

**Tracking disappeared species IV.
Occurrence of *Coleophora millefolii* Zeller, 1849 in Hungary
(Lepidoptera: Coleophoridae)**

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Abstract – Three voucher specimens of *Coleophora millefolii* Zeller, 1849 (Lepidoptera: Coleophoridae) from Hungary are deposited in the Hungarian Natural History Museum. All of them were collected more than 70 years ago, in 1952, by László Gozmány on Hársbokor hill near Budakeszi (Pest County). We report eleven additional, more recent localities of this species in Hungary. The larval case, an adult specimen, the female genitalia and the known Hungarian localities of the species are illustrated.

Key words – Microlepidoptera, faunistics, new records, Western Palaearctic, *Achillea millefolium*

INTRODUCTION

Currently 211 species of the family Coleophoridae (Lepidoptera) are known from Hungary (BALDIZZONE *et al.* 2022). Larvae of the genus *Coleophora* Hübner, 1822 prepare cases from leaves or seeds of their host plant. Most species are monophagous, only few of them are oligo- or even polyphagous. The larval cases bear important diagnostic characters, but recognition of the host plant is usually essential for identification.

Achillea millefolium L. (Asteraceae) is widespread and frequent in Hungary (KIRÁLY *et al.* 2009), and it serves as host plant for several species of Lepidoptera, including *Coleophora millefolii* Zeller, 1849. This species was first reported from Hungary by GOZMÁNY (1956), who claimed that it was a Central European species and in Hungary it was found only in Budapest; the latter record, however, might be erroneous and probably pertain to Budakeszi (see below). GOZMÁNY (1956) claimed that in Hungary its flight time is in July, its host plant is *Achillea millefolium*, and its larva prepares a leaf case. SZÖCS (1977) repeated the data of GOZMÁNY (1956), adding that *Coleophora millefolii* has a Northern as well

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as Central European distribution, and its monophagous larvae feed until June. This species has been recorded from Albania, Austria, Belarus, Bulgaria, Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Italy, Latvia, Norway, Poland, Romania, Russia, Slovakia, Sweden, Switzerland and Ukraine (KARSHOLT & NIEUKERKEN 2013).

In search for this apparently disappeared species, the authors monitored the materials collected by agricultural light traps, and searched for cases in many places in Hungary. Eleven additional, recent localities of this species are reported in the present paper. The collected specimens are deposited in the private collections of Csaba Szabóky and Attila Takács, and one specimen is deposited in the Hungarian Natural History Museum (HNHM), Budapest. Photos of the adults and cases were taken using a Canon 450 D camera set on a Carl Zeiss Stemi-2000 binocular stereomicroscope.

Abbreviations – BLDZ = genitalia slide by Giorgio Baldizzone; LG = genitalia slide by László Gozmány; IR = genitalia slide by Ignác Richter; ZT = genitalia slide by Zdenko Tokár.

RESULTS AND DISCUSSION

Museum material

HNHM harbours three voucher specimens of *Coleophora millefolii* from Hungary: (3908) Budakeszi, Hársbokor-hegy [= Hársbokor hill], 9.VIII.1952, leg.: L. Gozmány; (3909) Budakeszi, Hársbokor-hegy, 21. VIII.1952, leg.: L. Gozmány (gen. prep. 699, LG); (3910) Budakeszi, Hársbokor-hegy, 29.VIII.1952, leg.: L. Gozmány (gen. prep. 544, LG) (BUSCHMANN & RICHTER 2016; present study). A reexamination of the material in course of the present study revealed that the collecting date of specimen No. 3908 was incorrectly given by BUSCHMANN & RICHTER (2016) as “29.VIII.1952”. The record of the species from Budapest (GOZMÁNY 1956) was apparently based on these specimens, therefore it is erroneous and pertain to Budakeszi, a town adjacent to Budapest.

Distribution in Hungary

The present study found *Coleophora millefolii* in the following localities in Hungary.

Fejér County: Csákberény, Bucka-hegy, 8.VII.2021, 25.VII.2021, 26.VII.2021, leg. A. Takács; Kőszárhegy, 3.IX.2021, leg. A. Takács; Pákozdszik [= saline habitat], 17.VIII.2020, leg. A. Takács (Fig. 1); Sárszentágota, 18.VIII.2021, 25.VIII.2021, 5.VIII.2022. leg. A. Takács. **Pest County:** Budaörs, Huszonnégyökrös-hegy, 27.V.2022 (only cases), leg. A. Pál, 20.V.2023 (only cases), leg. A. Takács & A. Pál; Nagykovácsi, Júlia major, 30.VIII.1978, leg. Cs. Szabóky (gen.prep 8694, ZT). **Vas County:** Tanakajd, 3.VIII.2022, light trap. **Veszprém County:** Balatonfüred, Nagymező, gázfogadó [= gas receiver], 17.X.2009 (only cases), leg. Cs. Szabóky; Királykút, borókás [= juniper stand] (Felsőörs), 18.VIII.1977, leg. Cs. Szabóky (gen. prep 8681, ZT), Sóly, 5.V.2023 (only cases), leg. A. Takács, A. Pál; Vászoly, Öreg-hegy, 31.VIII.2013, leg. Cs. Szabóky (gen. prep 21834, IR), 26.VIII.2014, leg. Cs. Szabóky (gen. prep 22296, IR), 21.VIII.2018, leg. Cs. Szabóky (gen. prep 31063, IR).

