

Paradasycera insignis (Christoph, 1882) - a new species for Europe from eastern Slovakia (Lepidoptera: Oecophoridae)

Zdenko Tokár, Jan Šumpich & Marcel Harman

Abstract

Paradasycera insignis (Christoph, 1882) has been recorded in Slovakia for the first time. This also presents a first record for Europe as the species was first described from the vicinity of Vladivostok in Russia, and all existing records thus far have come from the Russian Far East. Colour photographs of the adult and its habitat, as well as an illustration of the female genitalia are included.

Keywords: Lepidoptera, Oecophoridae, *Paradasycera insignis*, new record, barcoding, female genitalia, Slovakia, Europe.

Paradasycera insignis (Christoph, 1882) - una nueva especie para Europa del este de Eslovaquia
(Lepidoptera: Oecophoridae)

Resumen

Paradasycera insignis (Christoph, 1882) se ha registrado por primera vez en Eslovaquia. Se trata también de un primer registro para Europa, ya que la especie se describió por primera vez en los alrededores de Vladivostok, en Rusia y todos los registros existentes hasta ahora procedían del Lejano Oriente ruso. Se incluyen fotografías en color del adulto y su hábitat, así como una ilustración de la genitalia de la hembra.

Palabras clave: Lepidoptera, Oecophoridae, *Paradasycera insignis*, nuevo registro, código de barras, genitalia de la hembra, Eslovaquia, Europa.

Introduction

Hugo Theodor Christoph first described *Paradasycera insignis* in 1882, based on one female collected in the vicinity of the Russian town of Vladivostok (Christoph, 1882). Christoph placed the species in the genus *Incurvaria* Haworth, 1828 (with a question mark) due to its similarity to some members of the genus. Lvovsky & Sinev (2011) reclassified the species as belonging to the family Oecophoridae, though they credit Ebbe Schmidt Nielsen with being the first to draw this conclusion (albeit unpublished). Unique genital characteristics as well as external morphology of the moths supported the establishment of a new genus - *Paradasycera* Lvovsky & Sinev, 2011.

Only a few examples of this remarkable species have ever been collected, all in the Russian Far East. In addition to the holotype caught in 1877 (Christoph, 1882), *P. insignis* was also found in the Spassk District in 1929 (both Primorye), then in 2006 near Khabarovsk (Lvovsky & Sinev, 2011), with an additional two specimens again collected in Primorye (Sikhote-Alin Nature Reserve) in 2017 and 2018 (Anonymus, 2019, Sinev, pers. comm.). Considering the above, this new Slovak record is extremely interesting, and further data will no doubt be needed to determine the true distribution of this species.

Material and methods

The study specimen was found by the third author during afternoon hours on an old rotting trunk of hornbeam (*Carpinus betulus*) situated in the middle of the forest.

Female genitalia were dissected following the usual procedure for small Lepidoptera and stored in a small plastic vial filled with glycerol. Genitals were illustrated using Indian ink and water-soluble paint on transparent drawing paper. Photographs of the adult and locality were taken using Canon PowerShot G11 and Samsung Galaxy A14 digital cameras.

A tissue sample (dry leg) from the study specimen was successfully processed at the Canadian Centre for DNA Barcoding (CBG, Biodiversity Institute of Ontario, University of Guelph) according to the methodology of DeWaard et al. (2008), resulting in 359 base-pair DNA barcode segments of the mitochondrial COI gene (cytochrome c oxidase 1). This sequence, along with details of the sequenced specimen, were uploaded to the Barcode of Life Data Systems (BOLD; Ratnasingham & Hebert, 2007).

The study specimen is currently being stored in the collection of Marcel Harman (RCMH).

Results

Paradasycera insignis (Christoph, 1882)

Incurvaria? insignis Christoph, 1882. *Bull. Soc. imp. Nat. Moscou*, 56(4), 433

Material examined: SLOVAKIA, Ondavská vrchovina [highlands], Kladzany, Stavy, 48.8899N 21.7577E, 1 ♀, 1-VI-2015, (Barcode data NMPC-LEP-1236), M. Harman leg. (RCMH).

Molecular data: BIN: BOLD:ADP3229. The intraspecific average distance of the barcode region is 0.0% (n=3). The minimum distance to the nearest neighbour, a geometrid species *Hypomecis quaerenda* Herbulot, 2000 (BIN: BOLD:ACI9729), is 8.19% (p-dist). In addition to the Slovak sample, barcodes were also successfully marked for two other specimens from the Russian Far East, one of which is public (sample ID ON533877; 654 bp).

Biology: unknown. Presented specimen was collected during the daytime, and according to Lvovsky & Sinev (2011) the species can be attracted to light.

Distribution: Russian Far East (Primorye, Khabarovsk Krai), Slovakia.

