

**Occurrence of *Idaea spissilimbaria* (Mabille, 1888) in Hungary  
(Lepidoptera: Geometridae)**

Balázs TÓTH

*Hungarian Natural History Museum, Department of Zoology, Lepidoptera Collection,  
H-1088 Budapest, Baross utca 13, Hungary. E-mail: toth.balazs@nhmus.hu*

**Abstract** – One male specimen of the rarely collected *Idaea spissilimbaria* (Mabille, 1888) (Lepidoptera: Geometridae: Sterrhinae), previously only reported from four European countries, came to light on 1 July 2023 at the terrace of a resort in the town of Kőszeg, Western Hungary. The occurrence is the first record from Hungary, and the second record from the Carpathian Basin, as the species has been known from Transylvania (Romania). The collecting site is the northernmost one and it is at the lowest elevation among all known localities of the species.

**Key words** – accidental introduction, collecting at light, new record, faunistics

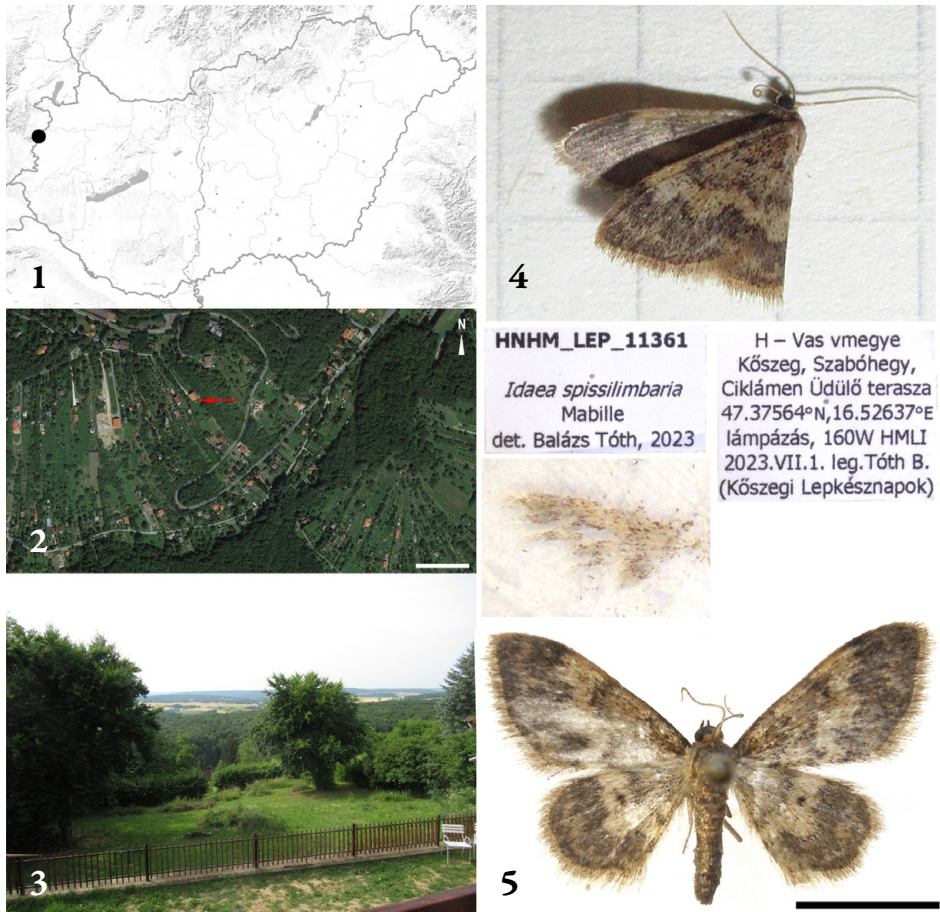
## INTRODUCTION

From 30 June to 2 July 2023 an event called “Kőszegi Lepkésznepok” (= Lepidopterist Days at Kőszeg) was organised for Hungarian lepidopterists, both amateurs and professionals, to collect data from the Kőszeg Mountains, Western Hungary, to distribute knowledge on field work and identification of Lepidoptera, as well as to maintain and improve social contacts. The program of this event included observing moths at light. On 1 July an interesting specimen from the subfamily Sterrhinae (Lepidoptera: Geometridae) came to light which remained unidentified in the field. The aim of this paper is to report on the identity of this specimen, to give details on the conditions of the collecting, to put this record into the context of earlier observations of the species, and to report it as a species new to Hungary.

## MATERIAL AND METHODS

The specimen was collected on 1 July in the town of Kőszeg, Vas County (Fig. 1), at the terrace of a resort. The terrace is situated 3 m above ground level. A 0.5 m

wide and 1 m tall stand with shelves was covered with a white sheet which was illuminated with a 160 W HMLI bulb emitting mixed light. The equipment was placed at the terrace in order to protect the bulb from rain. The specimen came to the lit side of the sheet shortly after switching the light, around 21:15 (local time), immediately settled down with spread wings, like the general resting position of *Idaea* spp., and made no further movement.



