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# TAXONOMICAL AND CHOROLOGICAL NOTES 16 (164–177)

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**Abstract**: The present part of the series provides miscellaneous new records of six lichen-forming, two lichenicolous and six flowering plant species from Hungary, Romania and Serbia. New Hungarian chorological records for the flowering plants are: *Juncus sphaerocarpus* new for the Putnok Hills and *Sorbus semiincisa* for Mezőföld. The second recent occurrence of *Crepis mollis* subsp. *succisifolia* very rare in Hungary is presented here from the Bakonyalja region. *Sporobolus cryptandrus* agressively spreading in the Hungarian sandy areas was found in the Nyírség area. The old records of *Lappula heteracantha* in the Mezőföld (Balatonkenese) and those of *Sherardia arvensis* in the Zemplén Mts are confirmed. Regarding the lichen-forming fungi *Bacidia fraxinea* and *Toniniopsis subincompta* are new to the Vértes Mts (Hungary), *Bacidia rubella* is new to Mt Pilis (Hungary), *Flavoparmelia soredians* is new to the Hajdúság area (Hungary), and *Oxneria huculica* is new to Romania and Serbia. Second or further additional records are reported for *Bacidia rubella* (Vértes Mts), and for *Parmotrema perlatum* (Nyírség area). Several new Hungarian records of the lichenicolous fungi *Scutula tuberculosa* and *Stigmidium solorinarium* for the Bakony, Buda, Bükk and Vértes Mts are also listed here.

**Key words**: Asteraceae, Boraginaceae, lichen-forming fungi, lichenicolous fungi, Hungary, Juncaceae, Poaceae, Romania, Rosaceae, Rubiaceae, Serbia, vascular plants

## INTRODUCTION

This paper is the 16th part of the series launched in *Studia botanica hungarica* focusing on the new chorological records, nomenclature, and taxonomy of

plant species from algae to vascular plants and fungi (Aszalósné Balogh *et al.* 2021, Barina *et al.* 2015, 2020, Csiky *et al.* 2017, Deme *et al.* 2019, Király *et al.* 2019*a*, *b*, Matus *et al.* 2018, Mesterházy *et al.* 2017, Papp *et al.* 2016, 2020, Schmidt 2020, Schmidt *et al.* 2018, Süveges *et al.* 2021, Takács *et al.* 2016).

Several new records for six flowering plant and eight cryptogamic taxa (six lichen-forming fungi and two lichenicolous fungi) are presented in this part of the series from Hungary, Romania and Serbia.

## MATERIAL AND METHODS

Nomenclature and taxonomy of lichen-forming and lichenicolous fungi follow CABI (2021) and MycoBank (Robert *et al.* 2018), while nomenclature of vascular plants follows Király (2009) and The Plant List (2013). Codes of the Central European Flora Mapping grid are in square brackets. Abbreviations of herbaria follow Thiers (2017).

## NEW RECORDS WITH ANNOTATIONS

### Fungi

### Lichen-forming fungi

(164) ***Bacidia fraxinea*** Lönnr. (Ramalinaceae)

Hungary, Fejér County, Vértes Mts, Csákberény: Ugró-völgy, on bark (*Acer campestre*). Lat.: 47.359346° N; Long.: 18.335020° E; Alt.: 275 m a.s.l. Coll.: Lőkös, L., 02.03.2021 (BP 98131).

The epiphytic crustose lichen species *Bacidia fraxinea* was recognized in Hungary 30 years ago (Ekman and Nordin 1993). Although it is the most frequent *Bacidia* species in Hungary, it has been unknown from the Vértes Mts before. New to the Vértes Mts!

Farkas, E., Lőkös, L.

(165) ***Bacidia rubella*** (Hoffm.) A. Massal. (Ramalinaceae)

Hungary, Fejér County, Vértes Mts, Csákberény: Ugró-völgy, on bark (*Acer campestre*). Lat.: 47.359346° N; Long.: 18.335020° E; Alt.: 275 m a.s.l. Coll.: Lőkös, L., 02.03.2021 (BP 98132). – Hungary, Pest County, Pilis–Visegrád Mts, Pilisszentkereszt, Mt Pilis, on bark (*Acer campestre*). Lat.: 47.691271° N; Long.: 18.863250° E; Alt.: 720 m a.s.l. Coll.: Lőkös, L., 31.03.2021 (BP 98134).

*Bacidia rubella* is also an epiphytic crustose lichen species, widespread in Hungary. However, this is just the second record for the Vértes Mts! The first specimen was collected by Gy. Timkó 1923 between Csóka and Csákberény *ca*

100 years ago. It was also known in some places in the Pilis–Visegrád Mts, but this recent record is new for Mt Pilis.

Farkas, E., Lőkös, L.

(166) ***Flavoparmelia soredians*** (Nyl.) Hale (Parmeliaceae)

Hungary, Hajdú-Bihar County, Nyírség, Hajdúszoboszló, small forest/plantation at the NE corner of the airport, in forest lot no. 163/C, on bark (*Fraxinus*). Lat.: 47.466391° N; Long.: 21.405723° E; Alt.: 100 m a.s.l. Coll.: Farkas, E., Lőkös, L. 11.06.2022 (BP 98135).

*Flavoparmelia soredians* an Atlanto-Mediterranean foliose lichen species was recently reported from Hungary (Farkas *et al.* 2016). It is considered as spreading mostly in anthropogenic, urban habitats in Hungary (Farkas *et al.* 2022). The 20th Hungarian record is new to the Hajdúság area (E Hungary).

Farkas, E., Lőkös, L.

(167) ***Oxneria huculica*** S. Y. Kondr. (Teloschistaceae)

Romania: Brasso, Pojana. Leg.: Szurák, J., 09.06.1908 (BP 28697). – Comit. Kolozs, in cortice *Piri pirasteris* declivius occidentalium, montis Lombi-hegy ad viam inter opp. Kolozsvár et pag. Bács. Leg.: Felföldy, L., 29.09.1941 (BP 86535). – Romania, Cluj-Napoca, Str. Republicii 48, at Institute of Biological Research, on bark (*Fraxinus*). Lat.: 46.761741° N; Long.: 23.589009° E; Alt.: 395 m a.s.l. Coll.: Lőkös, L., Pifkó, D., 08.09.2022 (BP 98137). – Romania, Cluj-Napoca, southern part of the Hajongard cemetery (Central cemetery), on bark (*Aesculus hippocastanum*). Lat.: 46.758590° N; Long.: 23.595621° E; Alt.: 440 m a.s.l. Coll.: Lőkös, L., Pifkó, D., 08.09.2022 (BP 98138). – Romania, Cluj-Napoca, southern part of the Hajongard cemetery (Central cemetery), on bark (*Fraxinus*). Lat.: 46.758319° N; Long.: 23.595176° E; Alt.: 440 m a.s.l. Coll.: Lőkös, L., Pifkó, D., 08.09.2022 (BP 98139). – Romania, Cluj-Napoca, middle part of the Hajongard cemetery (Central cemetery), near tomb of Sámuel Brassai, on bark (*Fraxinus*). Lat.: 46.761772° N; Long.: 23.593439° E; Alt.: 405 m a.s.l. Coll.: Lőkös, L., Pifkó, D., 08.09.2022 (BP 98140).

