COMPREHENSIVE PLANT BIOLOGY

https://doi.org/10.2298/CPB2501131S

(2025) 49 (1): 131–146
ISSN 3042-3201
formerly Botanica Serbica

Original Scientific Paper

New records and noteworthy data of plants, algae and fungi in SE Europe and adjacent regions, 21

Marko S. Sabovljević[1,2,3*], Gordana Tomović[1*], Aneta D. Sabovljević[1,2], Georgi Kunev[4], Salza Palpurina[5], Lado Kutnar[6], Ivilin Ilchev[7], Boris Assyov[8], Vladan Djordjević[1], Beata Papp[9], Snežana Dragićević[10], Péter Szűcs[11], Sara Stanković[12], Anna Mežaka[13,14], Veselin V. Shivarov[8] and Miruna-Maria Ștefănuț[15]

1 Institute for Botany and Botanical Garden, Faculty of Biology, University of Belgrade, Takovska 43, 11 000 Belgrade, Serbia
2 Department of Plant Biology, Institute of Biology and Ecology, Faculty of Science, Pavol Jozef Šafárik University in Košice, Mánesova 23, 040 01 Košice, Slovakia
3 Center of Plant Biotechnology and Conservation (CPBC), Takovska 43, 11000 Belgrade, Serbia
4 Sofia University St. Kliment Ohridski, Faculty of Biology, Department of Botany, 8 Dragan Tzankov Blvd., 1164 Sofia, Bulgaria
5 National Museum of Natural History, Bulgarian Academy of Sciences, Department of Botany, 1 Tsar Osvoboditel Blvd., 1000 Sofia, Bulgaria
6 Slovenian Forestry Institute, Večna pot, 1000 Ljubljana, Slovenia
7 University of Plovdiv Paisii Hilendarski, Faculty of Biology, 24 Tzar Assen Str., 4000, Plovdiv, Bulgaria
8 Institute of Biodiversity and Ecosystem Research, Bulgarian Academy of Sciences, 2 Gagarin Str., 1113 Sofia, Bulgaria
9 Botanical Department, Hungarian Natural History Museum, H-1431, Budapest, Hungary
10 Montenegrin Academy of Sciences and Arts, Rista Stijovića 5, 81000 Podgorica, Montenegro
11 Institute of Biology, Department of Botany and Plant Physiology, Eszterházy Károly Catholic University, Leányka u. 12, HU-3300 Eger, Hungary
12 Public Enterprise Djerdap National Park, Kralja Petra I 14a, 19220 Donji Milanovac, Serbia
13 Institute of Life Sciences and Technology, Daugavpils University, Parādes Street 1A, LV-5401 Daugavpils, Latvia
14 Institute of Forestry, Faculty of Forest and Environmental Sciences, Latvia University of Life Sciences and Technologies. Akadēmijas Street 11, LV-3001 Jelgava, Latvia
15 Institute of Biology – Bucharest, Romanian Academy, 296 Splaiul Independentei, 060031 Bucharest, P.O. Box 56-53, Romania

*column editors, to whom contribution should be sent (marko@bio.bg.ac.rs)

ABSTRACT:
This paper presents new records and noteworthy data on the following taxa in SE Europe and adjacent regions: lichenised fungus *Solorina bispora* var. *subspongiosa*, saprotrophic fungi *Geastrum berkeleyi* and *Marasmius epiphylloides*, liverworts *Bazzania trilobata* and *Cephaloziella hampeana*, mosses *Grimmia meridionalis, Neckera pennata, Rhodobryum ontariense, Sphagnum affine*, and *Sphagnum papillosum*, and monocots *Carex elata, Epipactis microphylla*, and *Ophrys apifera*

Keywords: new report, *Bazzania trilobata, Carex elata, Cephaloziella hampeana, Epipactis microphylla, Geastrum berkeleyi, Grimmia meridionalis, Marasmius epiphylloides, Neckera pennata, Ophrys apifera, Rhodobryum ontariense, Sphagnum affine, Solorina bispora* var. *subspongiosa, Sphagnum papillosum,* SE Europe

Received:
15 January 2025

Revision accepted:
20 March 2025

UDC: 581.95:582.28+582.32
+582.52+582.6/.9(292.4)

***Bazzania trilobata* (L.) Gray, fam. Lepidoziaceae (liverwort, bryophyte)**
Contributors: Aneta D. Sabovljević and Marko S. Sabovljević
Geographical focus: Serbia
New record and noteworthy data: New data on a red-listed liverwort species (EN) in Serbia (Sabovljević *et al.* 2024a)
Specimen data: 1) Western Serbia, Mt. Tara, Crveni Potok nature reserve, N 43.917557°, E 19.419839°, in the tree bases within a peatland forest area; 7 July

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

2024; leg./det. Sabovljević A, Sabovljević M.; **2)** *ibidem*, 17 June 2016; leg./det. Sabovljević A, Sabovljević M.; **3)** *ibidem*, 20 June 2017; leg./det. Sabovljević A, Sabovljević M.; **4)** Central Serbia, Mt, Kopaonik, near the ski centre, N 43.289035°, E 20.808865°, in a wet spruce forest; 26 May 2001; leg./det. Sabovljević M.
Vouchers: Herbarium of the Institute of Botany and the Jevremovac Botanical Garden, University of Belgrade, Bryophyte Collection (BEOU-Bryo) s.n., 06193, 06742, 02949.

Bazzania trilobata is a liverwort species of Holarctic distribution. In Europe, it has a predominantly suboceanic-temperate distribution. It has become rarer in northern and more continental regions, and it is absent in the Mediterranean (Hodgetts 2019). While its overall population seems to be stable in Europe (Hodgetts *et al.* 2019), it has disappeared from Portugal and in some other countries it is threatened and red-listed (Hodgetts 2019).

In Serbia, this is a rare species, recently assessed as endangered (EN) (Sabovljević *et al.* 2024a). The species is calcifuge and humid acidic habitats are rather rare in Serbia. However, it has recently been reported from Golija Mt. (Papp & Erzberger 2005) and Boranja Mt. (Pantović & Sabovljević 2013), while historical, herbarium-unsupported and imprecise literature data for Serbia can also be found for Majdanpečka Domena, Mt. Ostrozub, Mts. Stara Planina and Suva Planina (Popović 1966; Jovanović 1980; Gajić *et al*. 1991). Interestingly, no records were published in bryophyte surveys of the Tara National Park (Papp & Sabovljević 2002) and Kopaonik National Park (Papp *et al*. 2004), suggesting that new and rare species records can be found even in the most thoroughly surveyed areas in Serbia. All the records from Serbia to date have documented the species in a vegetative and asexual state. This species is known to form cushions, and in Serbia it is often associated with other moss species of conservation interest such as *Sphagnum girgensohnii* Russow*., Sphagnum capillifolium* (Ehrh.) Hedw.*, Leucobryum glaucum* (Hedw.) Angstr. and others like *Dicranodontium denudatum* Britton.

Apart from its narrow habitat preference (wet and acidic conditions), this species has also been shown to be intolerant of desiccation (Hodgetts 2019). Global climate change, including rising temperatures, decreased precipitation, as well as shifts in precipitation patterns, poses the main threat for this species' survival.

The species deserves special conservation attention in Serbia.

