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Original Scientific Paper

New records and noteworthy data of plants, algae and fungi in SE Europe and adjacent regions, 8

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ABSTRACT:
This paper presents new records and noteworthy data on the following taxa in SE Europe and adjacent regions: diatom alga *Cylindrotheca gracilis,* fungi *Laccaria macrocystidiata,* liverworts *Riccia canaliculata, Riccia cavernosa*, and *Riccia frostii,* mosses *Dicranum viride,* monocots *Arundo donax, Cephalanthera rubra, Epipactis palustris,* and *Sternbergia colchiciflora* and dicots *Aconitum anthora* and *Cephalaria pastricensis* are given within SE Europe and adjacent regions.

Keywords:
new report, *Aconitum anthora, Arundo donax, Cephalanthera rubra, Cephalaria pastricensis, Cylindrotheca gracilis, Dicranum viride, Epipactis palustris, Laccaria macrocystidiata, Riccia canaliculata, Riccia cavernosa*, *Riccia frostii, Sternbergia colchiciflora,* SE Europe

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***Aconitum anthora* L., fam. Ranunculaceae (dicot, vascular plants)**
Contributors: Marjan Niketić and Gordana Tomović
Geographical focus: Serbia
New records and noteworthy data: New sites are given for the critically endangered and strictly protected plant, currently known/confirmed from only one locality in Serbia. The species in question represents a new species for the region of northwestern Serbia and a confirmed finding for Mt. Beljanica in Northeastern Serbia.
Specimen data: 1) Northwestern Serbia, Mt. Medvednik, peak, MGRS 34T CP99, beech forest and clearings, limestone, 1200–1240 m a.s.l.; 7 May 2017; leg./det. Niketić M.; **2)** Northwestern Serbia, Mt. Medvednik, peak, MGRS 34T CP99, rocky ground, beech forest and clearings, limestone, 1200–1240 m a.s.l.; 22 August 2021; leg./det. Niketić M.; **3)** Northeastern Serbia, Mt. Beljanica, the ridge east of the summit, between Veliki Kamen and Solilo, MGRS 34T EP58, steep screes and rocky pastures, limestone, 1250–1315 m a.s.l.; 28 July 2021; leg. Niketić M, Tomović G; det. Niketić M.; **4)** Northeastern Serbia, Resava river gorge, MGRS 34T EP58, rock crevices, limestone, 400–420 m a.s.l., S exp.; 28 July 2017; Niketić M. (field observation).
Vouchers: Natural History Museum in Belgrade, General Herbarium of the Balkan Peninsula (BEO), 100122, 100123, 100124.

In the Red Data Book of the Flora of Serbia *A. anthora* is listed as a taxon supposed to be Extinct (EX-Srb DD), since it was not confirmed for any of the three known localities (Mt. Kopaonik, Mt. Beljanica and Mt. Stara Planina) (Niketić 1999 and the literature therein). Relatively recently this species was rediscovered for the flora of Serbia in the Sutjetska river gorge near Priboj in southwestern Serbia and its threatened status was re-estimated as Critically Endangered (CR B2ab(ii,iii,v) (Tomović *et al.* 2009).

In the three new discovered localities this species inhabits limestone rock crevices, steep screes, rocky pastures, beech forest and clearings. The population in Mt. Medvednik is represented by a small number of individuals (ca. 50), spatially restricted and requires urgent conservation measures. In Mt. Beljanica the population is very stable and consist of several hundred individuals and no threatened factors were observed. In the Resava river gorge we observed only one individual, which is why it was not collected for the herbarium collection. It might be possible to discover more numerous populations on the surrounding hills in the vicinity of this gorge as well as in the case of the Sutjeska river gorge (Sokolina and Tmor hills) in southwestern Serbia.

***Arundo donax* L., fam. Poaceae (monocot, vascular plants)**
Contributors: Marjan Niketić and Gordana Tomović
Geographical focus: Serbia
New records and noteworthy data: The first record in the non-cultivated Banat region and the confirmed presence for the Vojvodina province after 150 years.
Specimen data: Banat, Kovin, the village of Mramorak, on the shores of Kraljevac pond, near the church, level 99.5, N 44.8743991°, E 20.9833773°, MGRS 34T DQ96, marsh habitats, ca. 100 m a.s.l.; 7 June 2020; leg./det. Niketić M, Tomović, G.
Vouchers: Natural History Museum in Belgrade, General Herbarium of the Balkan Peninsula (BEO), 100121.

This alien species is new for the flora of the Banat region and its presence in the Vojvodina province has been confirmed after Godra (1872), who found it on the shore of the Obedska pond near the village of Kupinovo in the Srem region. For Serbia proper, it was first recorded in the 19th century by Pančić (1874) for the surroundings of Vranje and the Sićevo gorge.

Until recently, *A. donax* was considered as native to sub-tropical Eurasia (which encompasses the Mediterranean, Middle East, North India and East Asia), but according to Hardion *et al.* (2014), this highly invasive archeophyte has eastern Eurasian origin with broad naturalized distribution worldwide. The giant cane most probably represents one of the oldest plant invasions but since ancient times it has been used in agriculture, erosion control, hunting, fishing, construction, weaponry, medicine and recently in biofuel production (Hardion *et al.* 2014 and the literature therein).

According to Lakušić *et al.* (2018), *A. donax* should be treated as an allochthonous plant with unconfirmed naturalization. However, on the shore of Kraljevac pond near the village of Mramorak the population is quite well established, dense and consists of up to 1000 clonal individuals. It can be assumed that the individuals came to this habitat from the surrounding gardens where this species was grown as an ornamental plant.

