COMPREHENSIVE PLANT BIOLOGY

https://doi.org/10.2298/CPB2601141C

**(2026) 50 (1): 141–160**
**ISSN 3042-3201**
**formerly Botanica Serbica**

Original Scientific Paper

# New records and noteworthy data of plants, algae and fungi in Central Europe and adjacent regions, 2

János **Csiky**[1*], Dalma **Dobronoki**[2], László **Lőkös**[3], Attila **Sipos**[1], Pavel **Širka**[4], Tamás **Wirth**[5], Kornél **Baráth**[6], Ábel **Beránek**[7], Beáta **Papp**[8], Marko S. **Sabovljević**[9,10,11], Aneta D. **Sabovljević**[9,11], Milan **Valachovič**[12], Génesis Katherine **Dela Campos**[1], Richard **Hrivnák**[12], František **Bednár**[13], Bernadett **Döme**[8], Marcin **Nobis**[14], Ewelina **Klichowska**[14], Barbora **Šingliarová**[12], Erzsébet **Szurdoki**[15, 16] and Matúš **Hrivnák**[4]

1 Department of Ecology, Institute of Biology, Faculty of Sciences, University of Pécs, 7624 Pécs, Ifjúság útja 6, Hungary
2 Hungarian National Museum Public Collection Centre, Petőfi Literary Museum, Ferenc Kazinczy Museum, H–3980 Sátoraljaújhely, Dózsa György u. 11, Hungary
3 H–1025 Budapest, Cseppkő u. 23/b, Hungary
4 Department of Phytology, Faculty of Forestry, Technical University in Zvolen, T. G. Masaryka 24, 96001 Zvolen, Slovakia
5 University of Pécs, Botanical Gerden, H-7624 Pécs, Ifjúság útja 6., Hungary
6 Department of Biology, Berzsenyi Dániel Teacher Training Centre, Károlyi Gáspár tér 4., H-9700 Szombathely, Hungary
7 H-3600 Ózd, Hungary
8 Hungarian National Museum Public Collection Centre, Budapest, Hungarian Natural History Museum, Botanical Department, H–1476 Budapest, Pf. 222, Hungary
9 Institute for Botany and Botanical Garden, Faculty of Biology, University of Belgrade, Takovska 43, 11 000 Belgrade, Serbia
10 Department of Plant Biology, Institute of Biology and Ecology, Faculty of Science, Pavol Jozef Šafárik University in Košice, Mánesova 23, 040 01 Košice, Slovakia
11 Center of Plant Biotechnology and Conservation (CPBC), Takovska 43, 11000 Belgrade, Serbia
12 Institute of Botany, Plant Science and Biodiversity Centre of the Slovak Academy of Sciences, Dúbravská cesta 9, 845 23 Bratislava 4, Slovakia
13 Lániky 271/26, SK-034 91 Švošov, Slovakia
14 Institute of Botany, Faculty of Biology, Jagiellonian University, Gronostajowa 3, 30-387 Kraków, Poland
15 Department of Natural Sciences of Faculty of Primary and Pre-School Education of Eötvös Loránd University, Kiss János altábornagy 40, 1126 Budapest, Hungary;
16 HUN-REN Centre for Ecological Research, Institute of Ecology and Botany, H-2163 Vácrátót, Alkotmány u. 2-4., Hungary

*column editor (consult web page of the journal for the recent preparation instruction)
Please send your contributions to cpb@bio.bg.ac.rs

**ABSTRACT:**
This paper presents new records and noteworthy data on the following taxa in Central Europe and adjacent regions: a stonewort *Nitellopsis obtusa*, lichens *Absconditella lignicola, Lobaria pulmonaria, Multiclavula mucida*, and *Parmelia submontana*, liverworts *Mesoptychia heterocolpos* and *Sphaerocarpos europaeus*, mosses *Atrichum flavisetum, Campylopus pyriformis, Fabronia pusilla, Leptodon smithii,* and *Lewinskya acuminata,* dicots *Crataegus coccinea* var. *pringlei, Cuscuta approximata, Phedimus stoloniferus,* and *Tropaeolum majus*, and monocot *Sagittaria latifolia*.

**Keywords**: new report, *Absconditella lignicola, Atrichum flavisetum, Campylopus pyriformis, Crataegus coccinea* var. *pringlei, Cuscuta approximata, Fabronia pusilla, Leptodon smithii, Lewinskya acuminata, Lobaria pulmonaria, Mesoptychia heterocolpos, Multiclavula mucida, Nitellopsis obtusa, Parmelia submontana, Phedimus stoloniferus, Sagittaria latifolia, Sphaerocarpos europaeus, Tropaeolum majus,* Central Europe.

Received:
15 January 2026

Revision accepted:
15 March 2026

UDC: 581.95:582.29+582.32+582.61+582.52(4–191.2)

Published by Institute of Botany and Botanical Garden Jevremovac, Belgrade
Faculty of Biology, University of Belgrade, Belgrade, Serbia
www. cpb.bio.bg.ac.rs

***Absconditella lignicola* Vězda et Pišút, fam. Stictidaceae (lichen-forming fungus, ascomycete)**
**Contributors:** Dalma Dobronoki and László Lőkös
**Geographical focus:** Hungary
**New record and noteworthy data:** The first records for the Zemplén Mts, Hungary
**Specimen data: 1)** Hungary, Borsod-Abaúj-Zemplén County, Zemplén Mts, Telkibánya, Mt. Király-hegy, in the parking area at 'Erdész-Bányász Barátság Pihenő', on decaying wood (*Picea*), N 48.489088°, E 21.403483°, 285 m a.s.l., 7 May 2025; leg./det.: Lőkös L., Dobronoki D., Hegyessy G. [KFM 352]; **2)** Hungary, Borsod-Abaúj-Zemplén County, Zemplén Mts, Telkibánya, Mt. Király-hegy, near the spring 'Mátyás király kútja', on decaying wood (*Picea*), N 48.487755°, E 21.404138°, 285 m a.s.l., 7 May 2025; leg./det.: Lőkös L., Dobronoki D., Hegyessy G. [KFM 357]; **3)** Hungary, Borsod-Abaúj-Zemplén County, Zemplén Mts, Pusztafalu, Mt. Bába-hegy, along the blue triangle tourist route, on decaying wood (*Picea abies*), N 48.540687°, E 21.504189°, 440 m a.s.l., 8 May, 2025; leg./det.: Lőkös L., Dobronoki D., Hegyessy G. [hb Lőkös]; **4)** Hungary, Borsod-Abaúj-Zemplén County, Zemplén Mts, Pusztafalu, in a pine plantation at the upper end of the village, on decaying wood (*Pinus sylvestris*), N 48.546942°, E 21.494053°, 375 m a.s.l., 8 May, 2025; leg./det.: Lőkös L., Dobronoki D., Hegyessy G. [hb Lőkös]; **5)** Hungary, Borsod-Abaúj-Zemplén County, Zemplén Mts, Regéc, Ördög-völgy valley, along the yellow line tourist route, on decaying wood (*Picea abies*), N 48.405619°, E 21.411063°, 450 m a.s.l., 24 June 2025; leg./det.: Lőkös L., Dobronoki D. [hb Lőkös, KFM 436]; **6)** Hungary, Borsod-Abaúj-Zemplén County, Zemplén Mts, Füzér, along the red triangle tourist route, at Mt Égettbokor-hegy, on decaying wood (*Pinus sylvestris*), N 48.555060°, E 21.482112°, 495 m a.s.l., 26 June 2025; leg./det.: Lőkös L., Dobronoki D. [hb Lőkös, KFM 457]; **7)** Hungary, Borsod-Abaúj-Zemplén County, Zemplén Mts, Sátoraljaújhely, Mt. Vár-hegy, along the road to the bridge "Nemzeti Összetartozás Hídja", on decaying wood (*Pinus sylvestris*), N 48.386617°, E 21.640720°, 275 m a.s.l., 23 July 2025; leg./det.: Dobronoki D., Lőkös L. [hb Lőkös, KFM 515]; **8)** Hungary, Borsod-Abaúj-Zemplén County, Zemplén Mts, Regéc, Mt. Bohó-hegy, on decaying wood (*Picea abies*), N 48.443969°, E 21.372264°, 570 m a.s.l., 18 October 2025; leg./det.: Dobronoki D., Lőkös L. [hb Lőkös].
**Vouchers:** Hungarian National Museum Public Collection Centre, Petőfi Literary Museum, Ferenc Kazinczy Museum, Sátoraljaújhely, Hungary (KFM) and the private collection of L. Lőkös (hb. Lőkös).

*Absconditella lignicola* is a rather inconspicuous lichen-forming fungus, which usually grows in the cryptobiotic layer on the surface of decaying wood. It has recently been reported from Hungary, and its distribution and new occurrences were published by Farkas & Lőkös (2021), Farkas *et al.* (2022) and Varga *et al.* (2023). Although it was previously unknown from the Zemplén Mts, the 44 records included in these publications from various regions of Hungary suggested that it was a widely distributed species in the country. Eight new localities were found in the Zemplén Mts in 2025, confirming that this tiny, epixylic species is also frequent in the forests (both semi-natural forests and managed plantations) of the Zemplén Mts The species exhibits a preference for decaying wood of *Picea abies* and *Pinus sylvestris*.

***Atrichum flavisetum* Mitt., fam. Polytrichaceae (moss, bryophyte)**
**Contributors:** János Csiky and Attila Sipos
**Geographical focus:** Hungary
**New record and noteworthy data:** The third recent occurrence in Hungary, after sixty years without records

**Specimen data:** Nógrád County, Kemence (Királyháza), in the valley of the 'Rózsás-patak', above the side valley of Varsa-gödrök, N 47.9539942°, E 18.9463381°, 818 m a.s.l., 3 October 2025, leg./det. Csiky J, Sipos A.
**Voucher:** Herbarium of the University of Pécs JPU, Bryophyte Collection

This circumboreal species was widely recorded in Hungary in the colline and montane zones until the 1960s (Boros 1968). During the subsequent 60 years, however, no occurrences were reported, but in recent years *A. flavisetum* has been found in two landscape areas of Hungary (Wilbraham *et al.* 2025). At its newly discovered locality in the North Hungarian Mountains, within the beech belt of Börzsöny Mt. rich in montane species, it was found on a scree slope seasonally fed by springs. A small colony, covering approximately 0.03 $m^2$, occupies an overturned root plate where it occurs in association with *A. undulatum*, in a small clearing. The two related species, which share similar strategies (van Zuijlen *et al.* 2023), can be distinguished in the field even with the naked eye, provided sporophytes are present. The previous year's setae, originating lower on the stem, are visible throughout the year on at least some stems of *A. flavisetum*. Fresh setae of this species are thinner, shorter, and yellowish, arising in clusters near the shoot apex; the capsules are smaller and nearly straight, exhibiting much less curvature than those of *A. undulatum*. The significance of the Börzsöny locality is further emphasised by its proximity - only 10.6 km - from Slovakia, where no current records of the species are known (Hodgetts & Lockhart 2020).