***Carex elata* All., fam. Cyperaceae (monocot, vascular plant)**
Contributors: Georgi Kunev and Salza Palpurina
Geographical focus: Bulgaria
New records and noteworthy data: New sites of an endangered (EN) species in Bulgarian flora.
Specimen data: Western Bulgaria, Znepole region: **1)** Dragomansko Blato PA, in a drainage channel alongside hay meadows, former crop fields, N 42.920389°, E 22.960357°, MGRS 34T FN65, 700 m a.s.l.; fruits dispersed; 5 June 2023; leg./det. Kunev G.; **2)** Aldomirovsko Blato PA, in *Phragmition* communities, N 42.890306°, E 22.993075°, MGRS 34T FN65, 650 m a.s.l.; with fruits; 20 June 2023; leg./det. Kunev G.
Vouchers: Herbarium at the University of Sofia (SO) 108297, 108298; Herbarium at the Institute of Biodiversity and Ecosystem Research (SOM) 179192, 179193; vascular plant collection (BG-NMNHS-BOT) at the Herbarium of the National Museum of Natural History at the Bulgarian Academy of Sciences (BNHM): 1304, 3180, 3181, 3182 (https://www.gbif.org/occurrence/4608348371).

Carex elata has been evaluated as endangered in Bulgaria (Stoeva 2011). So far, it has been confirmed from three localities within the country (Hájek *et al.* 2005; ExEA 2023). Here, we report two new localities in Bulgaria: 1) Dragomansko Blato – about seven individuals growing along the drainage canals; 2) Aldomirovsko Blato – about 30 tuffs. Both localities fall within the Natura 2000 Protected Site Dragoman BG0000322. Additionally, Aldomirovsko Blato has also been designated a PA according to the Protected Areas Act in Bulgaria. During the summers of 2022–2024 Aldomirovsko Blato was almost completely drained, allowing easier access for monitoring. During this period, we were engaged in monitoring two rare species in the Bulgarian flora known from these areas, namely *Viola pumila* Chaix (EN) and *Fritillaria meleagroides* Schult. & Schult. f. (CR), which led to the findings of the two new localities of *C. elata.*

The last detailed study of Aldomirovsko Blato's flora reported 152 plants recorded in 1996 (Apostolova *et al.* 2001), but *C. elata* was not among them. The nearest previously known population of *C. elata* at the Kazichensko Blato locality, within the Sofia-City Province, was destroyed due to marsh desiccation, trampling and grazing (Stoeva 2011). These findings emphasise the importance of the Dragomansko and Aldomirovsko marshes as refuges for the biodiversity of the region.

***Cephaloziella hampeana*, fam. Cephaloziellaceae (liverwort, bryophyte)**
Contributors: Marko S. Sabovljević and Lado Kutnar
Geographical focus: Slovenia
New record and noteworthy data: New data on an endangered (EN) liverwort species in Slovenia (Martinčič 2024a)
Specimen data: Dolenjske Toplice municipality, near Podstenice in Kočevski Rog, N 45.648125°, E 15.030369°, *ca.* 850 m a.s.l., on a decaying log in a Dinaric fir-beech forest; 7 July 2023; leg. Sabovljević MS, Kutnar L.; det. Sabovljević MS.
Voucher: Herbarium of the Institute of Botany and the Jevremovac Botanical Garden, University of Belgrade, Bryophyte Collection (BEOU-Bryo) s.n.

The tiny liverwort species *Cephaloziella hampeana* has a boreo-temperate to north-oceanic distribution type in Europe (Hallingbäck 2019). Its scattered distribution ranges from Fennoscandia to the Iberian Peninsula and Macaronesia and further east to Russia, the Caucasus, Italy and the Balkans (Damsholt 2002).

Although its overall population trend in Europe remains unclear, there is no reason to believe that it is threatened by rapid decline (Hallingbäck 2019; Hodgetts *et al*. 2019), due to its wide range of micro-habitat types. It is associated with a wide range of acidic to neutral habitats, including rotting logs, mine spoil, peat soil and even on living *Sphagnum* species.

In Slovenia it is considered an endangered (EN) species (Martinčič 2024a), since it has only been reported once from the Rajhenavski Rog reserve in Kočevski Rog, in the Pre-Dinaric region of Slovenia (Ódor & van Dort 2002). After more than twenty years, in July 2023, we found this species in the area of Podstenice in Kočevski Rog, about 3–4 kilometres south-east of the Rajhenavski Rog reserve. This new locality of *C. hampeana* was found in a Dinaric fir-beech forest, dominated by European beech (*Fagus sylvatica* L.) and silver fir (*Abies alba* Mill.) mixed with Norway spruce (*Picea abies* (L.) H. Karst.) and some deciduous species, in a rocky forest area with a mean annual temperature of 7.7°C and mean annual precipitation of around 1500 mm (Škrk *et al.* 2021).

This species is rather difficult to detect in the field and needs to be in its reproductive phase for reliable identification.

***Geastrum berkeleyi* Massee, fam. Geastraceae (fungus, saprotrophic)**
Contributors: Ivilin Ilchev and Boris Assyov
Geographic focus: Bulgaria
New records and noteworthy data: This is the first finding of *G. berkeleyi* in Bulgaria Denchev & Assyov (2010).
Specimen data: The Black Sea coast, Varna Province and Municipality, Borovets settlement, NW of Arab-Cheshma locality, N 43.16302°, E 27.89278°, a plantation of *Cedrus atlantica* Carr. and *Pinus nigra* Arn. with an understory of *Quercus* sp., *Carpinus* sp. and other broadleaf trees and shrubs, on calcareous soil, *ca.* 180 m a.s.l.; 17 November 2024; leg. Ilchev I.; det. Ilchev I, Assyov B.
Voucher: Bulgarian Academy of Sciences, Mycological Collection of the Institute of Biodiversity and Ecosystem Research (SOMF), 30958.

Geastrum berkeleyi is a widespread species in Europe, albeit considered rare in most countries (Carlsson & Hæggström 2005; Jaworska 2011). In the Balkans it was previously documented with single findings from Greece and the Republic of North Macedonia (Dimou *et al.* 2008; Karadelev *et al.* 2018). However, some photographic records from Serbia have been featured on iNaturalist (iNaturalist 2025), suggesting its possible presence in this country. In terms of morphology, the reported Bulgarian collection compares well to the representative descriptions of *G. berkeleyi* in Pegler *et al.* (1995), Jeppson (2013), and Jeppson *et al.* (2013), It also partially corresponds to that in Sunhede (1989), though due to the taxonomic concept of the species in this latter work, readers are advised to also consult the relevant comments in Jeppson *et al.* (2013: 447–448).

***Epipactis microphylla* (Ehrh.) Sw., fam. Orchidaceae (monocot, vascular plant)**
Contributors: Vladan Djordjević
Geographical focus: Serbia
New records and noteworthy data: These are the first records of this species for both the Djerdap National Park and Kopaonik National Park. The species is protected by the Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES).
Specimen data: 1) Northeastern Serbia, Djerdap National Park, Mt. Northern Kučaj, Bele vode, N 44.587119°, E 21.983172°, MGRS 34T EQ73, ass. *Fagetum submontanum* (Rudski 1949) B. Jovanović 1976, plagioclase gneisses, exp. NW, incl. 10°, 400 m a.s.l.; 29 May 2024; leg. Djordjević V., Stanković S.; det. Djordjević V.; **2)** Central Serbia, Mt. Kopaonik, Đorov Brigde, N 43.359711°, E 20.740330°, MGRS 34T DP70, ass. *Fagetum montanum serbicum* Rudski 1949 em. B. Jovanović 1967, calc-schist and marble, exp. NE, incl. 20°, 749 m a.s.l.; 01 July 2023; leg. Djordjević V., Krdžić S.; det. Djordjević V.; **3)** Central Serbia, Mt. Kopaonik, Ravnište, Jelovarnik waterfall, N 43.267793°, E 20.856263°, MGRS 34T DN89, ass. *Fagetum montanum serbicum* Rudski 1949 em. B. Jovanović 1967, sericite-chlorite schists, exp. NE, incl. 30°, 1161 m a.s.l.; 23 Jun 2024; leg. Djordjević V., Krdžić S.; det. Djordjević V.; **4)** Central Serbia, Mt. Kopaonik, Gvozdac, Metodje Geyser, N 43.306065°, E 20.846248°, MGRS 34T DN89, ass. *Piceo-Fago-Abietetum* Čolić 1965, crystalline limestones, dolomites, marble and limestone, exp. NE, incl. 25°, 1423 m a.s.l.; 27 Jun 2024; leg./det. Djordjević V.
Vouchers: Herbarium of the Institute of Botany and Botanical Garden Jevremovac, University of Belgrade, vascular plant collection (BEOU) 72556, 72557, 72558, 72559; photo documentation of Djordjević V.

