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TAXONOMICAL AND CHOROLOGICAL NOTES 7 (75–84)

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Abstract: The present part of the series of miscellaneous new records provides the records of *Radiola linoides* reported for the first time from the Zemplén Mts, and as a confirmation of the occurrence of the species in Hungary. Partly sympatrically, *Centunculus minimus* is reported as a new species from the Zemplén Mts with a number of localities. One invasive bryophyte species *Campylopus introflexus* is reported newly from Colocense and Praematricum biogeographical regions in Hungary and an additional occurrence in Somogy County is mentioned. An introduced fungus, *Clathrus archeri* is reported for the first time from the Ciuc Mts largely expanding the known area of the species in Romania to the south. A frequently overlooked fern, *Dryopteris affinis* is newly reported from the Visegrád Mts and also from the Pinka Gorge in the Vas Mts. A remarkable new occurrence of *Primula farinosa* in Bakonyalja and additional records of *Cuscuta campestris* in W Hungary are also provided here.

Key words: Clavulinaceae, Dryopteridaceae, Hungary, Onagraceae, Poaceae, Romania

INTRODUCTION

This paper is the seventh 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 (Barina *et al.* 2015, Papp *et al.* 2016, Takács *et al.* 2016, Csiky *et al.* 2017*b*, Mesterházy *et al.* 2017, Schmidt *et al.* 2018.).

MATERIAL AND METHODS

Nomenclature of vascular plants follows Király (2009) and The Plant List (2013). Codes of the Central European Flora Mapping grid are in square brackets. Coding of forest lots has been based on www.erdoterkep.nebih.gov.hu. Coordinates if not recorded by GPS devices are in square brackets. Abbreviations of herbaria follow Thiers (2017).

NEW RECORDS WITH ANNOTATIONS

Fungi

(75) ***Clathrus archeri*** (Berk.) Dring

Romania, Harghita County, Ciuc Mts (Munții Ciucului, Csíki-havasok), Cozmeni (Csíkkozmás): Piatra Nierges (Nyerges), 46.186205° N, 25.970681° E, Alt. ~1000 m, leg.: N. Bauer, 23.08.2018. (Photodocumented, Fig. 1.)

The fungus species, *Clathrus archeri* described from Tasmania (Berkeley 1860, Dring 1980), is alien in Europe (Desprez-Loustau 2009). Dispersion of the species in Europe is well documented (Lohwag 1949, Dring 1980, Babos & Konecsni 1974, Béres 1996, Kreisel 2006; Salcedo *et al.* 2006, Zykova 2007, Halama *et al.* 2010). It is rare in Romania for the present, it has been found just in a few localities. In Romania *Clathrus archeri* has been recorded first in Maramures (Máramaros) County, around the upper reach of the Tisza River (Béres 1996, 1999). In the recent past, two new occurrences were published from the Eastern Carpathians (Bârgau Mts [Borgói-hegység], Gurghiu Mts [Görgényi-havasok]) (Bîrsan *et al.* 2014). The observed occurrence is new to the Ciuc Mountains.

The new locality was found south to the "Nyergestető pass", on the western edge of the table of Piatra Nierges (Nyerges). On that site the habitat of the species is a humid variant of the mountain meadows. Typical plant species of these grasslands are: *Anthoxanthum odoratum*, *Arrhenatherum elatius*, *Briza media*, *Carlina acaulis*, *Centaurea phrygia*, *Colchicum autumnale*, *Deschampsia caespitosa*, *Euphrasia rostkoviana*, *Festuca pratensis*, *F. rubra*, *Genista tinctoria*, *Gnaphalium sylvaticum*,

Fig. 1. Sporocarp („basidiocarp") of *Clathrus archeri* in Piatra Nierges (23.08.2018., N. Bauer)

Leontodon autumnalis, *Nardus stricta*, *Pilosella aurantiaca*, *Pimpinella saxifraga*, *Plantago media*, *Polygala vulgaris*, *Potentilla erecta*, *Stellaria graminea*, *Succisa pratensis*, *Thymus pulegioides*, *Trifolium pratense*, *Veronica officinalis*, and *Viola canina*. In the syntaxonomical system the meadows on the plateau are close to the *Hieracio pilosellae-Nardetum strictae* Pop *et al.* 1988 (on the drier patches) and the *Festuco rubrae-Agrostietum capillaris* Horvat 1951 associations (Sanda *et al.* 2008, Kovács 2013). The habitat and altitude of the newly found occurrence are almost the same with the parameters published by Bîrsan *et al.* (2014). Based on the Romanian data of the species, it seems that *Clathrus archeri* is spreading on the ranges of the Eastern Carpathians. Further records of the species are expected in the near future.