***Cephalanthera rubra* Rich. fam. Orchidaceae (monocot, vascular plant)**
Contributors: Petya Boycheva
Geographical focus: Bulgaria
New records and noteworthy data: Reported for the first time within the European NATURA 2000 network of Suha Reka (BG0000107).
Specimen data: Northeastern Bulgaria, Varna region, close to underbrush, Krumovo, N 43.415664°, E 27.763289°; 26 June 2021; leg./det. Petya Boycheva
Voucher: Herbarium of Sofia University St. Kliment Ohridski (SO) 108156.

Cephalanthera rubra is not new for the region of Northeastern Bulgaria (Assyov *et al.* 2012), but this is a new locality in the protected nature reserve Suha Reka. Although widespread throughout the country, the species is new to the area. The species is included in the list of the Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES).

***Cephalaria pastricensis* Dörfl. & Hayek, fam. Dipsacaceae (dicot, vascular plant)**

Contributors: Predrag Lazarević and Eva Kabaš

Geographical focus: Serbia

New records and noteworthy data: This is the first record for the region of Central Serbia and Mt. Kopaonik. The taxon is of great conservation interest.

Specimen data: Central Serbia, Mt. Kopaonik, Brzeće (Kamarište-Garine), N 43.290533°, E 20.866144°, 1470 m a.s.l., a hay meadow; 15 July 2021; leg./det. Lazarević P, Kabaš E.

Voucher: Herbarium of the Institute of Botany and Botanical Garden Jevremovac, University of Belgrade (BEOU), vascular plant collection 17810.

Cephalaria pastricensis represents a Balkan endemic species fragmentally distributed in the central and western parts of the Balkan Peninsula. In addition to Serbia, it is also recorded in the neighbouring countries: Bosnia and Hercegovina – Višegrad (Stolac), Bjelašnica: Obles – Umoljani, Javorak, Lukomir, Gacko (Kokorina, Vrba), the valley of the river Rakitnica; Montenegro – Piva (Ravno, the valley of the river Vrbnica – near the village of Orah), Rožaje (above Bukovica, between Gradina and Mečkov Dol), Kolašin (Gornje Lipovo-Ropušnica / below Vratila), Bablji Zub, Biogradska Gora; Albania – Mt. Paštrik, the area around Korča; Northern Macedonia – Mt. Šara (Brezno) (Rohlena 1942; Bjelčić 1974; Šilić 1990; Pulević 2005; Vladimirov *et al.* 2014; Barina *et al.* 2017).

In Serbia, it is recorded in Eastern Serbia: Mt. Devica (Oštra Čuka), Mt. Ozren, Mt. Suva Planina (Tri lokve – Pasarelo), Mt. Vidlič (Odorovski prelaz); Northeastern Serbia: Mt. Beljanica, Kučajske Mts. (Dubašnica – Vojal); Southwestern Serbia: Mojstirsko-Draške Mts. and Metohija: Mt. Paštrik (above the village of Gorožup – *locus classicus*); Mts. Prokletije (Lumbardska, Mokra Gora, Koprivnik, Nedžinat, Paklen, Žljeb, Savine vode) (Pančić 1874; Jovanović & Veseličić 1950; Diklić 1973; Šilić 1990; B. Zlatković *pers. comm.*). The record for Mt. Rtanj (Jovanović-Dunjić 1956 sub. *C. alpina*) should be treated as erroneous, while the very old literature records for *C. pastricensis* from Mt. Ozren and Mt. Devica (Pančić 1874, sub. *C. alpina*) should be verified and confirmed in the field (G. Tomović *pers. comm.*).

Cephalaria pastricensis is presented with scattered populations and a small number of individuals, growing in smaller groups or at times individually. Typical *C. pastricensis* habitats are mountain and subalpine limestone grasslands, rocky places and karst sinkholes, sometimes forests and forest clearings, etc.

The record on Mt. Kopaonik is the first finding on this mountain and in the central Serbia region. *Cephalaria pastricensis* is recorded in hay meadows above the village of Brzeće (Kamarište-Garine), estimated at fewer than 50 individuals scattered within a few nearby groups. The recorded population is threatened due to the abandonment of traditional meadow mowing practices and secondary succession. According to national legislation, *C. pastricensis* is a strictly protected species in Serbia. Within the process of implementing the technical adaptations set out in the Habitats Directive (establishing the Natura 2000 ecological network in Serbia), it has been proposed by national experts and authorities that *C. pastricensis* be included in Annexes II and IV of the Directive (Lazarević & Lakušić, unpublished data). Thus, this new record is of great conservation importance.

***Cylindrotheca gracilis* (Bréb. ex Kütz.) Grunow in Van Heurck 1882, fam. Bacillariaceae (diatom, algae)**

Contributors: Danijela Vidaković and Jelena Krizmanić

Geographical focus: Vojvodina, Serbia

New record and noteworthy data: The first record for Serbia.

Specimen data: 1) Banat, Opovo, Baranda village, Pečena Slatina saline pond, N 45.08006°, E 20.45436°; 29 March 2021; leg. Vidaković D, Ćirić M.; **2)** Banat, Opovo, Baranda village, Velika Slatina saline channel, N 45.05297°, E 20.49339°; 29 March 2021; leg. Vidaković D, Ćirić M.; **3)** Banat, Zrenjanin, Melenci village, Peskara artificial sandpit lake, N 45.51856°, E 20.29872°; 31 March 2021; leg. Vidaković D, Ćirić M.; **4)** Banat, Novi Bečej, Slano Kopovo saline pond, N 45.62814°, E 20.20364°; 19 May 2021; leg. Vidaković D.

