

**New data to the Microlepidoptera fauna of Hungary, part XIX
(Lepidoptera: Batrachedridae, Coleophoridae, Gracillariidae, Tortricidae)**

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Abstract – *Batrachedra parvulipunctella* Chrétien, 1915 (Batrachedridae), *Coleophora jaernaensis* Björklund & Palmqvist, 2002, *Coleophora caucasica* Stainton, 1867, *Coleophora solenella* Staudinger, 1859, (Coleophoridae), *Phyllocnistis valentinensis* M. Hering, 1936 (Gracillariidae), and *Eucosma tetraplana* (Möschler, 1866) (Tortricidae) are recorded from Hungary for the first time.

Key words – new records, faunistics

INTRODUCTION

Several microlepidopteran species were recorded as new for the fauna of Hungary in the last decade (PASTORÁLIS & BUSCHMANN 2018). To date, 2320 species of micromoths are known from Hungary (SZABÓKY & TAKÁCS 2018, FAZEKAS & HALÁSZ 2020, TABELL & KOSORÍN 2020, KATONA *et al.* 2020). This number will probably rise in the next years. The aim of this paper is to present seven micromoth species new for the fauna of Hungary.

MATERIAL AND METHODS

Authors of this paper have sampled moths on several localities in Hungary either with a white sheet illuminated by a 125W HgL (mercury vapour) lamp or with a portable light trap operated with UV LED lights. Cases of micromoths have been also collected and reared. During the identification of adults several species were found for the first time in Hungary. Among the species reported here, *Batrachedra parvulipunctella* Chrétien, 1915, *Coleophora jaernaensis* Björklund & Palmqvist, 2002, and *Eucosma tetraplana* (Möschler, 1866) were collected

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as adults; *Coleophora caucasica* Stainton, 1867, *Coleophora solenella* Staudinger, 1859, and *Phyllocnistis valentinensis* M. Hering, 1936 were found in larval stage. The species *Coleophora caucasica* was subject to COI barcoding. The specimens are deposited in the private collections of the authors. One specimen of all species collected in multiple specimens will be deposited in the collection of the Hungarian Natural History Museum, Budapest (= HNHM) after the publication of this paper.

RESULTS AND DISCUSSION

Batrachedridae

Batrachedra parvulipunctella Chrétien, 1915

(Fig. 1)

Junior syn.: *Batrachedra phragmitidella* (Mariani, 1936).

Material examined – In the settlement of Hortobágy (Hajdú-Bihar county), close to the buffalo farm, a white sheet with a 125 W HgL lamp was set up, surrounded by a population of *Salicornia europaea* L. on 25.VII.2019. (leg. Cs. Szabóky). Five micromoth specimens came to light, which had straw-coloured narrow forewings with a round, pale brown patch at tornus. The external morphology of the specimens showed that the species had not been known from Hungary. A specimen was dissected by I. Richter (gen. prep. 30879) and was identified as *B. parvulipunctella* (Fig. 1). Four further specimens were found in Pákozd (Fejér county), in the saline open grassland, on 19.VIII.2019, by Cs. Szabóky. In the same locality, other specimens were collected by the portable light trap of A. Takács (3 exemplars, 15.IX.2020). In Sárszentágota (Fejér county), several specimens came to the UV light of a light trap: 1 exemplar, 2.IX.2020; 2 exemplars, 13.VIII.2020; 1 exemplar, 16.VIII.2020; 2 exemplars, 4.VIII.2021, and 1 exemplar, 10.VIII.2021, all: leg. A. Takács).

Remarks – *Batrachedra parvulipunctella* is similar to *B. pinicolella* (Zeller, 1839), but the latter species has ochreous forewing instead of being straw-coloured, and the tornal spot is black, not light brown. Moreover, the larva of the latter species feeds on *Abies alba* (Mill.). Both species have a wingspan of 10–12 mm. Genus *Batrachedra* is represented also by one further species in Hungary: *B. praeangusta* (Haworth, 1828) has sophisticated greyish pattern and its larval host plants are *Populus* species.

Batrachedra parvulipunctella has been reported from England (RENNWALD & RODELAND 2021), France, Spain, Portugal, Sardinia, Sicily, Malta, Italy (mainland), Greece (mainland), Crete and Austria (Burgenland) (HUEMER 2019).

Bionomy – The larva of *B. parvulipunctella* lives in symbiotic relationship with *Aclerda berlesei* Bodenheimer, 1937 (Homoptera: Aclerdidae), which feeds on *Phragmites australis* (Cav.) Trin. ex Steud. and *Arundo donax* L. (Poaceae). The moth is bivoltine, adults fly from May to June and July to August (KOSTER & SINEV 2003).