N. Bauer

Bryophytes

(76) ***Campylopus introflexus*** (Hedw.) Brid. (Dicranaceae)

Hungary, Tolna County, Dél-Mezőföld: Paks, Cseresznyéspuszta, in a senescent pine plantation, on decayed pine wood, close to an asphalted road at a forest edge, 46.63996° N, 18.79634° E, 128 m [9378.4]; leg.: & det.: J. Csiky, 18.07.2018 (JPU); – Paks, Cseresznyéspuszta, in the same forest stand, on decayed pine wood, close to a sandy road, 46.63924° N, 18.79348° E, 134 m [9378.4]; leg.: J. Deme, J. Csiky, P. Erzberger; det.: J. Deme 04.10.2018, (JPU).

This bryophyte is the most widespread invasive moss species in Europe (Alegro *et al.* 2018). In Hungary, it was mainly found in the colline and submontane regions, but some stands were also reported from lowlands (Kisalföld, Belső-Somogy, Észak-Alföld) (Szűcs *et al.* 2014, Csiky *et al.* 2017). The expansion of this suboceanic temperate element (Hill & Preston 1998) is expected mainly in the subatlantic and submontane regions of the country, but in sites characterised by acidic soils and pine plantations as well.

This is the first observation of the species in the Mezőföld (Colocense). Its stands are small, a 1–2 dm^2 and another 10–30 cm^2 patch with sporophytes on decaying wood of *Pinus sylvestris* were found in the same forest. Associated species were *Aulacomnium androgynum*, *Bryum moravicum, Ceratodon purpureus*, *Dicranum scoparium*, *Hypnum cupressiforme, Polytrichum piliferum*, and *Caldonia* sp. The closest localities of large stands with sporophytes occur more than 79 km away in the Mecsek Mts. Since the cushions of *C. introflexus* were found on autochthonous decaying wood it is likely that the propagules that arrived here were spores.

The appearance of this invasive moss in the lowlands with sub-continental climate could indicate a serious danger on the biodiversity of the endemic Pannonian sand dune vegetation (cf. Meulen *et al.* 1987). For that reason, the monitoring of the *C. introflexus* stands is strongly recommended in this region, too.

J. Csiky, J. Deme & P. Erzberger

(77) ***Campylopus introflexus*** (Hedw.) Brid. (Dicranaceae)

Hungary, Bács-Kiskun County, Kiskunsági-homokhát: Kunbaracs, in a pine plantation, on soil and litter, close to the forest edge, 46.98158° N, 19.38256° E, 109 m [9082.1]; leg.: P. Erzberger & T. Rédei, det: P. Erzberger, 24.07.2018 (BP194586).

Bryophytes growing in the surroundings of *C. introflexus* were: *Scleropodium purum, Ceratodon purpureus, Dicranum scoparium, Leucobryum glaucum*.

This is the first observation of the species in the Duna-Tisza Közi Síkvidék (Praematricum).

P. Erzberger & T. Rédei

(78) ***Campylopus introflexus*** (Hedw.) Brid. (Dicranaceae)

Hungary, Somogy County, Nyugat Belső-Somogy (Somogyicum): Szenta, southwest of Kaszó: Baláta-tó, in deciduous forest, on soil and humus, 46.31456° N, 17.20861° E, 166 m [9669.3]; leg.: P. Erzberger, Cs. Németh & A. Mesterházy, det: P. Erzberger, 30.09.2015 (B-Erzberger 20638). Near the same site (46.31544° N, 17.21239° E) collected also 29.07.2018 leg. P. Erzberger & K. Baráth (B-Erzberger 25283).

Bryophytes growing in the surroundings of *C. introflexus* were: *Callicladium haldanianum, Dicranella heteromalla, Leptodictyum riparium, Polytrichum commune* var. *perigoniale*.

This is another observation of the invasive species in Somogy: Csiky *et al.* (2017*a*: 40) reported the species from Kelet-Belső-Somogy.

