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New records of two leaf miner species from Romania (Lepidoptera: Gracillariidae, Heliozelidae)

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Abstract – *Phyllocnistis valentinensis* Hering, 1936 (Lepidoptera: Gracillariidae) is reported for the first time from Romania (Transsylvania), and hitherto unknown early Hungarian records of this species are provided. *Coptodisca lucifluella* (Clemens, 1861) (Lepidoptera: Heliozelidae), an introduced Nearctic species already known from Romania, is newly recorded from Transsylvania.

Key words – Hungary, *Juglans regia*, Microlepidoptera, Transsylvania, *Salix*

INTRODUCTION

The authors took a short trip to visit saline habitats in Transsylvania, Romania between 16–18.IX.2023. During the trip they searched for mines and larval cases on the leaves of several potential host plants of *Coleophora* Hübner, 1822 species (Coleophoridae). This resulted in finding the mines of two species, namely *Phyllocnistis valentinensis* Hering, 1936 (Gracillariidae) and *Coptodisca lucifluella* (Clemens, 1861) (Heliozelidae). In this paper we present the first record of *Phyllocnistis valentinensis* from Romania, with some early records of this species from Hungary that have remained undetected so far. Additionally, *Coptodisca lucifluella*, an introduced Nearctic species already known from Romania, is newly recorded from Transsylvania.

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RESULTS

Gracillariidae
Phyllocnistis valentinensis Hering, 1936
(Figs 1–4)

Material examined – Two mines on two leaves of *Salix* sp. (Salicaceae): Romania, Cluj County, Sic (Szék), in the garden of Pension Nádas, 46.92285°N, 23.89923°E, 18.IX.2023, leg. G. Lendvai, A. Takács & B. Tóth (Fig. 1); two adults emerged from the mines on 25.IX.2023 (Fig. 2). Voucher specimens are deposited in the Hungarian Natural History Museum (HNHM), Budapest.

Remarks – First record from Romania, representing the easternmost known locality of the species in Europe. *Phyllocnistis valentinensis* was described from Valencia, Spain (Hering 1936), and has been hitherto found in several European countries but only one neighbouring country of Romania: Hungary, as late as in 2020 (Szabóky & Takács 2021). Its host plants are various species of Salicaceae. The larva prepares a corridor mine in the leaf which is visible from the underside. The mine usually starts from the midrib and ends at the margin, in a puparium made by creasing the lamina. Unlike all other *Phyllocnistis* species feeding on narrow-leaved *Salix* spp., the larva of *Phyllocnistis valentinensis* remains in the same leaf from hatching to pupation, and does not enter the petiole.

We found all mines on the same tree, which stands in the garden of a pension, at the bank of a pond. Infected leaves were removed and kept in a vial until the emergence of the adults. These specimens have extensive dark grey pattern, which is characteristic for the overwintering imagines of this species (Deschka 2014).

We checked the leaf mine collection of HNHM and, to our surprise, we found altogether 29 mines of *Phyllocnistis valentinensis* from Hungary, misidentified as *Phyllocnistis saligna* (Zeller, 1839) by J. Szőcs. Their data are as follows: four mines on *Salix alba* L.: "Szentendrei-sziget, Dunapart, Szentendrével szemben, 1962.VIII.30, leg. Papp József" [= Hungary, Szentendre Island, bank of Danube in front of Szentendre, 30.VIII.1962, leg. J. Papp]; five mines on *Salix alba* L.: "Szentendrei-sziget parti füzeséből, 1962.VIII.30, leg. Ambrus Béla" [= Hungary, Szentendre Island, from the willow forest at bank, 30.VIII.1962, leg. B. Ambrus]; twenty mines on "*Salix incana* Schrank" [= *Salix elaeagnos* Scop.]: same locality, but 6.X.1962, leg. J. Papp (Figs 3–4).

The identification key of Szőcs (1977) contains only one *Salix*-miner *Phyllocnistis* species: *Phyllocnistis saligna*. This work emphasises that the mine of that species quits the leaf, continues in the twig, and then enters another leaf. Although the morphology of the mines published above clearly differs from this description, their identification was never revised thus they remained misidentified as *Phyllocnistis saligna* until now. Therefore, the earliest known occurrence of *Phyllocnistis valentinensis* in Hungary is dated back to 1962.

Figs 1–2. *Phyllocnistis valentinensis* Hering, 1936 from Romania, Sic (Szék), 1 = mines in leaves of *Salix* sp., ventral view, scale bar = 10 mm, 2 = an emerged adult, lateral view, scale bar = 1 mm. (photos by Balázs Tóth)

Figs 3–4. Mines of *Phyllocnistis valentinensis* Hering, 1936 from Hungary, 1962, in leaves of *Salix elaeagnos* Scop., 3 = herbarium sheet with five mines (tips arrowed by black solid lines) and one mine of *Phyllocnistis saligna* (Zeller, 1839) (tip arrowed by dashed line), 4 = the leaf in red frame of Fig. 3 is magnified (photos by Balázs Tóth)

Heliozelidae
Coptodisca lucifluella (Clemens, 1861)

Material examined – 27 mines (of which 5 were active) on 16 leaflets of *Juglans regia* L. (Juglandaceae): Romania, Cluj County, Cojocna (Kolozs), on the bank of Cojocna stream, 46.74184°N, 23.83936°E, 16.IX.2023, leg. G. Lendvai, A. Takács & B. Tóth. Voucher specimens are deposited in the HNHM.

Remarks – *Coptodisca lucifluella* is native to the Nearctic region and was introduced to Europe. Its first European records are from Italy (Bernardo *et al.* 2012), then it was found in Hungary (Takács *et al.* 2017). Later on, it has also been recorded from France (mainland), Switzerland, Germany, Austria, Czechia, Slovakia, Serbia, Ukraine and Bulgaria (Rennwald & Rodeland 2023). First report from Romania was provided by Chireceanu *et al.* (2022) who found the species in Southern (Bucharest, Ilfov and Giurgiu Counties) and Western Romania (Arad County). Here it is newly reported from Transsylvania. Its main host plant is *Juglans regia* L. in Europe. The damage of *Coptodisca lucifluella* can be identified without difficulty, because its blotch mine with an oval-shaped hole in the leaf is unique among all kinds of mines occurring on *Juglans regia* L.

The presence of the oval holes at Cojocna showed that those larvae had already prepared their cases and crawled away to find shelter for overwintering and pupation. We did not find any larval case. We agree with Chireceanu *et al.* (2022) that *Coptodisca lucifluella* is likely present in many regions of Romania because it has been recorded in all neighbouring countries, and walnut trees are readily planted alongside the roads across the country, which offer an outstanding potential for the spread of this leaf miner species.

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