Epipactis microphylla is distributed throughout most of Europe, from Belgium to the Caspian Sea, in the Caucasus and Asia Minor (Delforge 2006). The

species has previously been recorded in numerous localities within a total of 39 10 × 10 km UTM grid cells in three regions of Serbia (Northwestern, Western and Southwestern Serbia) (Djordjević 2021 and the references therein). In addition, the species has also been recorded in the following regions and localities of Serbia: Bačka (Subotičko-Horgoška Sands); Srem (Mt. Fruška Gora); Šumadija (Mt. Rudnik, in the vicinity of Kragujevac, Ramaća Hill near Kragujevac); Central Serbia (Mts. Pasjača and Vidojevica, and Kraljevo: Bogutovačka Spa, Lopatnica River Gorge); Northeastern Serbia (Mt. Stol), Eastern Serbia (Mts. Stara planina and Suva planina, Pirot: Tepoš), as well as in the Kosovo region (Ločanska Bistrica Gorge) (Diklić 1976; Tomović *et al.* 2007 and the references therein; Jotić *et al.* 2013). The new finding of this species in the Djerdap National Park is the second record of this species in the region of Northeastern Serbia. Previously, the species was recorded only on Mt. Stol (Tomović *et al.* 2007). It is also the first record of this species in the MGRS 34T EQ73 10 × 10 km UTM grid cell. The new findings of this species in the Kopaonik National Park are the first records of this species for Mt. Kopaonik, and rare records of this species for the region of Central Serbia.

The species is known as a generalist which grows on different bedrock types, across a wide altitudinal range and in diverse habitats, including different types of forest vegetation (Djordjević *et al.* 2020). However, three newly recorded populations of this species were specifically found in beech forests, while the population on Mt. Kopaonik (Gvozdac) was discovered within *Piceo-Fago-Abietetum* Čolić 1965 the forest community. The species has been recorded on both siliceous geological substrates (plagioclase gneisses: Mt. Northern Kučaj; sericite-chlorite schists: Mt. Kopaonik, Ravnište) and carbonate bedrock types (calc-schist and marble: Mt. Kopaonik, Đorov Brigde; crystalline limestones, dolomites, marble and limestone: Mt. Kopaonik, Gvozdac). The species has the IUCN status of a regionally extinct species (RE) in Liechtenstein, a critically endangered species (CR) in Cyprus and the Czech Republic, an endangered species (EN) in Georgia and Austria, a vulnerable species (VU) in Bulgaria and Slovakia and near threatened (NT) in Ukraine, Switzerland, Slovenia, Luxemburg and Hungary (Kull *et al.* 2016).

***Grimmia meridionalis* (Müll.Hall.) E. Maier, fam. Grimmiaceae (moss, bryophyte)**
Contributors: Beata Papp and Snežana Dragićević
Geographical focus: Montenegro
New record and noteworthy data: A new record for the bryophyte flora of Montenegro
Specimen data: Budva, Buljarica, N 42.182833°, E 18.979667°, acidic schistose rock outcrop, on acidic rock, 20 m a.s.l.; 16 March 2023; leg. Papp B, Dragićević S; det. Papp B.
Voucher: Hungarian Natural History Museum, Department of Botany, Bryophyte Collection (BP) 198603.

In the past this species was considered a variety of *Grimmia trichophylla* Grev. (var. *meridionalis* Müll. Hal. or var. *teneriffae* Renauld & Cardot). It was elevated to species rank by Maier (2002). The main diagnostic features include leaves with elongate-rectangular basal cells with thick, nodulose walls, along with some marginal rows of hyaline cells. In the transitional part the cells are elongate-rectangular with strongly sinuose walls. Two narrowly elliptical guide cells are present in the cross-section of the nerve from the transitional part to the apex, which are obliquely arranged to the leaf axis (Maier 2010). The species has a Mediterranean distribution. In the Western Mediterranean it is known from the Azores, the Canary Islands, Portugal, Spain, France and Italy, and it has also been reported from Germany. In the Eastern Mediterranean it

has been documented from Albania, Bulgaria, Greece, North Macedonia and Cyprus (Hodgetts & Lockhart 2020). In Asia it is also known from Lebanon and Turkey (Maier 2010) and in Africa from Morocco, Algeria and Tunisia (Ros *et al*. 2013). It usually inhabits dry acidic grasslands on volcanic rocks, rarely on sandstone between 300 and 900 m a.s.l. (Maier 2010).

In Montenegro it was found in Buljarica Cove, which is one of the few remaining brackish marshes on the Adriatic coast. The beach is protected as a natural monument, but the surrounding area is also characterised by highly valuable ecosystems, with a high degree of biodiversity and numerous protected species at national and international levels. However, the area is threatened by various human activities, with the high pressure of tourism and associated pollution being the most critical among them (Katnić *et al*. 2017). The habitat of *G. meridionalis* in Buljarica, acidic rocks on the slopes covered by maquis vegetation with *Erica arborea* L., is of high conservation importance not only for Montenegro, but for the entire Balkan region. These rock formations are rare, particularly in coastal areas, due to the general predominance of limestone substrates. *Grimmia meridionalis* occurs on acidic rock accompanied with the following bryophytes; *Bartramia aprica* Müll. Hal., *Frullania tamarisci* (L.) Dumort., *Grimmia laevigata* (Brid.) Brid., *G. lisae* De Not. and *Hypnum cupressiforme* Hedw. var. *lacunosum* Brid.

***Limonium asterotrichum* (C.E. Salmon) C.E. Salmon, fam. Plumbaginaceae (dicot, vascular plant)**

Contributors: Georgi Kunev and Salza Palpurina

Geographical focus: Bulgaria

New records and noteworthy data: A new site for a critically endangered (CR) species in Bulgaria

Specimen data: S Bulgaria, Thracian Plane: W of Orizari village, Rhodopi Municipality, N slopes of the Golyama mogila burial mound near Orizari village, N 42.150332°, E 24.616060°, MGRS 35T LG06, 180 m a.s.l.; late-flowering stage; 6 October 2024; leg./det. Kunev G.

Vouchers: Herbarium at the University of Sofia (SO) 108405; Herbarium at the Institute of Biodiversity and Ecosystem Research (SOM) 179354; vascular plant collection (BG-NMNHS-BOT) of the Herbarium at the National Museum of Natural History at the Bulgarian Academy of Sciences (BNHM): 5098, 5099.

The species is a Bulgarian endemic, at present known from only five sites in the country (Goranova & Ančev 2011; Ivanova *et al.* 2014; ExEA 2024). It is evaluated as critically endangered (CR) and included in Annex 3 of the Bulgarian Biodiversity Act (Stoyanov *et al.* 2022). According to Apostolova *et al.* (2022), *Limonium asterotrichum* was one of the two critically endangered species in the Bulgarian flora found on the slopes of a burial mound during their research. The newly discovered population is of critical importance for conservation and management efforts. Detailed data on its precise location, population size, and herbarium references are provided to formalise this find.

The population occupies the north and northeast slopes of the burial mound, covering an area of approximately 0.03 ha. The number of flowering stems is estimated to exceed 500, but due to the rhizomatous growth form (developing 1–7 flowering stems per individual) determining the exact number of individuals remains challenging. The vegetation in the area also includes *Elymus hispidus* (Opiz) Melderis (dominant), *Allium guttatum* Steven, *Dactylis glomerata* L., *Cynosurus echinatus* L., *Dasypyrum villosum* (L.) Borbás, *Eryngium campestre* L., *Sambucus ebulus* L., *Centaurea salonitana* Vis., *Marrubium peregrinum* L., and others.

