

New bryophyte records in the Balkans: 6

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Abstract. New chorological data are presented for 28 species of bryophytes from Bulgaria and Romania. Twelve taxa are liverworts (*Marchantiophyta*) belonging to the families *Cephaloziaceae* (18), *Conocephalaceae* (19), *Gymnomitriaceae* (20–22), *Haplomitriaceae* (23), *Jungermanniaceae* (24–26), *Lophoziaceae* (27–28), *Ricciaceae* (1). Sixteen taxa are mosses (*Bryophyta*) belonging to the families *Amblystegiaceae* (14), *Brachytheciaceae* (16, 17), *Bryaceae* (10, 11), *Ditrichaceae* (8), *Encalyptaceae* (6), *Funariaceae* (2), *Fissidentaceae* (7), *Leskeaceae* (4), *Plagiomniaceae* (12, 13), *Polytrichaceae* (5), *Pottiaceae* (9), *Rhabdoweisiaceae* (3) and *Thuidiaceae* (15).

The publication includes contributions by A. Ganeva (1–4), A. Ganeva & N. Apostolova-Stoyanova (5–17), and S. Ștefănuț (18–28).

Reports 1–4

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Ricciaceae

1. *Ricciocarpos natans* (L.) Corda

Bu Forebalkan: River Mugura at its inflow into the Alexander Stamboliyski Dam, on flooded soil at river bank, 182 m, 43°07'07" N, 25°06'3.9" E, 29.07.2009, coll./det. A. Ganeva (SOM-B 9912).

This liverwort species was assessed as insufficiently known (DD) in the *Red List of Bulgarian Bryophytes* (Natcheva & al. 2006) as more data on its distribution in the country had to be collected. *Ricciocarpus natans* is new to the Forebalkan floristic region. Presently, the chorological information about this species is more comprehensive and a further evaluation of its conservation status will be more precise.

Funariaceae

2. *Physcomitrella patens* (Hedw.) Bruch & Schimp.

Bu Forebalkan: River Mugura at its inflow into the Alexander Stamboliyski dam, on a cart-road in the forests near the river, 182 m, 43°07'07" N,

25°06'3.9" E, 29.07.2009, coll./det. A. Ganeva (SOM-B 9927).

The first report on the distribution of this species in Bulgaria was by Petrov (1956). It was evaluated as Critically Endangered (Natcheva & al. 2006). Later on the species was reported from the Danubian Plain, north of Obnova village (Natcheva 2007).

Rhabdoweisiaceae

3. *Dicranoweisia cirrata* (Hedw.) Lindb.

Bu Mt Vitosh: Vladayska river valley, ca. 100 m from the path Vladaya village-Zlatni Mostove locality, along the cart-road to Karierite locality, on the trunk of an old *Betula pendula* Roth, up to 1.50 m height from the base, 1200 m, 18.08.2009, coll./det. A. Ganeva (SOM-B 9918).

This is the second locality of the species after the report of Natcheva (2005) from Tundzha Hilly Country, Mt Sakar.

Leskeaceae

4. *Ptychodium plicatum* (Schleich. ex F. Weber & D. Mohr) Schimp.

Bu Balkan Range (*Central*): Kozya Stena locality, a saddle to the west of Boba peak. In *Dryas octopetala* L. community, 1606 m, 42°47'18.77" N, 24°33'21.55" E, Sept 2009, coll. I. Apostolova, N. Velev, D. Sopotlieva, det. A. Ganeva (SOM 9938-B).

The species is of conservation importance, evaluated as Vulnerable (Natcheva & al. 2006). So far it has been reported only from the Pirin Mts (Šmarda 1970)

Reports 5–17

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The studies of the bryophyte flora of Mt Golo Burdo have not been comprehensive. After the publication of Ganeva (1992) there are no more bryological reports from this area. During the phytocoenological investigation in 2005–2006 bryophyte samples were also collected and more information was obtained about the bryophyte richness in of Mt Golo Burdo. In the following list some widespread species like *Ceratodon purpureus* (Hedw.) Brid., *Dicranum scoparium* Hedw., *Hypnum cupressiforme* Hedw., and *Brachytheciastrum velutinum* (Hedw.) Ignatov & Huttunen were not listed. They were found on various substrata in communities of *Quercus cerris* L., *Carpinus orientalis* Mill., *Quercus pubescens* Willd., *Carpinus betulus* L., *Pinus nigra* J.F. Arnold.