Voucher: Diatom Collection of Serbia (DCSR), Institute of Chemistry, Technology and Metallurgy, University of Belgrade, Serbia. Accession No.: Pečena Slatina 000259 (Slide DCSR 000259/A), Velika Slatina 000263 (Slide DCSR 000263/A), Peskara 000271 (Slide DCSR 000271/A), and Slano Kopovo 000328 (Slide DCSR 000368/A).

Cylindrotheca gracilis is originally described as a marine species (Cleve-Euler 1952). However, recent studies have shown that *C. gracilis* can be found in brackish and inland saline habitats, as well as in freshwater with high conductivity (Wojtal 2009; Stenger-Kovács & Lengyel 2015; Lange-Bertalot *et al.* 2017; Török-Krasznai & B-Béres 2021). In the Hungarian Red List of Algae Németh (2005) its status was assessed as Vulnerable (VU). It is greatly under-reported due to weakly silicified frustules which can be easily destroyed in most laboratory processing.

The frustules of *C. gracilis* are spindle shaped and twisted throughout the apical axis so that the valves and girdle bands spiral around the length of the cell. The valve length range is 57.7–119 µm and the width 4.4–6.4 µm. The valve consists only of the raphe system with visible fibulae, about 20 in 10 µm.

The species was observed in epipelic communities in three saline habitats (Pečena Slatina, Velika Slatina and Slano Kopovo) and in an epipsamic community in the Peskara artificial sandpit lake. The investigated saline habitats are shallow water bodies, with a dominance of sodium and chloride anions (Na–Cl–HCO_3 type), a high pH (above 8), and a conductivity range between 5572 and 15260 µS/cm. In the Peskara artificial sandpit lake lower conductivity (1889 µS/cm) was measured and the pH was 8.96.

***Dicranum viride* (Sull. & Lesq.) Lindb., fam. Dicranaceae (moss, bryophyte)**

Contributors: Lado Kutnar and Janez Kermavnar

Geographical focus: Slovenia

New record and noteworthy data: This is a rare and threatened species in Slovenia (Uradni list 2004-2014), a Natura 2000 species, a species protected by the Bern Convention (Appendix I) and listed in the EU Habitat Directive (Annex II)

Specimen data: 1) Old-growth forest reserve Pečka (Pragozd Pečka), in the mixed fir-beech forest in the Dinaric Mountains, N 45.752512°, E 15.001183°, on the bark of a standing beech tree, 792 m a.s.l., 8 July 2021; leg. Kermavnar J, Kutnar L, Sabovljević M.; det. Sabovljević M.; **2)** Old-growth forest reserve Pečka (Pragozd Pečka), in the mixed fir-beech forest in the Dinaric Mountains, N 45.752387°, E 15.000237°, on the bark of a standing beech tree, 820 m a.s.l., 8 July 2021; leg. Kermavnar J, Kutnar L, Sabovljević M.; det. Sabovljević M.; **3)** Julian Alps, near Bohinj Lake, Pod Voglom, N 46.276139°, E 13.834347°, on the bark of a standing beech tree, 572 m a.s.l., 7 July 2021; leg. Kermavnar J, Kutnar L, Sabovljević M.; det. Sabovljević M.; **4)** Julian Alps, near Bohinj Lake, in the area surrounding the Savica waterfall, N 46.289972°, E 13.800300°, on the bark of a standing beech tree, 654 m a.s.l., 10 July 2021; leg. Sabovljević A, Sabovljević M.; det. Sabovljević M.; **5)** Kamnik-Savinja Alps, Veliki Predaselj gorge, Kamniška Bistrica valley, N 46.321097°, E 14.594838°, on the bark of a standing beech tree, 573 m a.s.l., 11 July 2021; leg. Kutnar L, Sabovljević A, Sabovljević M.; det. Sabovljević M.

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

During the survey of Natura 2000 bryophyte species in Slovenia in 2021, we newly recorded and confirmed certain old reports of *Dicranum viride* in Slovenia. This species is widely distributed in Europe, with many reports from Central Europe and the mountain ranges of the Alps and the Carpathians to the southern Urals (Baisheva *et al.* 2013). Records seem to be considerably rarer north, west and south of this area. Outside Europe, there are some records in North America and the Asian part of Russia, but the records from South Korea, China, Japan and western North America are doubtful (Ignatova & Fedosov 2008). Thus, its main global distribution centre seems to be in Europe. The species is of high conservation interest as it is a flagship species in national and pan-European legislation. Although, Hodgetts *et al.* (2019) consider it as a Least Concern (LC) species on the European level, Schröck *et al.* (2019) estimate its overall European population trend as unclear and decreasing.

Dicranum viride occupies a rather narrow ecological niche, leading an epiphytic life requiring mesophytic forests with high humidity and not very large temperature amplitudes. This is why it was reported mainly from the specific topography of habitats such as forested ditches, small gorges or dolinas overgrown by forests composed of different deciduous tree species or mixed with some conifers. Most of the records are made on larger beech trees with curved trunks.

Indeed, all of the new records from Slovenia, come from such sites. Previously, there were about 20 records from Slovenia, but almost all of them were made at the end of the 19th and the beginning of the 20th centuries. The latest report was from 2002 from two sites, namely the old-growth forest reserves of Rajhenav and Krokar in the Kočevsko region (Odor & Van Dort 2002). Within the new records, the largest population comes from the Pod Voglom site (Bohinj Lake), but the areas around Veliki Predaselj (Kamniška Bistrica valley) and the Savica waterfall (Bohinj Lake) also seem to be significant.

***Epipactis palustris* (L.) Crantz, fam. Orchidaceae (monocot, vascular plant)**

Contributors: Milorad Veljković and Vladan Djordjević

Geographical focus: Serbia

New records and noteworthy data: This is the first record for the central part of Kosovo.