***Marasmius epiphylloides* (Rea) Sacc. & Trotter, fam. Marasmiaceae (fungus, saprotrophic)**
Contributor: Boris Assyov
Geographic focus: Bulgaria
New records and noteworthy data: These are the first findings of *M. epiphylloides* in Bulgaria (Denchev & Assyov 2010) and its second record from the Balkan Peninsula.
Specimen data: 1) Sofia Province, Sofia city, Vrana Park, N 42.63892°, E 23.42981 , *ca.* 575 m a.s.l.; 12 October 2019; leg./det. Assyov B.; **2)** Sofia city, West Park, N 42.70439°, E 23.25822°, *ca.* 605 m a.s.l.; 13 October 2019; leg./det. Assyov B; **3)** *idem,* N 42.70786°, E 23.27211°, *ca.* 590 m a.s.l.; 15 October 2019; leg./det. Assyov B; **4)** Sofia Province, Lozenska Planina Mt., above Pancharevo Dam, N 42.60203°, E 23.41225°, *ca.* 665 m a.s.l.; 18 October 2019; leg./det. Assyov B; all collections were made on the dead leaves of *Hedera helix,* always among thick carpets of the same plant in shady areas in forests.
Vouchers: The Bulgarian Academy of Sciences, Mycological Collection of the Institute of Biodiversity and Ecosystem Research (SOMF), 30959, 30960, 30961, 30962.

Marasmius epiphylloides appears to be a widespread species in Europe, usually easily identified in the field by its occurrence on decomposing leaves of common ivy (*Hedera helix* L.), as well as microscopically by its pileipellis, containing broom cells (Antonín & Noordeloos 1993, 2010). The studied Bulgarian specimens align well with the descriptions in Bon (1999), Antonín & Noordeloos (1993, 2010), and Ševčíková (2016). In the Balkans *M. epiphylloides* was previously found on Mt. Tara (Serbia) as evidenced by public sequences in GenBank (MK226511, direct submission). It is reported here for the first time from Bulgaria. Despite being scarcely documented in the Balkans, it is most probably widespread throughout the peninsula but under-recorded, given its very small size and specific habitat. This has been shown to be the case in some Central European countries (Ševčíková 2017). However, it is also worth noting that our observations in Bulgaria confirm those from the Czech Republic, that the fungus is not found everywhere that *Hedera* is present (Ševčíková 2016).

In the above localities it is not uncommon in places with dense ivy carpets, where it occurs consistently late in the season, provided that copious moisture is available (e.g. during misty or foggy periods). This coincides with the observations of Antonín & Noordeloos (1993, 2010) and Ševčíková (2016, 2017). While discussing the Czech collections, Ševčíková (2017) noted that *M. epiphylloides* was typically found at temperatures ranging from 4–8(10)°C. In this regard it is interesting to note that during the period the Bulgarian collections were gathered, the area was experiencing a rather warm autumn, with maximum temperatures exceeding 20°C. This suggests that the species is more versatile than previously recognised and that temperature is a less important limiting factor for it than moisture.

***Neckera pennata* Hedw. fam. Neckeraceae (moss, bryophyte)**
Contributor: Péter Szűcs
Geographical focus: Slovenia
New records and noteworthy data: A new record for North East Slovenia, classified as vulnerable (VU) in the European Union (27+UK)
Specimen data: North-eastern part of Slovenia, sub-Pannonian region, Hodoš village boundary, 250 metres from Dolenski potok, along the forest road, on the edge of a *Quercus* forest, on the bark of old *Quercus petraea* (Mattuschka) Liebl., with *Leptodon smithii* (Dicks. ex Hedw.) F. Weber & D. Mohr. and *Hyp-*

num cupressiforme Hedw,; N46.857303°, E16.295684°, 270 m a.s.l., 30 May 2014; leg/det: Péter Szűcs; conf: Andrea Sass-Gyarmati
Voucher: Bryophyte Herbarium of the Department of Botany and Plant Physiology (EGR), Eszterházy Károly Catholic University, Eger, Hungary, s/n.

Neckera pennata is a temperate, widespread and almost cosmopolitan moss with a declining distribution. It primarily occurs on the trunks of old woodland trees, and occasionally on rock or soil surfaces (Diersen 2001). It is absent from many European countries (Hodgetts & Lockhart 2020), and the taxon has vulnerable status (VU) on the IUCN Red List of Threatened Species in the EU28 (Hodgetts et al. 2019). The bryophyte is recorded in most countries of south-eastern Europe (Sabovljević *et al*. 2008).

Slovenian occurrences have been documented in numerous phytogeographical regions, however, the most recent data from the sub-Pannonian unit dates back more than 50 years (Martinčič 2024b).

***Ophrys apifera* Huds., fam. Orchidaceae (monocot, vascular plant)**
Contributors: Vladan Djordjević and Sara Stanković
Geographical focus: Serbia
New records and noteworthy data: This is the first record of this species in the region of Northeastern Serbia and its first record for the Djerdap National Park. The species is protected by the Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES).
Specimen data: Northeastern Serbia, the Djerdap National Park, Košo Brdo, N 44.545232°, E 22.018813°, MGRS 34T EQ83, ass. *Chrysopogonetum grylli* s.l., limestones, marls, clays and sandstones, exp. SW, incl. 25°, 198 m a.s.l.; 29 May 2024; leg. Djordjević V, Stanković S.; det. Djordjević V.
Voucher: Herbarium of the Institute of Botany and Botanical Garden Jevremovac, University of Belgrade, vascular plant collection (BEOU) 72208; photo documentation of Djordjević V.

Ophrys apifera is distributed across western, central, southern and eastern Europe, on the Balkan Peninsula, in the Levant and North Africa, northward as far as Great Britain, Holland and Denmark, and in the east as far as the Caucasus (Delforge 2006; Pedersen & Faurholdt 2007). The species was previously recorded in 21 10 × 10 UTM grid cells in Serbia in the following regions: Banat, Northwestern Serbia, Western Serbia, Šumadija, Central Serbia, Eastern Serbia, as well as Kosovo and Metohija (Djordjević *et al*. 2017; Sabovljević *et al*. 2021). The new finding of this species in the Djerdap National Park is the first record of this species in the region of Northeastern Serbia. It is also the first record of this species in the MGRS 34T EQ83 10 × 10 km and also the EQ4 50 × 50 km UTM grid cells.

Ophrys apifera was found in the grassland community *Chrysopogonetum grylli* s.l., part of the alliance *Chrysopogono-Danthonion calycinae* Kojić 1959. The following accompanying taxa were recorded at the site with *O. apifera*: *Chrysopogon gryllus* (L.) Trin., *Danthonia alpina* Vest, *Filipendula vulgaris* Moench and *Leucanthemum vulgare* Lam. In addition, a significant number of orchid species were recorded in this grassland stand: *Orchis militaris* L., *O. purpurea* Huds, *O. simia* Lam, *Anacamptis pyramidalis* (L.) Rich., *Gymnadenia conopsea* (L.) R. Br. and *Ophrys scolopax* subsp. *cornuta* (Steven) E. G. Camus. The species was found on limestones, marls, clays and sandstones, at an elevation of 198 m, on a southwestern-facing slope with an inclination of 25°.

The newly recorded population of this species in the Djerdap National Park consisted of four individuals within an area of 20 m². The species has the IUCN status of a critically endangered species (CR) in Ukraine, the Czech Republic and Slovakia, an endangered species (EN) in Georgia, Bulgaria, Croatia, Lux-

emburg and Austria, and a vulnerable species (VU) in Liechtenstein, Switzerland, Slovenia and Hungary (Kull *et al.* 2016). The estimated IUCN status of this species in Serbia is near threatened (NT) (Djordjević *et al.* 2017).