A. Mesterházy, Cs. Németh, K. Baráth & P. Erzberger

Pteridophyta

(79) ***Dryopteris affinis*** (Lowe) Fraser-Jenk. (Dryopteridaceae)

Hungary, Komárom-Esztergom County, Dömös: Rám-szakadék, at the lower part of the ravine, on andesite bedrock, along the rocky path, 47.742344° N, 18.896363° E, 284 m [8279.3]; leg.: Csiky J., Csiky Á. & Csiky M., 27.08.2018, det.: Csiky J. (photodocumented); – Pilisszentkereszt: Kanyargós-patak, in a road cut of an oak-hornbeam-beech forest, along the blue cross tourist path, 47° 42' 21" N, 18° 53' 59,6" E, 498 m [8279.3]; leg. & det.: Csiky J., 01.10.2018, (photodocumented).

This native fern is relatively widespread in Hungary (Király & Király 2018, Schmidt *et al.* 2018), but new for the Visegrád Mts (Visegradense). *D. affinis* is a dominant and character species of ravine forests on non-carbonate bedrock in Slovenia (Košir 2005). Its spreading to the north-east can be a result of climate change and/or human influences (conifer plantations). This individual is not really apparent for the first sight with 3 leaves on a single and small (40–50 cm) plant on the right side of the Rám-szakadék, accompanied by other ferns, close to the foot of the steep andesite cliff. Associated herb taxa within 1 m^2 are typical species of *Parietario-Aceretum* (Horánszky 1964) Soó 1971: *Asplenium trichomanes*, *Athyrium filix-femina, Cystopteris fragilis, Dryopteris filix-mas, Epilobium montanum*, and *Mycelis muralis*. Since this ravine is usually flooded by mud and debris, and it is very close to the tour path, long-term survival of this small individual is uncertain. The second specimen is a well-developed plant with 8 large leaves in the Kanyargós-patak valley, 400 m far from the outer house of the village. Associated herb species within 1 m^2 are the followings: *Athyrium filix-femina*, *Geranium robertianum, Viola reichenbachiana*.

J. Csiky

(80) ***Dryopteris affinis*** (Lowe) Fraser-Jenk. (Dryopteridaceae)

Hungary, Vas County, Nagyvilágos Hill, Felsőcsatár, Pinka Gorge, in a *Fagus sylvaticus* dominated mixed forest, at the edge, 47.209528° N 16.420778° E, 258 m [8764.4]; leg. & det.: K. Baráth 05.06.2017 (photodocumented).

Also a single but strong individual of *D. affinis* was found in the Pinka Gorge, near Felsőcsatár. Although several floristical and vegetation studies have been carried out in this unique landscape since the 19th century (Király *et al.* 1999), this species has not been reported from Pinka Gorge yet. At this locality the associated herbs were *Aegopodium podagraria, Geum urbanum, Humulus lupulus, Pulmonaria officinalis*, and *Urtica dioica*.

K Baráth

Vascular plants

(81) ***Centunculus minimus*** L.