Serbia, Bács-Bodrog v. m., Zenta, Népkert, *Quercus robur* kérgén. Leg.: Gallé, L. 20.09.1929 (BP 47201). – Serbia: in cortice Salicis fragilis ad balneam Banjska prope Mitrovica, alt. ca. 550 m. s. m. Leg.: Andrasovszky, J., 19.10.1916 (BP 47208, BP 86525). – Serbia, Braničevo District, Djerdap National Park, Golubac, a small park at the riverbank of Danube, on bark (*Acer saccharinum*, *Fraxinus*). Lat.: 44.653899° N; Long.: 21.630018° E; Alt.: 70 m a.s.l. Coll.: Lőkös, L., Papp, B., 26.06.2022 (BP 98136).

*Oxneria huculica*. a common and widespread lichen species has been described recently (Kondratyuk *et al.* 2010), separating it from the similar *O. fallax*. Its old collections might be overlooked. These old and recent records are new to Romania and Serbia!

L. Lőkös, D. Pifkó, B. Papp

(168) ***Parmotrema perlatum*** (Huds.) M. Choisy (Parmeliaceae)

Hungary, Hajdú-Bihar County, Nyírség, Nyírábrány: Hátsó-dűlő, southernmost part of 76/E forest lot, 8497.2, 47.57708° N 21.98885° E, alt. 146 m, oak forest, on bark of *Quercus robur*, leg. et

det. Matus, G., 03.03.2022 (small young specimen with more ciliae and few soralia) (DE). – Hungary, Hajdú-Bihar County, Nyírség, Nyírábrány: Hátsó-dűlő, southernmost part of 76/E forest lot, 8497.2, 47.57706° N E21.98912° E, alt. 145 m, oak forest, on bark of *Qu. robur*, leg. Matus, G., 03.03.2022, det. Lőkös, L. (large older specimen with degrading ciliae, wrinkled central thallus and more marginal capitate soralia) (DE) (Fig. 1). – Hungary, Hajdú-Bihar County, Nyírség, Nyíracsád: 275/P forest lot, 8497.2, N47.57754° N 21.98410° E, alt. 142 m, planted oak forest, on bark of *Qu. robur*, leg. Matus, G., Yarmak, M, Kiss, P., 08.04.2022, det. Matus, G., Lőkös, L. (DE).

After publishing the recent review on its Hungarian distribution (Farkas *et al.* 2021), running lichen survey yielded further occurrences of *Parmotrema perlatum* from forests of Southern Nyírség, East Hungary. The species (syn. *Parmelia perlata* (Huds.) Ach.; *Parmelia trichotera* Hue), formerly considered as 'rare, strongly declining' (Verseghy 1994). Recent findings increase portion of records from the unpolluted rural region by the eastern border even further (5 flora mapping grid unit out of the total 29 ones in Hungary). It may suggest that either the frequency of the species has been underestimated or the recent mildness of winters extends its active period and promotes the spreading of the species preferring humid, oceanic-suboceanic habitats (Jørgensen 1996, Nimis *et al.* 2018). All recent records are from *Quercus* bark suggesting that it is the most frequent natural substrate for the species.

G. Matus, L. Lőkös

**Fig. 1.** *Parmotrema perlatum*, on *Quercus* bark (Hátsó-dűlő, Nyíracsád, Hungary) (photo: G. Matus).

(169) ***Toniniopsis subincompta*** (Nyl.) Kistenich, Timdal, Bendiksby et S. Ekman (= *Bacidia subincompta* (Nyl.) Arnold) (Ramalinaceae)

Hungary, Fejér County, Vértes Mts, Csákberény: Ugró-völgy, on bark (*Acer campestre*). Lat.: 47.359346° N; Long.: 18.335020° E; Alt.: 275 m a.s.l. Coll.: Lőkös, L., 02.03.2021 (BP 98133).

This epiphytic crustose lichen species belonging to the former *Bacidia* s. l. genus is less frequent in Hungary with a main distribution in the middle mountain range. It seems to be spreading, most of its occurrences were recorded in the last decades. No records have been known from the Transdanubian Mts before. New to the Vértes Mts!

Farkas, E., Lőkös, L.

## Lichenicolous fungi

(170) ***Scutula tuberculosa*** (Th. Fr.) Rehm (Byssolomataceae)

Hungary, Pest County, Buda Mts, Pilisszentiván, Kis-Szénás, gritty road-bank between Hosszú-árok and Iváni-hegy along dirty road, on shaded calcareous soil. Lat.: 47.599318° N; Long.: 18.874150° E; Alt.: 370 m a.s.l. Leg.: Lőkös, L., 25.05.1988 (BP 96272). – Hungary. Veszprém County, Bakony Mts, Veszprém, Séd-völgy, near Lackó-forrás, on calcareous soil/rock. Lat.: 47° 05' 36.12" N; Long.: 17° 52' 47.08" E; Alt.: ca. 245 m a.s.l. Leg.: Lőkös, L. and Farkas, E., 22.06.1993 (BP 96259). – Hungary. Borsod-Abaúj-Zemplén County. Bükk National Park, Bükk Mts, Ómassa, Mt Jávor-hegy, alt. ca 500 m a.s.l. On calcareous soil. Leg.: Lőkös, L. (12/86N), 24.04.1986 (BP 96279). – Comit. Fejér. In rupibus dolom. silvat. vallis Svábrőzse-völgy prope Vérteskozma. Alt. s. met. ca: 340. Leg.: Boros, Á., 1935.04.07. (BP 36690). – Comit. Fejér. In rupestribus dolomit. silvat. vallis Kőlik-völgy pr. Csákvár. Alt. s. met. ca: 2–300. Leg.: Boros, Á., 1937.04.04. (BP 36723). – Vértes, Fejér megye, Csákberény, Kőkapu-völgy, É-i kitettségű dolomitszikla humuszán. É.sz.: 47° 21' 44.5"; K.h.: 18° 18' 25.0"; Tszf.m.: kb. 388 m (GPS 655/1). Leg.: Németh, Cs., 2005.IV.16. (BP 92231). – Vértes, Fejér megye, Vérteskozma, Nagy-Tábor-hegy, *Fago-Ornetum*, É-i kitettségű dolomitsziklán. É.sz.: 47° 26' 51.0"; K.h.: 18° 26' 29.5"; Tszf.m.: kb. 361 m (GPS 549). Leg.: Németh, Cs., 2005.III.25. (BP 92218).