***Rhodobryum ontariense* (Kindb.) Kindb., fam. Bryaceae (moss, bryophyte)**
Contributors: Anna Mežaka and Marko S. Sabovljević
Geographical focus: Serbia
New record and noteworthy data: New data on a red-listed moss species (EN) in Serbia (Sabovljević *et al.* 2024b)
Specimen data: Banat, Deliblatska Peščara, Čardak area, N 44.858901°, E 21.103755°, on sandy soils at the edge of bushy vegetation; 27 January 2025; leg./det. Mežaka A, Sabovljević MS.
Voucher: Herbarium of the Institute of Botany and the Jevremovac Botanical Garden, University of Belgrade, Bryophyte Collection (BEOU-Bryo) s.n.

The first report of *Rhodobryum ontariense* in Serbia dates back to 2001, when Sabovljević & Cvetić (2001) revised a previous report of *Rhodobryum roseum* (Hedw.) Limpr. and determined that the specimens from Deliblatska Peščara did not correspond to that species, either ecologically or morphologically. *Rhodobryum ontariense* prefers base-rich soils (the pH of the substrate in Deliblato Sands is around 8), while *R. roseum* thrives in more acidic and wet soils and cooler conditions. *Rhodobryum ontariense* was found in various sites in small quantities within the Deliblato Sands Special Nature Reserve (Sabovljević 2003), and has been continuously monitored over the last decade. The decline of the species was documented in the subpopulations of the monitored sites, where some pleurocarp species have overtaken its previous presence and it was thus assessed by Sabovljević *et al*. (2024b) as a threatened species (EN) in the latest red-list of mosses in Serbia. Papp & Erzberger (2009) confirmed its presence in the Sićevaćka Klisura gorge (Sabovljević & Cvetić 2001), which is the second known site of this species in Serbia.

The species has never been found with sporophytes in Serbia. However, Sabovljević *et al*. (2011) confirmed a rather high genetic variability within selected subpopulations in the Deliblato Sands, despite all samples and previous records consisting solely of gametophore with no sex organs. They suggested the presence of at least six haplotypes within the tested subpopulations, indicating genetic differences. Given that this species is dioecious, such genetic variability was not expected. The same authors also considered the rhizomatous spread of the species, and questioned potential dispersal vectors. They also speculated on a different origin due to the observed genetic variability.

Here, we report the first record of a sporophyte in Serbia. This seems to be a rather rare event as sporophytes are rarely seen in other areas (e.g. the Iberian Peninsula; Guerra *et al.* 2010). We found a single plant with two sporophytes, one mature from the previous year, and one young still developing. The same plant patch did not contain other rosettes with female gametangia. Other patches nearby were in the asexual stage.

The species is red-listed in Finland (EN), Germany (NT), Luxembourg (CR), Slovakia (NT) and Romania (VU) (Hodgetts & Lockhart 2020). In SE Europe, it is also present in Bulgaria, Croatia and Slovenia. Interestingly, in the new red lists of Italy and Slovenia, its conservation status has been changed from data deficient (DD) to least concern (LC) (Martinčič 2024b; Puglisi *et al*. 2024).

This species also exhibits interesting biological activity and chemical constituents (e.g. Pejin *et al*. 2012a, b).

***Solorina bispora* Nyl. var. *subspongiosa* (Zschacke) Frey, fam. Peltigeraceae (fungus, lichenised)**
Contributors: Veselin V. Shivarov & Boris Assyov
Geographical focus: Bulgaria
New record and noteworthy data: The finding of *Solorina bispora* var. *subspongiosa* represents the first record of this taxon from Bulgaria.
Specimen data: Pirin Mts., Dzamdzhievi Skali, on calcareous soil, among mosses, approx. N 41.766889°, E 23.410861°, *ca.* 2350 m a.s.l.; 25 August 2009; leg. Assyov B.; det. Shivarov VV.
Voucher: The Bulgarian Academy of Sciences, Mycological Collection of the Institute of Biodiversity and Ecosystem Research (SOMF), 27651.

The genus *Solorina* consists of arctic-alpine, soil-dwelling lichens. About ten species are known worldwide in montane to alpine areas, with eight taxa currently recognised in Europe (Gärtner *et al.* 2011).

During the elaboration of the Red List of lichenised fungi in Bulgaria (Shivarov *et al.* 2023), *S. spongiosa* (Ach.) Anzi was selected for assessment with a single locality in the country from the Pirin Mts., near Banderitsa Chalet (Ivanov 1990), without any available specimen. Another specimen of *S. spongiosa* from the Pirin Mts., (Dzamdzhievi Skali rock crevices) deposited in SOMF, collected by the second author and identified by D. Stoykov, was also examined. While its external morphology is similar to *S. spongiosa*, the number of ascospores per ascus, spore size and morphology correspond to *S. bispora* var. *subspongiosa* (see Gärtner *et al.* 2011; Nimis 2025). This taxon is intermediate between the *S. bispora*-group and *S. spongiosa,* and has probably been overlooked in the European arctic-alpine habitats. It was recently reported from the Italian Alps and ongoing DNA analysis is expected to clarify the status of this taxon (Nascimbene *et al.* 2021).

Solorina spongiosa was assessed as vulnerable (VU) by Shivarov *et al.* (2023). Due to the limited area of calcareous soil in alpine environments in Bulgaria, the preferred habitat for members of the *S. bispora*-group and *S. spongiosa,* further attention and a monitoring programme are needed to evaluate the status of the Bulgarian populations of these lichens.

***Sphagnum papillosum* Lindb. and *S. affine* Renauld & Cardot, fam. Sphagnaceae (moss, bryophyte)**
Contributor: Miruna-Maria Ștefănuț
Geographical focus: Romania
New record and noteworthy data: New records of rare *Sphagnum* species in Romania.
Specimen data: Vlășchinescu Peatbog, Maramureș County, N 47.746510°, E 23.722289°, 885 m a.s.l.; 19 April 2024; leg./det. Ștefănuț M-M.
Vouchers: Bryophyte collection of the Herbarium of the Institute of Biology – Bucharest, Romanian Academy (BUCA), B12295, B12311, B12312, B12325.

Sphagnum papillosum was reported in Romania from Molhașul de la Călățele, Cluj County, 916 m a.s.l., 25 October 1915, leg./det. Győrffy I., Péterfi M., conf. Ștefănuț M-M., BP 7427 (Győrffy & Péterfi 1919). Similarly, *S. affine* Renauld & Cardot was also reported from Văleni, Călățele, 920–940 m a.s.l., 25 October 1915, leg./ det. Győrffy I., Péterfi M., sub *S. imbricatum* Hornsch. var. *cristatum* Warnst. fo. *fuscescens* Warnst., rev. Ștefănuț M-M., BP 7450, 7451 (Győrffy & Péterfi 1919). For almost a hundred years, this was the only report of *S. papillosum* for Romania (Plămadă 1998). In recent years, *S. papillosum* has been reported from Tăul Obcioarei peatbog, Maramureș County, 1046–1047 m a.s.l. (Goia *et al.* 2018) and Poiana Călineasa, Cluj County, N 46.56278°, E 22.81636°; 1367 m a.s.l., 1 October 2017, leg. & det. Hájková P. (BRNU 680228).

In the Vlaşchinescu Peatbog, *Sphagnum papillosum* was found on the edge of peat bog pools, in hummocks, along with other characteristic plants including *S. medium* Limpr., *S. capillifolium* (Ehrh.) Hedw., *Polytrichum strictum* Menzies ex Brid., *Calluna vulgaris* (L.) Hull, *Drosera rotundifolia* L., *Empetrum nigrum* L., *Eriophorum vaginatum* L. and *Vaccinium vitis-idaea* L.

