

New bryophyte records in the Balkans: 3

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Abstract. New chorological data are presented for 25 species of bryophytes from Romania and Bulgaria. Six taxa are liverworts (*Marchantiophyta*) belonging to the families *Antheliaceae* (report no. 5), *Calypogeiaceae* (6), *Gymnomitriaceae* (4), *Jungermanniaceae* (3), and *Lophoziaceae* (1, 2). Nineteen taxa are mosses (*Bryophyta*) belonging to the families *Amblystegiaceae* (9), *Bartramiaceae* (8), *Brachytheciaceae* (11), *Bryaceae* (22–25), *Orthotrichaceae* (15–21), *Pottiaceae* (12–14), *Sphagnaceae* (7), and *Thuidiaceae* (10).

The publication includes contributions by S. Ștefănuț (1–6), M. Hájek & al. (7–11), and R. Natcheva (12–25).

Reports 1–6

Sorin Ștefănuț

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Lophoziaceae

1. *Anastrophyllum hallerianum* (Nees ex Lindenb.)
R.M. Schust.

Ro Rarău Mt: under Pietrele Doamnei, in common spruce forest, on rotten wood, sterile, 1450 m, 47°27'15" N, 25°33'45" E, 25.07.2007, coll./det. S. Ștefănuț (BUCA B3769).

– Giumalău Mt: Giumalău Secular Forest, in common spruce forest, on rotten wood, sterile, 1200 m, 47°24'44" N, 25°29'45" E, 13.09.2006, coll./det. S. Ștefănuț (BUCA B3675, BUCA B3678, BUCA B3696, BUCA B3697, BUCA B3699).

The nearest locality of this species in Romania is Neamț Monastery, 08.1923, collected by M. Brândză, determined by T. Ștefureac (Ștefureac 1942).

2. *Jamesoniella autumnalis* (DC.) Steph.

Ro Căliman Mts: peak Răchitișului, in the alpine zone, on soil, male, 2020 m, 47°05'55" N, 25°14'54" E, 26.07.2007, coll./det. S. Ștefănuț (BUCA B3727).

The nearest localities of this species in Romania are

Rodna Mts (Pax 1908; Ștefănuț 2004) and Neamț Monastery, 07.1919, collected by M. Brândză, determined by T. Ștefureac (Ștefureac 1942).

Jungermanniaceae

3. *Jungermannia hyalina* Lyell

Ro Căliman Mts: peak Răchitișului, in the alpine zone, on soil, male and female plants, 2020 m, 47°05'55" N, 25°14'54" E, 26.07.2007, coll./det. S. Ștefănuț (BUCA B3734, BUCA B3735).

The nearest localities of this species in Romania are Rodna Mts (Ștefănuț 2004) and Harghita Mts (Orbán & Bálint 2002).

Gymnomitriaceae

4. *Marsupella brevissima* (Dumort.) Grolle

Ro Căliman Mts: peak Răchitișului, in the alpine zone, on rocks, fertile plants with sporophytes, 2020 m, 47°05'55" N, 25°14'54" E, 26.07.2007, coll./det. S. Ștefănuț (BUCA B3724).

The nearest locality of this species in Romania is Rodna Mts (Ștefureac 1986).

Antheliaceae**5. *Anthelia juratzkana*** (Limpr.) Trevis.

Ro Căliman Mts: peak Răchitişului, in the alpine zone, on soil, sterile, 2020 m, 47°05'55" N, 25°14'54" E, 26.07.2007, coll./det. S. Ştefănuţ (BUCA B3731).

The nearest localities of this species in Romania are in Rodna Mts.

47°27'15" N, 25°33'45" E, 25.07.2007, coll./det. S. Ştefănuţ (BUCA B3755).

In Romania this species is present in the counties of Maramureş, Harghita, Alba and Cluj, and Bucegi and Făgăraş Mts.

Calypogeiaceae**6. *Calypogeia integristipula*** Steph.

Ro Rarău Mt: under Pietrele Doamnei, in common spruce forest, on rotten wood, sterile, 1450 m,

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Reports 7–11**Michal Hájek^{1,2}, Blanka Shaw³, Petra Hájková^{1,2}, Eva Mikulášková¹**

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Sphagnaceae**7. *Sphagnum flexuosum*** Dozy & Molk.