This lichenicolous fungus occurs on *Solorina saccata* in Hungary (Varga *et al.* 2021), with sexual and/or asexual stage. The ascospore producing and the conidial stages occur together on two specimens (BP 36723, BP 96279). Apothecia scattered on the host thallus with variable size (0.2–0.7(–0.8) mm diam.) and colour (from yellowish to dark brown), asci are *Scutula*-type, ascospores are hyaline, oval with one septum, 12.8–14.4 × 4.8–5.0 µm. The conidial stage is also very variable in size and shape of conidia (Fig. 2). There is a macroconidial form called *Karsteniomyces*-type, and our material contains also a microconidial form. Conidia are usually bacilliform (micro: 8–11 × 1 µm, macro: 11–15(–18) × 3–4 µm with or without septum) (Wedin *et al.* 2007). Five specimens have only conidial forms (BP 36690, BP 92218, BP 92231, BP 96259, BP 96272). Both micro- and macroconidia have been detected on two specimens (BP 36690, BP 36723) (micro: 9.6–12.8 × 1.0–1.6 µm, macro: 14.4–17.6 × 3.2–3.4 µm).

It was recognized from a recent collection from the Vértes Mts (BP 92218) (Varga *et al.* 2021), however it was detected from older collections as well. New to the Bakony, Bükk and Buda Mts.

N. Varga

**Fig. 2.** Subimmersed to sessile conidiomata of *Scutula tuberculosa* on the thallus of *Solorina saccata* (BP 92218) (scale: 200 μm) (photo: N. Varga).

## (171) ***Stigmidium solorinarium*** (Vain.) D. Hawksw. (Mycosphaerellaceae)

Veszprém megye, Bakony, Bakonybél, Hegyes-kő, É-i kitettségű árnyas mészkőszikla vékony humuszrétegén. É.sz.: 47.23079°; K.h.: 17.73791°; Tszf. m.: kb. 326 m (GPS 2065). Leg.: Németh, Cs., 2007.IV.6. (BP 92935). – Veszprém megye, Bakony, Várpalota, Vár-völgy, É-i kitettségben, árnyas dolomitsziklán. É.sz.: 47.22810°; K.h.: 18.10099°; Tszf. m.: kb. 344 m (GPS 2087/3). Leg.: Németh, Cs. and Békási, I., 2007.IV.21. (BP 92945). – Veszprém megye, Bakony, Veszprém, Csatári-malom és az Ördögrágta-kő között, É-i kitettségű árnyas dolomitszikla vékony humuszrétegén. É.sz.: 47.09762°; K.h.: 17.86344°; Tszf. m.: kb. 246 m (GPS 2074). Leg.: Németh, Cs., 2007.IV.7. (BP 92948). – Veszprém megye, Bakony, Veszprém, Csatári-malom és az Ördögrágta-kő között, É-i kitettségű árnyas dolomitszikla vékony humuszrétegén. É.sz.: 47.09748°; K.h.: 17.86465°; Tszf. m.: kb. 245 m (GPS 2073). Leg.: Németh, Cs., 2007.IV.7. (BP 92947). – Veszprém megye, Bakony, Veszprém, Tekeres-völgy, É-i kitettségű árnyas dolomitszikla vékony humuszrétegén. É.sz.: 47.08855°; K.h.: 17.86108°; Tszf. m.: kb. 266 m (GPS 2079). Leg.: Németh, Cs., 2007.IV.7. (BP 92953). – Fejér megye, Vértes, Csákberény, Csonka-bükk, É-i kitettségű dolomitsziklán. É.sz.: 47.38622°; K.h.: 18.32164°; Tszf. m.: kb. 384 m (GPS 1952/1). Leg.: Németh, Cs., 2006.X.21. (BP 92932). – Fejér megye, Vértes, Gánt, bányatelep, É-i kitettségben, dolomitsziklán. É.sz.: 47° 22’

09.7"; K.h.: 18° 23' 26.4"; Tszf. m.: kb. 195 m (GPS 1362). Leg.: Barina, Z., 2005.IX.24. (BP 92463). – Fejér megye, Vértes, Csákberény, Csonka-bükk, É-i kitettségű dolomitsziklán. É.sz.: 47.386080°; K.h.: 18.322870°; Tszf. m.: kb. 399 m (GPS 1954). Leg.: Németh, Cs., 2006.X.21. (BP 92931). – Fejér megye, Vértes, Csákberény, Somos-völgy, É-i kitettségű dolomitsziklán lombos moha gyepben. É.sz.: 47° 21' 37.6"; K.h.: 18° 18' 39.6"; Tszf. m.: kb. 343 m (GPS 661). Leg.: Barina, Z. and Németh, Cs., 2005.IV.22. (BP 92223). – Hungary. Veszprém County, Bakony Mts: Mt Hegyes-kő ca 2.5 km SSE of Bakonybél. Lat.: 47.230954° N; Long.: 17.738179° E; Alt.: 310 m a.s.l. On calcareous soil among shaded, calcareous rocks. Leg.: Lőkös, L. and Farkas, E., 10.07.1993 (BP 96261). – Veszprém megye, Bakony, Veszprém, Tekeres-völgy (a Kőris-hegy nyugati letörése), északi kitettségű, árnyas dolomitszikla vékony humuszrétegén. É.sz.: 47.08200°; K.h.: 17.84704°; Tszf. m.: kb. 289 m (GPS 2084). Leg.: Németh, Cs., 2007.IV.7. (BP 92956).

This lichenicolous fungus occurs on *Solorina saccata* in Hungary (Varga *et al.* 2021), but elsewhere it also colonizes *S. bispora* (Hawksworth 1983, Brackel 2014). Infected areas become greyish, dark brown perithecia immersed, asci produce 8 ascospores. Ascospores are hyaline, light to dark brown according to the stage of maturity, 8.0–12.8 × 3.0–3.5 μm. Younger forms are usually lighter brown with two septa, matured forms are darker brown sometimes with three septa (Roux and Triebel 1994). In our Hungarian material the two-septate ascospores are more common.