Specimen data: Kosovo, Gračanica, Novi Badovac (Smrdljan), N 42.589338°, E 21.208639°, MGRS 34T EN11, a wet habitat near the creek, andesite, 640 m a.s.l.; 28 Jun 2019; leg. Veljković M.; det. Djordjević V, Veljković M.

Vouchers: photo documentation of Veljković M.

Epipactis palustris is a Eurasian species distributed throughout Europe, temperate Asia, east to Siberia, south to western Iran, and extremely rare in the southern part of the Mediterranean region (Jacquemyn *et al.* 2014). The new finding of this species in Smrdljan near Gračanica is the first record of this species in MGRS 34T EN11 10×10 km^2 and also in EN2 50×50 km^2 UTM grid

cells. Previously, it was recorded in only 4 10×10 km² UTM grid cells in the Kosovo and Metohija province and in 53 10×10 km² UTM grid cells throughout Serbia (Djordjević *et al.* 2017).

The newly recorded population in Gračanica numbered six individuals within an area of 10 m². The species has the status of an Endangered species (EN) in Ukraine, Norway, Finland, Bulgaria, the Czech Republic and Luxembourg, while it is a Vulnerable species (VU) in Georgia, the Netherlands, Slovakia, Slovenia and Austria (Kull *et al.* 2016). The estimated IUCN conservation status of this species in Serbia is Near Threatened (NT) (Djordjević *et al.* 2017). According to Serbian legislation, the species is classified as strictly protected.

***Laccaria macrocystidiata* (Migl. & Lavorato) Pázmány, fam. Hydnangiaceae (fungus, mycorrhizal)**
Contributors: Boris Assyov and Fuat Bozok
Geographical focus: Bulgaria, Greece
New records and noteworthy data: These are the first records of *L. macrocystidiata* in Bulgaria and its second mention from Greece in the nrITS-barcoded collection (Denchev & Assyov 2010; Dovana *et al.* 2011).
Specimens data: 1) Bulgaria, the Strouma valley, Blagoevgrad distr., SW of Mikrevo village, N 41.609137°, E 23.177203°, in an artificial plantation of *Cedrus deodara*, ca. 365 m a.s.l.; 13 December 2014; leg./det. Assyov B.; **2)** *idem,* in the vicinity of Kamenitsa village, N 41.650961°, E 23.166590°, under *Quercus coccifera*, ca. 165 m a.s.l.; 27 November 2021, leg./det. Assyov B.; **3)** *idem,* in the vicinity of Parvomay village, N 41.418052°, E 23.131253°, in a plantation of *Quercus suber*, ca. 245 m a.s.l., 12 December 2021, leg./det. Assyov B.; **4)** Greece, Chalkidiki Regional unit, Aristotelis, Stratoni village, N 40.512541°, E 23.804674°, at the edge of a forest of *Pinus brutia, P. maritima* and *Quercus coccifera,* among *Cistus* spp., ca. 165 m a.s.l.; 14 December 2014; leg./det. Assyov B.
Vouchers: Mycological Collection of the Institute of Biodiversity and Ecosystem Research, Bulgarian Academy of Sciences (SOMF), 30437, 30436, 30435, 30438 (GenBank OM286886).

Laccaria macrocystidiata is a poorly-known species, macro-morphologically resembling other reddish-coloured taxa of the genus. The macroscopic characters which may suggest the preliminary identification of *L. macrocystidiata* are relatively robust basidiomata, notably squamulose pilei and concolorous or even darker than the pilei, fibrillose stipe. Microscopically, the combination of predominantly globose basidiospores, 4-spored basidia and long cheilocystidia set this species apart (Migliozzi & Lavorato 1988; Pázmány 1994; Contu 2003; Dovana *et al.* 2021).

The sequence released here was obtained by employing the protocol in Bozok *et al.* (2020). Compared to that from the epitype of *L. macrocystidiata* (MW584897), it shows 100% identity throughout the pairwise alignment of the ITS1-5.8S-ITS2-region. The pilei in our specimens are up to 6 cm wide, flesh-coloured, pinkish, orange-red to brick-red, and conspicuously squamulose. The stipe is up to 10 × 1 cm, concolorous or darker than the pileal surface, longitudinally fibrillose. The lamellae are whitish pink, flesh-coloured or intensively pink. The basidiospores measure 8–10.7 × 7.9–10.5µm, Q=1–1.14, on average 8.8–9.7 × 8.4–9.3 µm, average Q=1.04–1.05 (*n*=90), globose or more rarely subglobose. The basidia are 4-spored. The cheilocystidia measure 31–132 × 7–15.5µm, and are thin-walled, covering the sterile lamellar edge. The pileipellisis is characterised by a cutis with hyphae 2.5–8µm wide, with bundles of hyphae protruding from the main surface. Clamp connections are present in all the tissues.

Described as a form of *L. affinis* (Singer) Bon (Migliozzi & Lavorato 1988), the independent status of *L. macrocystidiata* was recently affirmed with phylogenetic evidence by Dovana *et al.* (2021), also confirming that it is a widespread, but previously unrecognized species. On the Balkan Peninsula it is so far only known from Greece (Dovana *et al.* 2021). Here we include the first Bulgarian records and the additional nrITS-barcoded specimen from Greece. In Bulgaria *L. macrocystidiata* seems not to be so uncommon in thermophilous habitats in the south of the country.