***Campylopus pyriformis* (Schultz) Brid., fam. Leucobryaceae (moss, bryophyte)**
**Contributor:** Pavel Širka
**Geographical focus:** Slovakia
**New record and noteworthy data:** Data Deficient (DD) in Slovakia (Mišíková *et al.* 2020), the second record for the country
**Specimen data:** Borská nížina Lowland, Malacky Dictrict, Malacky: *Pinus sylvestris* L. monoculture overgrown by *Calamagrostis epigejos* (L.) Roth, on sandy soil with accompanying species *Campylopus introflexus* (Hedw.) Brid. and *Leucobryum glaucum* (Hedw.) Ångstr., N 48.4075783°, E 17.0081547°, 160 m a.s.l., 17 September 2025; leg./det. Širka P., conf. Kubešová S.
**Voucher:** Herbarium of the Technical University in Zvolen (ZV), s.n.

*Campylopus pyriformis* grows predominantly on acidic peaty or sandy soils and raw humus in woodlands. It is a bipolar subcosmopolitan species with a wide distribution in the Southern Hemisphere and a scattered occurrence in the Northern Hemisphere, where it is more frequent in suboceanic and sub-Mediterranean parts of Europe and becomes rarer towards the northeast (Dierssen 2001; Kučera 2004) with potential ongoing spread (Kučera *et al.* 2012). Its biogeographic status in Europe remains debated: while some authors consider it an introduced species (Dierssen 2001; Campisi & Cogoni 2019), others assume at least partly native populations (Stech & Wagner 2005), and Essl & Zechmeister (2021) therefore treat it as cryptogenic. At the European scale the species is assessed as Least Concern, but national Red List assessments in Central Europe vary considerably, ranging from Endangered (e.g. Austria and Poland) to Data Deficient (Hungary) and Least Concern or LC-att (e.g. Czechia, Germany, and Switzerland) (see Hodgetts & Lockhart 2020 for review). In Slovakia it was evaluated as Data Deficient (Mišíková *et al.* 2020), apparently based on a single published record from a mixed forest in Šajdíkove Humence in the Borská nížina Lowland (Jančovičová *et al.* 2019). The present record represents the second known locality in this lowland and only the second confirmed occurrence for the country. Although the species

may be underrecorded in Slovakia, due to limited targeted research on the genus, the current Data Deficient (DD) status remains justified. At the locality in Malacky, it co-occurred with another species of southern hemisphere origin from the same genus and with similar ecology, *Campylopus introflexus*, which is considered alien in Europe, occurring more frequently in this region of Slovakia (Mišíková & Dobiašová 2014; Širka *et al.* 2018).

***Crataegus coccinea* var. *pringlei* (Sarg.) J.A.Macklin & J.B.Phipps, fam. Rosaceae (dicot, vascular plant)**
**Contributor:** Tamás Wirth
**Geographical focus:** Hungary
**New record and noteworthy data:** Additional data for a rare species adventive in Hungary. **Specimen data:** Southern Hungary, Pécs, Kökénypuszta, in a *Pruno-Crataegetum*-like shrubland on the site of previously cut down black locust forestation, N 46.01020°, E 18.20530°, 182 m a.s.l., 9 April 2017; leg/det. T. Wirth).
**Voucher**: Herbarium of the University of Pécs (JPU).

The taxon, previously treated at the species level, is native to northeastern North America (Phipps 2007). Some of the North American hawthorn species are sporadically planted as ornamental plants in Hungary, primarily in collection gardens (botanical gardens and arboretums). Only two of these species - *C. coccinea* var. *coccinea* L. (as *C. pedicellata* Sarg.) and *C. flabellata* (Bosc ex Spach) K.Koch - have previously been documented as adventive in the country (Balogh *et al.* 2004; Bartha *et al.* 2015). The population found consists of an old, fruit-bearing individual, several hundred seedlings, and a few dozen young individuals of different ages. Due to the high degree of hybridisation and apomixis among hawthorns (Hrabětova-Uhrova 1967; Muniyamma & Phipps 1979; Gosler 1990), and the introduction of hybrid species from Eurasia to the American continent (Love & Feigen 1978; Christensen *et al.* 2014) adventive species from the genus may contribute to the contamination of the genetic pool of *Crataegus* species native to Hungary. Therefore, the further fate and behaviour of the individuals should be monitored in the future.

***Cuscuta approximata Bab.*, fam. Cuscutaceae (dicot, vascular plant)**
**Contributors:** János Csiky and Kornél Baráth
**Geographical focus:** Hungary
**New record and noteworthy data**: A record unconfirmed for more than 100 years, now representing the only extant population in Hungary
**Specimen data:** Pest County, Nagykovácsi, on the steep, rocky, south-facing slopes of Remete-hegy, within a mosaic of rocky grassland and pubescent oak shrub-wood, N 47.561448°, E 18.933850°, 368 m a.s.l., 1 July 2023, leg./det. Csiky J., conf. Baráth K.
**Voucher:** Herbarium of the University of Pécs (JPU)

This thermophilous species, native to the Old World (García 2024), and particularly to the southern and eastern part of Europe, was first collected in Hungary in 1923 in the Buda Hills, on Remete-hegy. At that time, the plant was identified as *C. planiflora* (Zsák 1941), but was subsequently revised to *C. approximata* (Csiky 2003). Remete-hegy is one of the most prominent, most frequently visited, and most intensively studied botanical sites in Hungary, making it particularly surprising that this occurrence has not been confirmed for more than a century. *C. approximata* had previously been recorded in Hungary at only four localities (Csiky 2003; Király 2009; Wirth *et al.* 2020), but in recent years its presence at these sites could not be verified. The only exception is represented

by the vigorous populations occurring in the clearings of downy oak stands with an open canopy, and rocky grasslands on Remete-hegy, which currently represent the species' sole extant locality in Hungary. The observed host species included: *Achillea pannonica* Scheele, *Acinos arvensis* (Lam.) Dandy, *Allium flavum* L., *Cardaminopsis arenosa* (L.) Hayek, *Centaurea stoebe* Tausch, *Cleistogenes serotina* (L.) Keng, *Dictamnus albus* L., *Euphorbia cyparissias* L., *Festuca rupicola* Heuff., *Hypericum perforatum* L., *Melica ciliate* L., *Orlaya grandiflora* (L.) Heuff., *Salvia pratensis* L., *Sideritis montana* L., *Stachys recta* L., *and Thymus glabrescens* Willd. *Cuscuta approximata* was in full bloom in early July. On Remete-hegy, *C. epithymum* also occurs in similar habitats, but its flowering peaks later.

***Fabronia pusilla* Raddi, fam. Fabroniaceae (moss, bryophyte)**
**Contributors:** Ábel Beránek and Pavel Širka
**Geographical focus:** Slovakia
**New record and noteworthy data:** Confirming an old record in Slovakia. This is currently the second known locality in the country.
**Specimen data:** The Cerová vrchovina Highlands, Gemerské Dechtáre, Bagova skala near the Steblová skala Nature Reserve: in fissures, shaded cavities and around a small cave on a steep, south-facing volcanic rock field. The slope is dominated by *Bothriochloa ischaemum* (L.) Keng patches and an open oak forest with a high proportion of *Quercus pubescens Brot*. In 4–5 locations situated very close to one another, the two GPS coordinates represent the two most distant points. Many plants were fertile. N 48.2487333°, E 19.9898444°, 351 m a.s.l. & N 48.2484778°, E 19.9900806°, 345 m a.s.l., 16 October 2025; leg./det. Beránek Á., conf. Širka P.
**Voucher:** Photo archive of Á. Beránek, specimens currently in the private collection of Á. Beránek.

This characteristic Mediterranean moss was previously known from only a few historical localities in Slovakia and was thus considered as regionally extinct/vanished (RE/VA) (Mišíková *et al*. 2020). Pilous (1956) collected it for the first time on andesite rocks near Kozárovce in the Štiavnické vrchy Mts, and later (Pilous 1957) abundantly on the opposite hill of nearby Kusá hora near Levice in the Danubian Hills (originally described as near Tlmače), as well as from the Cerová vrchovina Highlands from two localities: Zaboda(kő) (now the Zaboda Natural Monument) and Lebedét/Lebedőt hill (=Bagova skala). In the Cerová vrchovina Highlands, the species was recently also recorded at Tilič hill in the Pohanský hrad National Nature Reserve (Širka *et al*., unpubl.). Although Bagova skala is currently partially covered by an abandoned quarry (without *Fabronia*), many parts have remained untouched. Interestingly, Z. Pilous also found *Fabronia pusilla* here, fertile and in abundance. Similarly to *Leptodon smithii* (Dicks. ex Hedw.) F.Weber & D.Mohr, the Slovak localities represent the northeasternmost points in the species' distribution in Europe (Campisi *et al*. 2019).

***Leptodon smithii* (Hedw.) F.Weber & D.Mohr, fam. Leptodontaceae (moss, bryophyte)**
**Contributor:** Ábel Beránek
**Geographical focus:** Slovakia
**New record and noteworthy data:** Rediscovered after almost 70 years from the only previously known locality in Slovakia.
**Specimen data:** The Cerová vrchovina Highlands, Hajnáčka, the Zaboda Natural Monument: inside a basalt fissure open only on the south-facing side. On bare rock in a semi-shaded environment, without competing moss species, in

an area approximately the size of a palm. The basalt outcrop itself is situated in a middle-aged oak forest, shaded by trees. N 48.2329694°, E 19.9744333°, 439 m a.s.l., 15 October 2025; leg./det. Beránek Á., conf. Širka P.
**Voucher:** Photo archive of Á. Beránek, specimen currently in the private collection of Á. Beránek.