Hungary, Zemplén Mountains, Füzér: Drahos meadow, on anthill in Junco-Molinion fen-meadow 48.561416° N, 21.422583° E, 540 m [7494.2]; leg.: G. Matus & A. Takács, 31.07.2010, (Matus & Takács 2010, DE-Soo-25279 in Takács *et al.* 2014), – Füzér: Drahos meadow, wild boar dug up area in fen-meadow 48.564638° N 21.422944°, 536 m [7494.2]; obs.: G. Matus, 30.07.2017, – Füzér: Drahos, wild boar dug up area in fen-meadow, 48.564638° N 21.422944°, 536 m [7494.2]; leg.: G. Matus, 30.07.2018 DE-Soo-45661, HNHM-TRA 00012574, – Nagyhuta: Nyírjes-völgy, logging operation area, 48.423305° N, 21.470277° E, 239 m [7594.4]; obs.: G. Matus, A., Barabás & D. Hricsovinyi, 11.08.2018, – Nagyhuta: Pap-völgy (side valley of Nyírjes-völgy), in disturbed wet grassland on forest road, 48.422000° N, 21.4724725° E, 258 m [7594.4]; 11.08.2018, leg.: A. Barabás, D. Hricsovinyi & G. Matus, DE-Soo-45666, HNHM-TRA 00012575, – Nagyhuta: Ugrói-völgy (side valley of Nyírjes-völgy), disturbed grassland, 48.421194° N, 21.479083° E, 278 m [7594.4]; leg.: D. Hricsovinyi, G. Matus & A. Barabás, 11.08.2018, DE-Soo-45667, HNHM-TRA 00012577, – Regéc: Gyertyán-kúti-rétek, disturbed grassland on dirt road, 48.439277° N, 21.365444° E, 686 m and 48.442277° N, 21.364444° E, 677 m [7594.3]; 31.07.2018, leg.: G. Matus, DE-Soo-45663, HNHM-TRA 00012578, – Fony: Cicés, at the border of 21/TI and 24/E, in disturbed grassland of road verge, 48.440027° N, 21.320833° E, 696 m [7593.4]; leg.: G. Matus, DE-Soo-45662, HNHM-TRA 00012580; and 48.440111° N, 21.322138° E, 696 m [7593.4]; 04.08.2018 obs.: G. Matus, – Fony: N of Nagy-Mocsáros, on forest road between 19/B and 19/E subcompartments, in sparse vegetation, 48.438388° N, 21.332333° E, 674 m [7594.3]; 04.08.2018, obs.: G. Matus, – Fony: SE slope of Téglás-kő, on forest road between 9/A and 19/C subcompartments, 48.439527° N, 21.335416° E, 661 m [7594.3]; 04.08.2018, obs.: G. Matus, – Fony: NW of Farkas-domb, logging operation area between 20/E and 26/TI subcompartments, disturbed grassland, 48.436055° N, 21.329166° E, 675 m [7594.3]; 04.08.2018, obs.: G. Matus, – Nagyhuta: NW slope of Kis-Dobogó-hegy, 132/A subcompartment, in degraded roadside grassland, 48.421583° N, 21.499638° E, 349 m [7595.3]; 05.08.2018, obs.: G. Matus; – Nagyhuta: roadside grasslands between 134/E and 133/A subcompartments, 48.412500° N, 21.497222° E, 447 m and 48.412222° N, 21.497277° E, 449 m [7595.3]; 12.08.2018, obs.: A. Barabás & D. Hricsovinyi, – Nagyhuta: meadow between 109/B and 109/D subcompartments, on wildboar dug up spot, 48.410250° N, 21.497277° E, 422 m [7595.3]; 12.08.2018, obs.: A. Barabás, D. Hricsovinyi & G. Matus, – Nagyhuta: Kékszűrő, sparse vegetation on dirt road, 48.410138° N, 21.506138° E, 418 m [7695.1]; 12.08.2018, leg.: D. Hricsovinyi, A. Barabás & G. Matus, DE-Soo-45665, HNHM-TRA 00012576, – Nagyhuta: Tegda-völgy, disturbed grassland on road verge, 48.418277° E, 21.495277° E, 404 m [7594.4]; 03.08.2018, leg.: G. Matus & J. Matus, DE-Soo-45664, HNHM-TRA 00012579, – Nagyhuta: Gyertyán-rét, in disturbed roadside grasslands, 48.399166° N, 21.500555° E, 424 m, 48.398666° N, 21.500805° E, 426 m and 48.396083° N, 21.501500° E, 426 m [7595.3]; 12.08.2018, obs.: D. Hricsovinyi, G. Matus & A. Barabás.

Chaffweed, the smallest member of the Primulaceae family in Hungary, is an easily overlooked annual. It is considered as 'near threatened' in the IUCN classification (Király 2007). It has sporadic, mostly historic data from volcanic members of the North Hungarian Mountain Range such as the Börzsöny, Cserhát, and Mátra Mts (Király 2009). It has recently been reported also from some parts of Northern Hungary (Molnár & Virók 2014, Bartha *et al.* 2015, Csiky *et al.* 2017*a*). *Centunculus minimus* has not been collected in the Zemplén