***Riccia canaliculata* Hoffm., fam. Ricciaceae (liverwort, bryophyte)**
Contributors: Simona Strgulc Krajšek and Žan Lobnik Cimerman
Geographical focus: Slovenia
New record and noteworthy data: The first record for Slovenia since the year 1894.
Specimen data: Central Slovenia, Gorenjska, Šmartno pod Šmarno goro, grassland on the left bank of the Gračenica stream, 300 m W of the village of Povodje, N 46.14175°, E 14.47323°, a depression with occasional shallow water on the edge of a wet meadow, 315 m a.s.l.; 24 October 2021; leg./det. Strgulc Krajšek S.
Voucher: Herbarium of the University of Ljubljana (LJU), s/n.

Riccia canaliculata is a representative of the subgenus *Ricciella* (A. Braun) Boulay. The branches are linear and narrow, up to only 1 mm wide, and forked several times into two branches of similar size. It has a conspicuous longitudinal groove on the dorsal side, which is even more visible on the dry specimens. A small triangular white ventral scale covers the tip of the branches. Capsules develop on the ventral side of the thallus (Damsholt 2002; Shumacker & Váňa 2005; Long 2010). According to the literature, *R. canaliculata* usually grows on damp mud on reservoir margins or the shores of lakes and ponds (Long 2010).

It is native to Europe, the Mediterranean part of Africa, North America and Brazil (Paton 1999; Damsholt 2002). In Europe, it is considered rare but more frequent in the Atlantic and sub-Atlantic regions (Damsholt 2002). Its conservation status on the European level is of Least Concern (LC) (Hodgetts *et al.* 2019).

In Slovenia, *R. canaliculata* is included in the Updated Red List of Bryophytes of Slovenia with a Data Deficient-vanished (DD-va) conservation status (Martinčič 2016), based on the historical locality of this species near Brežice in the eastern part of the country (Breidler 1894). The species is also rare in the neighbouring countries. It is included in the national Red Lists of Italy as Endangered (EN), in Austria as Regionally Extinct (RE) and in Hungary as Data Deficient (DD) (Hodgetts & Lockhart 2020). The species has not been found in Croatia yet (Alegro & Šegota 2018).

Our new finding from Central Slovenia is the first confirmation of the presence of this species in Slovenian flora.

Riccia cavernosa Hoffm. and ***Riccia frostii*** Austin, **fam. Ricciaceae (liverworts, bryophytes)**
Contributors: Sorin Ștefănuț and Constantin-Ciprian Bîrsan
Geographical focus: Romania
New record and noteworthy data: The most southern records for Romania.
Specimen data: Southern Romania, Gostinu, Giurgiu County, the left bank of the Danube River, N 43.987783°, E 26.142483°, 15 m a.s.l.; 20 and 28 October 2021; leg. Ștefănuț S, Bîrsan C-C.; det. Ștefănuț S.
Voucher: Herbarium of the Institute of Biology – Bucharest, Romanian Academy (BUCA), bryophyte collection, *R. cavernosa*: B12233-B12238; *Riccia frostii*: B12239-B12251.

The male and female samples of *Riccia frostii* were found on a sandy alluvial bank on Gostinu beach, alongside other bryophytes such as *Riccia cavernosa*, the terrestrial form of *Ricciocarpos natans* (L.) Corda and *Physcomitrium patens* (Hedw.) Mitt.

These mark the first record of *R. cavernosa* and the second report of *R. frostii* to Romania in the last 50 years (Ștefănuț 2008; Ellis *et al.* 2013, 2020). The presence of *R. cavernosa* was recently confirmed on herbarium samples (Ellis *et al.* 2013). The record of *R. cavernosa* on the bank of the Danube confirms that all the old records of *R. crystallina* L. belong to *R. cavernosa* (Ștefănuț 2008). The nearest locality of *R. frostii* to Romania is located in Serbia and for *R. cavernosa* in Hungary (Hodgetts & Lockhart 2020). The conservation status of *R. frostii* in Romania has been changed from Endangered – EN B2ab(ii,iii,iv) to Vulnerable – VU B2ab(ii,iii,iv) (Ștefănuț & Goia 2012; Ellis *et al.* 2020) and for *R. cavernosa* from Data Deficient – DD to Vulnerable – VU B2ab(ii,iii,iv) (Ștefănuț & Goia 2012; Ellis *et al.* 2013).

Sternbergia colchiciflora **Waldst. & Kit., fam. Amaryllidaceae; (monocot, vascular plant)**
Contributors: Alma Hajrudinović-Bogunić and Ante Begić
Geographical focus: Bosnia and Herzegovina.
New records and noteworthy data: These are two new records of this rare and threatened species for Bosnia and Herzegovina.
Specimen data: 1) Southeastern Bosnia and Herzegovina, Gacko, Rudo polje, N 43.189196°, E 18.484426°, 870 m a.s.l.; 21 September 2021; leg./det. Hajrudinović-Bogunić A, Begić A.; **2)** Southwestern Bosnia and Herzegovina, Posušje, Gradac, N 43.432141°, E 17.385748°, 680 m a.s.l.; 15 September 2021; leg./det. Begić A, Hajrudinović-Bogunić A.
Vouchers: National museum of Bosnia and Herzegovina, Herbarium of Bosnia and Herzegovina (SARA), BH collection 52478, 52479.