Distribution patterns of lichenicolous fungi follow those of the host. *Solorina saccata* seems to be rather common on its habitats in the Transdanubian Mountain Range, but habitat fragmentation and microclimatic changes endangering these small populations (Sinigla *et al.* 2018).

It was published from Hungary recently (Varga *et al.* 2021). Detailed records of the specimens collected from the Bakony and Vértes Mts between 1993 and 2007 are presented here.

N. Varga

## Flowering plants

(172) ***Crepis mollis*** (Jacq.) Asch. subsp. ***succisifolia*** (All.) Dostál (Asteraceae)

Hungary, Veszprém county, Devecseri-Bakonyalja region, Noszlop: Bárány-les, 47.165123° N, 17.450873° E, alt. 180 m, [8870.2]; leg. & det.: N. Bauer, 13.05.2021 (BP HNHM-TRA 00128955). (Fig. 3).

*C. mollis* subsp. *succisifolia* (syn. *C. hieracioides* Waldst. et Kit.) is a vulnerable taxon (Grulich 2012) of species-rich mesophilic meadows and fens of the Central-European mountainous and submountainous regions (Kaplan *et al.* 2018). After the rediscovery of the species (Bauer and Somlyay 2015) handled formerly extinct, it is the second known recent Hungarian population also, which was also found in the Bakonyalja region. Latter is a small population with 15–20 specimens, southwestern to the settlement of Noszlop on the floodplain of the stream named "Tegye-víz". The habitat of the species is a shaded

**Fig. 3.** *Crepis mollis* subsp. *succisifolia* at Noszlop (Bakonyalja, Hungary) (photo: N. Bauer).

transitional ecotone of a rich fen (*Juncetum subnodulosi* Koch 1926) and a drying *Molinia* fen (*Succiso-Molinietum hungaricae* (Komlódi 1958) Soó 1969). The locality still shows good naturalness with several valuable elements of the characteristics fens of Bakonyalja (e.g. *Cirsium rivulare* (Jacq.) All., *Dianthus superbus* L., *Eriophorum latifolium* Hoppe, *Iris sibirica* L., *Lathyrus pannonicus* (Jacq.) Garcke, *Gentiana pneumonanthe* L., *Veratrum album* L.), but, because a small game-park was established on the neighbouring parcel, the fertilisation caused by wild boars and mouflons seems to be an endangering effect. Latter is also true for the Czech Republic, where the subspecies was frequent and distributed, but that is in decline, many of its former occurrences have vanished due to eutrophication (Kaplan *et al.* 2018). Nevertheless, two known populations of the species prove the importance of conserving valuable fens in the Bakonyalja region.

N. Bauer

(173) ***Juncus sphaerocarpus*** Nees (Juncaceae)

Hungary, Borsod-Abaúj-Zemplén County, Serényfalva: "Mocsár", in a wet field, 48.33077° N, 20.39321° E [7688.3], leg. Cs. Molnár, 24.06.2021 (BP).

Due to the construction of a high-voltage line, in a few months of 2021 in an unploughed, approximately 20 × 20 m area, in a swamp growing area, the *Juncus sphaerocarpus* appeared, certainly from the seed bank.

During the planning of the poles supporting the line, several square areas necessary for the construction of the pole were designated and taken out of agricultural production in 2021, but only part of them was actually worked on, nothing happened in the rest, until re-ploughing the entire field after harvest.

Approximately one hundred plants produced a crop. *Bromus commutatus*, *B. japonicus*, *Juncus articulatus*, *J. bufonius*, *Lythrum hyssopifolia*, *Persicaria maculosa*, *Plantago major* subsp. *intermedia*, *Poa trivialis*, *Ranunculus sardous* and *Veronica anagallis-aquatica*, among others, lived next to this species.

It is only known from a few places in the Northern Hungarian Mountains, such as in Cserehát, near the Beret, in wet fields (Virók *et al.* 2004), in the Torna Basin at Tornagörgő (now Hrhov, Slovakia) and in the Bódva Valley at Hídvégardó (Virók *et al.* 2016) in pioneer vegetation of wet substrate.

Cs. Molnár

(174) ***Lappula heteracantha*** (Ledeb.) Borbás (Boraginaceae)

Hungary, Veszprém county, Mezőföld region, Balatonkenese: Soós-hegy hill, 47.03546° N, 18.09571° E, alt. ~160 m, [8974.4]; leg. & det.: N. Bauer, 06.06.2018 (BP HNHM-TRA 00058786).

*Lappula heteracantha* is a continental flora element with a wide Eurasian area (Hlavacek 1958, Ovchinnikova 1997, Ovchinnikova *et al.* 2004). The species shows an exciting regional distribution pattern in Hungary. Like other continental taxa in Hungary, in its regional distribution pattern can be seen an enrichment in the Northern Hungarian Mts. Western to the Danube it frequently occurs just in the eastern part of the Transdanubian Range. According to Bartha *et al.* (2020), the westernmost locality of the species is at the southern margin of the Vértes Mts, near to Mór settlement, where it was collected for the first time by Ádám Boros in 1951 (BP 483332). Approximately 100 specimens of the species can be found on the edge of the hill Soós-hegy at Balatonkenese – as a confirmation of old data. *L. heteracantha* was published near Lake Balaton for the first time by Borbás (1900), the first known herbarium sheet from Balatonkenese was collected by Sándor Jávorka in 1953 (BP 200638). These data mentioned above cannot be seen on the current area map of the species (Bartha *et al.* 2020), probably because formerly published data collected in the Balaton Uplands and Bakony Mts (see Borbás 1900, Hlavacek 1958) have not been confirmed by the recent flora mapping projects. Further, the herbarium data documented by specimens based on misidentification;

specimens from Mt Badacsony (leg. Borbás V., 04.06.1893., BP 565263) and „Bakonytető" of Veszprém (leg. Barthos Gy., Sept. 1960., BP 290644) are sheets with *L. squarrosa* individuals (rev. Bauer N., 2021). The presence of *L. heteracantha* at Balatonkenese, confirmed by this note, is a plant geographically evident occurrence because that followed by several other continental species (e.g. *Isatis tinctoria* L., *Sisymbrium polymorphum* (Murray) Roth.) rare in Hungary, reaching their local area border on the western margin of Mezőföld, at the bluffs of Lake Balaton (Borbás 1900, Bauer and Somlyay 2007).

N. Bauer

(175) ***Sherardia arvensis*** L. (Rubiaceae)

Hungary, Zemplén Mts, Gönc: Köszörűkő-dűlő, lot number: 0262/1, [7593.2], 48.49637° N, 21.29901° E, alt. 185 m, margin of wheat field, leg. et det. G. Matus, 25.07.2020 (DE).