Remark: Lvovsky (2019) placed *P. insignis* between two oecophorid species, *Dasycera oliviella* (Fabricius, 1794) and *Esperia sulphurella* (Fabricius, 1775), but this placement should be considered provisional. Both species have since been barcoded and are clearly not closely related to *P. insignis*. Additionally, the designation of *Hypomecis quaerenda* as the nearest neighbour is doubtful due to an absence of barcode results for many Palearctic oecophorid species. Systematic classification of the species is expected to will be the subject of an upcoming work (Sinev, pers. comm.).

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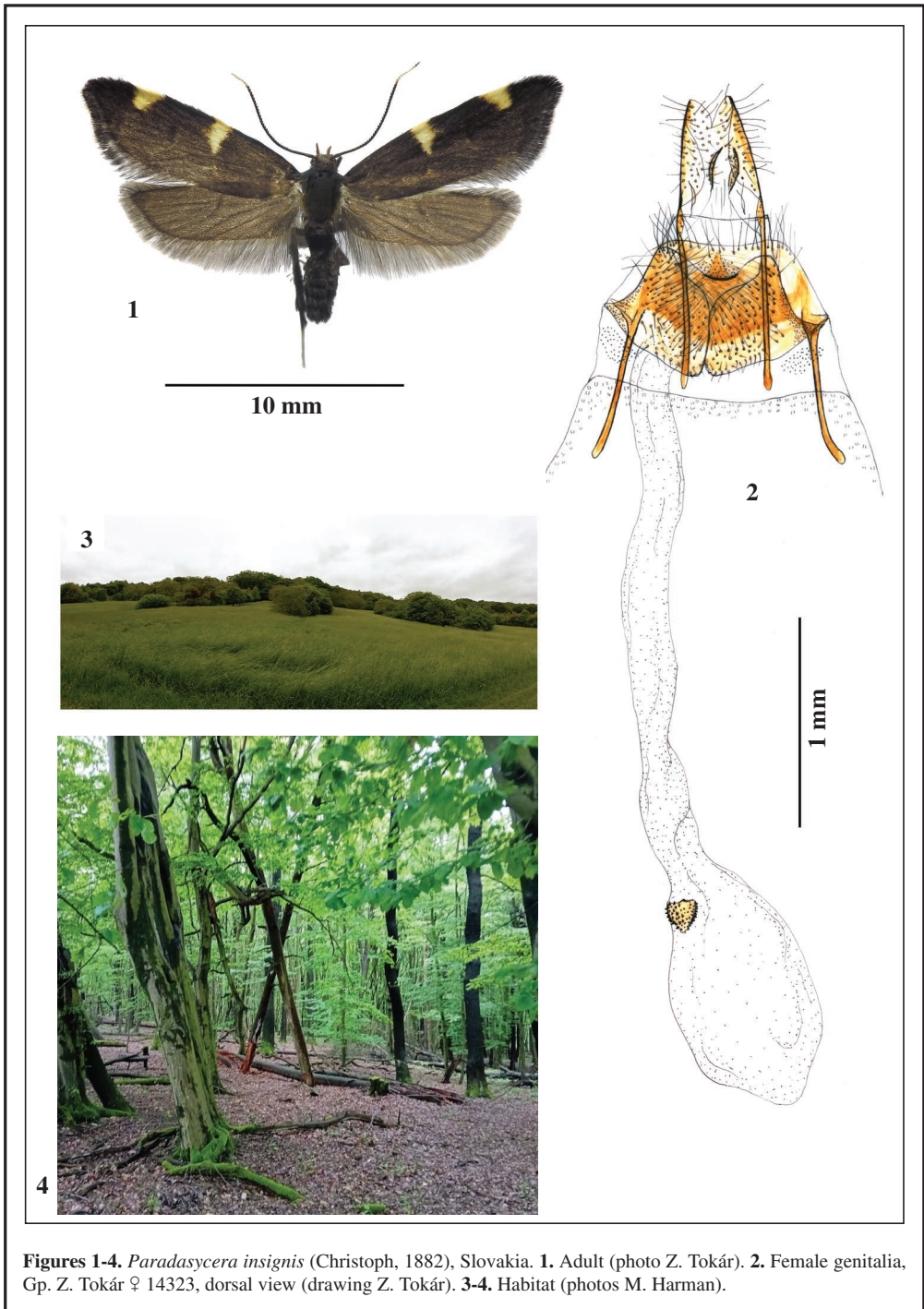
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Figures 1-4. *Paradasycera insignis* (Christoph, 1882), Slovakia. **1.** Adult (photo Z. Tokár). **2.** Female genitalia, Gp. Z. Tokár ♀ 14323, dorsal view (drawing Z. Tokár). **3-4.** Habitat (photos M. Harman).