The genus *Sternbergia* comprises two species in Europe: *S. lutea* (L.) Ker Gawl. ex Spreng. and *S. colchiciflora* Waldst. & Kit. (Webb 2010). *Sternbergia colchiciflora* is distributed throughout Southern Europe reaching Ukraine and Southwest Asia on the eastern border of its distribution (WCSP 2022). In a large and disjunct distribution area, several geographic morphotypes were proposed, including var. *dalmatica* Rchb. in the coastal Dinaric area (Reichenbach 1830), but with no formal recognition (Nikolić 2005; Euro+Med 2016; WCSP 2022). *Sternbergia colchiciflora* inhabits dry calcareous grasslands with shallow and rocky soils. It flowers for a short period of time during the second half of September. It is considered a rare species in the Balkans (Šilić 1966; Stevanović *et al.* 1991; Šilić & Šolić 1999; Vuković *et al.* 2017; Mala & Maxhuni 2020). In Bosnia and Herzegovina, four localities have been reported so far (Šilić 1966; Bjelčić & Šilić 1971).

We report two new localities of *S. colchiciflora* in Bosnia and Herzegovina: Rudo polje and Gradac. Around 50 individuals were observed in Rudo polje near Gacko in Southeastern Bosnia and Herzegovina. This site represents xerothermous grassland within *Quercus petraea* (Matt.) Liebl. and *Q. cerris* L. degraded forests. More than 2000 individuals were registered at the second site of Gradac in the vicinity of Posušje in the southwestern part of the country. This site represents xerothermous grasslands mixed with *Quercus pubescens* Willd. and *Carpinus orientalis* Mill. with a high risk of habitat degradation.

Although not endangered globally (Király *et al.* 2011), its regional assessment category is endangered (Vuković *et al.* 2017; Mala & Maxhuni 2020). It is listed as Data Deficient in Bosnia and Herzegovina (Anonymous 2014). Future research will probably reveal new

populations of this geophyte which can be easily overlooked due its small size and short flowering time. Each new finding is valuable for an accurate assessment of its populations needed for conservation.

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REFERENCES

Alegro A & Šegota V. 2018. Mahovine. In: Nikolić T (ed.), *Flora Croatica Database*. Prirodoslovno-matematički fakultet, Sveučilište u Zagrebu. Available at: http://hirc.botanic.hr/fcd/ [Accessed: 11 October 2021].

Anonymous 2014. Crvena lista ugroženih divljih vrsta i podvrsta biljaka, životinja i gljiva Federacije Bosne i Hercegovine. *Službene novine Federacije BiH* 7/14.

Assyov B, Petrova A, Dimitrov D & Vasilev R. 2012. *Conspectus of the Bulgarian vascular flora. Distribution maps and floristic elements, 4th ed.* Bulgarian Biodiversity Foundation, Sofia.

Baisheva E, Mežaka A, Shirokikh P & Martynenko V. 2013. Ecology and distribution of *Dicranum viride* (Sull. & Lesq.) Lindb. (Bryophyta) in the Southern Ural Mts. *Arctoa* **22**: 41–45.

Barina Z, Mullaj A, Pifkó D, Somogyi G, Meco M & Rakaj M. 2017. Distribution maps. In: Barina Z (ed.), *Distribution atlas of Vascular plants in Albania*, pp. 183, Hungarian Natural History Museum, Budapest.

Bjelčić Ž. 1974. *Flora Bosne i Hercegovine IV – Sympetalae. Pars* **3**. Zemaljski muzej Bosne i Hercegovine, Prirodnjačko odjeljenje. Posebno izdanje, Sarajevo.

Bjelčić Ž & Šilić Č. 1971. Karakteristične cvjetnice za hercegovački endemni centar – planina Prenj, Čvrsnica i Čabulja. *Glasnik Zemaljskog muzeja Bosne i Hercegovine u Sarajevu, Prirodne nauke, Posebni otisak, Nova serija* **10**: 39–57.

Bozok F, Assyov B, Taskin H, Dogan HH & Buyukalaca S. 2020. Molecular phylogenetic studies of Turkish boletes with emphasis on some recently described species. *Nova Hedwigia* **110**(1–2): 99–129.

Breidler J. 1894. Die Lebermoose Steiermarks. *Mittheilungen des Naturwissenschaftlischen Vereins für Steiermark* **30**: 256–357.

Cleve-Euler A. 1952. Die Diatomeen von Schweden und Finnland. Teil V. (Schluss.). *Kungliga Svenska Vetenskapsakademiens Handlingar* **3**(3): 1–153.

Contu M. 2003. Il genere *Laccaria* (Basidiomycotina, Agaricales) in Italia, con note sullerimanenti specie in Europa. *Bolletino del Gruppo Micologico 'G. Bresadola' – Nuova Serie* **46**(1): 5–58.

Damsholt K. 2002. *Illustrated flora of Nordic liverworts and hornworts*. Nordic Bryological Society, Lund.

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.

Diklić N. 1973. *Cephalaria* Schrad. In: Josifović M (ed.), *Flora SR Srbije* **8**, pp. 540–548, Srpska Akademija nauka i umetnosti, Beograd.

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.

Dovana F, Moreno G, Para R, Lavorato C & Mucciareli M. 2021. Phylogenetic reappraisal and epitypification of *Laccaria macrocystidiata* (Hydnangiaceae, Basidiomycota). *Phytotaxa* **514**(2): 129–139.

Ellis LT, Afonina OM, Atwood JJ, Bednarek-Ochyra H, Burghardt M, Dragićević S, Vuksanović S, Espinoza-Prieto B, Opisso J, Goga M, Bačkor M, Graulach A, Hugonnot V, Koroleva NE, Chandini VK, Manju CN, Mufeed B, Natcheva R, Norhazrina N, Syazwana N, Peralta DF, Plášek V, Popov SYu, Porley RD, Rimac A, Alegro A, Vuković N, Koletić N, Šegota V, Sabovljević MS, Schäfer-Verwimp A, Sérgio C, Ştefănuţ S, Taha MA, Abou-Salama UY & Wolski GJ. 2020. New national and regional bryophyte records, 62. *Journal of Bryology* **42**: 195–208.