Field madder is considered a sporadic arable weed in most of Hungary except for some, mostly Western Hungarian landscapes, e.g. Gerecse Mts (Barina 2006). Most of its recent records from the Northern Mountain Range stem from the Aggtelek Mts and Cserehát (Virók *et al.* 2004, 2016). It is similarly widespread north of these at the Slovenský kras (Bertová *et al.* 1985, Virók *et al.* 2016) and at the Košická kotlina (several historic records; Bertová *et al.* 1985),

**Fig. 4.** *Sherardia arvensis* and *Euphorbia exigua* (Köszörűkő-dűlő, Gönc, Hungary) (photo: G. Matus).

next to the new finding. In contrast, only a limited number of historic records is available from Zemplén Mts; Regéc: Hulják in Kiss (1939); Regéc, Tokár-tető (1958): Simon (2005); Komlóska: Kiss (1939). Neither specimens from Zemplén Mts have been reported at herbarial databases (BPU, DE, EGR; E. Vojtkó 2014, Takács *et al.* 2014, 2015, Nótári *et al.* 2017) nor was it mentioned in recent publications about the area (Türke *et al.* 2020*a*, *b*, Vojtkó and Farkas 2023). This record is therefore a confirmation of field madder at Zemplén Mts after over 60 years (Fig. 4). The species is either overlooked because of its small stature or because of insufficient search at arables. Another explanation for the lack of recent records is that the species, similarly to other vulnerable arable weeds, cannot tolerate modern agricultural technics and herbicides and has lost most of its habitats withdrawing to small refuges at margins of low productivity arables. Accompanying species at site included *Adonis aestivalis*, *Daucus carota* subsp. *carota*, *Euphorbia falcata*, *E. exigua*, *Melampyrum arvense* and *Thymelaea passerina*, some of which are also rare in the region.

G. Matus

(176) ***Sorbus semiincisa*** (Borbás) Borbás (Rosaceae)

Hungary, Fejér county, Mezőföld region, Kőszárhegy: Szár-hegy, 47.098279° N, 18.03931° E, alt. 222 m, [8975.2]; leg. & det.: N. Bauer, 18.09.2021 (BP HNHM-TRA 00128943). (Fig. 5).

**Fig. 5.** *Sorbus semiincisa* at Szár-hegy, Kőszárhegy (Hungary) (photo: N. Bauer).

*Sorbus semiincisa* is an endemism distributed in the Buda Mts and Pilis Mts (Kárpáti 1960, Kurtto *et al.* 2013). Still, its island-like occurrences, slightly isolated from the main area, are also known on the eastern margin of the Gerecse Mts (Barina 2006). On 13 May 2016, one small tree was found north of the settlement of Kőszárhegy, on the plateau of the hill Szár-hegy. Shoots with typical ripe fruits were collected in September of 2021. Stone mining has been typical on the Szár-hegy for centuries. Since the 1960s, the local mining for the Devon limestone forming the main block of the hill (Gyalog and Horváth 2004) has been very intense. Most of the limestone surfaces have been removed yet. Further individuals of the species, despite the aimed search, have not been found not on the hill Szár-hegy nor rocky outcrops of other island hills standing out from the loess plateau of Mezőföld (Füle: Kő-hegy, Balatonfőkajár: Somlyó-hegy).

On the hill Szár-hegy several character species of the rocky vegetation of the Transdanubian Mts occur (*Allium moschatum* L., *Artemisia alba* Turra, *Medicago prostrata* Jacq., *Ornithogalum comosum* L., *Paronychia cephalotes* (M. Bieb.) Besser, etc.) (see Bauer and Somlyay 2007, Barina 2008). Based on that, occurring of *S. semiincisa* should be spontaneous here. On the other hand, because only one specimen could be recorded, we do not exclude the subspontaneous origin. The latter question could be answered based on the results of a detailed population genetic analysis of *S. semiincisa*.

N. Bauer

(177) ***Sporobolus cryptandrus*** (Torr.) A. Gray (Poaceae)

Hungary, Hajdú-Bihar County, Létavértes: Létai-legelő, shallow dune slack ca. 200 m north-east of the former school building 'Ligeti Iskola' (later on as HUNÉP holiday home), hundreds of individuals (centre: 47.43944° N, 21.91143° E, alt. 119 m), [8597.3], leg. and det. Matus, G., A. Balogh, R., 17.10.2022 (DE).

The North American Sand Dropseed is a rapidly invading species in dry sandy grasslands throughout Europe (Török and Aradi 2017, Török *et al.* 2021). In Hungary it has already become established at several sites of Kiskunság (a calcareous sandy region in Central Hungary) while its vanguards have also reached the Small Hungarian Plain (Schmidt 2021 in *http://floraatlasz.uni-sopron.hu)*. In East Hungary the species has first been reported from urban habitats in the city of Debrecen in 2016, but has been present there unidentified years before. Our finding is the first rural record from Nyírség, a calcifuge sandy area east of Debrecen. The newly surveyed population, located 30 km south-east of the city, lies at intersecting dirt roads along the major hiking trail, Alföldi Kéktúra ('Lowland Blue') (Fig. 6) and counts a few hundreds of individuals scattered over a *ca* 40 × 25 m sized area with some further outposts by these roads. This layout suggests an at least few years' old establishment at the site. The area is not mown but occasion-

**Fig. 6.** *Sporobolus cryptandrus* (Létai-legelő, Létavértes, Hungary) (photo: G. Matus).

ally grazed by sheep, roe deer and hare. The population stretches into grasslands registered in the Natura 2000 network (Kék-Kálló-völgye: HUHN20016, a habitats directive site with dominant habitat types '6260 Pannonic sand steppes' and '6510 Lowland hay meadows', respectively, *https://natura2000. eea.europa.eu*). The neighbouring non-protected, non Natura 2000 forest lots, Létavértes 108/A and 108/B, where edges are occupied, have last been clear-cut and replanted with black locust in 2009 and 2017, respectively. Occurrence of further still unnoticed populations is likely in the region.

G. Matus, R. A. Balogh

* * *

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**Összefoglaló**: A regionális jelentőségű előfordulásokat és nevezéktani megjegyzéseket bemutató sorozat jelenlegi, tizenhatodik részében hat edényes növénytaxon, hat zuzmófaj és két zuzmóparazita mikrogomba új elterjedési adatait közöljük Magyarország, Románia és Szerbia területéről.

