

**Tracking disappeared species III.
Occurrence of *Coleophora absinthii* Wocke, 1877 in Hungary
(Lepidoptera: Coleophoridae)**

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Abstract – *Coleophora absinthii* Wocke, 1877 is represented in the Hungarian Natural History Museum by only one voucher specimen from Hungary. The species was collected for the first time in 1952 from Hungary but, in spite of several publications reporting it as a frequent species, no specimen of *C. absinthii* has been deposited in the museum since its first record. We found the species between 2018 and 2020 in six new Hungarian localities. The tubular case, the case made of flowers, the adult, the genitalia and the distribution map of the species are presented.

Key words – Microlepidoptera, faunistics, new records, *Artemisia absinthium*

INTRODUCTION

According to the latest genetic studies (BALDIZZONE 2019) the family Coleophoridae Bruand, 1850 (Lepidoptera: Gelechioidea) contains only three genera instead of the previously recognised five: *Augasma* Herrich-Schäffer, 1853, *Coleophora* Hübner, 1822 and *Ischnophanes* Meyrick, 1891. Genera *Goniodoma* Zeller, 1849 and *Metriotes* Herrich-Schäffer, 1853 are junior synonyms of *Coleophora* (BAUER *et al.* 2012).

The family is represented by 207 species in Hungary, with one species in the genus *Augasma* and 206 species in *Coleophora* (PASTORÁLIS & BUSCHMANN 2018).

Larvae of *Coleophora* construct portable cases and prepare mines. Most species are monophagous, only few of them are polyphagous. Cases have important specific characters but it is essential to know the host plant for identification.

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Artemisia absinthium L. (Asteraceae) is widespread and frequent in Hungary (KIRÁLY 2009) and used by many species of Lepidoptera as a host plant, which are rare in spite of the abundance of the plant. One of the especially rare species is *Coleophora absinthii* Wocke, 1877 which is monophagous on this plant.

GOZMÁNY (1952) reported *C. absinthii* as a native species in Hungary. Later he wrote (GOZMÁNY 1956): “Was found in Germany and Poland, a characteristic species of sandy areas in Hungary. Flight time: July. Host plant: *Artemisia absinthium*.” SZŐCS (1977) omitted the species from his guide to mines of Lepidoptera and it is also absent from the work of PETRICH (2001) on the Lepidoptera of the vicinity of the Lake Velence.

Coleophora absinthii has been hitherto found in Europe in the Czech Republic, Denmark, Estonia, Finland, France, Germany, Italy: Sicily, Latvia, Lithuania, Norway, Poland, Romania, Russia, Slovakia, Sweden and Switzerland (KARSHOLT & VAN NIEUKERKEN 2013).

MATERIAL AND METHODS

The Hungarian Natural History Museum (HNHM, Budapest) harbours only one voucher specimen of *C. absinthii* from Hungary, which was collected in Csepel (now 21st district of Budapest) on 20.VII.1898 by Tivadar Uhrik-Mészáros (BUSCHMANN & RICHTER 2016).

Study of the distribution of the species in Hungary was started in 2018. Since then mines of *C. absinthii* were searched in twelve localities: Pettend, Nadap, Velence, Sukoró, Pákozd, Gánt-Gránás, Csákberény, Mór, Kőszárhegy, Balatonfüred, Salföld and Sárszentágota. In addition, a portable light trap was also used for search in Kőszárhegy, Pákozd and Sárszentágota during the flight time of the adults. Voucher specimens are deposited in the private collections of Csaba Szabóky and Attila Takács, and one specimen will be deposited in HNHM after the publication of this paper.

Images of adult specimens and cases were prepared with a Canon 450 D camera, applied to a Carl Zeiss Stemi-2000 binocular stereomicroscope. Genitalia slide was prepared by Ignác Richter (Malá Čausa, Slovakia) via the traditional method, and photographed with a Bresser 12 Mpx camera attached to a BTC microscope. Images were edited with the software Adobe Photoshop CS6.

RESULTS AND DISCUSSION

Museum material

HNHM harbours only one voucher specimen, however, GOZMÁNY (1956) reported *C. absinthii* as a frequent species. In our opinion, the reasons for this very low amount of material are that (1) the case of this species is difficult to recognise, (2) the host plant is resident in disturbed, ruderal habitats, which are usually avoided by lepidopterists collecting by light and searching larvae, (3) rearing *Coleophora* species is difficult, especially overwintering of cases is critical, (4) adults cannot be identified without genitalia dissection.

Distribution in Hungary

Our first successful search for *C. absinthii* resulted six cases in Pettend, on 7.VIII.2018. Six days later, on 13.VIII, several cases were found in Sukoró, Nadap and Pákozd. The species was also found in Alcsútdoboz, on 16.VIII, by Péter Finy. Cases were present in Salföld, close to the heathland, on 12.IX.2020. Adults have been collected only in Pákozd, they arrived to the light trap. In summary we found the species in seven localities out of the twelve examined ones (Fig. 1).