**Figs 1–5.** *Idaea spissilimbaria* (Mabille, 1888) in Hungary, 1 = collecting site (black dot) on the map of Hungary, 2 = satellite view of the collecting site (red arrow) in town Kőszeg, from Google Maps, 3 = view from the collecting site, 4 = freshly collected specimen, the grid represents 5 mm, 5 = set specimen and its labels; note the damaged pattern of the left forewing and the scales preserved separately (above). Scale bars = 100 m (Fig. 2), 5 mm (Fig. 5) (photos by Orsolya Dombi (Figs 3, 4) and Balázs Tóth (Fig. 5))

During the collecting day the air humidity was high due to a weak cold front. Local showers and thunderstorms occurred around the locality from 14:00 until dusk but there was no rain at the site. The peak temperature was around 30 °C which decreased to 20 °C by the time of collecting. The wind was light.

The habitat is situated on a south-southeastern slope of a hill at the edge of the Kőszeg Mountains with gardens, orchards, vineyards, scattered grassland and *Quercus* forest with *Castanea sativa* (Figs 2, 3). The elevation is 370 m. The bedrock is slate, the dominant one of the Kőszeg Mountains, which are among the easternmost parts of the Alps.

The specimen is deposited in the Hungarian Natural History Museum, Budapest (HNHM) where it was pinned and set in the traditional way. The right hind leg was removed and preserved in 96% solution of ethanol for genetic purposes. After setting it was identified as a male of *Idaea spissilimbaria* (Mabille, 1888) by wing pattern from the monograph of HAUSMANN (2004). The set specimen was photographed with an Olympus Camedia C 7070 camera. Verbatim label data are as follows (“|” stands for the end of a line, “||” for the end of a label, translations in square brackets):

H – Vas vmegye [County] | Kőszeg, Szabóhegy, | Ciklámen Üdülő terasza [terrace of Resort Ciklámen] | 47.37564°N, 16.53637°E | lámpázás [collecting at lamplight], 160W HMLI | 2023.VII.1. leg. Tóth B. | (Kőszegi Lepkésznepok) [Lepidopterist Days at Kőszeg] || HNHM\_LEP\_11361 | *Idaea spissilimbaria* | Mabille | det. Balázs Tóth, 2023.

The specimen was in good condition at capture (Fig. 4) but during the relaxing process the left forewing upperside stuck to the underlay of the relaxing box in resulting many scales detached from the wing surface. The detached scales were collected via pressing a piece of transparent, colourless adhesive tape to the underlay, more or less preserving the original pattern of the wing (Fig. 5).

## RESULTS AND DISCUSSION

### *Idaea spissilimbaria* (Mabille, 1888)

(Figs 4, 5)

This species has been recorded, apart from the type locality (Algeria, but doubtful according to HERBULOT (1968)), from Southern France (Alps: DUFAY 1983), Corsica (HERBULOT 1968), Italy (PINZARI *et al.* 2010), Romania (STĂNESCU & HAUSMANN 2002) and Bulgaria (DUFAY 1983). It is a rare species with disjunct distribution, until 2004 only nine specimens were known in collections (HAUSMANN 2004) but later on few further observations were made, mainly in Southern France (DROUET & FILOSA 2015, RENNWALD & RODELAND 2023).

The habitat preference is not precisely known, all specimens were observed between 870 m and 1300 m above sea level (= a.s.l). Flight time is from mid-July to mid-August, based on limited data. Immature stages and host plants are unknown (HAUSMANN 2004).

*Idaea spissilimbaria* appears not to be a variable species regarding its size and pattern, what is supported also by the new specimen. It can be immediately distinguished from all Sterrhinae species recorded in Hungary (and in the whole Carpathian Basin) due to its small size and the dirty sandy ground colour of the wings with a broad, jagged, dark band in the marginal field. The habitus may be similar to the dark, contrasted form of *I. biselata* (Hufnagel, 1767) but the dark marginal band of *I. spissilimbaria* is strongly jagged, while this pattern is only slightly curved in *I. biselata* (VARGA 2010). In the European fauna *I. spissilimbaria* is similar to *I. manicaria* (Herrich-Schäffer, 1852), *I. subsaturata* (Guenée, 1858) and *Cleta ramosaria* (Villers, 1789) but the dark marginal band of *I. spissilimbaria* is always more jagged than in those three species (HAUSMANN 2004).

The collecting site in Hungary is somewhat reminiscent to those in Bulgaria reported by BESHKOV (2010), dominated by gardens, grassland and neighbouring forest. The following differences may be important: in Bulgaria the sites were situated around 900 m a.s.l while in Hungary the site was at much lower elevation, 370 m; the bedrock in Bulgaria was calcareous while in Hungary it was slate; and the nearby forest in Bulgaria was made of *Carpinus* species while in Hungary it was an oak woodland.