Bu Mt Sredna Gora (*Western*): Mt Lozenska, Lozen village, Rousamski Meadows, 969 m, 42°33'03" N, 23°33'05" E, 26.06.2007, coll. M. Hájek, Z. Rozbrojová, I. Apostolova & D. Sopotlieva, det. M. Hájek & E. Mikulášková (Ha 07/04).

This species has been reported from three Bulgarian mountains: Rhodopi Mts, Balkan Range and Mt Vitosha (Natcheva & Ganeva 2005; Hájek & al. 2005). In Mt Lozenska, we have found it in a waterlogged depression within intermittently wet *Molinion* meadows on acidic soils belonging to the *Junco effussi-Molinietum caeruleae* Tüxen 1954 association.

dangered (Natcheva & al. 2006). The species has been reported from rather warm regions of Southern Pirin, Western Rhodopes, Mt Slavyanka, Mt Strandzha and Central Balkan Range (Natcheva & Ganeva 2005; Hájková & al. 2007).

Amblystegiaceae**9. *Drepanocladus aduncus*** (Hedw.) Warnst.

Bu Valley of Strouma River: N of Blagoevgrad town, flooded *Deschampsion* meadow, 410 m, 42°03'12" N, 23°03'01" E, 25.06.2007, coll. M. Hájek, Z. Rozbrojová, I. Apostolova & N. Velez, det. P. Hájková (Ha 07/03).

Thuidiaceae**10. *Thuidium delicatulum*** (Hedw.) Schimp.

Bu Pirin Mts; Razlog town, complex of calcareous spring fens and mesophytic pastures at Krousheto locality, 1000 m, 41°51'29" N, 23°23'41" E, 22.06.2007, coll. M. Hájek, Z. Rozbrojová, I. Apostolova & N. Velez, det. E. Mikulášková (Ha 07/02).

This grassland species is perhaps often overlooked in Bulgaria. It was found in species-rich, grazed moist grassland in the complex of calcareous fens at the Krousheto site, presently endangered by building of hotels (Hájek 2007). Vegetation composition of the grassland corresponds to the *Molinion caeruleae* alliance.

Bartramiaceae**8. *Philonotis marchica*** (Hedw.) Brid.

Bu Valley of Strouma River (*Southern*): Kolarovo village, spring at the foothills of Mt Belasitsa (generally known locality of *Osmunda regalis*), 275 m, 41°22'39" N, 23°07'07" E, 24.06.2007, coll. M. Hájek, Z. Rozbrojová, I. Apostolova & N. Velez, det. P. Hájková, conf. Blanka Shaw (Ha 07/01).

This species has recently become threatened in Europe because of the deterioration of calcareous wetlands in warm regions (e.g. Buryová & Hradílek 2006). It is included in the Bulgarian bryophyte Red List as En-

Brachytheciaceae**11. *Brachythecium mildeanum*** (Schimp.) Schimp.

Bu West Frontier Mts: Mt Osogovska, wet meadows close to Kamenishka Skakavica village, 965 m, 42°14'13" N, 22°30'20" E, 25.06.2007, coll. *M. Hájek, Z. Rozbrojová, I. Apostolova & N. Velev*, det. *E. Mikulášková* (Ha 07/05).

Brachythecium mildeanum grows in wet meadows and fens, between 640 m and 1800 m in Bulgaria. Further localities of the species have been reported by Hájková & al. (2007).

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Reports 12–25**Rayna Natcheva**

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Pottiaceae**12. *Syntrichia papillosa*** (Wilson) Jur.

Bu Valley of Mesta River: at the remains of the fortress Nikopolis ad Nestrum (Gurmen village), on the bark of *Juglans regia*, sterile, 535 m, 41°35'42" N, 23°47'46" E, GM-30, 14.06.2007, coll./det. *R. Natcheva* (SOM-B 9330).

– Forebalkan: W slopes of Vrushka Chouka hill, on the bark of *Quercus* sp., sterile, associated with *Orthotrichum anomalum* Hedw., 677 m, 43°49'56.8" N, 22°22'17.3" E, FP-15, 20.02.2007, coll./det. *R. Natcheva* (SOM-B 8922)

The species is red-listed in Bulgaria, evaluated as *Endangered* (Natcheva & al. 2006).

