The bryophyte flora of Northern Mt Strandzha

Beáta Papp[1], Rayna Natcheva[2] & Anna Ganeva[2]

[1] Botanical Department, Hungarian Natural History Museum, Budapest, Pf. 222. H-1476, Hungary, e-mail: pappbea@bot.nhmus.hu

[2] Department of Plant and Fungal Diversity and Resources, Institute of Biodiversity and Ecosystem Research, Bulgarian Academy of Sciences, Acad. Georgi Bonchev St., bl. 23, 1113 Sofia, Bulgaria, e-mail: renimoss@bio.bas.bg (corresponding author), animoss@bio.bas.bg

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Abstract. The present study reports 206 species (167 mosses and 39 liverworts) from the Bulgarian territory of Mt Strandzha. Of these, 13 species and one subspecies are new to the country. Eighty-nine mosses and 20 liverworts are reported for the first time for Mt Strandzha. There are 24 red-listed species. Thus Mt Strandzha appears to be extremely important for conservation of the bryophyte diversity in Bulgaria.

Key words: bryophyte flora, Bulgaria, Mt Strandzha, new species

Introduction

Mt Strandzha is situated in Southeast Bulgaria and the eastern part of European Turkey, in the southeastern part of the Balkan Peninsula.

Combination of various climatic influences has resulted in a rich and unique flora and fauna. Besides the European and Eurasian floristic elements, there are also Euxinian, steppe, and Mediterranean species and, therefore, Mt Strandzha has been set apart into an independent region of the Euxinian Province (Bondev 2002). Forests are dominated by *Fagus orientalis*, *Quercus polycarpa*, *Q. hartwissiana*, *Carpinus orientalis*, *Tilia rubra*, *Celtis caucasica*, etc. Typical representatives of shrub and herbaceous plants are *Rhododendron ponticum*, *Laurocerasus officinalis*, *Ilex aquifolium*, *Daphne pontica*, *Vaccinium arctostaphylos*, *Hypericum calycinum*, *Symphytum tauricum*, etc.

Mt Strandzha is very important for nature conservation. Most of the territory of the mountain falls into the Strandza Nature Park. It is also part of the European ecological network NATURA 2000 (BG0000378 Strandzha). The region is also an Important Bird Area (BG040), Prime Butterfly Area (code 39) and is suggested for an Important Plant Area.

The vascular flora and vegetation are well studied and scientific interest in that region of the country has been high in recent years (Dimitrov & al. 1997; Gussev & al. 1997, 1998, 2004; Denchev & al. 1999; Bancheva & al. 2002a, b). On the other hand, the bryophyte flora is extremely poorly known. The first record of bryophytes from Mt Strandzha was reported by Petrov (1958). Afterwards, there have been only sporadic records of single species (Simon & Vajda 1959; Petrov 1963, 1966, 1986; Kuc & al. 1965; Meyer & Grolle 1968; Stefanoff 1971), but no study has been specifically directed at investigation of the bryophyte flora of Mt Strandzha.

The aim of this paper is to present the recent, systematically collected data on the bryophyte flora of Mt Strandzha.

Material and methods

Study area

Mt Strandzha is situated in the southeast part of Bulgaria. It falls within the Continental-Mediterranean climatic region (Velev 2002). Summers are warm and winters are mild, without lasting snow cover and with small temperature amplitudes. The climate of the area is influenced considerably by the Black Sea and is predominantly transitional to Mediterranean. Major rivers in the area are river Veleka and the border river Rezovska.

According to the physical and geographical regionalisation, the mountain is situated within the East Rhodopean and Strandzha region (Yordanova & al. 2002). The largest and highest part of the mountain is on the territory of Turkey, with peak Mahiada (1031 m) as its highest point. The highest peak in the Bulgarian part of Mt Strandzha is peak Golyamo Gradiste (710 m).

Mt Strandzha mainly constitutes of old Paleozoic metamorphic and granite rocks, with some limestone outcrops. The predominant soil types are yellow-podzolic soils.

Nomenclature

The nomenclature follows Grolle & Long (2000) for liverworts and Hill & al. (2006) for mosses.