A virágos növények közül az országos viszonylatban is ritka *Juncus sphaerocarpus* új populációja került elő a Putnoki-dombság területéről, az endemikus *Sorbus semiincisa* pedig újnak bizonyult a Mezőföld területére. A gyorsan terjedő *Sporobolus cryptandrus*-t a Nyírség területéről korábban csak Debrecen városi környezetében detektálták, az új nyírségi előfordulás Debrecenen kívüli, vidéki területről származik. A *Crepis mollis* subsp. *succisifolia* második élő populációja került elő a Bakonyalja területéről. Megerősítést nyert a *Lappula heteracantha* korábbi mezőföldi (Balatonkenese), valamint a *Sherardia arvensis* korábbi zempléni-hegységi előfordulása.

A zuzmófajok közül a *Bacidia fraxinea* és a *Toniniopsis subincompta* új a Vértes, a *Bacidia rubella* új a Pilis hegy, a *Flavoparmelia soredians* pedig új a Hajdúság területére, továbbá az *Oxneria huculica* több új romániai és szerbiai adatát is közöljük. Említést érdemelnek a *Bacidia rubella* második vértesi és a *Parmotrema perlatum* további nyírségi adatai is. A Magyarországról nemrégiben kimutatott zuzmóparazita mikrogombák, a *Scutula tuberculosa* és a *Stigmidium solorinarium* számos új hazai adatát ismertetjük főként a Dunántúli-középhegység (Bakony, Budai-hegység, Vértes) és a Bükk területéről.

## REFERENCES


Aszalósné Balogh, R., Buczkó, K., Erzberger, P., Freytag, Cs., Homm, Th., Lőkös, L., Matus, G., Nagy, Z., Papp, B. and Farkas, E. (2021): Taxonomical and chorological notes 15 (153–163). – *Studia bot. hung.* **52**(2): 165–184. https://doi.org/10.17110/StudBot.2021.52.2.165

Barina, Z. (2006): A Gerecse hegység flórája. (Flora of the Gerecse Mountains). – *Rosalia* **1**: 1–612.

Barina, Z. (2008): Adatok a Dunántúli-középhegység és környéke flórájához. (Data on the flora of Hungarian Middle Mountains and neighbouring regions). – *Flora Pannonica* **6**: 3–23.

Barina, Z., Benedek, L., Boros, L., Dima, B., Folcz, Á., Király, G., Koszka, A., Malatinszky, Á., Papp, D., Pifkó, D. and Papp, V. (2015): Taxonomical and chorological notes 1 (1–19). – *Studia bot. hung.* **46**(2): 205–221. https://doi.org/10.17110/studbot.2015.46.2.205

Barina, Z., Molnár, Cs., Somogyi, G., Szederjesi, T., Pifkó, D., Rigó, A., Mártonffy, A., Virók, V. and Dudáš, M. (2020): Taxonomical and chorological notes 11 (112–125). – *Studia bot. hung.* **51**(1): 67–76. https://doi.org/10.17110/StudBot.2020.51.1.67

Bartha, D., Bán, M., Schmidt, D. and Tiborcz, V. (eds) (2020): *Magyarország edényes növényfajainak online adatbázisa*. (http://floraatlasz.uni-sopron.hu). – Soproni Egyetem, Erdőmérnöki Kar, Növénytani és Természetvédelmi Intézet. Accessed: 28.05.2022.

Bauer, N. and Somlyay, L. (2007): A Sisymbrium polymorphum (Murray) Roth. és más florisztikai adatok a Nyugat-Mezőföldről. (Sisymbrium polymorphum (Murray) Roth. and other data to the flora of the Mezőföld region (Central Hungary)). – *Kitaibelia* **12**(1): 52–55.

Bauer, N. and Somlyay, L. (2015): A Crepis mollis (Jacq.) Asch. subsp. hieracioides (Waldst. & Kit.) Domin újrafelfedezése Magyarországon. (Rediscovery of Crepis mollis (Jacq.) Asch. subsp. hieracioides (Waldst. & Kit.) Domin in Hungary). – *Kitaibelia* **20**(1): 150–156. https://doi.org/10.17542/kit.20.150

Bertová, L., Chrtek, J., Kmeťová, E., Štepánek, J. and Zahradníková, K. (1985): *Sherardia*. – In: Bertová, L. (ed.): Flóra Slovenska 4/2. VEDA, Bratislava, pp. 8–11.

Borbás, V. (1900): *A Balaton tavának és partmellékének növényföldrajza és edényes növényzete.* – A Balaton Tudományos Tanulmányozásának Eredményei. Magyar Földrajzi Társaság Balaton Bizottsága, Budapest, 431 pp.

Brackel, W. von. (2014): Kommentierter Katalog der flechtenbewohnenden Pilze Bayerns. – *Bibl. Lichenol.* **109**: 1–476.

CABI (2021): *The Index Fungorum*. – http://www.indexfungorum.org (accessed 5 May 2021).

Csiky, J., Kováts, D., Deme, J., Takács, A., Óvári, M., Molnár, V. A., Malatinszky, Á., Nagy, J. and Barina, Z. (2017): Taxonomical and chorological notes 4 (38–58). – *Studia bot. hung.* **48**(1): 133–144. https://doi.org/10.17110/studbot.2017.48.1.133

Deme, J., Palla, B., Haszonits, Gy., Csiky, J., Baráth, K., Kovács, D., Zurdo Jorda, A., Erzberger, P., Wolf, M., Papp, V. and Schmidt, D. (2019): Taxonomical and chorological notes 9 (94–98). – *Studia bot. hung.* **50**(2): 381–392. https://doi.org/10.17110/StudBot.2019.50.2.381

E. Vojtkó, A., Takács, A., Molnár V., A. and Vojtkó, A. (2014): Herbarium database of the vascular collection of Eszterházy Károly College (EGR). – *Kitaibelia* **19**(2): 339–348.

Farkas, E., Lajtha-Tabajdi, Á., Lőkös, L., Molnár, K., Paczkó, L. and Sinigla, M. (2016): Flavoparmelia soredians (Parmeliaceae, lichenised Ascomycetes), a spreading lichen species in Hungary. – *Studia bot. hung.* **47**(1): 5–12. https://doi.org/10.17110/StudBot.2016.47.1.5

Farkas, E., Aszalósné Balogh, R., Matus, G. and Lőkös, L. (2021): *Parmotrema perlatum* (Huds.) M. Choisy (Parmeliaceae). In: Aszalósné Balogh, R., Buczkó, K., Erzberger, P., Freytag, Cs., Homm, Th., Lőkös, L., Matus, G., Nagy, Z., Papp, B. and Farkas, E. (2021): Taxonomical and chorological notes 15 (153–163). – *Studia bot. hung.* **52**(2): 170–172. https://doi.org/10.17110/StudBot.2021.52.2.165

Farkas, E., Varga, N., Veres, K., Matus, G., Sinigla, M. and Lőkös, L. (2022): Distribution types of lichens in Hungary that indicate changing environmental conditions. – *J. Fungi* **8**(6): 600. https://doi.org/10.3390/jof8060600

Grulich, V. (2012): Red list of vascular plants of the Czech Republic. 3rd edition. – *Preslia* **84**: 631–645.

