ANNALS OF THE UPPER SILESIAN MUSEUM IN BYTOM
ENTOMOLOGY

Vol. **29 (online 004)**: 1–6 ISSN 0867-1966, eISSN 2544-039X (online) Bytom, 24.06.2020

Adam Klasiński[1,2]

Elachista laurii Bidzilya & Budashkin, 2016 (Lepidoptera: Elachistidae) – a new species for the Caucasian fauna

http://doi.org/10.5281/zenodo.3906324

[1] Częstochowskie Koło Entomologiczne przy Muzeum Częstochowskim, Aleja NMP 47, 42-217 Częstochowa, Poland

[2] ul. Łukasińskiego, 42-200 Częstochowa, Poland, e-mail: adamklas@op.pl

Abstract: The paper provides new records of *Elachista laurii* Bidzilya & Budashkin, 2016 from the Caucasus (Lepidoptera: Elachistidae). A hitherto unknown female is described and illustrated.

Key words: Lepidoptera, *Elachista*, *Elachista laurii*, new record, faunistics, taxonomy, Georgia.

INTRODUCTION

Research into the Elachistidae of the Caucasus began with the finding of *Elachista gangabella* Zeller, 1850 in the early 20th century (Filipiev 1926). By the beginning of the 21st century, 47 species had been found, 27 of which were first-time records (Sruoga *et al*. 2017). With sizes ranging from 4 to 20 mm, elachistids belong to the micromoths (Kaila 2011). The concealed life style of elachistid larvae and the difficulties in obtaining material for breeding mean that many gaps still remain in our knowledge of the biology of the numerous species already familiar to science. One such example is *Elachista laurii* Bidzilya & Budashkin, 2016. To date, only the males of this species have been described; the life history and genitalia of the female have not yet been characterized. This species has been recorded in south-eastern Ukraine (Luhansk district; the Chomutovskaya and Proval'skaya steppe nature reserves) and Russia (the Ulyanovsk, Saratov and Volgograd regions). Hitherto, these moths have been found exclusively in steppe habitats (Bidzilya *et al.* 2016).

MATERIALS AND METHODS

Elachista laurii Bidzilya & Budashkin, 2016

3♂♂, 2♀♀, 5-21.05.2019, Georgia, Kartli, Gomi 41°54'19''N/44°22'50''E, 700 m a.s.l., leg. A. Klasiński.

In contrast to all the previous specimens of *E. lauri*, the moths from Georgia were trapped in a pasture-like locality. The closest surviving Shiraki Steppe lies in the interfluve of the

Rivers Iori and Alazani of the Kura river basin in south-eastern Georgia, some 150 km from the border with Azerbaijan. The moths were netted at dusk in the light of a portable lamp. The genitalia were prepared using the methods of Robinson (1976) and Traugott-Olsen & Nielsen (1977). The voucher specimens are stored in the author's collection. This is a new species for both the Caucasus and Georgia.

The imagines were examined under a Wild M8 stereoscopic microscope and photographed using a Nikon PB-5 bellows and an AF Micro Nikkor 60mm lens. Male and female genitalia were examined in glycerol. The male genitalia were photographed in a finished preparation in Euparal (Figs. 5–7), whereas one of the photographs shows details of the female genitalia in glycerol (Figs. 8, 9). The photographs were taken with a Jenamed 2 microscope, a Nikon D5300 camera and the CombineZP program.

Female genitalia:

