

# New bryophyte records in the Balkans: 1

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\* Reports for Bulgaria have been reviewed by Rayna Natcheva, for Greece by E. Tsakiri, and for Romania by G. Dihoru.

**Abstract.** New chorological data are presented for 24 species and subspecies of bryophytes from Bulgaria (reports no. 2, 3, 6, 12-24), Greece, the Rhodes island (1, 4, 5, 7), and Romania (8-11). Six taxa are liverworts (*Marchantiophyta*) belonging to the families *Calypogeiaceae* (13), *Conocephalaceae* (8), *Gymnomitriaceae* (10), *Haplomitriaceae* (9), *Ricciaceae* (12), and *Scapaniaceae* (11). Eighteen taxa are mosses (*Bryophyta*) belonging to the families *Bryaceae* (23), *Dicranaceae* (16), *Ditrichaceae* (15), *Fissidentaceae* (2-4), *Funariaceae* (14), *Grimmiaceae* (1), *Hypnaceae* (24), *Orthotrichaceae* (21, 22), and *Pottiaceae* (5-7, 17-20).

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The publication includes contributions by B. Papp (1-7), S. Ștefănuț (8-11), and R. Natcheva (12-24).

From this issue onward, **Phytologia Balcanica** starts to publish new chorological records for the bryophytes on the Balkan Peninsula, following the example given by vascular plant botanists. The bryological records will conform to the format adopted for the records of vascular plants (for details see Vladimirov & al. 2006a, b) with the following differences:

- The nomenclature and systematics should follow Grolle & Long (2000) and Söderström & al. (2002) for liverworts and hornworts, and Hill & al. (2006) for mosses.
- Specify on what type of substrate the plants were collected.
- If possible indicate the fertility of the species (with sporophytes, perianths, perichaetia, perigonia, arche-gonia or antheridia, or sterile).

The manuscripts should be sent in electronic format via e-mail to: [phytobalcanica@abv.bg](mailto:phytobalcanica@abv.bg) or [phytolbalcan@gmail.com](mailto:phytolbalcan@gmail.com) with subject *Bryophyte records*, or via regular mail on a CD to postal address: Phytologia Balcanica, Institute of Botany, Bulgarian Academy of Sciences, Acad. Georgi Bonchev St., bl. 23, 1113 Sofia, Bulgaria.

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*Grimmiaceae*1. *Grimmia dissimulata* E. Maier

**Gr** Rhodes island: Mt Profitis Ilias, *Cupressus-Pinus* forest, limestone rocks, 36°16'35.18"N, 27°56'34.49"E, 640 m, 07.08.2006., coll. B. Papp, conf. E. Maier (BP 173206); Petaloudes village, Valley of the butterflies, *Liquidambar orientalis-Platanus orientalis* forest, limestone rocks, 300 m, 36°20'12.32"N, 28°03'47.24"E, 05.08.2006., coll. B. Papp (BP 173207); Epta Piges, pine forest, limestone rocks along a stream, 120 m, 36°15'19.06"N, 28°06'44.89"E, 06.08.2006., coll. B. Papp (BP 173208).

This is a recently described species (Maier 2002). According to Maier it is distributed in Africa (Morocco), Asia (Syria, Turkey), and Europe (Austria, Belgium, Cyprus, France, Germany, Great Britain, Greece, Hungary, Italy, Spain, and Switzerland). New to the Rhodes island (Maier 2002).

*Fissidentaceae*2. *Fissidens arnoldii* R. Ruthe

**Bu** Danubian Plain: Danube river at Gorni Vadin village, stone dam, 140 m, KJ-74, 16.08.1996, coll. B. Papp (BP 172405).

The species grows together with *Leptodictyum riparium* (Hedw.) Warnst. and *Leskea polycarpa* Hedw. This is the second locality of this European red-listed species in Bulgaria. It was reported for the first time from the dam of river Malki Iskur at Roman town (Papp & al. 2006). New to the Danubian Plain (Natcheva & Ganeva 2005).