Gyalog, L. and Horváth, I. (2004): *A Velencei-hegység és a Balatonfő földtana*. (Geology of the Velence Hills and the Balatonfő). – Magyar Állami Földtani Intézet, Budapest, 316 pp.

Hawksworth, D. L. (1983): A key to lichen-forming, parasitic, parasymbiotic and saprophytic fungi occurring on lichens in the British Isles. – *Lichenologist* **15**: 1–44. https://doi.org/10.1017/s0024282983000031

Hlavacek, A. (1958): Prispevon k rozsireniu Lappula heteracantha (Ledeb.) O. Kuntze v Europe. (Ein Beitrag zur Verbreitung der Lappula heteracantha (Ledeb. O. Kuntze in Europa). – *Biologia* **13**(5): 362–370.

Jørgensen, P. M. (1996): The oceanic element in the Scandinavian lichen flora revisited. – *Symb. Bot. Upsal.* **31**(3): 297–317.

Kaplan, Z., Koutecky, P., Danihelka, J., Šumberová, K., Ducháček, M., Štěpánková, J., Ekrt, L., Grulich, V., Řepka, R., Kubát, K., Mráz, P., Wild, J. and Brůna, J. (2018): Distributions of vascular plants in the Czech Republic. Part 6. – *Preslia* **90**: 235–346. https://doi.org/10.23855/preslia.2018.235.

Kárpáti, Z. (1960): Die Sorbus-Arten Ungarns und der angrenzenden Gebiete. – *Feddes Repert.* **62**: 71–331.

Király, G. (2009): Új magyar füvészkönyv. Magyarország hajtásos növényei. Határozókulcsok. – Aggteleki Nemzeti Park Igazgatóság, Jósvafő, 616 pp.

Király, G., Baráth, K., Bauer, N., Erzberger, P., Papp, B., Szűcs, P., Veres, Sz. and Barina, Z. (2019*a*): Taxonomical and chorological notes 8 (85–93). – *Studia bot. hung.* **50**(1): 241–252. https://doi.org/10.17110/StudBot.2019.50.1.241

Király, G., Hohla, M., Süveges, K., Hábenczyus, A. A., Barina, Z., Király, A., Lukács, B. A., Türke, I. J. and Takács, A. (2019*b*): Taxonomical and chorological notes 10 (98–110). – *Studia bot. hung.* **50**(2): 391–407. https://doi.org/10.17110/StudBot.2019.50.2.391

Kiss, Á. (1939): Adatok a Hegyalja flórájához. – *Bot. Közlem.* **36**(5–6): 181–273.

Kondratyuk, S. Y., Kärnefelt, I., Goward, T., Galloway, D., Kudratov, I., Lackovičová, A., Lisická, E. and Guttová, A. (2010): Diagnoses of new taxa. – In: Oxner, A. M. (2010): Flora Lishaĭnikiv Ukraïni. (Flora of the lichens of Ukraine) 2(3). Naukova dumka, Kiev, pp. 435–445.

Kurtto, A., Sennikov, A. N. and Lampinen, R. (eds) (2013): Atlas Florae Europaeae. Distribution of Vascular Plants in Europe. 16. Rosaceae (Cydonia to Prunus, excl. Sorbus). – The Committee for Mapping the Flora of Europe & Societas Biologica Fennica Vanamo, Helsinki, 168 pp. [maps 4709–4878.]

Matus, G., Csiky, J., Bauer, N., Baráth, K., Vasuta, G., Barabás, A., Hricsovinyi, D., Takács, A., Antal, K., Budai, J., Erzberger, P., Molnár, P. and Barina, Z. (2018): Taxonomical and chorological notes 7 (75–84). – *Studia bot. hung.* **49**(2): 83–94. https://doi.org/10.17110/studbot.2018.49.2.83

Mesterházy, A., Matus, G., Király, G., Szűcs, P., Török, P., Valkó, O., Pelles, G., Papp, V. G., Virók, V., Nemcsok, Z., Rigó, A., Hohla, M. and Barina, Z. (2017): Taxonomical and chorological notes 5 (59–70). – *Studia bot. hung.* **48**(1): 263–275. https://doi.org/10.17110/studbot.2017.48.2.263

Nimis, P. L., Hafellner, J., Roux, C., Clerc, P., Mayrhofer, H., Martellos, S. and Bilovitz, P. O. (2018): The lichens of the Alps – an annotated checklist. – *MycoKeys* **31**: 1–634. https://doi.org/10.3897/mycokeys.31.23568

Nótári, K., Nagy, T., Löki, V., Ljubka, T., Molnár V., A. and Takács, A. (2017): Az ELTE Füvészkert herbáriuma (BPU). (The herbarium of the Botanical Garden of Eötvös Loránd University (BPU)). – *Kitaibelia* **22**(1): 55–59. https://doi.org/10.17542/kit.22.55

Ovchinnikova, S. V. (1997): *Lappula Moench.* – In: Malyshev, L. I. (ed.): Flora of Siberia: Pyrolaceae–Lamiaceae (Labiatae), vol. 11. [Флора Сибири: Pyrolaceae–Lamiaceae (Labiatae)]. Nauka, Novosibirsk, pp. 131–142. (in Russian)

Ovchinnikova, S. V., Pjak, A. I. and Ebel, A. L. (2004): Novelties in the genus Lappula (Boraginaceae) of the Altai mountain system. [Новинки в роде Lappula (Boraginaceae)]. – *Turczaninowia* **7**(2): 5–13. (in Russian)

Papp, B., Erzberger, P., Lőkös, L., Szurdoki, E., Németh, Cs., Buczkó, K., Höhn, M., Aszalósné Balogh, R., Baráth, K., Matus, G., Pifkó, D. and Farkas, E. (2020): Taxonomical and chorological notes 12 (126–136). – *Studia bot. hung.* **51**(1): 77–98. https://doi.org/10.17110/StudBot.2020.51.1.77

Papp, V., Király, G., Koscsó, J., Malatinszky, Á., Nagy, T., Takács, A. and Dima, B. (2016): Taxonomical and chorological notes 2 (20–27). – *Studia bot. hung.* **47**(1): 179–191. https://doi.org/10.17110/studbot.2016.47.1.179

Robert, V., Stalpers, J. and Stegehuis, G. (2018): *MycoBank, the fungal website.* – http://www.mycobank.org/DefaultPage.aspx (accessed 5 May 2021).