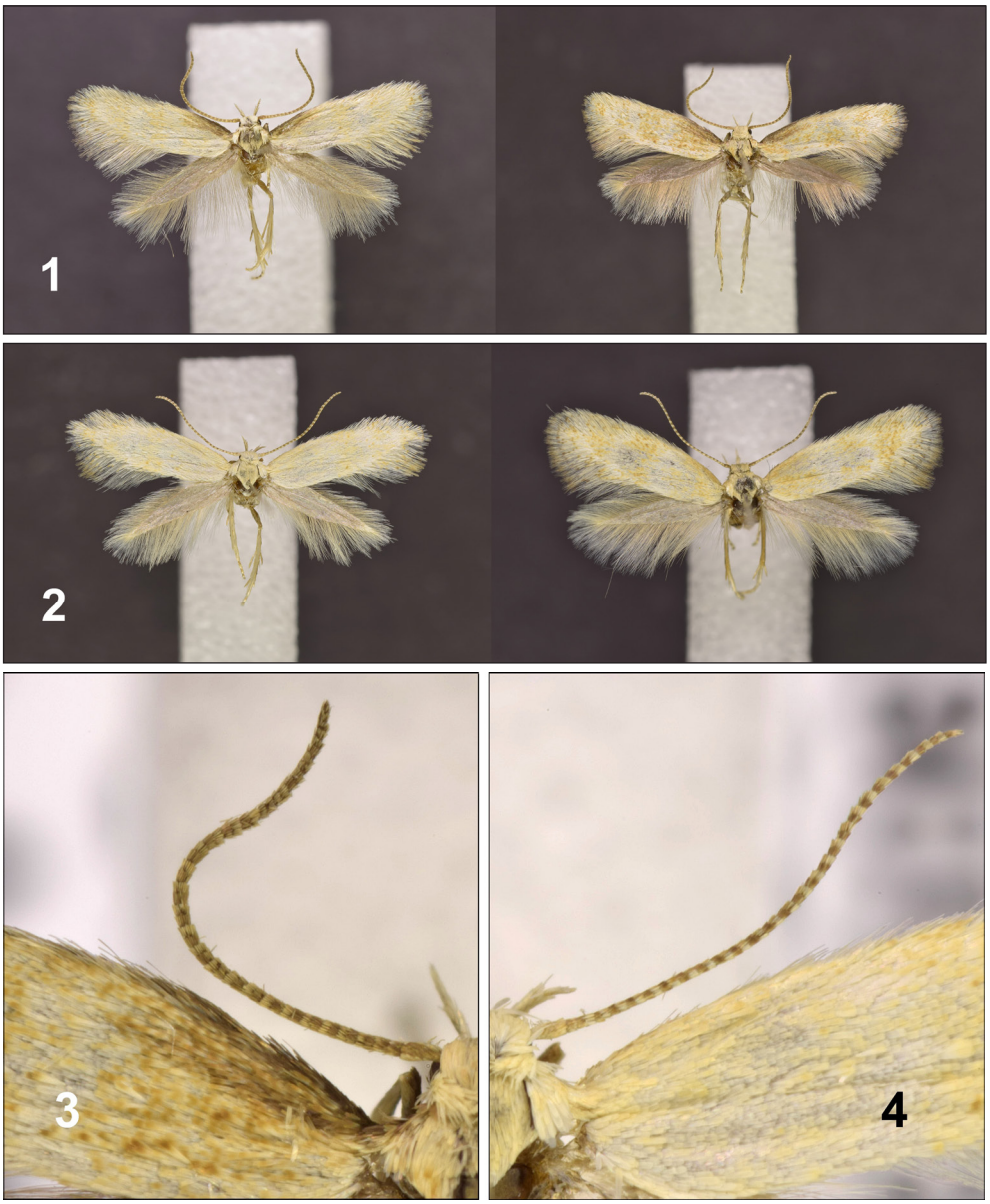
(Fig. 8–9) Papillae anales triangular, joined ventrally, sclerotized up to the half of their length. Apophyses posteriores straight, 413 μm long. Apophyses anteriores 300 μm long, slightly bent from their middle up to the distal end. Antrum sleeve-shaped. Ostium clearly delimited. Ductus bursae narrow, gradually expanding into the corpus bursae, which is of medium width. Signum 75-88 μm long, lying along the longer axis of the corpus bursae, flat, elongate, its margins irregularly spinose. The total length of the female genitalia is 2250 μm.

