinarovo, Bulgaria – (A) Living moth, 5.v.2021; (B) Set moth, 9.iv.2022; (C) Lateral view of head, note a lack of ventral tuft of scales on the labial palps, a diagnostic character for the genus. Scale bars: (B) 2 mm; (C) 0.5 mm.

147 m a.s.l., 5.v.2021, on *Thymus*; 1 ♀, the same locality, 9.iv.2022, genitalia slide No. 1/18.5.2022, in the collection of Institute of Biodiversity and Ecosystem Research, Sofia, Bulgaria.

Morphological notes (based on collected material): wingspan 7.4 mm, forewing length 3.4 mm. Forewings dark grey-brown, with white transverse band (typical for females) and greyish suffusion in apical area consisting of bicolour scales. The wing pattern of the females of this species (Fig. 1A, B) is very similar to *Tinagma balteolella*. Externally, it can be distinguished by absence of a tuft of scales at the tip of the second segment of labial palps (Fig. 1C). From other *Klimeschia* species it is easily distinguished by the genitalia. The female genitalia are characterised by ostium with cyathiform apical part with incised posterior and serrated lateral margins, basal part cylindrical with minute spines (acanthae); anterior part of ductus bursae with large triangular teeth; signum consisting of irradiating numerous long flat blades

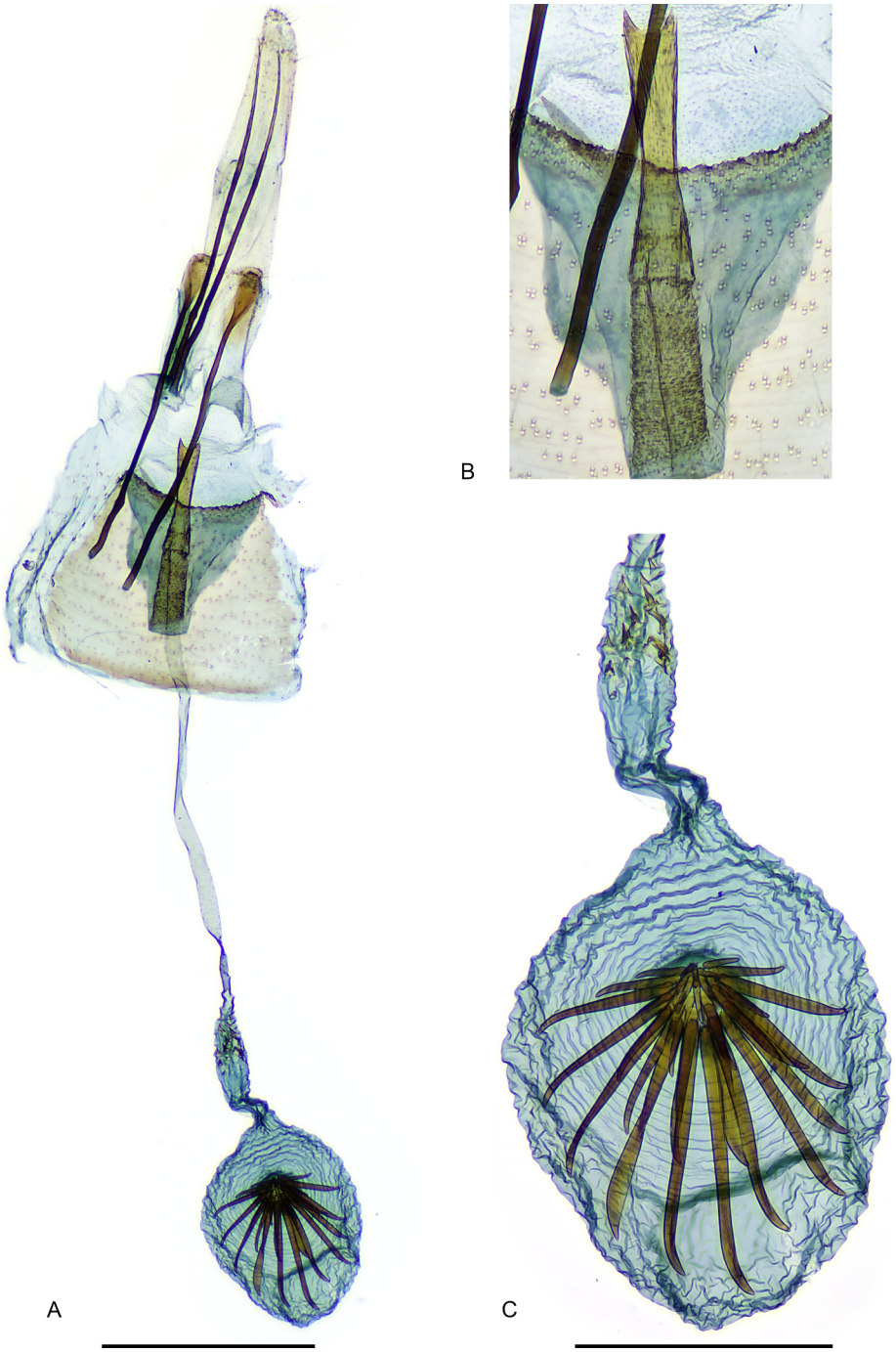

Fig. 2. Female genitalia of *Klimeschia transversella* of the specimen from Fig. 1B – (A) Whole genitalia; (B) Ostium; (C) Corpus bursae and anterior part of ductus bursae with signa. Scale bars: (A) 500 μm, (B, C) 250 μm.

(Fig. 2). No male specimen was available for examination. A detailed description is provided by Gaedike (1974).

Notes on biology: The host plant of the larvae is usually *Thymus* (Gaedike, 1974, Zagulyaev, 1981), but also *Helichrysum, Gnaphalium* and *Potentilla* (Zagulyaev, 1981). The moths fly from May to July (Zagulyaev, 1981).

Notes on distribution: *Klimeschia transversella* is known from nearly entire Europe: Austria, Belarus, Belgium, Bosnia and Herzegovina, Croatia, the Czech Republic, Denmark, Estonia, Finland, France,

Germany, Greece, Hungary, Italy, Latvia, Lithuania, North Macedonia, Poland, Portugal, Romania, Russia, Slovakia, Spain and Sweden (Gaedike, 1996, 2013). Lepiforum e.V. (2022) illustrates specimens from Germany, Slovakia and Spain. Outside Europe it occurs in Turkey (Koçak & Kemal, 2009) and Caucasus region (Gaedike, 2021).

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