This distinctive Atlantic-Mediterranean species is widespread throughout the Mediterranean region in Europe, but becomes very rare and threatened further north and east, as in Austria (Pöltl *et al*. 2019), Hungary and Romania (Hodgetts & Lockhart 2020). In Slovakia, it was considered as regionally extinct/vanished (RE/VA) (Mišíková *et al*. 2020). The only previously known – and now confirmed – locality in Slovakia was found by Pilous (1957), who provided a thorough description of the plant and its habitat from Zaboda hill (now the Zaboda Natural Monument): "It grows in shady, often damp deep crevices in basalt rocks, quite rarely in three places in a group of summit rocks at an altitude of 465 m". During several hours of intensive survey on the hilltop, only a single crevice containing the plant was located. The closest known historical localities of *Leptodon smithii* to Zaboda are in Hungary, in the Mátra and Tokaj-Eperjes Mountains (Orbán & Vajda 1983), also in volcanic rock fissures, but these also need to be confirmed, as the species currently survives at very few sites in western Hungary (Csiky *et al*. 2023, 2025; Erzberger *et al*. 2023). Boros (1968) speculated that in Hungary only the rock fissures providing a suitable climate allow *Leptodon* to survive continental winters (see Erzberger 2020). Therefore, the potentially favourable microclimatic conditions in the fissure at Zaboda could be assessed using long-term temperature-humidity logger(s) to determine whether they differ significantly from the external environment. The Slovak locality at Zaboda represents the northeastern edge of the distribution of *L. smithii*, together with a recently reported site in western Poland near the German border (Otte 2021). It is important to note that recent findings show that *L. smithii* is able to survive even on tree bark and exposed rock several hundred kilometres to the west/south-west of the Slovak locality (e.g. Pöltl *et al*. 2019; Erzberger 2020; Csiky *et al*. 2023, 2025).

***Lewinskya acuminata* (H.Philib.) F. Lara, Garilleti & Goffinet, fam. Orthotrichaceae (moss, bryophyte)**
**Contributor:** Beáta Papp
**Geographical focus:** Hungary
**New record and noteworthy data:** A new record for the bryophyte flora of Hungary
**Specimen data:** Jász-Nagykun-Szolnok County, Túrkeve, an oak forest along the Berettyó River, on *Quercus* bark, N 47.113111°, E 20.804028°, 90 m a.s.l., 31 May 2025, leg. and det. Papp B.
**Voucher:** The Hungarian National Museum Public Collection Centre, Budapest, The Hungarian Natural History Museum, Department of Botany, Bryophyte Collection, BP 199410.

It is a sub-Mediterranean, montane (Düll 1985) epiphyte. It is widely distributed in the Western Mediterranean region, and it is known from Great Britain, where it is red listed as Vulnerable (VU). Additional records exist from Belgium, the Netherlands, Switzerland and Germany, where it is extremely rare. In SE Europe it occurs in Albania, Bosnia-Herzegovina, Croatia, Greece, Montenegro and Slovenia (Hodgetts & Lockhart 2020).

It was collected on the Great Hungarian Plain in a dry oak forest planted on saline soil outside the flood protection embankment of the river Berettyó. Besides the predominance of *Quercus robur* L., *Fraxinus pennsylvanica* Marshall and *Ulmus minor* Mill. were the main constituents of the loose canopy.

In the shrub layer *Crataegus monogyna* Jacq., *Prunus spinosa* L., *Rosa canina* L. and *Sambucus nigra* L. were frequent, while the herb layer was characterised by a dense cover of *Galium aparine* L. and *Rubus caesius* L.

*Lewinskya acuminata* was found on the bark of a *Quercus robur* accompanied by *Lewinskya affinis* (Schrad. ex Brid.) F. Lara, Garilleti & Goffinet, *Orthotrichum patens* Bruch ex Brid., *Pulvigera lyellii* (Hook. & Taylor) Plášek, Sawicki & Ochyra and *Radula complanata* (L.) Dumort. This record significantly extends the northern distribution range of this sub-Mediterranean element.

In recent years, several bryophytes with Mediterranean and sub-Mediterranean characters have been reported from Hungary, including *Calypogeia arguta* Nees & Mont. (Ellis *et al.* 2021), *Ceratodon conicus* (Hampe) Lindb. (Blockeel *et al.* 2024), *Cryphaea heteromalla* (Hedw.) D.Mohr (Ellis *et al.* 2024a), *Scleropodium touretii* (Brid.) L.F. Koch (Ellis *et al.* 2024b), *Sphaerocarpos michelii* Bellardi (Ellis *et al.* 2022), and *Tortella humilis* (Hedw.) Jenn. (Blockeel *et al.* 2024).

***Lobaria pulmonaria* (L.) Hoffm., fam. Peltigeraceae (lichenised fungus, ascomycete)**

**Contributors**: Marko S. Sabovljević and Aneta D. Sabovljević

**Geographical focus**: Austria

**New records and noteworthy data**: A new report of a species in a decline in Europe; threatened in many European regions.

**Specimen data**: Austria, Near the road Loiblpass Strasse in Loibltal by the Loiblbach stream, Ferlach in Karnten, close to the Slovenian border, N 46.450713°, E 14.255739°. In *Abieti-Fagetum* prov. forest with sycamores, in a ditch by the stream, 14 sycamore trees recorded as phorophytes within 100 m$^2$; 12 November 2025; leg./det. Sabovljević MS, Sabovljević AD.

**Voucher**: Herbarium of the Institute of Botany and Botanical Garden Jevremovac, University of Belgrade (BEOU), s/n.

A lichen, *Lobaria pulmonaria* is an umbrella species characteristic of old-growth forests (Czarnota *et al.* 2023). It is a stenotopic, large foliose species (Nadyeina *et al.* 2014), occurring in high air humidity forests and mainly found as an epiphyte on beech trees (*Fagus sylvatica* L.) and less frequently sycamore trees (*Acer pseudoplatanus* L.). A low disturbance rate of forest stands, i.e. stable with high air humidity and diffused sunlight preventing long periods of thallus drying seem to be key factors for the occurrences of this lichen species (Gauslaa & Solhaug 1999; Benesperi *et al.* 2018). The lichen is formed by three symbionts, namely fungus, cyanobacterium (*Nostoc* sp.) and green algae (*Trebouxia* sp.).

The species is threatened in many regions of its distribution range worldwide, and it is reported as declining in Europe (Walser *et al.* 2002). Air pollution, inadequate forestry practice and habitat fragmentation are the main factors affecting this species. It is a flagship species for well managed forests and forest stands of high quality. Rapid climate changes are an additional threat to this species (Di Nuzzo *et al.* 2022).

According to Franz & Tauner-Zeiner (2019), this species is rarely recorded in the Austrian province of Carinthia. However, the authors also reported a unique and rare submontane site in the urban region of Klagenfurt. Franz & Tauner-Zeiner (2019) stated that the species is known to occur in approximately 15 locations in Carinthia, predominantly at altitudes ranging from 1000 to 1400 m within the missives of the Carnic and Karawanken Alps. The new record site is located within the broader geographical confines of the Karawanken Alps.

***Mesoptychia heterocolpos* (Thed. ex Hartm.) L.Söderstr. & Váňa, fam. Jungermanniaceae (liverwort, bryophyte)**
**Contributors:** Pavel Širka and Milan Valachovič
**Geographical focus:** Slovakia
**New record and noteworthy data:** Near Threatened (NT) in Slovakia (Mišíková *et al.* 2021), the second record for the Muránska planina Plateau
**Specimen data:** Muránska planina Plateau, Revúca District, Muráň: the Veľká Stožka National Nature Reserve, Teplá dolina Valley, phytosociological relevé no. MV3960, typical chasmophytic vegetation on limestone rocks dominated by *Bellidiastrum michelii* Cass. and *Campanula cochleariifolia* Lam. in combination with small ferns, e.g. *Asplenium viride* Huds., *A. ruta-muraria* L. and *A. trichomanes* L., N 48.78305°, E 19.951944°, 1020 m a.s.l., 13 August 2025; leg. Valachovič M., det. Kubešová S., Širka P.
**Voucher:** Herbarium of the Technical University in Zvolen (ZV), s.n.

This liverwort species occurs on humid calcareous rocks, typically growing over or among cushions of other calciphilous bryophytes rather than directly on bare rock (Váňa 2017; Sabovljević 2019). Recent published records from Slovakia are scarce and include only two localities in the Tatra Mts (Górski & Váňa 2014). Several older records are summarised by Duda & Váňa (1989), including occurrence on the Muránska planina Plateau in the nearby Hrdzavá dolina Valley. At the studied locality in Veľká Stožka, the species was found growing on or together with *Ctenidium molluscum* (Hedw.) Mitt., *Cololejeunea calcarea* (Lib.) Steph., *Distichium capillaceum* (Hedw.) Bruch & Schimp., *Exsertotheca crispa* (Hedw.) S.Olsson, Enroth & D.Quandt, *Fissidens dubius* var. *dubius* P.Beauv., *Gymnostomum aeruginosum* Sm., *Orthothecium rufescens* (Dicks. ex Brid.) Schimp. and *Tortella tortuosa* agg. (Hedw.) Limpr.

***Multiclavula mucida* (Pers.) R.H. Petersen, fam. Hydnaceae (lichenised fungus, basidiomycete)**
**Contributors**: Attila Sipos and Génesis K. Dela Campos
**Geographical focus**: Hungary
**New records and noteworthy data**: Reporting the first documented occurrence of *Multiclavula mucida* in Hungary along with additional records.
**Specimen data**: Borsod-Abaúj-Zemplén County, Aggteleki karszt, Szögliget, Verő-oldal, in a montane beech forest, on decaying beech wood, N 48.528022°, E 20.612869° 337 m a.s.l., 10 October 2022, and Öreg-tető, in the transition zone between a beech and an oak-hornbeam forest, on decaying beech wood, N 48.530344°, E 20.621497° 337 m a.s.l., 26 November 2023, leg and det. Virók V.
**Vouchers**: Photo archive of Virók V.
**Specimen data**: Nógrád County, Börzsöny Mt. Diósjenő, in the valley of Rózsás-patak, above the side valley of Varsa-gödrök, on decaying beech and ash logs, N 47.9539194°, E 18.9467126°, 814 m a.s.l., 3 October 2025; leg. Csiky J, Dela CGK, Sipos A, det. Csiky J, Dela CGK, Sipos A.
**Voucher**: Herbarium of the University of Pécs (JPU).