Roux, C. and Triebel, D. (1994): Révision des especes de Stigmidium et de Sphaerellothecium correspondant a Pharcidia epicymatia sensu Keissler ou a Stigmidium schaereri auct. – *Bull. Soc. Linn. Provence* **45**: 451–542.

Schmidt, D. (2020): Taxonomical and chorological notes 13 (137). – *Studia bot. hung.* **51**(2): 87–90. https://doi.org/10.17110/StudBot.2020.51.2.87

Schmidt, D., Csiky, J., Matus, G., Balogh, R., Szurdoki, E., Höhn, M., Ábrán, P., Buczkó, K. and Lőkös, L. (2018): Taxonomical and chorological notes 6 (71–74). – *Studia bot. hung.* **49**(1): 121–130. https://doi.org/10.17110/studbot.2018.49.1.121

Simon, T. (2005): Botanikai útinaplóim zempléni-hegységi adatai (1954–1967). – *Kanitzia* **13**: 11–28.

Sinigla, M., Lőkös, L., Molnár, K., Németh, Cs. and Farkas, E. (2018): Distribution of the legally protected lichen species Solorina saccata in Hungary. – *Studia bot. hung.* **49**(1): 47–70. https://doi.org/10.17110/studbot.2018.49.1.47

Süveges, K., Takács, A., Tóth, K., Török, P., Vikár, J. and Molnár, Cs. (2021): Taxonomical and chorological notes 14 (138–152). – *Studia bot. hung.* **52**(1): 65–79. https://doi.org/10.17110/studbot.2021.52.1.65

Takács, A., Baráth, K., Csiky, J., Csikyné, R. É., Király, G., Nagy, T., Papp, V., Schmidt, D., Tamási, B. and Barina, Z. (2016): Taxonomical and chorological notes 3 (28–37). – *Studia bot. hung.* **47**(2): 345–357. https://doi.org/10.17110/studbot.2016.47.2.345

Takács, A., Nagy, T., Fekete, R., Lovas-Kiss, Á., Ljubka, T., Löki, V., Lisztes-Szabó, Zs. and Molnár V., A. (2014): A Debreceni Egyetem Herbáriuma (DE) I.: A „Soó Rezső Herbárium". (The herbarium of Debrecen University (DE) I. The "Rezső Soó Herbarium"). – *Kitaibelia* **19**(1): 142–155.

Takács, A., Süveges, K, Ljubka, T., Löki, V., Lisztes-Szabó, Zs. and Molnár V., A. (2015): A Debreceni Egyetem Herbáriuma (DE) II.: A „Siroki Zoltán Herbárium". (The Herbarium of Debrecen University (DE) II.: The „Zoltán Siroki Herbarium"). – *Kitaibelia* **20**(1): 15–22. https://doi.org/10.17542/kit.20.15

Thiers, B. M. (2017): *Index Herbariorum: A global directory of public herbaria and associated staff.* – New York Botanical Garden's Virtual Herbarium. http://sweetgum.nybg.org/ih/ [accessed on 21 June 2021]

Török, P. and Aradi, E. (2017): A new potentially invasive grass, sand dropseed (Sporobolus cryptandrus) discovered in sandy areas of Hungary – A call for information on new localities. – *Bulletin of the Eurasian Dry Grassland Group* **35**: 24–25.

Török, P., Schmidt, D., Bátori, Z., Aradi, E., Kelemen, A., Hábenczyus, A., Díaz Cando, P., Tölgyesi, Cs., Pál, R. W., Balogh, N., Tóth, E., Matus, G., Táborská, J., Sramkó, G., Laczkó, L., Jordán, S., McIntosh-Buday, A., Kovacsics-Vári, G. and Sonkoly, J. (2021): Invasion of the North American sand dropseed (Sporobolus cryptandrus) – A new pest in Eurasian sand areas? – *Global Ecology and Conservation* **32**: e01942, https://doi.org/10.1016/j.gecco.2021.e01942

Türke, I., Lontay, L., Serfőző, J., Zsólyomi, T., Drozd, A. and Pelles, G. (2020*a*): Florisztikai adatok a Tokaj–Zempléni-hegyvidékről és környékéről. (Floristic data from the Tokaj–Zemplén Mts and the surroundings (NE Hungary)). – *Kitaibelia* **25**(1): 33–56. https://doi.org/10.17542/kit.25.33

Türke, I., Lontay, L., Zsólyomi, T., Serfőző, J., Drozd, A. and Pelles, G. (2020*b*): Pótlások Magyarország edényes növényfajainak elterjedési atlaszához XI. Adatok a Tokaj-Zempléni-hegyvidékről és környékéről. (Contributions to the Atlas Florae Hungariae XI. Data from the Tokaj–Zemplén Mts and its surroundings). – *Kitaibelia* **25**(2): 239–241. https://doi.org/10.17542/kit.25.239

Varga, N., Lőkös, L. and Farkas, E. (2021): Annotated checklist of the lichenicolous fungi of Hungary. – *Diversity* **13**: 557. https://doi.org/10.3390/d13110557

Verseghy, K. (1994): *Magyarország zuzmóflórájának kézikönyve.* (The lichen flora of Hungary). – Magyar Természettudományi Múzeum, Budapest, 415 pp.

Virók, V., Farkas, R., Farkas, T., Šuvada, R. and Vojtkó, A. (2016): *A Gömör–Tornai-karszt flórája. Enumeráció.* – ANP Füzetek XIV, Aggteleki Nemzeti Park Igazgatóság, Jósvafő, 1126 pp.

Virók, V., Farkas, R., Szmorad, F. and Boldoghné Szűts, F. (2004): Florisztikai adatok Borsod-Abaúj-Zemplén-megye északi részéről. (Floristic data from the northern part of Borsod-Abaúj-Zemplén county). – *Kitaibelia* **9**(1): 143–150.

Vojtkó, A. and Farkas, T. (2023): Florisztikai adatok Észak-Magyarországról III. Zempléni-hegység. – *Kitaibelia* **28**(1) (in press).

Wedin, M., Ihlen, P. G. and Triebel, D. (2007)*:* Scutula tuberculosa, the correct name of the Scutula growing on Solorina spp., with a key to Scutula s. str. in the Northern Hemisphere. – *Lichenologist* **39**(4): 329–333. https://doi.org/10.1017/s0024282907006949

http://floraatlasz.uni-sopron.hu (accessed: 11 December 2022)