Fig. 6. Worldwide distribution of *Idaea spissilimbaria* (Mabille, 1888), dots: earlier records, square: the new record from Hungary (source of map: [www.freeworldmaps.net](http://www.freeworldmaps.net))

The closest locality of any earlier record is from the opposite (eastern) end of the Carpathian Basin, with the distance of ca. 600 km. It is situated in Transylvania (Romania): one male specimen is known from the Cindrel (= Cibin) Mountains, deposited in the Zoological State Collection, Munich, Germany (STĂNESCU & HAUSMANN 2002). Perhaps this site is the most similar one to the locality in Hungary in a zoogeographical point of view. The locality in Central Italy is nearly as close to Kőszeg (ca. 620 km) as the one in the Cindrel Mountains.

The record in Hungary represents the northernmost occurrence of the species, the single known site in Hungary, but the second one in the Carpathian Basin (Fig. 6). It is worth to mention that it is at the lowest elevation of all known observations, and also the date of collecting is the earliest one in the year.

Despite the intensive field work in many European countries, including the establishment of light trap networks in the last decades, the species was found by single specimens at the majority of its localities. These records, due to their scarcity, do not lead to any conclusion regarding to either the habitat requirement of *I. spissilimbaria*, or the direction and reasons of a possible expansion. It can be stated that the majority of the records are accidental and, at least in the Carpathian Basin, highly unexpected. Several unexpected species of Macroheterocera was found in the last decade in Hungary, either remaining single records (e.g. KATONA *et al.* 2020) or becoming widespread (e.g. SZEŐKE & AVAR 2019). Various theories can be constructed to explain the single occurrence of *I. spissilimbaria* in Hungary, such as accidental introduction, areal expansion or even being native although very rare and / or overlooked, but these will remain speculative until further observations will become available. It would be desirable to return to the site several times in the flight time of the species in order to collect further specimens in the next years.

\*

*Acknowledgements* – I am grateful to Ádám Faragó (Őriszentpéter, Hungary) and István Szentirmai (Őrség National Park Directorate) for organising this collecting event. I am indebted to Veronika Both (Budapest, Hungary), Ádám Faragó and Csaba Szabóky (Budapest, Hungary) for their various kind help in establishing the collecting equipment. Thanks are due to Orsolya Dombi (Érd, Hungary) for the permission of using her photographs. Mihai Stănescu (“Grigore Antipa” National Museum of Natural History, Bucharest, Romania) and Réka Sebestyén (Library of HNHM) provided literature. Zsolt Bálint (HNHM, Budapest) checked the manuscript.

## REFERENCES

- BESHKOV S. 2010: Contribution to the Bulgarian Macrolepidoptera fauna (Lepidoptera: Geometridae, Noctuidae). – *The Entomologist's Record and Journal of Variation* **122**: 175–181.
- DROUET É. & FILOSA A. 2015: Compléments à la faune des papillons de nuit des Hautes-Alpes (Lepidoptera). – *Oreina* **29**: 30–31.
- DUFAY C. 1983: *Idaea spissilimbaria* (Mabille), espèce nouvelle pour la France continentale et la Bulgarie. – *Alexanor* **13**(1): 13–15.
- HAUSMANN A. 2004. *The geometrid moths of Europe, 2. Sterrhinae*. – Apollo Books, Stenstrup, 600 pp.
- HERBULOT C. 1968: Sur cinq Geometridae de Corse. – *Alexanor* **5**(6): 244–246.
- KATONA G., SCHERMANN B., DOMBI O. & TÓTH B. 2020: First record of Spodoptera littoralis in Hungary (Lepidoptera: Noctuidae). – *Folia entomologica hungarica* **81**: 119–122.
- RENNWALD E. & RODELAND J. 2023: *Idaea spissilimbaria* (Mabille, 1888). *Bestimmungshilfe für die in Europa nachgewiesenen Schmetterlingsarten*. Available from: [https://lepiforum.org/wiki/page/Idaea\\_spissilimbaria](https://lepiforum.org/wiki/page/Idaea_spissilimbaria) (accessed 6 July 2023)
- PINZARI M., PINZARI M. & ZILLI A. 2010: Deep lepidopterological exploration of Mt Cagno and surroundings (Central Italy), a restricted mountain massif and hotspot for butterfly and moth diversity (Lepidoptera). – *Bollettino dell'Associazione Romana di Entomologia* **65**(1–4): 3–383.
- STĂNESCU M. & HAUSMANN A. 2002: On the presence of *Idaea spissilimbaria* (Mabille, 1888) (Lepidoptera: Geometridae: Sterrhinae) in Romania. – *Travaux du Museum National d'Histoire Naturelle Grigore Antipa* **44**: 249–251.
- SZEŐKE K. & AVAR K. 2019: *Athetis hospes* (Freyer, 1831) Nyugat-Magyarországon (Lepidoptera: Noctuidae). (*Athetis hoppers* [sic] (Freyer, 1831) from Western Hungary (Lepidoptera: Noctuidae).) – *Natura Somogyiensis* **33**: 21–24.
- VARGA Z. (ed.) 2010: *Magyarország nagylepkéi. Macrolepidoptera of Hungary*. – Heterocera Press, Budapest, 253 pp.