Ellis LT, Bakalin VA, Baisheva E, Bednarek-Ochyra H, Ochyra R, Borovichev EA, Choi SS, Sun B-Y, Erzberger P, Fedosov VE, Garilleti R, Albertos B, Górski P, Hájková P, Hodgetts NG, Ignatov M, Koczur A, Kurbatova LE, Lebouvier M, Mežaka A, Miravet J, Pawlikowski P, Porley RD, Rosselló JA, Sabovljević MS, Pantović J, Sabovljević A, Schröder W, Ştefănuţ S, Suárez GM, Schiavone M, Yayintas ÖT & Váňa J. 2013. New national and regional bryophyte records, 36. *Journal of Bryology* **35**: 228–238.

Euro+Med. 2006+. *Euro+Med PlantBase - the information resource for Euro-Mediterranean plant diversity*. Available at: http://www.europlusmed.org [Accessed 07 September 2021]

Godra B. 1872. Flora des Peterwardeiner Grenz-Regiments 9. *Österreichische Botanische Zeitschrift* **22**: 228–231.

Hardion L, Verlaque R, Saltonstall K, Leriche A & Vila B. 2014. Origin of the invasive *Arundo donax* (Poaceae): a trans-Asian expedition in herbaria. *Annals of Botany* **114**: 455–462.

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, Sérgio 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, Ştefănuţ 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, Patiño 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. Irish Wildlife Manuals, No. 123*. National Parks and Wildlife Service, Department of Culture, Heritage and the Gaeltacht, Ireland.

Ignatova EA & Fedosov VE. 2008. Species of *Dicranum* (Dicranaceae, Bryophyta) with fragile leaves in Russia. *Arctoa* **17**: 63–83.

Jacquemyn H, Brys R & Hutchings MJ. 2014. Biological flora of the British Isles: *Epipactis palustris*. *Journal of Ecology* **102**: 1341–1355.

Jovanović B & Veseličić L. 1950. Prethodno saopštenje o biljnom pokrivaču Suve planine. Srpska akademija nauka, *Zbornik Radova 2, Institut za Ekologiju i Biogeografiju* **1**: 37–59.

Jovanović-Dunjić R. 1956. Tipovi pašnjaka i livada na Rtnju. Srpska akademija nauka, *Zbornik Radova, Institut za Ekologiju i Biogeografiju* **6**: 3–45.

Király G, Bazos I, Hodálová I, Ferakova V & Melnyk V. 2011. *Sternbergia colchiciflora*. The IUCN Red List of Threatened Species **2011**: e.T165219A5991842 [Accessed 05 January 2022]

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.

Lakušić D, Niketić M & Tomović G. 2018. Liliopsida: Poaceae (Gramineae). In: Niketić M & Tomović G (eds.), *Kritička lista vrsta vaskularne flore Srbije **1**. Lycopodiopsida, Polypodiopsida, Gnetopsida, Pinopsida i Liliopsida*, pp. 110–138, Srpska Akademija nauka i umetnosti, Beograd.

Lange-Bertalot H, Hofmann G, Werum M & Cantonati M. 2017. *Freshwater Benthic Diatoms of Central Europe: Over 800 Common Species Used in Ecological Assessment*. English edition with updated taxonomy and added species. Koeltz Botanical Books, Schmitten-Oberreifenberg.

Long D. 2010. *Riccia canaliculata*. In: Atherton I, Bosanquet S & Lawley M (eds.), *Mosses and liverworts of Britain and Ireland, A field guide*, p. 265, British Bryological Society, Plymouth.

Mala X & Maxhuni Q. 2020. *Sternbergia colchiciflora* Waldst. et Kit. (Amaryllidaceae), a new genus and species in the flora of Kosovo. *Acta Botanica Croatica* **79**: 236–238.

Martinčič A. 2016. Updated Red List of bryophytes of Slovenia. *Hacquetia* **15**: 107–126.

Migliozzi V & Lavorato C. 1988. Appunti di micoflora mediterranea 6. *Laccaria affinis* fo. *macrocystidiata* fo. nov. *Micologia Italiana* **17**(2): 3–6.

Németh J. 2005. Red list of algae in Hungary. *Acta Botanica Hungarica* **47**: 379–417.

Niketić M. 1999. *Aconitum anthora* L. In: Stevanović V (ed.), *Crvena knjiga flore Srbije **1**. Iščezli i krajnje ugroženi taksoni*, pp. 99–100, Ministarstvo za životnu sredinu Republike Srbije, Biološki fakultet Univerziteta u Beogradu, Zavod za zaštitu prirode Republike Srbije.

Nikolić T. 2005. *Flora Croatica Database*. Faculty of Science, University of Zagreb. Available at: http://hirc.botanic.hr/fcd [Accessed 13 October 2021]

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

Pančić J. 1874. *Flora Kneževine Srbije*. Državna štamparija, Beograd.

Paton AJ. 1999. *The liverwort flora of the British Isles*. Harley Books, Colchester.

Pázmány D. 1994. ZurSystematik der Gattung *Laccaria* Bk. et Br. *Zeitschrift für Mykologie* **60**(1): 5–12.

Pulević V. 2005. *Građa za vaskularnu floru Crne Gore*. Dopuna "Conspectus Florae Montenegrinae". Republički zavod za zaštitu prirode Crne Gore, Podgorica, Posebna izdanja, Knjiga **2**.

Reichenbach L. 1830. *Flora Germanica Excursoria. Sectio Prima*. Apud Carolum Cnobloch, Lipsiae.

Rohlena J. 1942. Conspectus Florae Montenegrinae. *Preslia* **20–21**: 338–339.