The conservation status of *S. papillosum* in Romania has been changed from critically endangered – CR B1ab(ii,iii)+2ab(ii,iii) (Ştefănuţ & Goia 2012) to endangered – EN B2ab(ii,iii,iv) and *S. affine* has been confirmed in Romania.

Acknowledgements – V. Djordjević was supported by the Ministry of Science, Technological Development and Innovation of the Republic of Serbia (451-03-66/2024-03/ 200178); V. Djordjević and S. Stanković received support from the project: Monitoring of the Orchids of the Djerdap National Park (Contract No. 2820 of 05/24/2024). B. Assyov would like to acknowledge support from the project 'Phylogeny, Taxonomy and Sustainable Ese of Fungi'. MM Ştefănuţ acknowledges the support from the PeatRO3 (RO-ENVIRONMENT-0005) EEA grant and the Romanian Academy PhD thesis grant. M. Sabovljević and L. Kutnar acknowledge the support of the EU Project LIFE Integrated Project for Enhanced Management of Natura 2000 in Slovenia (LIFE17 IPE/SI/000011).

REFERENCES

Antonín V & Noordeloos ME. 1993. A monograph of *Marasmius, Collybia* and related genera in Europe Part 1: *Marasmius, Setulipes,* and *Marasmiellus. Libri Botanici* **8**: 3–229.

Antonín V & Noordeloos ME. 2010. *A monograph of marasmioid and collybioid fungi in Europe*. IHW-Verlag, Eching.

Apostolova I, Petrova C & Vassilev P. 2001. Flora and vegetation of the Aldomirovsko marsh protected area. *Annual of Sofia University St. Kliment Ohridski, Faculty of Biology, Book 2 – Botany* **93**: 115–132.

Apostolova I, Sopotlieva D, Valcheva M, Ganeva A, Shivarov V, Velev N, Vasilev K, Terziyska T & Nekhrizov G. 2022. First survey of the vascular and cryptogam flora on Bulgaria's ancient mounds. *Plants* **11**: 705. https://doi.org/10.3390/plants11050705

Bon M. 1999. Flore mycologique d'Europe (5): Les collybio-marasmïoïdes et ressemblants. *Documents Mycologiques, Mémoires Hors série* **5**: 87–132.

Carlsson R & Hæggström CA. 2005. *Geastrum berkeleyi* in the Åland Islands, SW Finland. *Karstenia* **45**: 69–72.

Damsholt K. 2002. *Illustrated Flora of Nordic Liverworts and Hornworts*. Nordic Bryological Society, Lund.

Delforge P. 2006. *Orchids of Europe, North Africa and Middle East*. A&C Black Ltd. Publishers; London.

Denchev CM & Assyov B. 2010. Checklists of the larger basidiomycetes in Bulgaria. *Mycotaxon* **111**: 297–282 + on-line version: *Mycotaxon Checklists Online* (http://www.mycotaxon.com/resources/checklists/denchev-v111-checklist.pdf): 1–76. [Accessed 25 December 2024].

Diersen K. 2001. Distribution, ecological amplitude and phytosociological characterization of European bryophytes. *Bryophytorum Bibliotheca* **56**: 1–289.

Diklić N. 1976. *Epipactis* Zinn. In: Josifović M (ed.), *Flora SR Srbije vol.* **8**, pp. 94–101, Srpska Akademija Nauka i Umetnosti, Beograd.

Dimou DM, Zervakis GI & Polemis E. 2008. Mycodiversity studies in selected ecosystems of Greece: 4. Macrofungi from *Abies cephalonica* forests and other intermixed tree species (Oxya Mt., central Greece). *Mycotaxon* **104**: 39–42. + on-line version. Mycotaxon Checklists Online (https://www.mycotaxon.com/resources/checklists/dimou-v104-checklist.pdf): 1–52. [Accessed 5 January 2025].

Djordjević V. 2021. *Flora orhideja (Orchidaceae) zapadne Srbije*. Srpska akademija nauka i umetnosti, Posebna izdanja – knjiga 701, Odeljenje hemijskih i bioloških nauka – knjiga 17, Beograd, Serbia.

Djordjević V, Lakušić D, Jovanović S & Stevanović V. 2017. Distribution and conservation status of some rare and threatened orchid taxa in the central Balkans and the southern part of the Pannonian Plain. *Wulfenia* **24**: 143–162.

Djordjević V, Tsiftsis S, Lakušić D, Jovanović S, Jakovljević K & Stevanović V. 2020. Patterns of distribution, abundance and composition of forest terrestrial orchids. *Biodiversity and Conservation* **29**: 4111–4134. https://doi.org/10.1007/s10531-020-02067-6

ExEA 2023. Executive Environment Agency (ExEA), Register of protected areas in Bulgaria - Declaring a protected area 'Tufesta ostritsa', for conservation of an endangered plant species Tufesta ostritsa (*Carex elata*), and its habitat. Available at: https://eea.government.bg/zpo/bg/area.jsp?NEM_Partition=1&categoryID=6&areaID=613 [Accessed 21 December 2024].

ExEA 2024. Executive Environment Agency (ExEA), Register of protected areas in Bulgaria - Declaring a protected area 'Vodenitsata', for conservation of the plant species Manolovska garlitsa (*Limonium asterotrichum*) and its habitat. Available at: https://eea.government.bg/zpo/bg/area.jsp?NEM_Partition=1&categoryID=6&areaID=622 [Accessed 21 December 2024].

Gajić M, Korać M & Obratov D. 1991. Pregled mahovina u Srbiji, *Zbornik radova sa simpozijuma "Nedeljko Košanin i botaničke nauke"*, p. 401–407. Ivanjica.

Gärtner G, Dablander A & Kofler W. 2011. Zur Taxonomie von *Solorina bispora* Nyl. ssp. *bispora* (Ascolichenes) nach Sporenmerkmalen. *Berichte des naturwissenschaftlichen-medizinischen Verein Innsbruck* **97**: 27–33.

Goia I, Șuteu A, Țifrea E & Grapini S. 2018. Studies on plant communities in Tăul Obcioarei peat bog – Maramureș Mountains. *Contribuții Botanice* **53**: 35–48. https://doi.org/10.24193/Contrib.Bot.53.4

Goranova V & Ančev M. 2011. *Limonium asterotrichum* (Salmon) Salmon. In: Peev D, Petrova AS, Anchev M, Temniskova D, Denchev CM, Ganeva A, Gussev C, Vladimorov V, Golemanskz V, Beron P, Yivkov M, Popov A, Popov V, Beschkov V, Deltshev C, Michev T, Spassov N, Stoev P, Dobrev D, Biserkov V, Gussev C, Hibaum G, Roussakova V, Pandurski I, Uyunov Y, Marius D, Tyonev D &Tsoneva S (eds.), *Red Data Book of the Republic of Bulgaria **1**, Plants and Fungi*, p. 480, BAS & MoEW, Sofia.

Guerra J, Brugues M, Cano MJ & Cros RM. 2010. *Flora Briofitica Iberica IV*. SEB, Murcia, Spain.

Győrffy I & Péterfi M. 1919. Schedae et animadversiones diversae ad "Bryophyta regni Hungariae exsiccata, edita a sectione botanica Musei Nationalis Transsilvanici". Tom. II. – III. No. 51–150 (Sphagna). *Botanikai Múyeumi Füzetek* **3**: 43–74.

Hájek M, Hájková P & Apostolova I. 2005. Notes on the Bulgarian wetland flora, including new national and regional records. *Phytologia Balcanica* **11**: 173–184.

Hallingbäck T. 2019. *Cephaloziella hampeana (Europe assessment). The IUCN Red List of Threatened Species* 2019: e.T87492793A87834107. [Accessed 13 February 2025].