DISCUSSION

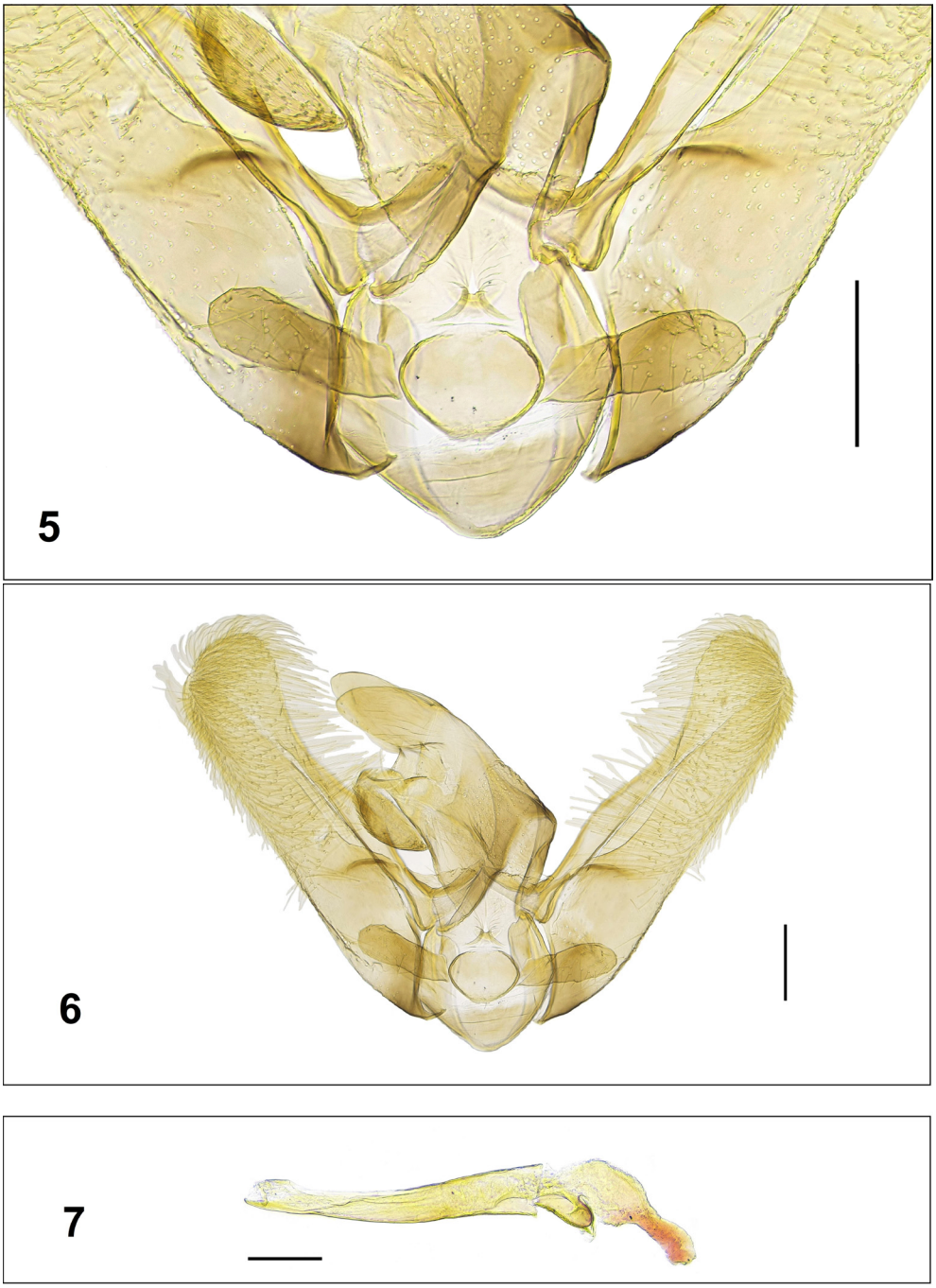
Males and females of *Elachista laurii* Bidzilya & Budashkin, 2016 (Figs. 1–2) were collected at the same locality on the same day using the same technique: the moths were flushed from sward vegetation with the aid of a portable light. Comparison of the characters of male adults with the morphological appearance of females reveals some differences. The wing span is 8.6-9.3 mm in females and 8.8-9.7 mm in males. Parts of the frons are alternately white and light grey in the 60 μm wide central part, which is narrower than the male antenna – here 80 μm wide (Fig. 3–4). The forewings in both sexes have the same fine pattern, but this is less distinct and paler in females, especially in the costal region. The hindwing in the female light grey, paler than in the male. (Figs. 1–2).

ACKNOWLEDGEMENTS

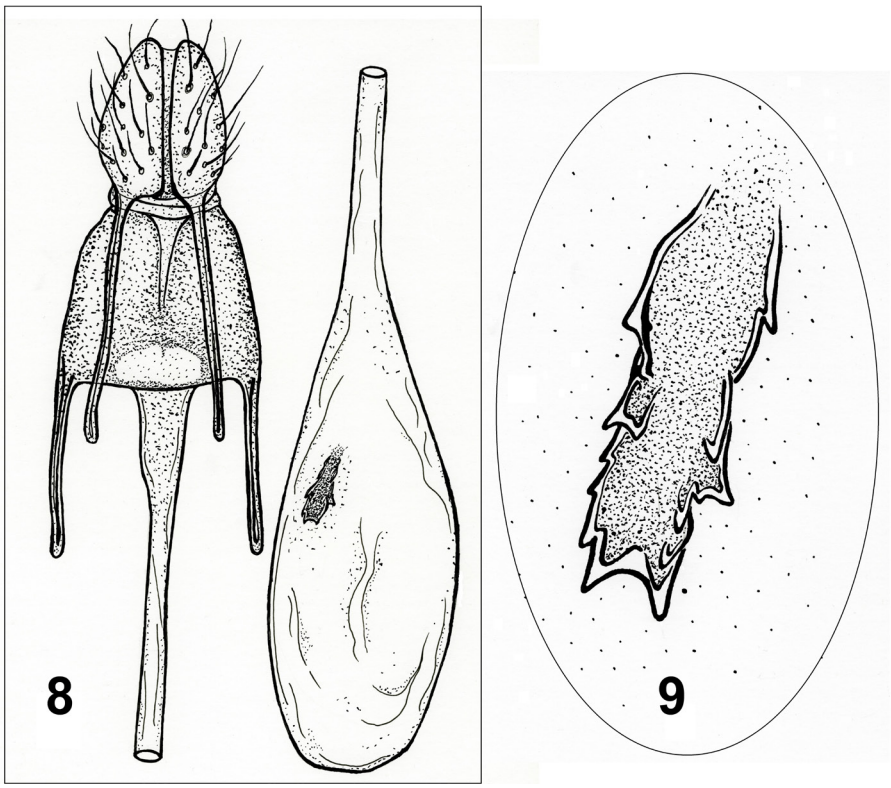
I would like to thank Dr Lauri Kaila of the University of Helsinki for confirming my identification of these moths, and also Professor Jarosław Buszko of the Nicolaus Copernicus University (Toruń), Dr Roland Dobosz of the Upper Silesian Museum (Bytom) and Sergey Yu. Sinev of the Institute of Zoology, Russian Academy of Sciences (St. Petersburg) for assessing an earlier version of this paper and for their valuable comments.