Proposed Hungarian name: sziki lándzsásmoló.

Coleophoridae

Coleophora jaernaensis Björklund & Palmqvist, 2002

(Fig. 2)

208 species of the family Coleophoridae have been known from Hungary (PASTORÁLIS & BUSCHMANN 2018, TABELL & KOSORÍN 2020); a further one is reported here.

Material examined – The light trap in Sárszentágota (Fejér county) collected a *Coleophora* species on 11.VIII.2020 we were unable to identify. It was sent to G. Baldizzone who identified it as *C. jaernaensis* Björklund & Palmqvist, 2002 by dissection (gen prep: BLDZ 17233). The specimen is placed in the collection of A. Takács.

Remarks – This species was reported from Sweden (BJÖRKLUND & PALMQVIST 2002); further localities in Europe: Finland and Germany (ROWECK & SAVENKOV 2007).

Ground colour of forewing yellowish white, brown colour restricted to veins and fragmented to sections of irregular length (Fig. 2). Antenna with brown rings. Length of case 6–8 mm, its shape similar to that of *C. vestianella* (Linnaeus, 1758).

Bionomy – Supposed host plant of *C. jaernaensis* is *Chenopodium album* (L.). Univoltine, flies in July and August. Wingspan: 11–14 mm.

Proposed Hungarian name: északi zsákosmoló.

Coleophora caucasica Stainton, 1867

(Figs 3–4)

Material examined – In Csákberény, Bucka-hegy (Fejér county), one case of a *Coleophora* species was found on *Thymus* sp. on 12.V.2020 (leg. A. Takács). It was in larval stage, the rearing attempt was not successful, the larva died. It was barcoded (NCBI GenBank code: MZ 664323), and the sequence enabled us to identify the specimen as *C. caucasica* (Fig. 3).

Remarks – The case (Fig. 4), as well as the adult, is similar to those of *C. ornatipennella* species group. Wingspan of adults 18–20 mm. This species was described from Asia Minor (STAINTON 1867), later found in Czechia, Slovakia, Romania, and Russia (ANIKIN & SHCHUROV 2001). The case is placed in the collection of A. Takács.

Proposed Hungarian name: kaukázusi zsákosmoly.

Coleophora solenella Staudinger, 1859

(Figs 5–6)

Material examined – During the zoological survey of the Körös-Maros National Park Lepidoptera species were collected in Csikópuszta, in the vicinity of Blaskovics puszta (Békés county). On 24.IX.1997 a collecting event was organised with a 125 W HgL lamp (leg. Cs. Szabóky & K. Leskó). The results were very poor, only ten species of Lepidoptera came to light. The sheet was set up in a saline grassland, in a patch of *Artemisia* sp. Due to the very low density of moths there was a lot of time to scan the undergrowth lit by the lamp. During this check, on the dry shaft of inflorescence of *Artemisia santonicum* L. cases of a *Coleophora* species were found, with strongly curved apex and mouth directed to the ground. 34 cases were collected. None of them resulted an adult and attempts to identify the cases remained unsuccessful. Due to our knowledge accumulated during 23 years, we were convinced in 2020 that the cases probably belonged to *C. solenella*. The species was searched in Csikópuszta, on 4.VI.2021 by Cs. Szabóky but was not found because the locality had suffered constant heavy grazing and mowing. Further saline habitats, namely Hortobágy and Újszentmargita: Tilos-erdő (Hajdú-Bihar county), were visited on 28.V.2021 and *A. santonicum* individuals were examined by Cs. Szabóky and A. Patalenszki, but these searches also remained unsuccessful. On the same day, the researchers mentioned above, finally found a case identical to those collected in 1997. The locality was Kosár-hát near Tiszafüred (Jász-Nagykun-Szolnok county), on *A. santonicum*. The larva walked in the rearing vial for one week, then attached its case to the wall of the vial. The adult emerged on 30.VI.2021 thus identification as *C. solenella* became unambiguous (Fig. 5). The specimen is placed in the collection of Cs. Szabóky. Three additional cases were collected in the vicinity of Csanádalberti (Békés county) on 14.VII.2021 by the authors, but none of them resulted adults.