*Multiclavula mucida* occurs in the northern part of Europe and in the montane regions of Central Europe (John & Haedeke 2012). It appears to be rare throughout its range, and only scattered records are available from the Carpathians (Schmidt *et al.* 2018; Papp *et al.* 2020). This note reports new occurrences of the species in the North Hungarian Mts, but also records its first discovery in Hungary, which was made on the Aggtelek Karst one year prior to its detection on Mecsek Mt. (Csiky *et al.* 2023). On the Aggtelek karst, a colony of approximately 600 cm² was recorded on decaying beech wood within a mon-

tane beech forest at Verő-oldal in 2022, while a larger colony of about 1200 cm² was observed on similarly decaying beech wood in a transitional stand between beech and oak-hornbeam forests at Öreg-tető in 2023. The colony at Verő-oldal was no longer present in 2023, whereas the Öreg-tető population persisted and was still detectable in 2024 (Virók V. ex litt.). Another stand of *M. mucida* was found on decaying fallen logs of a *Fagus sylvatica* and *Fraxinus excelsior* in the montane beech zone of Börzsöny Mt. in 2025. The patch sizes of the colonies were measured to be 1120 cm², 2640 cm², 960 cm² and 270 cm². These observations, together with previous records (Csiky *et al.* 2023), indicate that the species has been continuously present in Hungary since 2022 and highlights the importance of surveying potential refugia of *M. mucida* at lower elevations, below the beech forest zone (e.g. Mecsek and Aggtelek Karst), within the Pannonian region in autumn, where microclimatic conditions correspond to those characteristic of the beech forest belt.

***Nitellopsis obtusa* (Desvaux) J. Groves, fam. Characeae (stonewort, charophyte algae)**
**Contributors:** Richard Hrivnák and František Bednár
**Geographical focus:** Slovakia
**New record and noteworthy data:** A new locality of stonewort with a relatively low number of distribution records in Slovakia, considered an Endangered species (EN). We also present the second phytosociological relevé of *Nitelletopsidetum obtusae* from Slovakia.
**Specimen data:** Slovakia, Podunajská pahorkatinna Mts, Váhovce village, the Kráľová water reservoir on the Váh river, north-eastern margin, N 48.2570742°, E 17.7939247°, 118 m a.s.l., 14 August 2025; leg. Hrivnák R., det. Bednár F.
**Voucher:** Photo documentation of Bednár F. (https://www.inaturalist.org/observations/308021146).

*Nitellopsis obtusa* is a large charophyte, reaching a size of 20–100 (up to 200) cm (Schubert *et al.* 2024). It is distributed across most of Europe and Asia, where it is considered native, while in North America it is listed as an aggressive invasive species (Sleith *et al.* 2015; Schubert *et al.* 2024; Guiry & Guiry 2026). The species is relatively rare in Central and Eastern Europe but occurs more frequently in northern Poland, Austria and the Balkans, where it is considered less threatened (Blaženčić *et al.* 2006; Urbaniak & Gąbka 2014; Schubert *et al.* 2024; Hohla *et al.* 2025). Moreover, *N. obtusa* is regarded as an expansive species and a strong competitor among stoneworts, negatively affecting the distribution of other macrophytes (Pełechaty *et al.* 2022). In Slovakia, *N. obtusa* is a rare species classified as Endangered (EN) in the national charophyte Red List (Hindáková *et al.* 2022). It has been recorded in the south-western part of the country (Hindáková *et al.* 2022), with only one additional locality reported in recent years (Bednár & Hrivnák unpubl.). We recorded a large population in the artificial water reservoir, occurring in relatively shallow water with low transparency. The population was accompanied by several aquatic plant species, including *Ceratophyllum demersum* L., *Elodea nuttallii* (Planch.) H. St. John, *Lemna minor* L., *Myriophyllum spicatum* L., *Najas marina* L., *Potamogeton lucens* L., *P. perfoliatus*, *P. pusillus* s. lat., *Stuckenia pectinata* (L.) Börner and *Spirodela polyrhiza* (L.) Schleid, as well as filamentous algae. In addition, *N. obtusa* formed a dominant stand, which can be classified as the community *Nitelletopsidetum obtusae* Dąmbska 1961; this association has so far been documented in the country by only a single relevé (Husák & Oťaheľová 1985; see also Oťaheľová 2001; Hrivnák *et al.* 2019a).
14 August 2025, area 16 m²; Total cover: 100%; stagnant water, depth 60–80 cm; author: Richard Hrivnák.

*Nitellopsis obtusa* 5, *Myriophyllum spicatum* 1, *Ceratophyllum demersum* +, *Elodea nuttallii* +, *Najas marina* +, *Potamogeton perfoliatus* +.

***Parmelia submontana* Hale, fam. Parmeliaceae (lichen-forming fungus, ascomycete)**
**Contributors:** László Lőkös and Bernadett Döme
**Geographical focus:** Hungary
**New record and noteworthy data:** A noteworthy, rare species, but it seems to be spreading now, the first record for the Pilis–Visegrád Mts, and the 7th for Hungary (cf. Papp *et al.* 2020)
**Specimen data:** Hungary, Pest County, Pilis–Visegrád Mts, Pilisszentkereszt, Dobogókő, "Hegytető", old oak trees in the parking area, on bark (*Quercus cerris* Pall.), N 47.718655°, E 18.898125°, 690 m a.s.l., 2 November 2024; leg./det. Döme B, Lőkös L.
**Voucher:** Private collection of L. Lőkös (hb. Lőkös)

*Parmelia submontana* is a corticolous, foliose lichen-forming fungus, characterised by loosely attached, elongated lobes with down-rolled margins and isidioid soredia. It is predominantly widespread in Europe. It has been reported from five localities in both montane and lowland areas of Hungary in recent years, i.e. from the Börzsöny and Buda Mts (Papp *et al.* 2020), from the "Barcsi-ősborókás" (Akác *et al.* 2024), and the Mátra Mts (pers. comm.). A new locality ("Hegytető") was found in the Pilis–Visegrád Mts in 2024, where *Parmelia submontana* was collected from the bark of *Quercus cerris*, which is a new phorophyte for *Parmelia submontana* in Hungary. Considering the new records reported within a rather short time, it remains unclear whether *Parmelia submontana* is now spreading in Hungary or it was just overlooked in the past.

***Phedimus stoloniferus* (S.G.Gmel.) 't Hart, fam. Crassulaceae (dicot, vascular plant)**
**Contributors:** Marcin Nobis and Ewelina Klichowska
**Geographical focus:** Poland
**New record and noteworthy data:** An alien casual, a new record for the flora of Poland.
**Specimen data:** Gorce Mts, Ochotnica Górna village, in the Jaszcze stream valley, on stones near the stream within the mesophilous riparian forest, N 49.5271667°, E 20.2170278°, 720 m a.s.l., 18 August 2025; leg. Klichowska E and Nobis M, det. Nobis M and Klichowska E.
**Voucher:** Herbarium of the Institute of Botany, Jagiellonian University in Krakow (KRA: 643448 and 643449).

*Phedimus* Raf. comprises approximately 20 species, traditionally classified under the broader genus *Sedum* L. and characterised by flattened leaves with serrate or crenate margins (vs. terete or semi-terete leaves with entire margins in *Sedum*; Thiede & Eggli 2007; Cho *et al.* 2024). The separate position of the genus is also confirmed by molecular data (Gontcharova & Gontcharov 2009).

*Phedimus* is widely distributed in Eurasia. However, those species classified within the subgenus *Phedimus* are distributed in the Mediterranean and Caucasus regions, while those from the subgenus *Aizoon* occur in eastern Asia (China, Japan, Korea and Central Siberia; Thiede & Eggli 2007). Selected species of *Phedimus* have been introduced into many central and northern European countries as ornamentals and have recently been observed escaping from cultivation and becoming established in different habitats. For instance, *Phedimus spurius* (M.Bieb.) 't Hart (syn. *Sedum spurium* M. Bieb.) has been intro-

duced into most European countries and is considered a naturalised neophyte in numerous parts of Europe (Lambdon *et al.* 2008; Danihelka *et al.* 2012; Mirek *et al.* 2020). Another species, *Phedimus stoloniferus* (S.G.Gmel.) 't Hart, which is morphologically similar to the above-mentioned species, and naturally distributed in SW Asia and S-SE Europe (POWO 2025), is now beginning to spread and has been documented in several European countries (e.g. Austria, Belgium, Czechia, Slovakia, France, Germany, Great Britain, Ireland, Norway, and Switzerland; POWO 2025). In Central Europe this species is mostly considered an alien casual plant (Danihelka *et al.* 2012; Kasperek 2016). However, it has the potential to be invasive, and in Switzerland, it is already considered a problematic invasive species spreading in various types of grassland and woodland habitats in the Prealps (Huguenin-Elie *et al.* 2011).

*Phedimus stoloniferus* differs from the more common *P. spurius* by its branched, creeping stems and leaf blades entire or obscurely crenate near the apex, with margins which are not or only sparsely ciliate vs. leaf blades which are crenate-serrate in the distal portion, and ciliate with stout white hairs along the margins (Go Botany 2025).

Here, we present the first record of *P. stoloniferus* in Poland. At its newly discovered locality, it occurs on the stony right-bank of a Jaszcze stream in Ochotnica Górna (Gorce Mts, south Poland) in a mesophilous riparian forest. The species is likely to have escaped from nearby home gardens in the village. Two populations were observed at the site. In the newly found locality, the species appears to have spread in the same way as the previously recorded one from the banks of the Westerbach stream in Frankfurt am Main (Kasperek 2016).

***Sagittaria latifolia* Willd., fam. Alismataceae (monocot, vascular plants)**
**Contributors:** Richard Hrivnák and Barbora Šingliarová
**Geographical focus:** Slovakia
**New record and noteworthy data:** A relatively rare alien plant in Slovakia, documented for the first time in the Carpathian bioregion.
**Specimen data:** Slovakia, Veľká Fatra Mts, Šútovo village, the north-eastern margin of the Krpeľany water reservoir on the Váh River, on the right bank of the river, N 49.1474222°, E 19.1018678°, 428 m a.s.l., 8 September 2025; leg. Hrivnák R, Pulišová Širková K, Skokanová K and Šingliarová B., det. Hrivnák R.
**Voucher:** Herbarium of the Institute of Botany, Slovak Academy of Sciences (SAV).