3. *Fissidens crassipes* Wilson ex Bruch & Schimp. subsp. *crassipes*

**Bu** Danubian Plain: Danube river at Ostrov village, dam of limestone rocks at the harbour, 140 m, KJ-74, 16.08.1996, coll. B. Papp (BP 172409).

Accompanying bryophytes are *Hygroamblystegium tenax* (Hedw.) Jenn., *Leptodictyum riparium* (Hedw.) Warnst. and *Leskea polycarpa* Hedw. New to the Danubian Plain (Natcheva & Ganeva 2005). The species is included in the list of threatened bryophytes of Bulgaria (Natcheva & al 2006).

4. *Fissidens crassipes* subsp. *warnstorffii* (M. Fleisch.) Brugg.-Nann.

**Gr** Rhodes island: Epta Piges, pine forest, limestone rocks in a stream, 120m, 36°15'19.06"N, 28°06'44.89"E, 06.08.2006., coll. B. Papp (BP 173205).

This is a submediterranean subspecies (Düll 1995). In SE Europe it is reported from Croatia, Bosnia-Herzegovina, Slovenia, Bulgaria (Düll & al. 1999), and Greece (Düll 1995). In Greece it is known only from the Ionian islands and North Central Greece. New to the Rhodes island (Düll 1995).

*Pottiaceae*5. *Barbula bolleana* (Müll.Hal.) Broth.

**Gr** Rhodes island: Epta Piges, pine forest, limestone rocks in a stream, 120 m, 36°15'19.06"N, 28°06'44.89"E, 06.08.2006., coll. B. Papp (BP 173203).

This is a submediterranean species (Düll 1995). In SE Europe it is reported from Croatia (Düll & al. 1999) and Greece (Düll 1995). In Greece it is known only from Crete, the Aegean and Ionian islands. New to the Rhodes island (Düll 1995).

6. *Cinclidotus riparius* (Host ex Brid.) Arn.

**Bu** Danubian Plain: river Danube at Gorni Vadin village, stone dam, 140 m, KJ-74 16.08.1996, coll. B. Papp (BP 172404); river Danube at Ostrov village, dam of limestone rocks at the harbour, 140 m, KJ-74 16.08.1996, coll. B. Papp (BP 172408); branch of river Danube at Esperanto island near Orjahovo town, on a concrete element, 140 m, GP-44, 17.08.1996, coll. B. Papp (BP 172418). Accompanying bryophyte is *Leskea polycarpa* Hedw.

New to the Danubian plain (Natcheva & Ganeva 2005).

7. *Pseudocrossidium revolutum* (Brid.) R.H. Zander

**Gr** Rhodes island: Epta Piges, pine forest, limestone rocks along a stream, 120 m, 36°15'19.06"N, 28°06'44.89"E, 06.08.2006., coll. B. Papp (BP 173204).

This suboceanic-submediterranean species is known from all SE European countries except for Serbia (Düll 1984, 1995; Düll & al. 1999; Natcheva & Ganeva 2005). New to the Rhodes island (Düll 1995).

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*Conocephalaceae***8. *Conocephalum salebrosum*** Szweyk., Buczkowska & Odrzykoski

**Ro** Giumalău Mountain: Giumalău Secular Forest, in common spruce forest, on soil, 1210 m, 47°26'44"N, 25°29'44"E, 11.09.2006, coll./det. S. Ștefănuț (BUCA B3503), sterile plants.

— Piatra Craiului Mountains: Crăpătura Pietrei Craiului, Brașov County, 1100 m, 45°33'44"N, 25°15'51"E, 21.08.2003, coll./det. S. Ștefănuț (BUCA B2749), female plants with archegoniophores; Argeș County, Brusturet Gorges, on soil, 950 m, 45°27'55"N, 25°13'45"E, 26.07.2004, coll. O. Pop, det. S. Ștefănuț (BUCA B2956), female plants with archegoniophores.