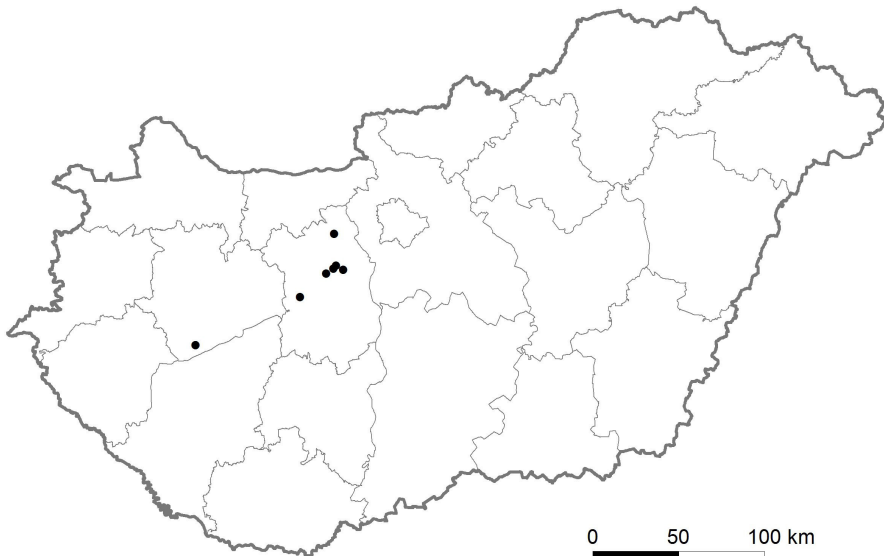
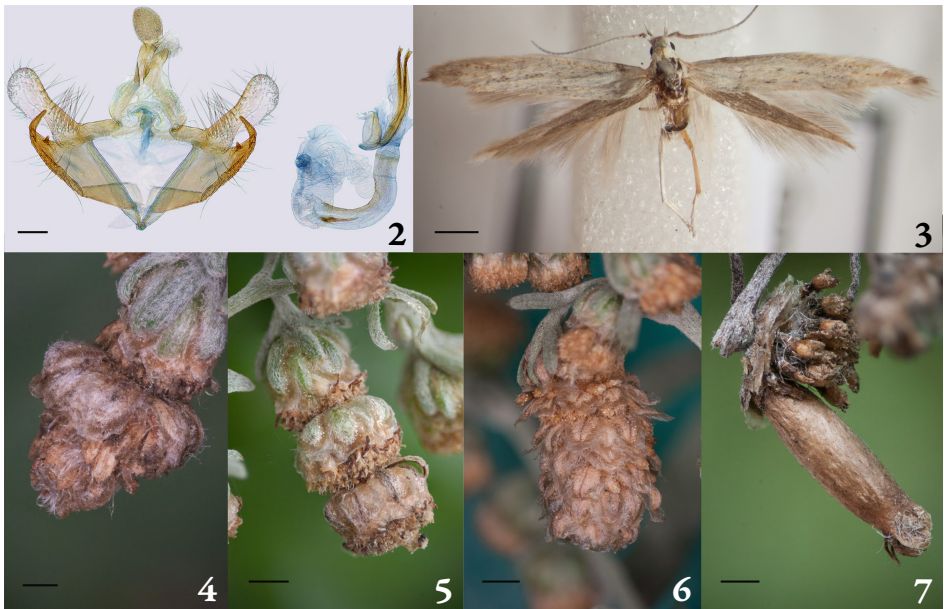


Fig. 1. Present distribution of *Coleophora absinthii* in Hungary (map by Kristóf Antal)

Bionomy

Adults (Figs 2–3) fly in July and August. The female lays 2–5 eggs to each plant, depending on the size of the plant. Larvae prepare their first case from one flower head (Fig. 4). Larvae in stage L3 attach two heads to each other, then feed in a third one (Fig. 5), making the case almost indistinguishable from intact inflorescences. The L4 larva prepares an unusually large case from the achaenia of these three flower heads (Fig. 6). Inside this assemblage the final tubular case (Fig. 7) is prepared, which becomes visible by gradually losing the protective layer of achaenia. This case is used for overwintering. Larvae do not feed after winter.



Figs 2–7. Male genitalia and different stages of *Coleophora absinthii*: 2 = male genitalia, GP 30839 IgR HU, 3 = imago from Pákozd, 4 = case in stage L1, made of one flower head, 5 = case in stage L3, made of two flower heads, 6 = L4 larva with its case made of achaenia, 7 = tubular case in stage L5. Scale bar: Fig. 2 = 0.2 mm, Figs 3–4 = 1 mm, Figs 5–6 = 2 mm, Fig. 7 = 1.2 mm

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