13. *Syntrichia virescens* (De Not.) Ochyra

Bu Valley of Mesta River: at the remains of the fortress Nikopolis ad Nestrum (Gurmen village), on the bark of *Juglans regia*, with sporophytes, associated with *Orthotrichum obtusifolium* Brid., 535 m, 41°35'42" N, 23°47'46" E, GM-30, 14.06.2007, coll./det. *R. Natcheva* (SOM-B 9331)

The species is evaluated as *Vulnerable* in the *Bulgarian Bryophyte Red List* (Natcheva & al. 2006).

14. *Weissia levieri* (Lindb.) Kindb.

Bu Forebalkan: W slopes of Vrushka Chouka hill, on dry bare calcareous soil among rocks, with sporophytes, associated with *Phascum cuspidatum* var. *piliferum* (Hedw.) Hook. & Taylor, 677 m,

43°49'56" N, 22°22'17" E, FP-15, 20.02.2007, coll./det. *R. Natcheva* (SOM-B 8917).

Orthotrichaceae**15. *Orthotrichum affine*** Schrad. ex Brid.

Bu Forebalkan: W slopes of Vrushka Chouka hill, on the bark of *Quercus* sp., with sporophytes, in association with *O. anomalum* Hedw., 677 m, 43°49'56" N, 22°22'17" E, FP-15, 20.02.2007, coll./det. *R. Natcheva* (SOM-B 8923).

– Mt Slavyanka: ravine Parilski Dol, on the bark of *Ostrya carpinifolia*, with sporophytes, ca. 1100 m, 41°24'56" N, 23°39'30" E, GL-92, 14.06.2007, coll./det. *R. Natcheva* (SOM-B 9324).

16. *Orthotrichum cupulatum* Hoffm. ex Brid.

Bu Forebalkan: W slopes of Vrushka Chouka hill, on dry calcareous rocks, with sporophytes, associated with *O. anomalum*, 677 m, 43°49'56" N, 22°22'17" E, FP-15, 20.02.2007, coll./det. *R. Natcheva* (SOM-B 8921).

17. *Orthotrichum diaphanum* Schrad. ex Brid.

Bu Valley of River Mesta: at the remains of the fortress Nikopolis ad Nestrum (Gurmen village), on the bark of *Juglans regia*, with sporophytes, 535 m, 41°35'42" N, 23°47'46" E, GM-30, 14.06.2007, coll./det. *R. Natcheva* (SOM-B 9328)

18. *Orthotrichum lyellii* Hook. & Taylor

Bu Mt Slavyanka: ravine Parilski Dol, on the bark of

Ostrya carpinifolia, sterile, ca. 1100 m, 41°24'56" N, 23°39'30" E, GL-92, 14.06.2007, coll./det. R. Natcheva (SOM-B 9325).

19. *Orthotrichum obtusifolium* Brid.

Bu Valley of River Mesta: at the remains of the fortress Nikopolis ad Nestrum (Gurmen village), on the bark of *Juglans regia*, sterile, 535 m, 41°35'42" N, 23°47'46" E, GM-30, 14.06.2007, coll./det. R. Natcheva (SOM-B 9329).

20. *Orthotrichum pallens* Bruch ex Brid.

Bu Forebalkan: W slopes of Vrushka Chouka hill, on the bark of *Quercus* sp., with sporophytes, associated with *Hypnum cupressiforme* Hedw., 677 m, 43°49'56" N, 22°22'17" E, FP-15, 20.02.2007, coll./det. R. Natcheva (SOM-B 8924).

– Rhodopi Mts (Western): Rakovo Dere locality, on the bark of twigs of *Potentilla fruticosa* L., with sporophytes, 1517 m, 41°50'06" N, 24°08'40" E, KG-63, 15.06.2007, coll./det. R. Natcheva (SOM-B 9326).

21. *Orthotrichum pumilum* Sw. ex anon.