*Sagittaria latifolia* is native to the Americas, occurring mainly in North and Central America and partially in South America. It is an alien plant species in Europe, where it has been recorded in the wild mainly in Western and Central Europe and locally in Eastern Europe, while records remain relatively rare in Southwestern and Southeastern Europe and Scandinavia (Hussner 2012; https://www.gbif.org). In addition, *S. latifolia* has been included in the list of 21 aquatic plant species recorded in the largest number of invaded regions covered by the SynHab database (a global database of habitat affiliations of naturalised and invasive alien plants; https://www.synhab.com/; Kortz *et al.* 2025). In Slovakia, the species has been recorded in the wild only recently (Hrivnák *et al.* 2019b) at two localities in the south of central Slovakia (Nobis *et al.* 2019). Since then, several other records have been documented from southern Slovakia, including the Podunajská nížina lowland in the west (Dudáš *et al.* 2024), the Rimavská kotlina basin in the centre (Dudáš *et al.* 2020), and the Slánske vrchy Mountains and the Východoslovenská nížina lowland in the east (Dudáš *et al.* 2019; https://www.inaturalist.org/observations/229746218). In 2025, we recorded a relatively large *S. latifolia* population in the littoral zone at the margin of the Krpeľany water reservoir on the

Váh River. The population formed a large polycormon covering approximately 100–200 m² within marshy vegetation of *Phragmition communis* Koch 1926. This is the first record of *S. latifolia* within the Western Carpathian bioregion of Slovakia and may indicate the beginning of the species' spread into mountainous regions.

***Sphaerocarpos europaeus* Lorb., fam. Sphaerocarpaceae (liverwort, bryophyte)**
**Contributors:** Beáta Papp and Erzsébet Szurdoki
**Geographical focus:** Hungary
**New record and noteworthy data:** Refound after 100 years in Hungary
**Specimen data:** Somogy County, Barcs, in an arable field along the road to Kaposvár, N 45.993972°, E 17.5229722°, 124 m a.s.l., 14 March 2025, leg. and det. Papp B.
**Voucher:** Hungarian National Museum Public Collection Centre, Budapest, Hungarian Natural History Museum, Department of Botany, Bryophyte Collection, BP 54159/H

During field work in Somogy County we visited the locality of a rare bryophyte species, *Bruchia flexuosa* (Schwägr.) Müll. Hal, discovered in 2015. (Németh & Mesterházy 2015). Although *Bruchia* was not found, another interesting taxon, namely *S. europaeus,* was recorded. This species was found again in Hungary after 100 years. The only previously known locality was near Darány (Boros 1968; Orbán & Vajda 1983), which is the next village adjacent to Barcs, the site of the recent record. It was collected by Ádám Boros in 1923 and identified by Victor Schiffner under the name *Sphaeocarpos texanus* Austin (Erzberger & Papp 2004). However, European specimens of *Sphaerocarpos texanus* are clearly distinct from the American *S. texanus* (Bell *et al.* 2013), therefore, the latter has been excluded from the European checklist. *Sphaerocarpos europaeus* is the oldest valid name based on a European specimen (Hodgetts *et al.* 2020).

*Sphaerocarpos europaeus* is a liverwort with sub-Mediterranean, sub-Atlantic distribution in Europe (Düll 1983). However, in many countries it is red listed (Hodgetts & Lockhart 2020). It is an annual shuttle species (Orbán 1984) and usually appears in late winter on open, acidic sandy or loamy soil in gardens, cultivated areas, fallow fields, and vineyards (Dierssen 2001). It can be distinguished only by the spore characteristics of its close relative, *Sphaerocarpos michelii* Bellardi, which has recently been reported from Hungary (Ellis *et al.* 2022; Wolf *et al.* 2023).

In the recently discovered locality numerous thalli of *S. europaeus* were found on wet, acidic sandy soil on arable land accompanied by the following bryophyte species: *Bryum argenteum* Hedw., *B. bicolor* Dicks., *Imbribryum alpinum* (Huds. ex With.) N. Pedersen, *Ceratodon purpureus* (Hedw.) Brid., *Dicranella staphylina* H. Whitehouse, *Ephemerum serratum* (Hedw.) Hampe, *Tortula acaulon* (With.) R. H. Zander, *Physcomitrium pyriforme* (Hedw.) Bruch & Schimp., *Riccia sorocarpa* Bisch. and *Trichodon cylindricum* (Hedw.) Schimp.

***Tropaeolum majus* L., fam. Trapaeolaceae (dicot, vascular plant)**
**Contributors:** Matúš Hrivnák and Richard Hrivnák
**Geographical focus:** Slovakia
**New record and noteworthy data**: An alien plant rarely documented in Slovakia.
**Specimen data:** Central Slovakia, the town of Zvolen, north of the bridge over the Hron River, on Ľ. Štúra street, on the right bank of the river embankment, N 48.5790278°, E 19.1110833°, 290 m a. s. l., 9 October 2020; leg. Hrivnák M., det. Csölleová L, Hrivnák M and Hrivnák R.

**Voucher:** Herbarium of the Institute of Botany, Slovak Academy of Sciences (SAV), and photo documentation of Hrivnák M.

*Tropaeolus majus* originates from South America, specifically the Andes from Peru and Bolivia northwards to Colombia, but is an alien species in Europe, where it was introduced in the 16th century (Lim 2014). All the above-ground parts of the plant are edible and can be added to salads, sandwich spreads, vegetable dishes, and butter, or used to flavour vinegar (Lim 2014). The species has been reported to contain up to ten times more vitamin C than lettuce (Duke & Ayensu 1985). *Tropaeolus majus* is therefore a frequently cultivated plant and is among the 150 most widespread alien plant species in Europe (Lambdon *et al.* 2008). Similarly, *T. majus* is cultivated in Slovakia (e.g. Uhlířová 2011; Habán & Bečárová 2012), but is relatively rare in the wild. Medvecká *et al.* (2012) evaluated *T. majus* as a species with very rare occurrences in the country, with fewer than four known localities. The species was reported from Bratislava in the past (Feráková & Jarolímek 2011), but since then, only a few localities have been recorded. Rendeková & Mičieta (2017) again recorded the species in the city of Bratislava, while Kantor in Eliáš (2024) and Kliment *et al.* (2017) documented its presence in the villages of Belá-Dulice and Ľubochňa in the Veľká Fatra Mountains. All records come from ruderalised or man-made habitats. Similarly, we found two individuals in a ruderalised grassland on a riverbank at the edge of a housing estate, a locality frequently visited by people.

**Acknowledgement** – Beáta Papp acknowledges her gratitude to Anikó Csecserits (Vácrátót, Hungary) for providing information on the vascular plants of the studied forest and to the Hungarian Biodiversity Research Society, which made these investigations possible during the XXV. Biodiversity Days. Richard Hrivnák's study was partially supported by the Grant Agency VEGA (2/0067/24). Barbora Šingliarová and Richard Hrivnák would like to thank Kristína Pulišová Širková and Katarína Skokanová for their assistance with the field research on *Sagittaria latifolia*. Their study was supported by the Grant Agency VEGA (2/0022/25). Pavel Širka was financially supported by the Scientific Grant Agency of the Ministry of Education, Research, Development and Youth of the Slovak Republic and the Slovak Academy of Sciences (VEGA 1/0768/25).

## REFERENCES

Akác A, Buczkó K, Cser B, Farkas E, Lőkös L, Molnár C, Stenger-Kovács C, Szűcs P & Varga N. 2024. Taxonomical and chorological notes 19: 169–180. *Studia Botanica Hungarica* **55**: 169–180. https://doi.org/10.17110/StudBot.2024.55.1.169

Balogh L, Dancza I & Király G. 2004. *Actual list of neophytes in Hungary and their classification according to their success*. In: Mihály B & Botta-Dukát Z (eds.), *Biological invasions in Hungary: Invasive plants*. A KvVM Természetvédelmi Hivatalának tanulmánykötetei 9, pp. 61–92, TermészetBÚVÁR Alapítvány Kiadó, Budapest, Hungary.

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

Bell D, Long DG & Hollingsworth P 2013. *The use of DNA barcoding to address major taxonomic problems for rare British bryophytes*. Royal Botanic Garden, Edinburgh.

Benesperi R, Nascimbene J, Lazzaro L, Bianchi E, Tepsich A, Longinotti S & Giordani P. 2018. Successful conservation of the endangered forest lichen *Lobaria pulmonaria* requires knowledge of fine-scale population structure. *Fungal Ecology* **33**: 65–71. https://doi.org/10.1016/j.funeco.2018.01.006

Blaženčić J, Stevanović B, Blaženčić Ž & Stevanović V 2006. Red data list of Charophytes in the Balkans. *Biodiversity and Conservation* **15**: 3445–3457. https://doi.org/10.1007/s10531-005-2008-5

Blockeel TL, Schneider C, Schneider Th, Martin P, Long DG, Erzberger P & Papp B. 2024. Additions to the bryophyte flora of Hungary from the British Bryological Society meeting in April 2024. *Studia Botanica Hungarica* **55**: 267–283. https://doi.org/10.17110/StudBot.2024.55.2.267

Boros Á. 1968. *Bryogeographie und Bryoflora Ungarns*. Akadémiai Kiadó, Budapest.

Campisi P & Cogoni A. 2019. *Campylopus pyriformis* (Europe assessment). *The IUCN Red List of Threatened Species 2019*: e.T84829814A87771234. [Accessed 8 January 2026].

Campisi P, Cogoni A, Blockeel T, Garcia C, Hodgetts N, Kučera J, Lara F, Lüth M & Schröck C. 2019. *Fabronia pusilla* (Europe assessment). *The IUCN Red List of Threatened Species 2019*: e.T86500021A87769690. [Accessed 16 November 2025].