Mts since the second half of the 19th century (between Tolcsva and Erdőhorváti 1877, Simkovics, BP131421). Neither newly collected specimens (BP, BPU, DE, EGR, Takács *et al.* 2014, E. Vojtkó *et al.* 2014, Nótári *et al.* 2017) nor published records are available since then (Kiss 1939, Hargitai & Soó 1940, Simon 2000, Király 2009, Bartha *et al.* 2015). From 2010 to 2018 we have recorded the species at altogether 21 points, in 13 distinct geographical areas from the municipalities of Fony, Füzér, Nagyhuta, and Regéc, respectively. The following floristic quadrants have been involved: 7494.2, 7593.4, 7594.3, 7594.4, 7595.3, and 7695.1. Altitude of observations ranged from 239 to 696 m while distance of furthest points measured 20 km. The studied sites have various lithomorphic or gravelly skeletoidic soils derived from moderately to highly acidic volcanic bedrocks. Proportion of the 0.1 cm to 2 cm gravel fraction ranged from 8.6 to 30.0 (m/m) % in topsoil of the sampled occurrences. Range of studied soil characteristics is as follows: pH(KCl): 4.1–5.5, pH(H_2O): 5.5–6.3, organic material (%/%): 1.4–5.0, P_2O_5 (mg/kg): 15–72, NO_3+NO_2–N (mg/kg): <2.0–7.6 (N=9). All occurrences are sparsely vegetated spots linked to natural (ant and wild boar activity) or human disturbances, mainly by forest roads or at logging areas. Frequent accompanying species included *Potentilla erecta*, *Agrostis capillaris*, *Plantago major*, *Prunella vulgaris*, *Carex pallescens*, *Juncus bufonius*, *J. tenuis*, *Leontodon hispidus*, and *Lysimachia nummularia*. The following Nanocyperion species have also been observed: *Radiola linoides* (see item 81 below), *Gnaphalium uliginosum*, *Centaurium littorale* subsp. *uliginosum*, *Lythrum hyssopifolia*, and *Peplis portula*. The most frequent bryophytes were vegetative *Fossombronia* specimens (determined at one site as the rare *F. wondraczekii*), a genus all Hungarian species of which are characteristic of the Nanocyperion alliance (Orbán & Vajda 1983). Further bryophytes recorded at more than one sample included *Atrichum angustatum*, *A. undulatum*, *Calliergonella cuspidata*, *Hypnum lindbergii*, *Phaeoceros carolinianus*, *Philonotis arnelii*, *Polytrichum formosum*, and *Scapania irrigua*. Based on the significant vertical range and geographical distance of the historic and recent findings, presence of *Centunculus* is very likely in similar habitats throughout the Zemplén Mts.

G. Matus, A. Barabás, D. Hricsovinyi, A. Takács, K. Antal & J. Budai

(82) ***Cuscuta campestris*** Yunck. (Convolvulaceae)

Hungary, Vas County, Bük: 9 adjacent plots in the railway station, 47.386248° N, 16.751195° E, 178 m [8666.2], and 7 plots along the roads, 47.397035° N, 16.734089° E, 180 m [8666.1], leg. & det.: K. Baráth K., 28.05.2017 (photodocumented).

Cuscuta campestris is probably the most widely distributed species in the genus and the only parasitic weed of North America that has spread throughout

the Old World. Although nowadays this dodder is one of the most widespread parasitic plants in Hungary, it is not so frequent in Vas County (Bartha *et al.* 2015). Because of this invasive parasite is able to cause serious damage to agricultural fields, it is recommended to monitor its spread in the Country. Altogether 16 plots were found in Bük, where *Ambrosia artemisifolia, Cichorium intybus, Plantago major, Polygonum aviculare, Setaria pumila, Silene alba* were infested by *C. campestris.*

K. Baráth

(83) ***Primula farinosa*** L.

Hungary, Nemeshany: Sárkány-rét, 08.05.2015, leg.: G. Vasuta & P. Molnár; 25.04.2018, leg.: G. Vasuta (photodocumented).

Actually, *Primula farinosa*, an emblematic and strictly protected species is known in Hungary only in two locations in the Balaton Upland and one at Sopronkőhida (W Hungary) (Bartha *et al.* 2015). First we found one specimen of *P. farinosa* on an additional location (08.05.2015) at the end of its flowering. Later (25.04.2018) at a 500 metres distance of the first specimen 30 flowering and 80 non flowering individuals were found. The new populations are in a 21 and 25 kilometre distance from the nearest actually known populations.

The species has a few and small but viable populations in Tapolca and Káli Basins. Nevertheless, these locations are endangered by drying conditions and the expansion of invasive weeds at the same time. The habitats of *P. farinosa* are very special wetlands influenced by cold spring water belonging to the *Orchio–Schoenetum* (Allorge 1921) Oberd 1957 community.