Remarks – There are no similar cases among *Coleophora* species in Hungary. The case of *C. solenella* is 15 mm long, straw-coloured, anal opening is bivalved, the mouth is directed 45° to the longitudinal axis of the case (Fig. 6). Rear end of case is flattened and strongly curved. Ribs parallel with the mouth are present and longitudinal ribs are also visible. Adult: wingspan 15 mm, forewing with three longitudinal silver stripes: one of them between costa and central brown

line, other between tornus and the brown line, the remaining from the base along the medial crease, a small silver spot more or less visible at the base of dorsum. The species has been found in Europe in France, Switzerland, Spain, Italy (BALDIZZONE *et al.* 1999) and southern Russia (FALKOVITSH & REZNIK 1980).

Bionomy – According to literature sources *C. solenella* feeds on *A. campestris* L. (STAUDINGER 1859, BALDIZZONE *et al.* 1999), but in Hungary this moth species has been found only on *A. santonicum*. Univoltine, adults fly in July and August.

Proposed Hungarian name: ezüstös zsákosmoly.

Gracillariidae

Phyllocnistis valentinensis M. Hering, 1936

(Fig. 7)

Six species of *Phyllocnistis* have been hitherto recorded in Hungary: *Ph. saligna* (Zeller, 1839), *Ph. labyrinthella* (Bjerkandel, 1790), *Ph. xenia* M. Hering, 1936, *Ph. unipunctella* (Stephens, 1834), *Ph. vitegenella* (Clemens, 1859) (BUSCHMANN & PASTORÁLIS 2018) and *Ph. citrella* Stainton, 1856 (KATONA *et al.* 2020).

Material examined – In the 17th district of Budapest (Jászivány utca 64), on a *Salix* sp. tree in a garden, several interesting mines were observed on 17.VIII.2020 (leg. A. Takács). The mines were started from the central vein of the leaf, continued along the edge where the pupal chamber was prepared, slightly wrinkling the lamina. Altogether three adults emerged from these mines on 23.IX.2020, assigned to *Ph. valentinensis*. Further specimens were found in Rómaifürdő, Budapest on 20.IX.2020 on *Salix alba* L. (leg. Cs. Szabóky), then in Tokaj, Kopasz-hegy (Borsod-Abaúj-Zemplén county) on 29.IX.2021 (leg. A. Takács).

Remarks – Wingspan: 4.5 mm (Fig. 7). Host plants are Salicaceae species, bivoltine with seasonal dimorphism: the summer generation is whitish while the autumn, overwintering generation consists of dark grey specimens (DESCHKA 2014). The species was described from a botanical garden in Valencia, Spain (HERING 1936). Further European localities: Austria (HUEMER 2013), Slovakia (PASTORÁLIS *et al.* 2013), Bulgaria, France, Greece, Italy, Russia, Kazakhstan (NEL & VARENNE 2015), Belgium, the Netherlands and Germany (VAN NIEUKERKEN & WULLAERT 2018).

Proposed Hungarian name: szegélyaknás fűzmoly.

Tortricidae
Eucosma tetraplana (Möschler, 1866)
 (Fig. 8)

Material examined – During the zoological survey of the Körös-Maros National Park Lepidoptera species were collected in Bélmegyer (Békés county). In the forest steppe habitat Cs. Szabóky collected at lamplight on 31.VIII.1995. The density of moths was moderate, 130 species were registered. The collected material contained a specimen similar to *E. flavispecula* (Kuznetsov, 1964), then, two years later, on 25.VIII.1997 (leg. Cs. Szabóky) a further specimen was caught during a species-poor collecting event (55 species). Later re-examination showed that the two specimens actually belonged to *E. tetraplana* instead of *E. flavispecula*. The specimens are placed in the collection of Cs. Szabóky.

Remarks – Differentiation of these two species: the whole head and the labial palps are white in *E. tetraplana*, while only the frons and the labial palps are white in *E. flavispecula*. The pattern of costa in forewing is also different in the two species: in *E. flavispecula* wedge-like streaks are visible only at distal half of costa, while in *E. tetraplana* the whole costa has streaks. Furthermore, the distalmost streak is indistinct in *E. flavispecula*, while it is white and conspicuous in *E. tetraplana*. The light tornal patch is large and conspicuous in *E. flavispecula*, with only the upper streak developed, while in *E. tetraplana* the tornal patch is reduced and contains two conspicuous black streaks. Wingspan 12–15 mm (Fig. 8). The species has been recorded in India (Jammu & Kashmir), Asia Minor (KOÇAK & KEMAL 2008), Iran, Mongolia (RAZOWSKI 2003) and Russia (European part, Siberia, Transcaucasia) (GANAI & KHAN 2019).