— Bucharest City: Botanical Garden, on rocks, 5.07.2005, coll./det. S. Ștefănuț (BUCA B3177), sterile plants.

— Gorj County: Muierii Cave, 05.09.2006, coll. G. Cogălniceanu, det. S. Ștefănuț (BUCA B3527), sterile plants.

— Șureanu Mountain: Hunedoara County, Godeanu Valley, 25.05.2006, coll. M. Paucă, det. S. Ștefănuț (BUCA B3528, B3529), male plants with antheridiophores.

This species was recently reported as new for Romania from the Bucegi Massif (Szweykowski & al. 2005).

*Haplomitriaceae***9. *Haplomitrium hookeri*** (Sm.) Nees

**Ro** Bucegi Massif: Babele Mountain, in the alpine zone, on soil, 2200 m, 45°24'44"N, 25°28'37"E, 8.09.2005, coll./det. S. Ștefănuț (BUCA B3276, BUCA B3277), female plants with archegonia and young sporophytes, and male plants with antheridia; Babele Mountain, in the alpine zone, on soil, 2190 m, 45°24'45"N, 25°28'42"E, 07.09.2006, coll./det. S. Ștefănuț (BUCA B3550), sterile plants.

New for Meridional Carpathians. Bucegi is the second massif in Romania where this species was found (Ștefănuț 2000).

*Gymnomitriaceae***10. *Marsupella commutata*** (Limpr.) Bernet

**Ro** Bucegi Massif: Babele Mountain, in the alpine zone, on soil, 2140 m, 45°24'38"N, 25°28'36"E, 07.09.2006, coll./det. S. Ștefănuț (BUCA B3549), sterile plants.

This species was recently reported as new for Romania from the Făgăraș Massif (Ștefănuț 2004). Bucegi is the second massif where this species was found.

*Scapaniaceae***11. *Scapania cuspiduligera*** (Nees) Müll.Frib.

**Ro** Bucegi Massif: Gaura glacial ring, in the alpine zone, on soil, 2175 m, 45°26'26"N, 25°26'26"E, 8.07.1999, coll./det. S. Ștefănuț (BUCA B3531), sterile plants; Gaura glacial ring, in the alpine zone, on soil, 45°26'27"N, 25°26'19"E, 2120 m, 8.07.1999, coll./det. S. Ștefănuț (BUCA B3355); Mălăești glacial ring, in the alpine zone, on soil, 2260 m, 45°27'06"N, 25°27'04"E, 9.07.1999, coll./det. S. Ștefănuț (BUCA B3470), sterile plants; Mălăești glacial ring, in the alpine zone, on soil, 2110 m, 45°27'05"N, 25°26'53"E, 9.07.1999, coll./det. S. Ștefănuț (BUCA B3469).

The presence of this species in Romania was recorded in some papers on the Meridional Carpathians (Müller 1957; Schuster 1974; Frey & al. 2006). This is the first precise localization for this species in Romania.

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*Ricciaceae*12. *Riccia fluitans* L.

**Bu** The Forebalkan: At Lukovitski Karst Park south of the town of Lukovit, on the sandy bank of river Panega, 145 m, KH-68, 43°11'11.2"N, 24°03'22.6"E, 31.10.2006, coll. R. Natcheva (SOM-B 8868).

The species is probably overlooked in many regions in Bulgaria. So far it is known from single locations in the Danubian Plain, Vitosha and Sofia Regions and Western Rhodopi Mts (Ganeva & Natcheva 2003). This is the first record of *R. fluitans* for the Forebalkan region. It is interesting that the plants formed small sterile rosettes in a terrestrial environment, whereas in all other cases the species has been found floating on the water surface.