Schröck C, Bisang I, Caspari S, Hedenäs L, Hodgetts N, Kiebacher T, Kučera J, Ştefănuţ S & Vana J. 2019. *Dicranum viride*. *The IUCN Red List of Threatened Species* **2019**: e. T84741252A87735693.

Schumacker R & Váňa J. 2005. *Identification keys to the liverworts and hornworts of Europeand Macaronesia*. 2nd ed. Sorus, Poznań.

Ştefănuţ S. 2008. *The Hornwort and Liverwort Atlas of Romania*. Ars Docendi-Universitatea din Bucureşti.

Ştefănuţ S & Goia I. 2012. Checklist and Red List of Bryophytes of Romania. *Nova Hedwigia* **95**: 59–104.

Stenger-Kovács C & Lengyel E. 2015. Taxonomical and distribution guide of diatoms in soda pans of Central Europe. *Studia Botanica Hungarica* **46**(Suppl.): 3–203.

Stevanović V, Niketić M & Lakušić D. 1991. Chorological additions to the flora of eastern Yugoslavia. *Flora Mediterranea* **1**: 121–142.

Šilić Č. 1966. *Sternbergia colchiciflora* W. K. var. *dalmatica* Rchb. u flori Jugoslavije. *Glasnik Zemaljskog Muzeja Bosne i Hercegovine u Sarajevu, Prirodne nauke, Nova serija* **5**: 115–122.

Šilić Č. 1990. *Endemične biljke*. SP "Svjetlost" Izdavačko preduzeće Sarajevo, Zavod za udžbenike i nastavna sredstava Beograd.

Šilić Č & Šolić ME. 1999. *Sternbergia colchiciflora* Waldst. et Kit. var. *dalmatica* Reichenb. on the Biokovo massif (Croatia). *Natura Croatica* **8**: 155–160.

Tomović G, Zlatković B, Niketić M, Perić R, Lazarević P, Duraki Š, Stanković M, Lakušić D, Anačkov G, Knežević J, Szabados K, Krivošej Z, Prodanović D, Vukojičić S, Stojanović V, Lazarević M & Stevanović V. 2009. Threat status revision of some taxa from "The Red Data Book of Flora of Serbia 1". *Botanica Serbica* **33**(1): 33–43.

Török-Krasznai E & B-Béres V. 2021. Rarely mentioned species in Hungary: Can we step into the same lake? *Biologia* **76:** 1661–1673.

Uradni list RS. 2004-2014. Uredba o zavarovanih prosto živečih rastlinskih vrstah. No. 46/04, 110/04, 115/07, 36/09 in 15/14. Available at: http://pisrs.si/Pis.web/pregledPredpisa?id=URED3192 [Accessed 19 October 2021]

Van Heurck H. 1882. *Synopsis des Diatomées de Belgique, Atlas*. Anvers: Ducaju et Cie. Plates LXXVIII-CIII.

Vladimirov V, Dane F, Matevski V & Tan K. 2014. New floristic records in the Balkans: 25. *Phytologia Balcanica* **20**: 267–310.

Vuković N, Šegota V & Brana S. 2017. Data deficient *Sternbergia colchiciflora* Waldst. & Kit. (Amaryllidaceae) in Croatian flora – Removing the veil of mist. *Natura Croatica* **26**(2): 261–269.

WCSP. 2022. *World Checklist of Selected Plant Families*. Facilitated by the Royal Botanic Gardens, Kew. Available at: http://wcsp.science.kew.org/ [Accessed 05 October 2021]

Webb DA. 2010. *Sternbergia* Waldst. & Kit. In: Tutin TG, Heywood VH, Burges NA, Moore DM, Valentine DH, Walters SM & Webb DA (eds.), *Flora Europaea vol* **5**. *Alismataceae to Orchidaceae*, p. 506. Cambridge University Press, New York.

Wojtal AZ. 2009. The diatoms of Kobylanka stream near Kraków (Wyżyna Krakowsko-Częstochowska Upland, S Poland). *Polish Botanical Journal* **54**: 129–330.

REZIME

Botanica SERBICA

Novi i značajni podaci o biljkama, algama i gljivama iz JI Evrope i susednih regiona, 8

Gordana Tomović, Marko S. Sabovljević, Marjan Niketić, Petya Boycheva, Predrag Lazarević, Eva Kabaš, Danijela Vidaković, Jelena Krizmanić, Lado Kutnar, Janez Kermavnar, Milorad Veljković, Vladan Djordjević, Boris Assyov, Fuat Bozok, Simona Strgulc Krajšek, Žan Lobnik Cimerman, Sorin Ştefănuţ, Constantin-Ciprian Bîrsan, Alma Hajrudinović-Bogunić i Ante Begić

U radu su prikazani novi i značajni podaci sa područja JI Evrope i susednih regiona o sledećim taksonima: silikatnoj algi *Cylindrotheca gracilis,* gljivi *Laccaria macrocystidiata,* jetrenjačama *Riccia canaliculata, Riccia cavernosa* i *Riccia frostii,* mahovini *Dicranum viride,* monokotilama *Arundo donax, Cephalanthera rubra, Epipactis palustris* i *Sternbergia colchiciflora* i dikotilama *Aconitum anthora* i *Cephalaria pastricensis.*

Ključne reči: novi nalaz, *Aconitum anthora, Arundo donax, Cephalanthera rubra, Cephalaria pastricensis, Cylindrotheca gracilis, Dicranum viride, Epipactis palustris, Laccaria macrocystidiata, Riccia canaliculata, Riccia cavernosa*, *Riccia frostii, Sternbergia colchiciflora,* JI Evropa