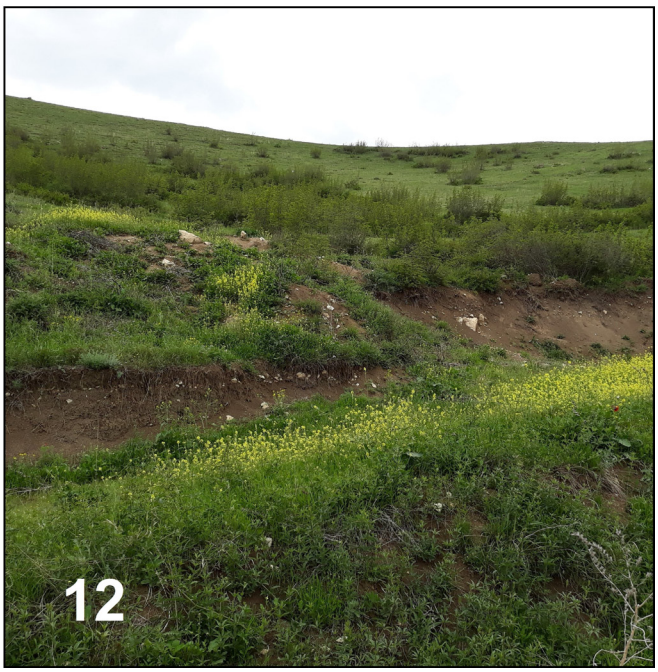
Figs. 1–4. *Elachista laurii* Bidzilya & Budashkin, 2016, 1 – males; 2 – females; 3 – male: head and basal part of the wing; 4 – female: head and basal part of the wing (photos A. Klasiński).



Figs. 5–7. Genitalia of ♂ *Elachista laurii* Bidzilya & Budashkin, 2016 (Slide No. AK 5135 Adam Klasiński): 5 – region of juxta; 6 – overall view; 7 – aedeagus. Scale = 100 μm. (photos A. Klasiński).



Figs. 8–9. Genitalia of ♀ *Elachista laurii* Bidzilya & Budashkin, 2016, 8 – overall view; 9 – signum (drawings A. Klasiński).



Figs. 10–12. Habitat of *Elachista laurii* Bidzilya & Budashkin, 2016 in the vicinity of Kartli, Georgia (photos A. Klasiński).

REFERENCES

Bidzilya O., Budashkin Yu., Zhakov A. 2016. Checklist of grass-mining moths of Ukraine with description of one new species (Lepidoptera: Elachistidae). *SHILAP Revista de Lepidopterología* 44(173): 17–38.

Filipiev N. 1926. Mikrolepidopterenfauna des Gouvernements von Stavropol (Russland, Ciscaucasien). *Archiv für Naturgeschichte* 91(1): 94–118.

Kaila L. 2011. Elachistine moths of Australia (Lepidoptera: Gelechioidea: Elachistidae). *Monographs on Australian Lepidoptera*. Vol. 11. CSIRO Publishing, Melbourne: 443 pp.

Robinson G.S. 1976. The preparation of slides of Lepidoptera genitalia with special reference to the Microlepidoptera. *Entomologist's Gazette* 27: 127–132.

Sruoga V., Sinev S.Yu., Rocienė A. 2017. The Elachistidae (Lepidoptera: Gelechioidea) of Caucasus, with description of three new species. *Zootaxa* 4338(2): 241–262. https://doi.org/10.11646/zootaxa.4338.2.2.

Traugott-Olsen E., Nielsen E.S. 1977. The Elachistidae (Lepidoptera) of Fennoscandia and Denmark. *Fauna Entomologica Scandinavica* 6: 1–299.

Accepted: 3 June 2020; published: 24 June 2020