*Calypogeiaceae*13. *Calypogeia sphagnicola* (Arnell & J. Perss.) Warnst. & Loeske

**Bu** Pirin Mts (*Northern*): in a *Sphagnum* mire at the Lower Kremeski lakes, in the cushions of *Sphagnum subfulvum* Sjors, 2147 m, GM-02, 41°42'38"N, 23°31'37"E, 10.09.2006, coll. R. Natcheva (SOM-B 8797).

Only sterile plants were present. In Bulgaria *C. sphagnicola* is red-listed as Vulnerable (Natcheva & al. 2006). So far it has been reported only from Mt Vitosha without a precise location (Simon & Vajda 1959). No herbarium specimen of the species is present either in SOM or in BP, where Vajda's collections are deposited. Thus this is the second report of *C. sphagnicola* for Bulgaria and the first from the Pirin Mts.

*Funariaceae*14. *Physcomitrella patens* (Hedw.) Bruch & Schimp.

**Bu** Danubian Plain: north of Obnova village, on muddy soil banks of an old irrigation canal that flows into the old river-bed of river Osum, ca 50 m, LJ-31, 43°27'73"N, 24°58'37"E, 31.10.2006, coll. R. Natcheva (SOM-B 8793).

With sporophytes. In Bulgaria *P. patens* is a Critically Endangered species (Natcheva & al 2006), so far reported for the Thracian lowland, at the fish-farm north

of Plovdiv (Petrov 1956). The author's attempts to find the species at the latter location in 2004 were unsuccessful. This is the first report of *P. patens* for Bulgaria after 50 years and the first for the Danubian Plain.

*Ditrichaceae*15. *Distichium inclinatum* (Hedw.) Bruch & Schimp.

**Bu** Rila Mts: at the Mramoretski Preslap saddle along the path between Ribni ezera and Makedonia challets, on calcareous soil among marble rocks, 2620 m, GM-06, 42°06'14"N, 23°28'43"E, 22.9.2006, coll. R. Natcheva (SOM-B 8796).

Collected sterile. *Distichium inclinatum* is red-listed in Bulgaria as Vulnerable (Natcheva & al. 2006). Formerly known from the calcareous parts of the Pirin Mts (Simon & Vajda 1959) and the Central Balkan Range (Šmarda 1970).

*Dicranaceae*16. *Dicranum bonjeanii* De Not.

**Bu** Znepole Region: wet meadows ca 1 km east of Tsruklevtsi village at the southern foothills of Mt Chepan, in association with *Calliergonella cuspidata* (Hedw.) Loeske, 805 m, FN-75, 42°56'42.4"N, 23°08'07.1"E, 21.9.2006, coll. R. Natcheva (SOM-B 8794).

Only sterile plants were present. This is the first record of the species for the Znepole region.

*Pottiaceae*17. *Ephemerum recurvifolium* (Dicks.) Boulay

**Bu** Danubian Plain: north of Obnova village, on soil on the banks of an old irrigation channel, flowing into the old river-bed of river Osum, ca 50 m, LJ-31, 43°27'73"N, 24°58'37"E, 31.10.2006, coll. R. Natcheva (SOM-B 8792).

Collected with numerous ripe sporophytes. A Critically endangered species in Bulgaria (Natcheva & al. 2006). Reported for the first time from the Sofia Region (Stefanoff & Petrov 1962) but no herbarium specimen exists in SOM. Therefore, this is the first documented occurrence of *E. recurvifolium* in Bulgaria and the first report of this species for the Danubian Plain.

**18. *Microbryum curvicollum*** (Hedw.) R.H. Zander

**Bu** Rhodopi Mts (*Western*): ca 3 km east from Dolno Dryanovo village along the road to Satovcha, on dry soil on the paths in a semi-open oak-pine forest (*Quercus cerris*–*Pinus nigra*), 873 m, GM-04, 41°35'44"N, 23°55'01"E, 18.06.2006, coll. R. Natcheva (SOM-B 8797).