Hodgetts N. 2019. *Bazzania trilobata (Europe assessment). The IUCN Red List of Threatened Species* 2019: e.T87498075A87796548. [Accessed 12 November 2024].

Hodgetts N, Cálix M, Englefield E, Fettes N, García Criado M, Patin L, Nieto A, Bergamini A, Bisang I, Baisheva E, Campisi P, Cogoni A, Hallingbäck T, Konstantinova N, Lockhart N, Sabovljević M, Schnyder N, Schröck C, Sergio C, Sim Sim M, Vrba J, Ferreira CC, Afonina O, Blockeel T, Blom H, Caspari S, Gabriel R, Garcia C, Garilleti R, González Mancebo J, Goldberg I, Hedenäs L, Holyoak D, Hugonnot V, Huttunen S, Ignatov M, Ignatova E, Infante M, Juutinen R, Kiebacher T, Köckinger H, Kučera J, Lönnell N, Lüth M, Martins A, Maslovsky O, Papp B, Porley R, Rothero G, Söderström L, Ștefănut S, Syrjänen K, Untereiner A, Váňa J, Vanderpoorten A, Vellak K, Aleffi M, Bates J, Bell N, Brugués M, Cronberg N, Denyer J, Duckett J, During HJ, Enroth J, Fedosov V, Flatberg KI, Ganeva A, Gorski P, Gunnarsson U, Hassel K, Hespanhol H, Hill M, Hodd R, Hylander K, Ingerpuu N, Laaka-Lindberg S, Lara F, Mazimpaka V, Mežaka A, Müller F, Orgaz JD, Patino J, Pilkington S, Puche F, Ros RM, Rumsey F, Segarra-Moragues JG, Seneca A, Stebel A, Virtanen R, Weibull H, Wilbraham J & Żarnowiec J. 2019. *A Miniature World in Decline: European Red List of Mosses, Liverworts and Hornworts*. IUCN, Brussels.

Hodgetts NG & Lockhart N. 2020. *Checklist and country status of European bryophytes – update 2020*. National Parks and Wildlife Service, Department of Culture, Heritage and the Gaeltacht, Ireland.

iNaturalist 2025. Berkeley's Earthstar (*Geastrum berkeleyi*). Available at: https://www.inaturalist.org/taxa/179170-Geastrum-berkeleyi [Accessed 5 January 2025].

Ivanov DL. 1990. New lichen species for the territory of Bulgaria from Pirin mountains. *Vestnik Moskovskogo Universiteta* Ser. **16**: 57–62.

Ivanova I, Kaninski A, Kotopanova Y & Apostolov N. 2014. New Habitats of *Limonium asterotrichum* in Bulgaria. *Plant Science* **51**(6): 26–28.

Jaworska J. 2011. A new record of the rare earthstar *Geastrum berkeleyi* from the Swietokrzyskie Mts. *Acta Mycologica* **46**(1): 75–81.

Jeppson M. 2013. Jordstjärnor – en bestämningsguide. *Mykologiska Publikationer 6*, pp. 1–228, Sveriges Mykologiska Förening, Göteborg.

Jeppson M, Nilsson RH & Larsson E. 2013. European earthstars in Geastraceae (Geastrales, Phallomycetidae) – a systematic approach using morphology and molecular sequence data. *Systematics and Biodiversity* **11**(4): 437–465. https://doi.org/10.1080/14772000.2013.857367

Jotić B, Miljković M, Marković M, Zlatković B & Ranđelović V. 2013. The vascular flora of the Tepoš plateau around Pirot city (Eastern Serbia). *Biologica Nyssana* **4**: 19–33.

Jovanović B. 1980. Šumske *fitocenoze i staništa Suve planine*. Glasnik Šumarskog fakulteta, serija A - Šumarstvo, posebno izdanje 55.

Karadelev M, Rusevska K, Kost G & Mitic Kopanja D. 2018. Checklist of macrofungal species from the phylum Basidiomycota of the Republic of Macedonia. *Acta Musei Macedonici Scientiarum Naturalium* **21**: 23–112.

Katnić A, Jovićević M & Iković V. 2017. *Ecosystem-based assessment of biodiversity values and threats in Buljarica.* Montenegrin Ecologists Society and Environmetal Programme. Podgorica.

Kull T, Selgis U, Pecina MV, Metsare M, Ilves A, Tali K & Shefferson RP. 2016. Factors influencing IUCN threat levels to orchids across Europe on the basis of national red lists. *Ecology and Evolution* **6**: 6245–6265. https://doi.org/10.1002/ece3.2363

Maier E. 2002. *Grimmia dissimulata* E. Maier and taxonomic position of *Grimmia triochophylla* var. *meridionalis* Müll. Hal. (Musci, Grimmiaceae). *Candollea* **56**: 282–300.

Maier E. 2010. The genus *Grimmia* Hedw. (Grimmiaceae, Bryophyta). A morphological-anatomical study. *Boissiera* **63**: 1–377.

Martinčič A. 2024a. New checklist and the red list of the hornworts (Anthocerotophyta) and liverworts (Marchantiophyta) of Slovenia. *Hacquetia* **23**: 175–197. https://doi.org/10.2478-hacq-2023-0013

Martinčič A. 2024b. New checklist and the red list of the mosses (Bryophyta) of Slovenia. *Hacquetia* **23**: 69–118. https://doi.org/10.2478-hacq-2023-0006

Nascimbene J, Gheza G, Hafellner J, Mayrhofer H, Muggia L, Obermayer W, Thor G & Nimis PL. 2021. Refining the picture: new records to the lichen biota of Italy. *MycoKeys* **82**: 97–137. https://doi.org/10.3897/mycokeys.82.69027

Nimis PL. 2025. ITALIC - The Information System on Italian Lichens. Version 8.0. University of Trieste, Dept. of Biology. Available at: https://dryades.units.it/italic [Accessed 7 December 2024].

Odor P & van Dort K. 2002. Beech dead wood inhabiting bryophyte vegetation in two Slovenian forest reserves. *Zbornik Gozdarstva in Lesarstva* **69**: 155–169.

Pantović J & Sabovljević M. 2013. Contribution to the bryophyte flora of Mt Boranja (West Serbia). *Phytologia Balcanica* **19**: 23–27.

Papp B & Erzberger P. 2005. The bryophyte flora of Golija - Studenica biosphere reserve and some adjacent sites (SW Serbia - Montenegro). *Studia Botanica Hungarica* **36**: 101–116.

Papp B & Erzberger P. 2009. Contributions to the bryophyte flora of southeastern Serbia: Suva planina Mts and its surroundings. *Studia Botanica Hungarica* **40**: 125–142.

Papp B, Erzberger P & Sabovljevic M. 2004. Contribution to the bryophyte flora of Kopaonik Mts. (Serbia, Serbia-Montenegro). *Studia Botanica Hungarica* **35**: 67–79.

Papp B & Sabovljević M. 2002. The Bryophyte Flora of Tara National Park (W Serbia, Yugoslavia). *Studia Botanica Hungarica* **33**: 25–39.

Pedersen HÆ & Faurholdt N. 2007. *Ophrys: the bee orchids of Europe*. Kew Publishing, Royal Botanic Gardens, Kew.

Pegler DN, Læssøe T & Spooner BM. 1995. *British Puffballs, Earthstars and Stinkhorns.* Royal Botanic Gardens, Kew.

Pejin B, Iodice C, Tommonaro G, Sabovljević M, Bianco A, Tesevic V, Vajs V & De Rosa S. 2012. Sugar composition of the moss *Rhodobryum ontariense* (Kindb.) Kindb. *Natural Product Research* **26**: 209–215. https://doi.org/10.1080/14786419.2010.535163

Pejin B, Sabovljevic M, Tesevic V & Vajs V. 2012. Further study of fructoologosaccharides of *Rhodobryum ontariense*. *Cryptogamie Bryologie* **33**: 191–196. https://doi.org/10.7872/cryb.v33.iss2.2012.191

Plămadă E. 1998. *Flora briologică a României. Clasa Musci* **1**: 1–230.