The authors argue that the reasons of the apparent rarity of this species in Hungary, reflected by the scarce material deposited in the HNHM, are that (1) the species is difficult to find because its special habitat requirements: it occurs on *Achillea millefolium*, mainly in the western slopes of dry grasslands, with shrubs of *Prunus spinosa* L. and *Crataegus* spp. (Rosaceae); (2) rearing *Coleophora* species is difficult, especially the overwintering of cases is critical; and (3) adults cannot be identified without dissection of genitalia.

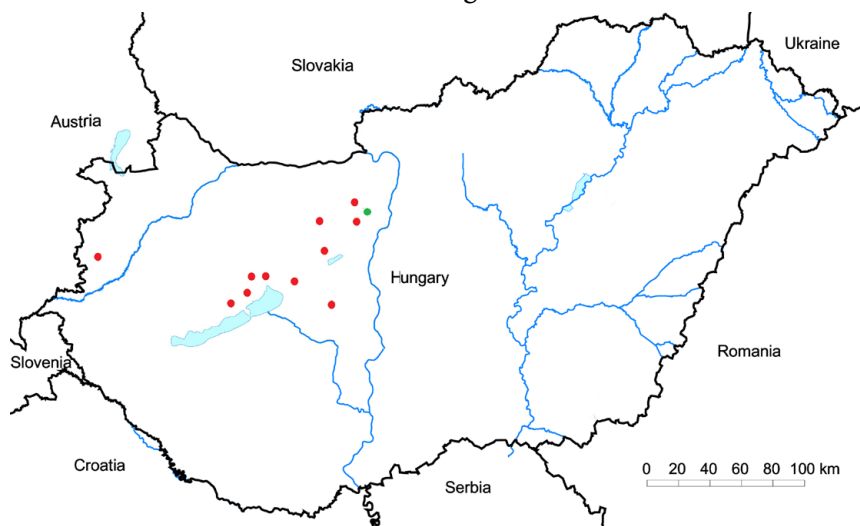
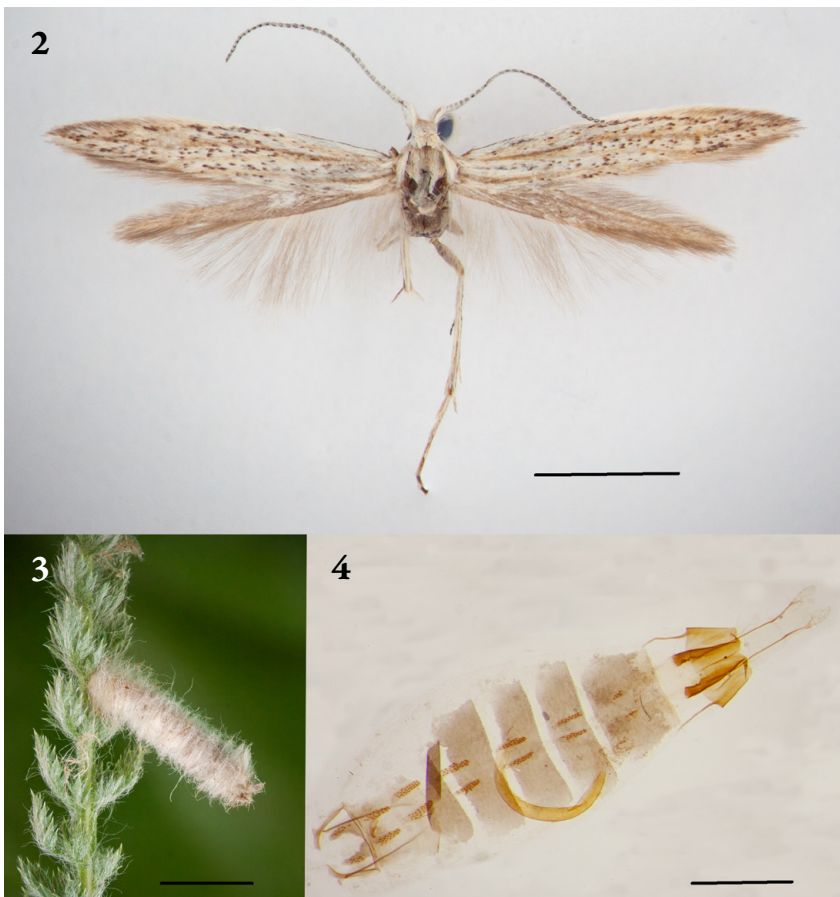


Fig. 1. Present distribution of *Coleophora millefolii* Zeller, 1849 in Hungary, red dots represent new data, the green dot represents the historical data (map by Kristóf Antal)

Bionomy

Adults (Fig. 2) fly in July and August. Although GOZMÁNY (1956) and SZŐCS (1977) only mentioned July as flight time, we found many specimens in August, and one specimen even in September. Historical voucher specimens deposited in the HNHM were also collected in August. Females lay 2–3 eggs per host plant individual. Larvae consume only the leaves. The larval case is hairy, greyish white (Fig. 3), easily recognisable on the leaf. Larvae are localised close to shrubs, restricted to their western side (being shaded in the morning hours); they always avoid drier parts of the grassland. The genitalia of the adults are diagnostic (Fig. 4).



Figs 2–4. *Coleophora millefolii* Zeller, 1849, 2 = adult female, scale bar = 2.5 mm, 3 = larval case, scale bar = 1.5 mm, 4 = female genitalia (no. GP 17425 BLDZ), scale bar = 0.2 mm (photos by Attila Takács (Figs 2–3) and Giorgio Baldizzone (Fig. 4))

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