Polytrichaceae

5. *Polytrichastrum formosum* (Hedw.) G.L. Sm.

Bu Znepole region: Mt Golo Burdo, Kralev Dol chalet, on soil in a *Carpinus betulus* forest, growing together with *Atrichum undulatum* (Hedw.) P. Beauv., 1020 m, 42°33.750' N, 23°03.522' E, FN-61, 13.08.2006, coll. N. Apostolova-Stoyanova, det. A. Ganeva & N. Apostolova-Stoyanova (SOM-B 9939).

Encalyptaceae

6. *Encalypta streptocarpa* Hedw.

Bu Znepole region: Mt Golo Burdo, Gradishte locality above the town of Pernik, on dry rocky soil in a meadow surrounded by *Pinus nigra* plantation, FN-61, 42°33.650' N, 23°01.808' E, 1033 m, 15.08.2005, coll. N. Apostolova-Stoyanova, det. A. Ganeva & N. Apostolova-Stoyanova (SOM-B 9943).

Fissidentaceae

7. *Fissidens dubius* P. Beauv.

Bu Znepole region: Mt Golo Burdo, Chervena Yabulka locality, NW of the town of Radomir, on soil in a *Carpinus betulus* forest, growing together with *Brachytheciastrum velutinum*, 1015 m, 42°33.908' N, 23°00.602' E, FN-61, 08.07.2005, coll. N. Apostolova-Stoyanova, det. A. Ganeva & N. Apostolova-Stoyanova (SOM-B 9940); OrLite chalet, at the bases of trees in a *Quercus cerris* forest, growing together with *Bryum capillare*, *Tortula subulata* Hedw., and *Hypnum cupressiforme*, 911 m, 42°33.986' N, 22°59.073' E, FN-61, 12.08.2005, coll. N. Apostolova-Stoyanova, det. A. Ganeva & N. Apostolova-Stoyanova (SOM-B 9941).

Ditrichaceae

8. *Distichium capillaceum* (Hedw.) Bruch & Schimp.

Bu Znepole region: Mt Golo Burdo, Plochata locality, NE of Radomir town, on rocky, dry, and exposed soil, growing together with *Tortella tortuosa* (Hedw.) Limpr., 936 m, 42°33.511' N, 23°01.305' E, FN-61, 16.08.2005, coll. N. Apostolova-Stoyanova, det. A. Ganeva & N. Apostolova-Stoyanova (SOM-B 9942).

Pottiaceae

9. *Tortella flavovirens* (Bruch) Broth.

Bu Znepole region: Mt Golo Burdo, OrLite chalet, SW slope of the mountain, on dry soil, 1013 m, 42°34.046' N, 22°59.547' E, FN-61, 10.08.2005, coll. N. Apostolova-Stoyanova, det. A. Ganeva & N. Apostolova-Stoyanova (SOM-B 9944).

This species was found to be widespread in the region, growing on rocky soil and spread on slope ridges, facing south or southwest. The species was not reported for Znepole region, although it is well known from similar habitats in other parts of the country.

Bryaceae

10. *Bryum capillare* Hedw.

Bu Znepole region: Mt Golo Burdo, Ostritsa Reserve, on decaying wood in a *Fagus sylvatica* L. forest, 977 m, 42°33.853' N, 23°02.645' E, FN-61, 19.07.2006, coll. N. Apostolova-Stoyanova, det. A. Ganeva & N. Apostolova-Stoyanova (SOM-B 9945).

The species was also found in the Chervena Yabulka locality in a *Carpinus betulus* forest, in the Radomir

Forest Park (*Quercus cerris* forest), in Lilechko Prisoe locality, and in Golyama Kozhushka locality above Kralev Dol village, growing on decaying wood, or at the base of the trees.

11. *Bryum pallescens* Schleich. ex Schwägr.

Bu Znepole region: Mt Golo Burdo, near Orлите chalet, on soil in an old *Pinus nigra* plantation, south-facing slope, 960 m, 42°33.986' N, 22°59.073' E, FN-61, 10.08.2005, coll. N. Apostolova-Stoyanova, det. A. Ganeva & N. Apostolova-Stoyanova (SOM-B 9946).

Plagiomniaceae

12. *Plagiomnium affine* (Blandow ex Funck) T.J. Kop.