Similarly, the population reported here grows in a wetland, however, its water level is deeper, and there are no open water surfaces, but well-saturated soil in the habitat. The habitat is invaded by goldenrod (*Solidago* spp.), but during the flowering time of bird's-eye primrose the weeds are still small in a very early phenophase, so the co-existence of *P. farinosa* and the goldenrods seems to be possible.

After finding the above populations, we found the following note in the diary of Ádám Boros: „Fen at the easternmost fishpond, at the edge of Meggyes forest [Devecser, W Hungary], on Nyúl meadow, at the locality described already on 12.04.1950, 20.10.1950, and 30.05. 1968 the following plants are very nice even now: *Parnassia palustris*, *Potentilla erecta*, *Primula farinosa* (withering), not rare." Surprisingly, no voucher specimens of this locality are known in BP.

The Boros report refers approximately to the same locality where we found the plants, thus our record is the confirmation and re-discovery of a forgotten population after 50 years.

G. Vasuta & P. Molnár

(84) ***Radiola linoides*** Roth (Linaceae)

Hungary, Zemplén Mts: Nagyhuta, Tegda-völgy, southern part of 135/A subcompartment, disturbed wet grassland at road verge, 48.418277° N, 21.495388° E, 405 m [7594.4]; leg. & det.: G. Matus 03.08.2018, HNHM-TRA 00012581; DE-Soo-45660, – Nagyhuta: Kis-Dobogó-hegy, southern part of 134/TI subcompartment, sparsely vegetated patch in acidic grassland, 48.415388° N, 21.496250° E, 411 m [7594.4], leg. & det.: A. Barabás, D. Hricsovinyi & G. Matus, 12.08.2018, EGR-8182.

Radiola linoides is a competitively weak, pygmy annual of open, damp, and infertile acidic ground. The species is in considerable decline throughout Europe largely due to the loss of lowland heaths or a lack of grazing and disturbance on them. In Central Europe similar trends apply as only a limited number of recent records occur in the western and central part of Slovakia (Futák 1982, P. Eliáš jr., pers. comm.). In the Czech Republic the species has been recorded in as little as four quadrants in the 2000–2016 period contrary to the 108 quadrants with records only before 2000 (Kaplan *et al.* 2016). It is regarded as critically endangered in both the Slovak and Czech Republics (*https://botany.cz*). Allseed has been considered extinct from Hungary (Király 2007) as in spite of intensive search none of the historic records from Belső-Somogy and the Őrség have been confirmed. The last herbarium specimens have been collected at Darány (Belső-Somogy) by Á. Boros from 1922 to 1927 (several specimens at BP and BPU-04472.JPG, Nótári *et al.* 2017) and two locations near Szőce and Őrimagyarósd (Őrség) by Á. Károlyi, T. Pócs, I. Gelencsér, G. Vida, L. Vajda, and R. Soó from 1954 to 1955 (several specimens at BP and BPU-04473.JPG, Nótári *et al.* 2017, Pócs *et al.* 1958), respectively. Changing land use has led to an impoverishment of Nanocyperion vegetation and the apparent extinction of *Radiola* from West-Hungary (Mesterházy in Pinke 2006). Neither collected specimens (BP, BPU, DE, EGR) nor published records are available from the Zemplén Mts (Kiss 1939, Hargitai & Soó 1940, Simon 2000, Király 2009, Bartha *et al.* 2015). Our finding confirms the presence of the species in the country and at the same time it is new to the North Hungarian Mountain Range. Most frequent accompanying species included *Centunculus minimus* (see item 81), *Potentilla erecta*, and *Prunella vulgaris*. Further important species in the close neighbourhood were *Vaccinium myrtillus*, *Calluna vulgaris*, and *Lycopodium clavatum*. Recorded bryophytes included *Phaeceros carolinianus*, a vegetative *Fossombronia* sp., *Scapania irrigua* (all are characteristic of Nanocyperion communities; Orbán & Vajda 1983) and *Hypnum lindbergii*. The studied sites most likely have lithomorphic soils derived from highly acidic volcanic bedrocks while the studied characteristics ranged as follows pH(KCl): 4.1–4.7, pH(H_2O): 5.5–6.1, organic material (m/m %): 1.4–4.1, P_2O_5–P (mg/kg): 15–72, NO_3+NO_2–N (mg/kg): <2.0–7.6 (N=3).