Popović M. 1966. Prilog poznavanju mahovina u rezervatima i zaštićenim područjima u Srbiji. *Zaštita Prirode* **33**: 219–228.

Puglisi M, Campisi P, Aleffi M, Bacilliere G, Bonini I, Cogoni A, Dia MG, Miserere L, Privitera M, Tiburtini M & Poponessi S. 2024. Red-list of Italian bryophytes. 2. Mosses. *Plant Biosystems* **158**: 1031–1056. https://doi.org/10.1080/11263504.2024.2386330

Ros RM, Mazimpaka V, Abou-Salama U, Aleffi M, Blockeel TL, Brugués M, Cros R M, Dia MG, Dirkse GM, Draper I, El Saadawi W, Erdağ A, Ganeva A, Gabriel R, González-Mancebo JM, Granger C, Herrnstadt I, Hugonnot V, Khalil K, Kürschner H, Losada-Lima A, Luís L, Mifsud S, Privitera M, Puglisi M, Sabovljević M, Sérgio, C, Shabbara HM, Sim-Sim M, Sotiaux A, Tacchi R, Vanderpoorten A & Werner O. 2013. Mosses of the Mediterranean, an annotated checklist. *Cryptogamie Bryologie* **34**: 99–283. https://doi.org/10.7872/cryb.v34.iss2.2013.99

Sabovljević M. 2003. Bryophyte flora of South Banat. (Vojvodina, Yugoslavia). *Cryptogamie, Bryologie* **24**(3): 241–252.

Sabovljević M & Cvetić T. 2001. *Rhodobryum ontariense* (Kindb.) Kindb. new to Yugoslavia and some notes on the genus *Rhodobryum* (Schimp.) Limpr. in the Federal Republic of Yugoslavia. *Ekologija* **36**: 145–153.

Sabovljević M, Cvetković J, Živković S, Vujičić M & Sabovljević A. 2011. Genetic structure of the rare moss species *Rhodobryum ontariense* in Vojvodina (Serbia) as inferred by isozymes. *Archives of Biological Sciences* **63**: 151–155. https://doi.org/10.2298/ABS1101151S

Sabovljević M, Natcheva R, Dihoru G, Tsakiri E, Dragićević S, Erdağ A & Papp B. 2008. Check-list of the mosses of SE Europe. *Phytologia Balcanica* **14**: 207–244.

Sabovljević MS, Pantović JP, Širka P, Vujičić MM, Sabovljević AD & Papp B. 2024a. Red-list of liverwort and hornwort species of Serbia: 2024 assessment. *Botanica Serbica* **48**:1–6. https://doi.org/10.2298/BOTSERB2401001S

Sabovljević MS, Pantović JP, Širka P, Vujičić MM, Sabovljević AD & Papp B. 2024b. Red-list of moss species of Serbia: 2024 assessment. *Botanica Serbica* **48**: 207–222. https://doi.org/10.2298/BOTSERB2402207S

Sabovljević MS, Tomović G, Lazarević P, Stojanović, V, Strgulc–Krajsek S., Kosič D, Kutnar L, Kermavnar J, Boycheva P, Yaneva G, Ivanov D, Vukojičić S, Đurović S, Buzurović U, Niketić M, Assyev B & Stefanut S. 2021. New records and noteworthy data of plants, algae and fungi in SE Europe and adjacent regions, 5. *Botanica Serbica* **45**: 353–360. https://doi.org/10.2298/BOTSERB2102353S

Ševčíková H. 2016. První nálezy špičky břečťanové – *Marasmius epiphylloides* – v Čechách a na Moravě. *Mykologické Listy* **135**: 1–10.

Ševčíková H. 2017. Doplňující informace k nálezům špičky břečťanové, její další lokality a nové poznatky k jejímu rozšíření a ekologii v České republice. *Mykologické Listy* **135**: 29–32.

Shivarov VV, Denchev CM & Denchev TT. 2023. Red List of lichenized fungi in Bulgaria. *Mycobiota* **13**: 1–30. https://doi.org/10.12664/mycobiota.2023.13.01

Škrk N, Serrano-Notivoli R, Čufar K, Merela M, Črepinšek Z, Kajfež Bogataj L & de Luis M. 2021. *SLOCLIM: a high-resolution daily gridded precipitation and temperature dataset for Slovenia*. *Earth System Science Data* **13**: 3577–3592. https://doi.org/10.5194/essd-13-3577-2021

Ștefănuț S & Goia I. 2012. Checklist and Red List of Bryophytes of Romania. *Nova Hedwigia* **95**: 59–104. https://doi.org/10.1127/0029-5035/2012/0044

Stoeva M. 2011. *Carex elata* All. In: Peev D, Petrova AS, Anchev M, Temniskova D, Denchev CM, Ganeva A, Gussev C, Vladimorov V, Golemanskz V, Beron P, Yivkov M, Popov A, Popov V, Beschkov V, Deltshev C, Michev T, Spassov N, Stoev P, Dobrev D, Biserkov V, Gussev C, Hibaum G, Roussakova V, Pandurski I, Uyunov Y, Marius D, Tyonev D & Tsoneva S (eds.), *Red Data Book of the Republic of Bulgaria **1***, Plants and Fungi, p. 480, BAS & MoEW, Sofia.

Stoyanov K, Raycheva T, Cheschmedzhiev I. 2022. *Key to the native and foreign vascular plants in Bulgaria. Interactive extended and supplemented edition*. Academic Publishing House of the Agrarian University. https://doi.org/10.13140/RG.2.2.36390.95047

Sunhede S. 1989. *Geastraceae (Basidiomycotina). Morphology, ecology and systematics with special emphasis on the North European species*. Fungiflora, Oslo.

Tomović G, Vukojičić S, Niketić M & Lakušić D. 2007. New chorological data on some threatened and rare plants in Serbia. *Archives of Biological Sciences* **59**: 63–73. https://doi.org/10.2298/ABS0701063T

COMPREHENSIVE PLANT BIOLOGY

REZIME

Novi i značajni podaci o biljkama, algama i gljivama iz JI Evrope i susednih regiona, 21

Marko S. Sabovljević, Gordana Tomović, Aneta D. Sabovljević, Georgi Kunev, Salza Palpurina, Lado Kutnar, Ivilin Ilchev, Boris Assyov, Vladan Djordjević, Beata Papp, Snežana Dragićević, Péter Szűcs, Sara Stanković, Anna Mežaka, Veselin V. Shivarov i Miruna-Maria Ștefănuț

U radu su prikazani novi i značajni podaci sa područja JI Evrope i susednih regiona o sledećim taksonima: liheniziranoj gljivi *Solorina bispora* var. *subspongiosa*, saprofitskim gljivama *Geastrum berkeleyi* i *Marasmius epiphylloides,* jetrenjačama *Bazzania trilobata* i *Cephaloziella hampeana,* mahovinama *Grimmia meridionalis, Neckera pennata, Rhodobryum ontariense, Sphagnum affine* i *Sphagnum papillosum,* i monokotilama *Carex elata, Epipactis microphylla* i *Ophrys apifera*.

Ključne reči: novi nalaz, *Bazzania trilobata, Carex elata, Cephaloziella hampeana, Epipactis microphylla, Geastrum berkeleyi, Grimmia meridionalis, Marasmius epiphylloides, Neckera pennata, Ophrys apifera, Rhodobryum ontariense, Sphagnum affine*, *Solorina bispora* var. *subspongiosa, Sphagnum papillosum*, JI Evropa