Bu Mt Slavyanka: ravine Parilski Dol, on the bark of *Ostrya carpinifolia*, with sporophytes, ca. 1100 m, 41°24'56" N, 23°39'30" E, GL-92, 14.06.2007, coll./det. R. Natcheva (SOM-B 9323).

The species is evaluated as *Near Threatened* by Natcheva & al. (2006).

Bryaceae

22. *Bryum alpinum* Huds. ex With.

Bu Forebalkan: S-SE slopes of Vrushka Chouka hill, on disturbed calcareous soil along the road near the hunter lodge, sterile, 500 m, 43°49'40" N, 22°22'46" E, FP-15, 20.02.2007, coll./det. R. Natcheva (SOM-B 8908).

23. *Bryum capillare* Hedw.

Bu Forebalkan: W slopes of Vrushka Chouka hill, on dry calcareous soil in a *Quercus*-dominated forest, with sporophytes, associated with *Atrichum undulatum* (Hedw.) P. Beauv., 677 m, 43°49'56" N, 22°22'17" E, FP-15, 20.02.2007, coll./det. R. Natcheva (SOM-B 8927).

24. *Bryum klinggraeffii* Schimp.

Bu Forebalkan: S-SE slopes of Vrushka Chouka hill, on disturbed soil along the road near the hunter lodge, sterile, associated with *Phascum cuspidatum* Hedw., 500 m, 43°49'40" N, 22°22'46" E, FP-15, 20.02.2007, coll./det. R. Natcheva (SOM-B 8909).

25. *Bryum moravicum* Podp.

Bu Forebalkan: NE slopes of Vrushka Chouka hill, in a *Tilia*-dominated forest, on the trunk of *Acer monspessulanum*, sterile, associated with *Pseudoleskeella nervosa* (Brid.) Nyholm and *Homalothecium sericeum* (Hedw.) Schimp., 651 m, 43°50'01" N, 22°22'15" E, coll./det. R. Natcheva (SOM-B 8894).

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References

- Buryová, B. & Hradíek, Z. 2006. Clonal structure, habitat age and conservation value of the moss *Philonotis marchica* in Kotoučquarry, Czech Republic. – *Cryptog. Bryol.*, **27**: 375-382.
- Hájek, M. 2007. News from Bulgaria: Most important spring fen complex under threat. – *IMCG Newsletter*, **3**: 34-35.
- Hájek, M., Tzonev, R., Hájková, P., Ganeva, A. & Apostolova, I. 2005. Plant communities of the subalpine mires and springs in the Vitosha Mt. – *Phytol. Balcan.*, **11**(2): 193-205.
- Hájková, P., Plášek, V., Hájek, M., Shaw, B. & Hradílek, Z. 2007. Records 1–32. In: Natcheva, R. (compiler), *New bryophyte records in the Balkans: 2.* – *Phytol. Balcan.*, **13**(2): 277-289.
- Natcheva, R. & Ganeva, A. 2005. Checklist of the bryophytes of Bulgaria with data on their distribution. II. Musci. – *Cryptog. Bryol.*, **26**: 209-232.
- Natcheva, R., Ganeva, A. & Spiridonov, G. 2006. Red List of the Bryophytes in Bulgaria. – *Phytol. Balcan.*, **12**(1): 55-62.
- Orbán, S. & Bálint, L. 2002. New data to the bryophyte flora of Hargita Mts. (Romania). – *Folia Historico-Naturalia Musei Matraensis*, **26**: 59-65 (in Hungarian).
- Pax, F. 1908. *Grundzüge der Pflanzenverbreitung in den Karpathen.* Band 2. Engelmann, Leipzig.
- Ștefănuț, S. 2004. Taxonomical and ecological researches of liverworts (*Marchantiophyta*) from Romania. *PhD Thesis* (unpubl.).
- Ștefureac, T. 1942. Contribution to the bryophyte flora of Romania. – *Bul. Grăd. Bot. Muz. Bot. Univ. Cluj*, **22**(1-4): 1-12 (in Romanian).
- Ștefureac, T. 1986. *Bucegia romanica* Radian in Rodna mountains, the Oriental Carpathians in Romania; ecological, cenological and chorological considerations. – *Rev. Roumaine Biol., Sér. Biol. Vég.*, **31**(2): 101-110.