G. Matus, A. Barabás, D. Hricsovinyi, K. Antal, J. Budai & P. Erzberger

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Összefoglaló: Regionális adatokat közlő rovatunk jelen részében beszámolunk a *Radiola linoides* Zempléni előkerüléséről, ami egyben a kipusztultnak vélt faj hazai előfordulásának megerősítése is. Szintén újként, részben azonos lelőhelyekről került elő a Zemplénből a *Centunculus minimus*. Az invazív *Campylopus introflexus* mohafaj mezőföldi és Duna–Tisza-közi megjelenését ismertetjük és újabb Somogy megyei adatát is közöljük. A szintén behurcolt *Clathrus archeri* gombafaj új romániai előfordulását közöljük a Csíki-havasokból. Az utóbbi időben számos helyről előkerült *Dryopteris affinis*-t újként közöljük a Visegrádi-hegységből és a Vas-hegycsoporthoz tartozó Pinka-szurdokból. A hazánkban igen ritka *Primula farinosa* új (elfeledett) bakonyaljai előfordulását és a hiányosan ismert elterjedésű *Cuscuta campestris* több Nyugat-magyarországi adatát is ismertetjük.

REFERENCES

Alegro A., Šegota V., Papp B, Deme J, Kovács D., Purger D. & Csiky J. (2018): The invasive moss Campylopus introflexus (Hedw.) Brid. (Bryophyta) spreads further into South-Eastern Europe. – *Cryptog. Bryol.* **39**(3): 331–341. https://doi.org/10.7872/cryb/v39.iss3.2018.331

Babos, L. & Konecsni J. (1974): Ritka és új gombáink. [Rare and new fungi in Hungary]. – *Búvár* **29**(1): 30–31.

Bartha D., Király G., Schmidt D., Tiborcz V., Barina Z., Csiky J., Jakab G., Lesku B., Schmotzer A., Vidéki R., Vojtkó A. & Zólyomi Sz. (eds) (2015): *Distribution atlas of vascular plants of Hungary*. – Nyugat-magyarországi Egyetem Kiadó, Sopron 330. pp

Béres M. (1996): Anthurus archeri (Berk.) Ed. Fischer (Fam. Clathraceae) o ciupercă rară ín România (A rare mushroom Anthurus archeri (Berk.) Ed. Fischer (Fam. Clathraceae) in Romania. – *Naturalia Pitesti* **2–3**: 113–116.

Béres M. (1999): Data to the vegetation of mushrooms in the Upper-Tisa region. – *Tiscia* **4**: 293–307.

Berkeley M. J. (1860): *Lysurus Archeri (Berk.).* – In: Hooker J. D.: The botany of the Antarctic Voyage Part III. Florae Tasmaniae. Vol. II., London, p. 264., Tab. CLXXXIV.

Bîrsan C., Cojocariu A. & Cenuşă E. (2014): Distribution and ecology of Clathrus archeri in Romania. – *Notulae Sci. Biol.* **6**(3): 288–291. http://dx.doi.org/10.15835/nsb639389

Csiky J., Baráth K., Bocz V., Deme J., Fülöp Zs., Kovács D., Nagy K., Tamási B. & Csikyné R. É. (2017*a*): Pótlások Magyarország edényes növényfajainak elterjedési atlaszához V. – *Kitaibelia* **22**: 383–403. https://doi.org/10.17542/kit.22.383

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

Desprez-Loustau M. L. (2009): Alien Fungi of Europe. – In DAISIE. *Handbook of alien species in Europe. Invading Nature*, *Springer Series In Invasion Ecology* **3**: 15–28.

Dring D. M. (1980): Contributions towards a rational arrangement of the Clathraceae. – *Kew Bull.* **35**(1): 1–96. http://dx.doi.org/10.2307/4117008

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

Futák J. (1982): *Radiola.* – In: Futák J. & Bertová L. (eds): *Flora Slovenska III.*, Veda, Bratislava, pp. 510–511.

Halama M., Reczynska K. & Swierkosz, K. (2010): Nowe stanowiska Clathrus archeri (Berk.) Dring Basidiomycota, (Phallales) na Dolnym Slasku. – *Przyroda Sudetów* **13**: 93–98.

Hargitai Z. & Soó R. (1940): A Sátorhegység flórájáról. – *Bot. Közlem.* **37**(3–4): 169–187.

Hill M. O. & Preston C. D. (1998): The geographical relationships of British and Irish bryophytes. – *J. Bryol.* **20**: 127–226.