Bu Znepole region: Mt Golo Burdo, Lilechko Prisoe locality above Kralev Dol village, on soil in a *Carpinus betulus* forest, 1034 m, 42°33.198' N, 23°04.521' E, FN-61, 09.08.2006, coll. N. Apostolova-Stoyanova, det. A. Ganeva & N. Apostolova-Stoyanova (SOM-B 9947).

The species was also found in a *Quercus cerris* forest close to Orлите chalet, at an altitude of 833 m, growing on a steep north-facing slope.

13. *Plagiomnium undulatum* (Hedw.) T.J. Kop.

Bu Znepole region: Mt Golo Burdo, near Orлите chalet, on rocks covered by soil in a *Quercus cerris* forest, N-NW facing slope, growing together with *Thuidium recognitum* (Hedw.) Lindb. and *Homalothecium lutescens* (Hedw.) H. Rob., 911 m, 42°33.986' N, 22°59.073' E, FN-61, 12.08.2005, coll. N. Apostolova-Stoyanova, det. A. Ganeva & N. Apostolova-Stoyanova (SOM-B 9948).

The species was not reported for Znepole region. It usually grows in more humid habitats but obviously in this locality it has found suitable ecological conditions.

Amblystegiaceae

14. *Amblystegium serpens* (Hedw.) Schimp.

Bu Znepole region: Mt Golo Burdo, near Orлите chalet, at the bases of trees in a *Quercus cerris* forest, growing together with *Hypnum cupressiforme*, *Bryum capillare*, and *Bryum moravicum* Podp., 911 m, 42°33.986' N, 22°59.073' E, FN-61, 12.08.2005, coll. N. Apostolova-Stoyanova, det. A. Ganeva & N. Apostolova-Stoyanova (SOM-B 9950).

Thuidiaceae

15. *Thuidium assimile* (Mitt.) A. Jaeger.

Bu Znepole region: Mt Golo Burdo, near Orлите chalet, on soil in a *Quercus cerris* forest, on a steep north-facing slope, 833 m, 42°33.890' N, 22°59.067' E, FN-61, 09.08.2005, coll. N. Apostolova-Stoyanova, det. A. Ganeva & N. Apostolova-Stoyanova (SOM-B 9949).

Brachytheciaceae

16. *Oxyrrhynchium hians* (Schimp.) Warnst.

Bu Znepole region: Mt Golo Burdo, Chervena Yabulka locality, NW of Radomir town, on rocks in a *Carpinus orientalis* forest, growing together with *Tortella tortuosa*, 970 m, 42°33.756' N, 23°00.775' E, FN-61, 08.07.2005, coll. N. Apostolova-Stoyanova, det. A. Ganeva & N. Apostolova-Stoyanova (SOM-B 9951).

17. *Pseudoscleropodium purum* (Hedw.) M. Fleisch.

Bu Znepole region: Mt Golo Burdo, to the south of Ostritsa Reserve, on soil in a *Carpinus orientalis* forest, 875 m, 42°33.175' N, 23°02.016' E, FN-61, 03.08.2006, coll. N. Apostolova-Stoyanova, det. A. Ganeva & N. Apostolova-Stoyanova (SOM-B 9952).

Reports 18–28

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Cephaloziaceae

18. *Cephalozia bicuspidata* (L.) Dumort.

Ro Retezat Mts: Gemenele Scientific Reserve, Tăul Știrbului, 2100 m, 45°21'46" N, 22°51'12" E, 18.09.2009, coll./det. S. Ștefănuț (BUCA B4105); Tăul Negru, 2040 m, 45°21'28" N, 22°49'45" E, 19.09.2009, coll./det. S. Ștefănuț (BUCA B4127); Retezat National Park, Tăul Porții, 2100 m, 45°21'25" N, 22°51'36" E, 18.09.2009, coll./det. S. Ștefănuț (BUCA B4119).

The nearest localities of this species in Romania are in the Parâng Mts (Ștefănuț 2008).

Conocephalaceae

19. *Conocephalum salebrosum* Szweyk., Buczkowska & Odrzykoski

Ro Făgăraș Mts: Avrig Lake, 2010 m, 45°34'41" N,

24°29'02" E, 21.08.2009, coll./det. S. Ștefănuț (BUCA B4054). This species grows along with *Bucegia romanica* Radian and *Sauteria alpina* (Nees) Nees on the north bank of Avrig Lake.

The nearest localities of this species in Romania are in the Piatra Craiului Mts (Ștefănuț 2008).