Cho MS, Kim Y, Kim SH, Jeon JH, Yang JY & Kim SC. 2024. Phylogenetic relationships and genetic diversity of the Korean endemic *Phedimus latiovalifolius* (Crassulaceae) and its close relatives. *Scientific Reports* **14**: 16255. https://doi.org/10.1038/s41598-024-63272-9

Christensen KI, Zarrei M, Kuzmina M, Talent N, Lin C & Dickinson TA. 2014. *Crataegus* ×*ninae-celottiae* and *C.* ×*cogswellii* (Rosaceae, Maleae), two spontaneously formed intersectional nothospecies. *Phytokeys* **36**: 1–26. https://doi.org/10.3897/phytokeys.36.6784

Csiky J. 2003. *Cuscuta approximata* Babington Magyarországon (Cuscutaceae Dumort.). *Kitaibelia* **8**: 75–80.

Csiky J, Deme J, Erzberger P, Kovács D, Németh C & Sipos A. 2023. *Multiclavula mucida* (Basidiomycota) a Pannon régióban és más adatok a magyarországi lopvanősző flórához. *Kitaibelia* **28**: 173–184. https://doi.org/10.17542/kit.28.40

Csiky J, Erzberger P, Kaló O, Nádasdi M, Wolf M, Zakály Gy & Sipos A. 2025. Érdekességek és változások a mecseki völgyek mohaflórájában. *Kitaibelia* **30**: 157–176. https://doi.org/10.17542/kit.30.070

Czarnota P, Tuchowski M, Szymczyk R & Piegdon A. 2023. *Lobaria pulmonaria* as an ubrella species for the protection of epiphytic lichen diversity in Polish Carpathians. *Acta Mycologica* **58**: 177130. https://doi.org/10.5586/am/177130

Danihelka J, Chrtek J Jr & Kaplan Z. 2012. Checklist of vascular plants of the Czech Republic. *Preslia* **84**: 647–811.

Di Nuzzo L, Giordani P, Benesperi R, Brunialti G, Fackovcová Z, Frati L, Nascimbene J, Ravera S, Vallese C, Paoli L & Bianchi E. 2022. Microclimatic Alteration after Logging Affects the Growth of the Endangered Lichen *Lobaria pulmonaria*. *Plants* **11**: 295. https://doi.org/10.3390/plants11030295

Dierssen K. 2001. Distribution, ecological amplitude and phytosociological characterisation of European bryophytes. J Cramer Publishing Company, Stuttgart, Germany.

Duda J & Váňa J. 1989. Rozšíření játrovek v Československu LVI. *Časopis Slezského Zemského Muzea, Série A – Vědy přírodní* **38**: 209–224.

Dudáš M, Eliáš P, Górecki A, Hrivnák M, Hrivnák R, Malovcová-Staníková M, Marcinčinová M & Pliszko A. 2020. New floristic records from Central Europe 6 (reports 81–98). *Thaiszia – Journal of Botany* **30**: 209–220. https://doi.org/10.33542/TJB2020-2-05

Dudáš M, Eliáš P Jr, Hrivnák R, Király G, Kobiv Y, Majerová M, Májeková J, Mikoláš V, Pliszko A, Schmotzer A & Takács A. 2024. New floristic records from Central Europe 13 (reports 176–197). *Thaiszia – Journal of Botany* **34**: 66–89. https://doi.org/10.33542/TJB2024-1-05

Dudáš M, Malovcová-Staníková M, Pliszko A, Schieber B & Zieliński J. 2019. New floristic records from Central Europe 4 (reports 41–53). *Thaiszia – Journal of Botany* **29**: 231–237. https://doi.org/10.33542/TJB2019-2-08

Duke JA & Ayensu ES. 1985. *Medicinal plants of China, vol. 1 & 2*. Reference Publications, Algonac, USA.

Düll R. 1983. Distribution of the European and Macaronesian liverworts (*Hepaticophytina*). *Bryologische Beiträge* **2**: 1–115.

Düll R. 1985. Distribution of the European and Macaronesian mosses (Bryophytina) II. *Bryologische Beiträge* **5**: 110–232.

Eliáš P. jr. 2024. Zaujímavejšie floristické nálezy. *Bulletin Slovenskej Botanickej Spoločnosti* **46**: 197–212.

Ellis LT, Adjie B, Alvarez DJ, Ardiles V, Asthana AK, Atwood JJ, Bakalin VA, Bednarek-Ochyra H, Boiko M, Budke JM, Cedrés-Perdomo RD, Cerrato MD, Csiky J, Espinoza-Prieto B, Gabriel R, Gey S, Gil L, Graulich A, Hylander K,

Kiebacher T, Konstantinova NA, Kučera J, Kunev G, Larraín J, Lönnell N, Maciel-Silva AS, Mamontov Yu S, Mattos GH R, Mir-Rosselló PM, Nadhifah A, Natcheva R, O'Leary, SV, Oliveira MF, Opisso J, Papp B, Peñaloza-Bojacá GF, Polaino-Martín C, Rawat KK, Ribas-Serra A, Rosadziński S, Sahu V, Sipos A, Staniaszek-Kik M, Starzomski BM, Suárez GM, Tucker DB L, Verma A & Zagorodniuk N. 2024b. New national and regional bryophyte records, 77. *Journal of Bryology* **46**: 139–155. https://doi.org/10.1080/03736687.2024.2388418

Ellis LT, Afonina OM, Ahmadi Sh, Alvarez DJ, Álvaro Alba WR, Ashouri A, Aslan G, Campos LV, Costa MC O, Csiky J, Czernyadjeva IV, Estepa-Ruiz MT, Gonçalves OA, Gradstein SR, Graulich A, He YK, Hu R-Y, Hugonnot V, Ignatova EA, Kirmaci M, Kopitar D, Krajšek SS, Kučera J, Kürschner H, Li X-D, Liu Z, Maciel-Silva AS, Mahdigholi K, Manju CN, Mehrabian AR, Mejia-Toro LF, Mufeed B, Ochyra R, O'Leary SV, Oliveira-da-Silva FR, Özenoğlu H, Peñaloza-Bojacá GF, Pépin F, Peralta DF, Rajesh KP, Rios AB M, Sahu V, Sajitha MS, Schäfer-Verwimp A, Shirzadian S, Soares de Lima J, Sipos A, Suárez GM, Vélez Puerta JM, Verma A, Vončina G, Vilk EF, Wierzgoń M Winter G, Yao KY & Zheng TX. 2024a. New national and regional bryophyte records, 78. *Journal of Bryology* **46**: 226–243. https://doi.org/10.1080/03736687.2024.2418206

Ellis LT, Alataş M, Álvaro Alba WR, Charry Giraldo AM, Amatov V, Batan N, Becerra Infante DA, Burghardt M, Czernyadjeva IV, Kuzmina E Yu, Doroshina G Ya, Erata H, Garilleti R, Gradstein SR, Jukonienė I, Karaman Erkul S, Keskin A, Ezer T, Lara F, Draper I, Maksimov AI, Mammadova AV, Natcheva R, Németh Cs, Pantović J, Sabovljević MS, Papp B, Poponessi S, Cogoni A, Porley RD, Reiner-Drehwald ME, Schäfer-Verwimp A, Schmotzer A, Šegota V, Alegro A, Rimac A, Ştefănuţ S, Szurdoki E, Vilk EF, Virchenko VM, Bijlsma RJ & Callaghan DA. 2021. New national and regional bryophyte records, 67. *Journal of Bryology* **43**: 301–311. https://doi.org/10.1080/03736687.2021.1977517

Ellis LT, Arrocha C, Benítez Á, Beyrouthy M, Chandini VK, Czernyadjeva IV, Deme J, Erzberger P, Fedosov VE, Górski P, Guerra J, Hugonnot V, Lautenschläger T, Lee GE, Mair P, Mamontov YU S, Manju CN, Manjula KM, Mesterházy A, Mufeed B, Müller F, Neinhuis C, Németh Cs, Paul RR, Pócs T, Porley RD, Rajesh KP, Raouf Fard F, Rawat KK, Rodríguez-Quiel E, Schäfer-Verwimp A, Ştefănuţ S, Tratter W, Verwimp I, Vilnet AA, Wolf M & Zander RH. 2022. New national and regional bryophyte records, 71. *Journal of Bryology* **44**: 252–263. https://doi.org/10.1080/03736687.2022.2143223

Erzberger P. 2020. Bryophyte recording in Hungary in the 21st century. *Field Bryology* **123**: 21–33.

Erzberger P, Csiky J, Baráth K, Beránek Á, Deme J, Fintha G, Jakab G, Matus G, Mesterházy A, Nagy J, Nagy Z, Németh Cs, Pócs T, Schmidt D, Schmotzer A, Szűcs P, Wolf M & Papp B. 2023. Preliminary data on frequency and distribution of Hungarian bryophytes based on 'recent' (1974–2022) records. *Journal of Bryology* **45**: 121–148. https://doi.org/10.1080/03736687.2023.2225966

Erzberger P & Papp B. 2004. Annotated checklist of Hungarian bryophytes. *Studia Botanica Hungarica* **35**: 91–150.

Essl F & Zechmeister H. 2021. The checklist of alien and cryptogenic bryophytes in Austria (2nd edition). *BioInvasions Records* **10**: 419–424.

Farkas E & Lőkös. L. 2021. Distribution of *Absconditella lignicola* (Stictidaceae, lichenised Ascomycetes) in Hungary. *Studia Botanica Hungarica* **52**: 115–124. https://doi.org/10.17110/StudBot.2021.52.2.115

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

Feráková V & Jarolímek I. 2011. *Bratislava*. In: Kelcey J-K & Müller N (eds.), *Plants and habitats of European cities*, pp. 79–129, Springer, New York.

Franz W & Tauner-Zeiner C. 2019. *Lobaria pulmonaria* (Fam. Lobariaceae) – ein Erstfund der Echten Lungenflechte im Stadtgebiet von Klagenfurt (Kärnten). *Carinthia II* **129**: 15–26.

García M. 2024. *Cuscuta approximata (smallseed alfalfa dodder)*. CABI Compendium. https://doi.org/10.1079/cabicompendium.113694

Gauslaa Y & Solhaug KA. 1999. High-light damage in air-dry thalli of the old forest lichen *Lobaria pulmonaria*—interactions of irradiance, exposure duration and

high temperature. *Journal of Experimental Botany* **50**: 697–705. https://doi.org/10.1093/jxb/50.334.697

Go Botany 2025. *Phedimus stoloniferus* — running false stonecrop. Go Botany 4.3. New England Wildflower Society. https://gobotany.nativeplanttrust.org/species/phedimus/stoloniferus/ [Accessed 17 November 2025].