Kaplan Z, Danihelka J., Štěpánková J., Ekrt L., Chrtek J. Jr., Zázvorka J. , Grulich V., Řepka R., Prančl J., Ducháček M., Kúr P., Šumberová K. & Brůna J. (2016): Distributions of vascular plants in the Czech Republic. Part 2. – *Preslia* **88**: 229–322.

Király G. & Király A. (2018): Adatok és kiegészítések a magyar flóra ismeretéhez III. – *Bot. Közlem.* **105**: 27–96. https://doi.org/10.17716/BotKozlem.2018.105.1.27

Király G. (ed.) (2007): *Red list of the vascular flora of Hungary.* – Private edition of the Authors, Lővér Print, Sopron 73 pp.

Király G. (ed.) (2009): *New Hungarian Herbal. The Vascular Plants of Hungary. Identification key.* – Aggteleki Nemzeti Park Igazgatóság, Jósvafő 616 pp.

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

Košir P. (2005): Forests of valuable broad-leaved trees on non-carbonate bedrock in Slovenia (Dryopterido affini-Aceretum pseudoplatani ass. nova hoc loco). – *Hacquetia* **4**: 61–89.

Kovács J. A. (2013): *Vegetation of Eastern Transylvania: Vegetation ecology and coenological relations in Eastern Transylvania (Case studies).* – Lambert Academic Publishing, 184 pp.

Kreisel H. (2006): Global warming and mycoflora in the Baltic region. – *Acta Mycologica* **41**(1): 79–94. https://doi.org/10.5586/am.2006.012

Lohwag K. (1949): Interessante Gastromycetenfunde aus Österreich. – *Sydowia* **3**: 101–112.

Matus G. & Takács A. (2010): *Recent distribution and population estimates of legally protected plant species at Drahos, Hemző and Gyertyán-kút meadows.* – Manuscript, Research report for Aggtelek National Park Directorate [A Drahos-, Hemző- és Gyertyán-kúti-rétek védett növényfajainak aktuális elterjedési és állománynagyság adatai], 77 pp.

Meulen F. van der, Hagen H. van der & Kruijsen B. (1987): Campylopus introflexus. Invasion of a moss in Dutch coastal dunes. – *Proceedings of the Koninklijke Nederlandse Academie van Wetenschappen. Series C: Biological and Medical Sciences* **90**: 73–80.

Molnár Cs. & Virók V. (2014): Centunculus minimus L. Aggtelek és Szögliget határában. – *Kitaibelia* **19**(1): 173–176.

Nótári K., Nagy T., Löki V., Ljubka T., Molnár V. A. & Takács A. (2017): Az ELTE Füvészkert herbáriuma (BPU). – *Kitaibelia* **22**(1): 55–59. https://doi.org/10.17542/kit.22.55

Orbán S. & Vajda L. (1983): *Magyarország mohaflórájának kézikönyve.* – Akadémiai Kiadó, Budapest, 518 pp.

Pinke Gy. (2006): Phytosociological survey of weed vegetation on extensive fields in the Transdanubian Mountain-range and West-Hungarian margin territory. – *Kanitzia* **14**: 57–74.

Pócs T., Nagy É., Gelencsér I. & Vida G. (1958): *Vegetationsstudien im Őrség.* – Akadémiai Kiadó, Budapest, 125 pp.

Salcedo I., Fernández-Vicente J. & Pérez-Butrón J. L. (2006): Stereum illudens Berk. Nueva cita para la micoflora de la Península ibérica. – *Revista Catalana de Micología* **28**: 81–85.

Sanda V., Öllerer K. & Burescu P. (2008): *Fitocenozele din România. Sintaxonomie, structură, dinamică şi evoluţie.* – Ars Docendi, Universitea din Bucureşti, 570 pp.

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

Simon T. (2000): *A magyarországi edényes flóra határozója. Harasztok – virágos növények.* – Nemzeti Tankönyvkiadó, Budapest, 976 pp.

Szűcs P., Csiky J. & Papp B. (2014): A neophyta Campylopus introflexus (Hedw.) Brid. elterjedése Magyarországon. – *Kitaibelia* **19**(2): 212–219.

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

Zykova M. (2007): New records of Anthurus archeri (Berk.) E. Fisch. (Clathraceae, Basidiomycota) in Ukraine. – *Chornomorski Bot. J.* **3**(2):124–128.