Bionomy – Univoltine, flies in July, bionomy unknown (MÖSCHLER 1866, RAZOWSKI 2003).

Proposed Hungarian name: bélmegyeri tükrösmoly.

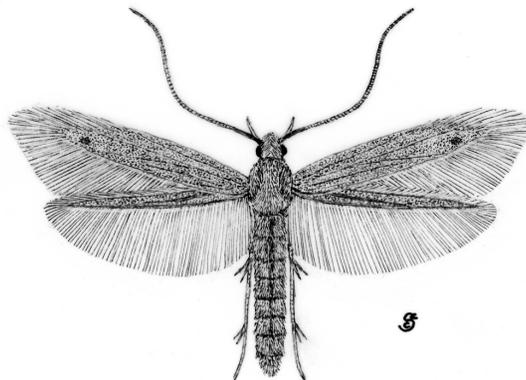


Figure 1. *Batrachedra parvulipunctella* Chrétien, 1915 (drawing by Cs. Szabóky)

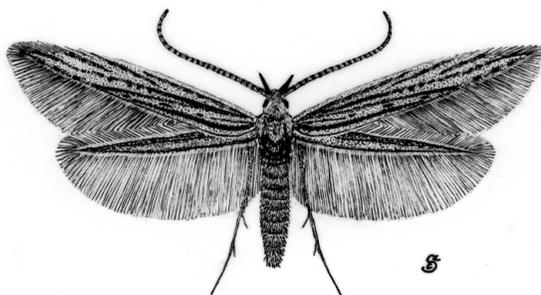


Figure 2. *Coleophora jaernaensis* Björklund & Palmqvist, 2002 (drawing by Cs. Szabóky)

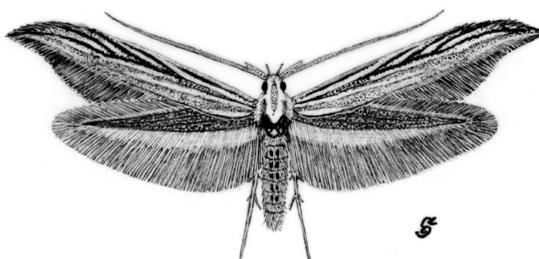


Figure 3. *Coleophora caucasica* Stainton, 1867 (drawing by Cs. Szabóky)



Figure 4. Case of *Coleophora caucasica* Stainton, 1867 (photo by A. Takács)

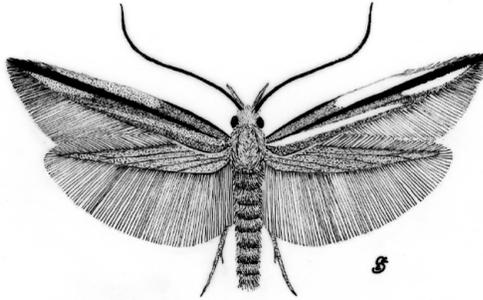


Figure 5. *Coleophora solenella* Staudinger, 1859 (drawing by Cs. Szabóky)



Figure 6. Case of *Coleophora solenella* Staudinger, 1859, case in stage L5 (photo by Cs. Szabóky)

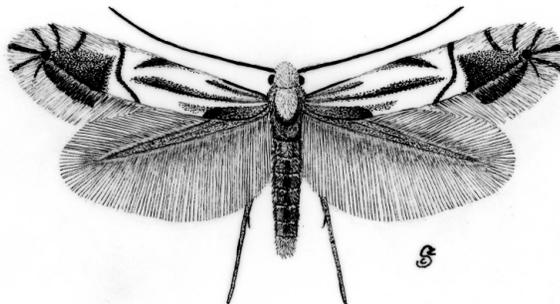


Figure 7. *Phyllocnistis valentinensis* M. Hering, 1936 (drawing by Cs. Szabóky)

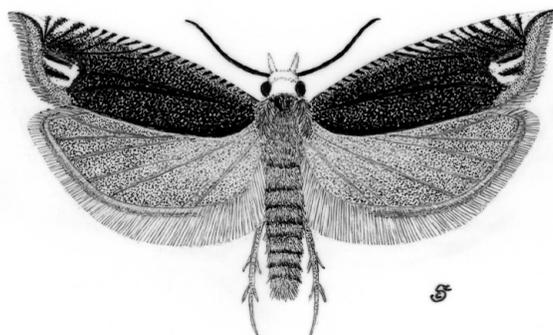


Figure 8. *Eucosma tetraplana* (Möschler, 1866) (drawing by Cs. Szabóky)

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