Gontcharova SB & Gontcharov AA. 2009. Molecular phylogeny and systematics of flowering plants of the family Crassulaceae DC. *Molecular Biology* **43:** 794–803.

Górski P & Váňa J. 2014. A synopsis of liverworts occuring in the Tatra Mountains (Western Carpathians, Poland and Slovakia): checklist, distribution and new data. *Preslia* **86**: 381–485.

Gosler AG. 1990. Introgressive hybridization between *Crataegus monogyna* Jacq. and *C laevigata* (Poiret) DC. in the Upper Thames Valley, England. *Watsonia* **18**: 49–62.

Guiry MD & Guiry GM. 2026. *AlgaeBase*. World-wide electronic publication, National University of Ireland, Galway. Available at: https://www.algaebase.org [Accessed 3 January 2026].

Habán M & Bečárová M. 2012. The exposure fields of medical plants in the Botanical garden of SUA in Nitra as a part of educational process. *Research Journal of Agricultural Science* **44**: 172–177.

Hindáková A, Gąbka M & Hrivnák R. 2022. Checklist, Red List, and distribution pattern of Charophytes (Charophyceae, Charales) in Slovakia based on critical revision of herbarium specimens. *Diversity* **14**: e897. https://doi.org/10.3390/d14110897

Hodgetts N & Lockhart N. 2020. *Checklist and country status of European bryophytes – update 2020*. Irish Wildlife Manuals, No. 123. National Parks and Wildlife Service, Department of Culture, Heritage and the Gaeltacht, Ireland.

Hodgetts NG, Söderström L, Blockeel TL, Caspari S, Ignatov MS, Konstantinova NA, Lockhart N, Papp B, Schröck C, Sim-Sim M, Bell D, Bell NE, Blom HH, Bruggeman-Nannenga MA, Brugués M, Enroth J, Flatberg KI, Garilleti R, Hedenäs L, Holyoak DT, Hugonnot V, Kariyawasam I, Köckinger H, Kučera J, Lara F & Porley RD. 2020. An annotated checklist of bryophytes of Europe, Macaronesia and Cyprus. *Journal of Bryology* **42**: 1–116. https://doi.org/10.1080/03736687.2019.1694329

Hohla M, Korsch H, Hofbauer M, Bernhardt K-G, Diewald W, Foissner I, Jäger D, Pall K, Prochinig U, Schagerl M, van de Weyer K & Gregor T. 2025. Characeen Österreichs. Checkliste, Atlas und Rote Liste der Armleuchteralgen (Charophyceae). *Biosystematics and Ecology* **4**: 9–146. https://doi.org/10.1553/biosystecol.4.e154327

Hrabětova-Uhrova A. 1967. *Hybridization bei den Crataegen*. Práce Botanického Klubu Přírodovědecké Fakulty v Brně **1966–1967**: 13–18.

Hrivnák R, Bubíková K, Oťaheľová H & Šumberová K. 2019a. Formalised classification of aquatic vegetation in Slovakia. *Phytocoenologia* **49**: 107–133. https://doi.org/10.1127/phyto/2018/0276

Hrivnák R, Medvecká J, Baláži P, Bubíková K, Oťaheľová H & Svitok M. 2019b. Alien aquatic plants in Slovakia over 130 years: historical overview, current distribution and future perspectives. *NeoBiota* **49**: 37–56. https://doi.org/10.3897/neobiota.49.34318

Huguenin-Elie O, Zollinger A, Stutz C, Gago R & Lüscher A. 2011. *Phedimus stoloniferus*: *a problematic alien species detected in Swiss grasslands.* In: Pötsch EM, Krautzer B & Hopkins A (eds.), *Grassland Farming and Land Management Systems in Mountainous Region, 29.08.-31.08.2011,* **16**, pp. 130–132, Publ. European Grassland Federation, Grassland Science in Europe, Raumberg-Gumpenstein. https://www.europeangrassland.org/fileadmin/documents/Infos/Printed_Matter/Proceedings/EGF2011.pdf [Accessed 3 January 3 2026]

Husák Š & Oťaheľová H. 1985. Vzácne spoločenstvá char na Záhorskej nížine. *Pamiatky a Príroda* **15**: 32–33.

Hussner A. 2012. Alien aquatic plant species in European countries. *Weed Research* **52**: 297–306. https://doi.org/10.1111/j.1365-3180.2012.00926.x

Jančovičová S, Godovičová K, Trojanovičová L, Vašková Z, Michalová M, Dušička J, Hrabovský M, Mišκovic J & Mišíková K. 2019. Let's go to the field. Botanical excursion 3. *Acta Botanica Universitatis Comenianae* **54**: 39–56.

John V & Haedeke J. 2012. Neufund von *Multiclavula mucida* in Rheinland-Pfalz mit Bemerkungen zur Verbreitung und Gefährdung der Art. *Herzogia* **25**: 287–292. https://doi.org/10.13158/heia.25.2.2010.287

Kasperek G. 2016. *Phedimus stolonifer* (SM GMELIN) H t'Hart nun auch in Hessen. *Hessische Floristische Briefe* **64**: 23–27.

Király G (ed.). 2009. *Új magyar füvészkönyv. Magyarország hajtásos növényei. Határozókulcsok*. ANP Igazgatóság, Jósvafő, Hungary.

Kliment J, Bernátová D, Očka S & Šípošová H. 2017: Nové poznatky o rozšírení cievnatých rastlín vo Veľkej Fatre – II. *Bulletin Slovenskej Botanickej Spoločnosti* **39**: 173–185.

Kortz A, Hejda M, Čuda J, Pattison Z, Brůna J, Novoa A, Pergl J, Pipek P, Štajerová K, Anastasiu P, Ansong M, Arianoutsou M, Barcelona JF, Bhatta S, Bordbar F, Borokini I, Celesti-Grapow L, Chacón-Madrigal E, Dawson W, Dorjee, Essl F, Ferrufino-Acosta L, Figueiredo E, Flores R, Fried G, Fuentes N, Galán P, Gilli C, Glaser M, Grande Allende JR, Gudžinskas Z, Holmes R, Hulme PE, Inderjit, Kang ES, Kreft H, Krix DW, Kühn I, Lopez O, MacVean A, Makhkamov T, Marchante E, Marchante H, Maroyi A, Meddour R, Meerts P, Mukul SA, Murray BR, Murray ML, Nickrent DL, Norman PE, Omer A, Patzelt A, Pelser PB, Pino J, Riera M, Rodríguez Delcid D, Rojas-Sandoval J, Rotchés-Ribalta R, Ruiz-Cruz JYS, Senator S, Sennikov AN, Shrestha BB, Smith GF, Sohrabi S, Tokarska-Guzik B, van Kleunen M, Vilà M, Wagner V, Weigelt P, Winter M, Yazlik A, Zykova E & Pyšek P. 2025. A global synthesis of naturalised and invasive plants in aquatic habitats. *NeoBiota* **102**: 473–494. https://doi.org/10.3897/neobiota.102.151156

Kučera J. 2004. *Campylopus* Brid. – křivonožka. Verze: 1.2 (12.10.2004). In: Kučera J (ed.), *Mechorosty České republiky – on-line klíče, popisy a ilustrace*, http://bryoweb.bf.jcu.cz/klic [Accessed 8 January 2026]

Kučera J, Váňa J & Hradílek Z. 2012. Bryophyte flora of the Czech Republic: updated checklist and Red List and a brief analysis. *Preslia* **84**: 913–850.

Lambdon PW, Pyšek P, Basnou C, Hejda M, Arianoutsou M, Essl F, Jarošík V, Pergl J, Winter M, Anastasiu P, Andriopoulos P, Bazos I, Brundu G, Celesti-Grapow L, Chassot P, Delipetrou P, Josefsson M, Kark S, Klotz S, Kokkoris Y, Kühn I, Marchante H, Perglová I, Pino J, Vila M, Zikos A, Roy D & Hulme PE. 2008. Alien flora of Europe: species diversity, temporal trends, geographical patterns and research needs. *Preslia* **80**: 101–149.

Lim TK. 2014. *Edible Medicinal and Non Medicinal Plants: Volume 8, Flowers*. Springer Science+Business Media, Dordrecht, Netherlands.

Love R & Feigen M. 1978. Interspecific hybridization between native and naturalized Crataegus (Rosaceae) in western Oregon. *Madroño* **25**: 211–217.

Medvecká J, Kliment J, Májeková J, Halada Ľ, Zaliberová M, Gojdičová E, Feráková V & Jarolímek I. 2012. Inventory of the alien flora of Slovakia. *Preslia* **84**: 257–309.

Mirek Z, Piękoś-Mirkowa H, Zając A & Zając M 2020. *Vascular Plants of Poland. An annotated checklist*. W Szafer Institute of Botany, Polish Academy of Sciences, Poland.

Mišíková K & Dobiášová K. 2014. Checklist of bryophytes of the Borská nížina lowland. *Acta Botanica Universitatis Comenianae* **49**: 19–29.

Mišíková K, Godovičová K, Širka P & Šoltés R. 2020. Checklist and red list of mosses (Bryophyta) of Slovakia. *Biologia* **75**: 21–37. https://doi.org/10.2478/s11756-019-00349-1

Mišíková K, Godovičová K, Širka P & Šoltés R. 2021. Checklist and red list of hornworts (Anthocerotophyta) and liverworts (Marchantiophyta) of Slovakia. *Biologia* **76**: 2093–2103. https://doi.org/10.2478/s11756-020-00670-0

Muniyamma M & Phipps JB. 1979. Cytological proof of apomixis in *Crataegus* (*Rosaceae*). *American Journal of Botany* **66**: 149–155.