Collected with mature sporophytes. The distribution of *M. curvicollum* in Bulgaria is unclear and the species is evaluated as Data Deficient in the Bulgarian bryophyte red list (Natcheva & al. 2006). It was reported for the first time by Velenovsky (1902) for the Thracian Lowland. Afterwards, it has not been observed until 2006 when it was found at two locations on loess cliffs along the Danube river (Natcheva & Ganeva 2006). This current record is the first location of *M. curvicollum* for the Rhodopi Mts.

**19. *Syntrichia papillosa*** (Wilson) Jur.

**Bu** Danubian Plain: south of Cherni Vruh village, on *Populus alba* along the river flowing by the village, 115 m, FP-93, 43°38'17"N, 23°22'48"E, 26.03.2005, coll. R. Natcheva (SOM-B 8872).

Sterile, with numerous gemmae. In Bulgaria the species is evaluated as Endangered (Natcheva & al. 2006). Formerly known from the Mt Strandza (Stefanoff & Petrov 1962), the Valley of River Strouma (Ganeva 1992), and the Rhodopi Mts (Düll & al. 1999).

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

**Bu** Northeast Bulgaria: Ivanovo village, on the bark of *Juglans regia* at the rock monasteries in the valley of river Rousenski Lom, ca 150 m, MJ-13, 26.03.2005, coll. R. Natcheva (SOM-B 8873).

A Vulnerable species in Bulgaria (Natcheva & al. 2006). Formerly known from the Rila (Kuc & al. 1965) and Rhodopi Mts (Düll & al. 1999).

**Orthotrichaceae****21. *Orthotrichum gymnostomum*** Bruch ex Brid.

**Bu** Rhodopi Mts (*Central*): on the trunks of *Populus tremula* just below Chairski lakes, 1271 m, KG-

80, 41°35'38"N, 24°26'27"E, 19.09.2006, coll. R. Natcheva (SOM-B 8874).

Relatively abundant, mostly with sporophytes. *Orthotrichum gymnostomum* was reported for the first time in Bulgaria for the region of Yakorouda in the Rila Mts (Kuc & al. 1965). This is the first record of the species for the Rhodopi Mts. In Bulgaria it is red-listed as Vulnerable (Natcheva & al. 2006).

**22. *Orthotrichum obtusifolium*** Brid.

**Bu** Danubian Plain: on the bark of *Platanus hybridus* in the Kailuka Park, the town of Pleven, ca 380 m, LJ-00, 27.03.2005, coll. R. Natcheva (SOM-B 8875).

Only sterile plants were observed. New to the Danubian Plain.

**Bryaceae****23. *Bryum moravicum*** Podp.

**Bu** Northeast Bulgaria: at the rock monastery near Ivanovo village, in the valley of river Rousenski Lom, on the bark of an old *Juglans regia* tree, ca 150 m, MJ-13, 26.03.2005, coll. R. Natcheva (SOM-B 8871).

— Danubian Plain: on the bark of *Platanus hybridus* in the Kailuka Park, the town of Pleven, ca 380 m, LJ-00, 27.03.2005, coll. R. Natcheva (SOM-B 8870).

Sterile at both locations. New to the Northeast Bulgaria and Danubian Plain.

**Hypnaceae****24. *Orthothecium rufescens*** (Dicks. ex Brid.) Schimp.

**Bu** Rhodopi Mts (*Central*): on limestone rocks along the road to Chairski lakes, 1360 m, KG-80, 41°35'11.3"N, 24°26'38.1"E, 19.09.2006, coll. R. Natcheva (SOM-B 8869).

Very abundant, often bordering the grass tufts at the edges of bare limestone rocks, frequently with sporophytes. This is the first report of *O. rufescens* for the Rhodopi Mts. In Bulgaria it has been found for the first time at a single location in the central part of the Balkan Range (Petrov 1975). The species is red-listed as Vulnerable (Natcheva & al. 2006).

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