Gymnomitriaceae

20. *Marsupella aquatica* (Lindenb.) Schiffn.

Ro Retezat Mts: the peatbog near the way towards Tăul Negru, in water, 1900 m, 45°21'44"N, 22°49'51"E, 19.09.2009, coll./det. S. Ștefănuț (BUCA B4139).

This taxon was treated as *M. emarginata* subsp. *aquatica* (Lindenb.) Meyl., but in a recent study (Vilnet & al. 2007) have shown that this taxon differs genetically from *M. emarginata* subsp. *emarginata* and is treated as a separate species (Konstantinova & Savchenko 2008).

In Romania, this species is known only from Făgăraș Mts (Ștefănuț 2008).

21. *Marsupella emarginata* (Ehrh.) Dumort.

Ro Retezat Mts: Gemenele Scientific Reserve, the Saddle towards Judele, 2300 m, 45°21'36" N, 22°51'30" E, 18.09.2009, coll./det. S. Ștefănuț (BUCA B4132); towards Tăul Negru, 2005 m, 45°21'37" N, 22°50'07" E, 19.09.2009, coll./det. S. Ștefănuț (BUCA B4128, B4138).

22. *Marsupella sprucei* (Limpr.) Bernet.

Ro Retezat Mts: Gemenele Scientific Reserve, Casa Laborator towards Tăul Gemenele, 1850 m, 45°22'03" N, 22°50'13" E, 17.09.2009, coll./det. S. Ștefănuț (BUCA B4123).

Haplomitriaceae

23. *Haplomitrium hookei* (Sm.) Nees (Fig. 1)

Ro Făgăraș Mts, Bălea Waterfall, 1650 m, 45°37'33" N, 24°36'37" E, 18.07.2009, coll./det. S. Ștefănuț (BUCA B4015); Avrig Lake, 2010 m, 45°34'45" N, 24°29'02" E, 22.08.2009, coll./det. S. Ștefănuț (BUCA B4062).

Retezat Mts: Gemenele Scientific Reserve, Tăul Știrbului, 2100 m, 45°21'46" N, 22°51'12" E, 18.09.2009, coll./det. S. Ștefănuț (BUCA B4103, B4107), sterile plants. This record is the southern most known locality for South-East Europe of this species.

In Romania, this species is present in Rodna Mts and Bucegi Massif also (Ștefănuț 2008).

Jungermanniaceae

24. *Jungermannia atrovirens* Dumort.



Fig. 1. *Haplomitrium hookei* from Retezat Mts, Romania (photo S. Ștefănuț 2009).

Ro Făgăraș Mts, Bălea Lake, 2040 m, 45°36'07" N, 24°37'03" E, 18.07.2009, coll./det. S. Ștefănuț (BUCA B4040).

The nearest localities of this species in Romania are in Piatra Craiului Mts, Iezer-Păpușa Mts and Mt Cozia (Ștefănuț 2008).

25. *Jungermannia confertissima* Nees

Ro Retezat Mts: Gemenele Scientific Reserve, Casa Laborator towards Tăul Gemenele, 1850 m, 45°22'03" N, 22°50'13" E, 17.09.2009, coll./det. S. Ștefănuț (BUCA B4122).

The nearest localities of this species in Romania are in Parâng Mts (Ștefănuț 2008).

26. *Mylia anomala* (Hook.) Gray

Ro Retezat Mts: Retezat National Park, Tăul Porții, 2100 m, 45°21'25" N, 22°51'36" E, 18.09.2009, coll./det. S. Ștefănuț (BUCA B4158).

The nearest locality of this species in Romania is Ponor, Alba County (Ștefănuț 2008).

Lophoziaceae

27. *Lophozia opacifolia* Culm. ex Meyl.

Ro Făgăraș Mts, Călțun Glacial Lake, 2180 m, 45°34'50" N, 24°34'39" E, 24.8.2009, coll./det. S. Ștefănuț (BUCA B4083, B4084).

In Romania, this species was known only from Bucegi Massif (Ștefănuț 2008).

28. *Tritomaria scitula* (Taylor) Jörg.

Ro Retezat Mts: Retezat National Park, below Șesele

Peak, towards Zănoaga, 2200 m, 45°21'16" N, 22°49'24" E, 19.09.2009, coll./det. S. Ștefănuț (BUCA B4135, B4136).

The nearest localities of this species in Romania are in Parâng Mts (Ștefănuț 2008).

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