Nadyeina O, Dymytrova L, Naumovych A, Postoyalkin S & Scheidegger C. 2014. Distribution and dispersal ecology of *Lobaria pulmonaria* in the largest primeval beech forest of Europe. *Biodiversity and Conservation* **23**: 3241–3262. https://doi.org/10.1007/s10531-014-0778-3

Németh C & Mesterházy A. 2015. *Bruchia flexuosa* (Schwägr.) Müll. Hal.: egy igazi különlegesség a magyar mohaflórában (*Bruchia flexuosa* (Schwägr.) Müll. Hal. a true peculiarity in the Hungarian bryoflora). *Kitaibelia* **20**: 193–201. https://doi.org/10.17542/kit.20.193

Nobis M, Klichowska E, Terlević A, Wrobel A, Erst A, Hrivnák R, Ebel AL, Tikhomirov VN, Byalt VV, Gudkova PD & Király G. 2019. Contribution to the flora of Asian and European countries: new national and regional vascular plant records, 8. *Botany Letters* **166**: 163–188. https://doi.org/10.1080/23818107.2019.1600165

Orbán S. 1984. A magyarországi mohák stratégiai és TW R értékei. [Life strategies and T, W, R values of Hungarian bryophytes]. *Az Egri Ho Si Minh Tanárképző Főiskola Füzetei* **17**: 755–765.

Orbán S & Vajda L. 1983. *Magyarország mohaflórájának kézikönyve*. Akadémiai kiadó, Budapest.

Oťaheľová H. 2001. *Charetea fragilis*. In: Valachovič M (ed.), *Rastlinné spoločenstvá Slovenska 3. Vegetácia mokradí*, pp. 393–406, Veda, Bratislava.

Otte V. 2021. *Leptodon smithii* an Polens Westgrenze, ein Neufund für Polen. *Herzogia* **34**: 515–518. https://doi.org/10.13158/heia.34.2.2021.515

Papp B, Erzberger P, Lőkös L, Szurdoki E, Németh C, Buczkó K, Höhn M, Aszalósné Balogh R, Baráth K, Matus G, Pifkó D & Farkas E. 2020. Taxonomical and chorological notes 12 (126–136): 82–84. *Studia Botanica Hungarica* **51**: 77–98. https://doi.org/10.17110/StudBot.2020.51.1.77

Pełechaty M, Zhapparova B, Brzozowski M & Pukacz A. 2022. Impact of *Nitellopsis obtuse* (Desv.) J Groves, a regionally alien and invasive charophyte, on macrophyte diversity in the species native range. *Hydrobiologia* **849**: 63–76. https://doi.org/10.1007/S10750-021-04710-x

Phipps JB. 2007. Miscellaneous typifications, new combinations and one new variety in North American *Crataegus* (Rosaceae). *Journal of the Botanical Research Institute of Texas* **1**: 1005–1010.

Pilous Z. 1956. Fragmenta bryologica 1–10. *Preslia* **28**: 42–51.

Pilous Z. 1957. Mechorosty Ragačských kopců Fiľakova. *Biológia* **4**: 241–254.

Pöltl M, Erzberger P, Gey S, Kiebacher T, Köckinger H, Reimann M, Schramm J, Sündhofer R & Berg C. 2019. Neues zur Moosflora der Steiermark 2. *Joannea Botanik* **16**: 65–80.

POWO. 2025. *Phedimus stoloniferus* (SGGmel.) 't Hart. Plants of the World Online. Facilitated by the Royal Botanic Gardens, Kew. https://powo.science.kew.org/ [Accessed 17 November 2025]

Rendeková A & Mičieta K. 2017. Interesting and rare plant taxa and community in the ruderal flora and vegetation of Bratislava and Malacky. *Acta Botanica Universitatis Comenianae* **52**: 11–27.

Sabovljević M. 2019. *Mesoptychia heterocolpos* (Europe assessment). *The IUCN Red List of Threatened Species* 2019: e.T78662132A87780776. [Accessed 4 January 2026]

Schmidt D, Csiky J, Matus G, Balogh R, Szurdoki E, Höhn M, Ábrán P, Buczkó K & Lőkös L. 2018. Taxonomical and chorological notes 6 (71–74). *Studia Botanica Hungarica* **49**: 121–132. https://doi.org/10.17110/StudBot.2018.49.1.121

Schubert H, Blindow I, Nat E, Korsch H, Gregor T, Denys L, Stewart N, van de Weyer K, Romanov R & Casanova MT. 2024. *Charophytes of Europe*. Springer, Cham.

Širka P, Kubešová S & Mišíková K. 2018. Bryophytes of spoil heaps rich in toxic metals in Central Slovakia. *Thaiszia – Journal of Botany* **28**: 59–77.

Sleith RS, Havens AJ, Stewart RA & Karol KG. 2015. Distribution of *Nitellopsis obtusa* (Characeae) in New York, USA. *Brittonia* **67**: 166–172. https://doi.org/10.1007/s12228-015-9372-6

Stech M & Wagner D. 2005. Molecular relationships, biogeography, and evolution of Gondwanan *Campylopus* species (Dicranaceae, Bryopsida). *Taxon* **54**: 377–382.

Thiede J & Eggli U. 2007. *Crassulaceae*. In: Kubitzki K (ed.), *The families and genera of vascular plants*, **9**, pp. 83–118, Springer. https://doi.org/10.1007/978-3-540-32219-1_12

Uhlířová J. 2011. Čo prezrádza Cypriánov herbár. *Acta Rerum Naturium Musei Nationalis Slovaci* **57**: 31–90.

Urbaniak J & Gąbka M. 2014. *Polish Charophytes. An illustrated guide to identification*. Wydawnictwo Uniwersytetu przyrodniczego we Wroclaviu, Wroclav, Poland.

van Zuijlen K, Nobis MP, Hedenäs L, Hodgetts N, Calleja Alarcón JA, Albertos B, Bernhardt-Römermann M, Gabriel R, Garilleti R, Lara F, et al. 2023. Bryophytes of Europe Traits (BET) data set: A fundamental tool for ecological studies. *Journal of Vegetation Science* **34**: e13179. https://doi.org/10.1111/jvs.13179

Váňa J. 2017. *Mesoptychia* (Lindb.) A Evans – prasklice. Verze: 2.0 (16.10.2017). In: Kučera J (ed.), *Mechorosty České republiky – on-line klíče, popisy a ilustrace*, http://bryoweb.bf.jcu.cz/klic [Accessed 8 January 2026]

Varga N, Lőkös L & Farkas E. 2023. Contributions to the lichen-forming and lichenicolous fungi of the Aggtelek National Park (NE Hungary). *Studia Botanica Hungarica* **54**: 155–174. https://doi.org/10.17110/StudBot.2023.54.2.155

Walser JC, Zoller S, Büchler U & Scheidegger C. 2002. Species-specific detection of *Lobaria pulmonaria* (lichenized ascomycete) diaspores in litter samples trapped in snow cover. *Molecular Ecology* **10**: 2129–2138. https://doi.org/10.1046/j.1365-294X.2001.01353.x

Wilbraham J, Afanasjeva LV, Ali SN, Álvaro-Alba WR, Aponte-Rojas AM, Bednarek-Ochyra H, Baráth K, Bell N, Boiko LM, Boiko MF, Cerrato MD, Cimerman Ž, Csiky J, Cuerdo M, Dangar BV, Enroth J, Erzberger P, Flatberg KI, Garilleti R, Gil L, Gradstein SR, Graulich A, Hugonnot V, Hsu Y-C, Kariyawasam I, Krajewski Ł, Kucharczyk J, Lara F, Majumdar S, Mir-Rosselló PM, Paul M, Pépin F, Porley RD, Potočnik K, Raviya RD, Ribas-Serra A, Schäfer-Verwimp A, Singh D, Singh DK, Sipos A, Starzomski BM, Ștefănuț M-M, Ștefănuț S, Strgulc Krajšek S, Tucker DBL, Tubanova DYa, Uotila PJ, Vélez-Puerta JM, Vončina G, Winter G & Yao K-Y. 2025. New national and regional bryophyte records, 81. *Journal of Bryology* **47**: 148–163. https://doi.org/10.1080/03736687.2025.2516912

Wirth T, Kovács D & Csiky J. 2020. Adatok és kiegészítések a magyarországi adventív flóra kivadult, meghonosodott és potenciális inváziós fajainak ismeretéhez. *Kitaibelia* **25**: 111–156. https://doi.org/10.17542/kit.25.111

Wolf M, Németh Cs & Erzberger P. 2023. *Sphaerocarpos michelii*, egy új májmoha faj Magyarországon (*Sphaerocarpos michelii*, a new liverwort species in Hungary). *Kitaibelia* **28**: 19–25. https://doi.org/10.17542/kit.28.028

Zsák Z. 1941. Florisztikai adatok a hazai növényvilág ismeretéhez. *Botanikai Közlemények* **38**: 12–34.

COMPREHENSIVE PLANT BIOLOGY

## REZIME

# Novi i značajni podaci o biljkama, algama i gljivama iz Centralne Evrope i susednih regiona, 2

János Csiky, Dalma Dobronoki, László Lőkös, Attila Sipos, Pavel Širka, Tamás Wirth, Kornél Baráth, Ábel Beránek, Beáta Papp, Marko S. Sabovljević, Aneta D. Sabovljević, Milan Valachovič, Génesis K. Dela Campos, Richard Hrivnák, František Bednár, Bernadett Döme, Marcin Nobis, Ewelina Klichowska, Barbora Šingliarová, Erzsébet Szurdoki i Matúš Hrivnák

U radu su dati novi i značajni podaci sa područja Centralne Evrope i susednih regiona za sledeće taksone: pršljenčicu *Nitellopsis obtusa*, lišajeve *Absconditella lignicola, Lobaria pulmonaria, Multiclavula mucida* i *Parmelia submontana,* jetrenjače *Mesoptychia heterocolpos* i *Sphaerocarpos europaeus,* mahovine *Atrichum flavisetum, Campylopus pyriformis, Fabronia pusilla, Leptodon smithii* i *Lewinskya acuminata,* dikotile *Crataegus coccinea* var. *pringlei, Cuscuta approximata, Phedimus stoloniferus* i *Tropaeolum majus* i monokotilu *Sagittaria latifolia*.

**Ključne reči**: novi nalaz, *Absconditella lignicola, Atrichum flavisetum, Campylopus pyriformis, Crataegus coccinea* var. *pringlei, Cuscuta approximata, Fabronia pusilla, Leptodon smithii, Lewinskya acuminata, Lobaria pulmonaria, Mesoptychia heterocolpos, Multiclavula mucida, Nitellopsis obtusa, Parmelia submontana, Phedimus stoloniferus, Sagittaria latifolia, Sphaerocarpos europaeus, Tropaeolum majus,* Centralna Evropa.