List of locations (Fig. 1)

1. Silkosiya Nature Reserve at Selski Dol locality, between Bulgari and Kosti villages, schist, 385 m, UTM NG65, 42°05'20.3" N, 27°45'05.6" E, 03.06.2009.
2. At Kosti village, acidic rocks and soil, 85 m, UTM NG65, 42°03'52.2" N, 27°46'25.3" E, 03.06.2009.
3. Trionski Dol locality at Bulgari village, acidic rocks,150 m, UTM NG56, 42°07'11.5" N, 27°42'57.9" E, 03-04.06.2009.

3a. Trionski Dol locality at Bulgari village, 130 m, UTM NG56, 42°07'22.8" N, 27°43'07.4" E, 04.06.2009.

3b. Trionski Dol locality at Bulgari village, exposed sandstone rocks, 115 m, UTM NG66, 42°07'58.4" N, 27°43'50.1" E, 04.06.2009.

4. St. Elena Chapel at Bulgari village, 275 m, UTM NG55, 42°5'19.00" N, 27°43'27.30" E, 03.06.2009.
5. Marina Reka Nature Reserve between Izgrev and Bulgari villages, schist, 150 m, UTM NG66, 42°06'41.6" N, 27°45'52.6" E, 04.06.2009.

5a. Marina Reka Nature Reserve between Izgrev and Bulgari villages, soil along the upper part of a road, 240 m, UTM NG66, 42°07'05.6" N, 27°46'11.9" E, 10.06.2009.

6. Veleka river between Brodilovo and Kosti villages, acidic rocks, 15 m, UTM NG65, 42°04'32.5" N, 27°49'24.6" E, 05.06.2009.
7. Veleka river at Kachul village towards Kosti village, lime-containing schist, 85 m, UTM NG55, 42°00'46.5" N, 27°40'04.2" E, 05.06.2009.

7a. Along a side branch of Veleka river at Kachul village towards village Kosti, acidic rocks, 80 m, UTM NG55, 42°00'41.4" N, 27°39'51.6" E, 05.06.2009.

8. Mt Strandzha, along the road between Kachul village and Malko Turnovo town, 130 m, UTM NG55, 42°01'34.3" N, 27°36'57.6" E, 06.06.2009.
9. Milkovski Dol locality at Vodicite near Malko Turnovo town, acidic rocks and soil, 410 m, UTM NG44, 41°59'29.4" N, 27°32'51.0" E, 06.06.2009.
10. Dokuzak stream in Sredoka Nature Reserve near Stoilovo village, 260 m, UTM NG45, 42°00'58.9" N, 27°30'20.7" E, 07.06.2009.
11. At the beginning of the trail towards Sredoka Nature Reserve at Stoilovo village, exposed acidic rocks, 270 m, UTM NG45, 42°02'00.3" N, 27°30'54.0" E, 07.06.2009.
12. Mladezhka river near Strandzhovska stream, 160-170 m, 42°07'49.4" N, 27°29'33.7" E and 42°08'07.4" N, 27°28'51.0" E, 08.06.2009.
13. Mladezhka river in Paroria Nature Reserve near Trakiyski Camp under Petrova Niva locality, 110 m, UTM NG45, 42°04'38.8" N, 27°32'30.7" E, 08.06.2009.
14. Along the road from Mladezhka river to Petrova Niva locality, 255 m, UTM NG45, 42°04'02.6" N, 27°32'12.3" E, 08.06.2009.
15. Raychov Dol locality in Vitanovo Nature Reserve near Malko Turnovo town, 375 m, UTM NG35, 42°00'26.9" N, 27°25'48.7" E, 09.06.2009.

15a. Bratanova Cave at Raychov dol locality in Vitanovo Nature Reserve near Malko Turnovo town, limestone rocks, 430 m, UTM NG35, 42°00'21.5" N, 27°25'21.2" E, 09.06.2009.

16. Golyam Mechi Dol Locality in Vitanovo Nature Rserve near Malko Turnovo town, 330 m, UTM NG35, 42°00'09.8" N, 27°26'36.6" E, 09.06.2009.
17. In Malko Turnovo town, on *Celtis* trees, 340 m, UTM NG44, 41°58'53.3" N, 27°31'25.9" E, 10.06.2009.

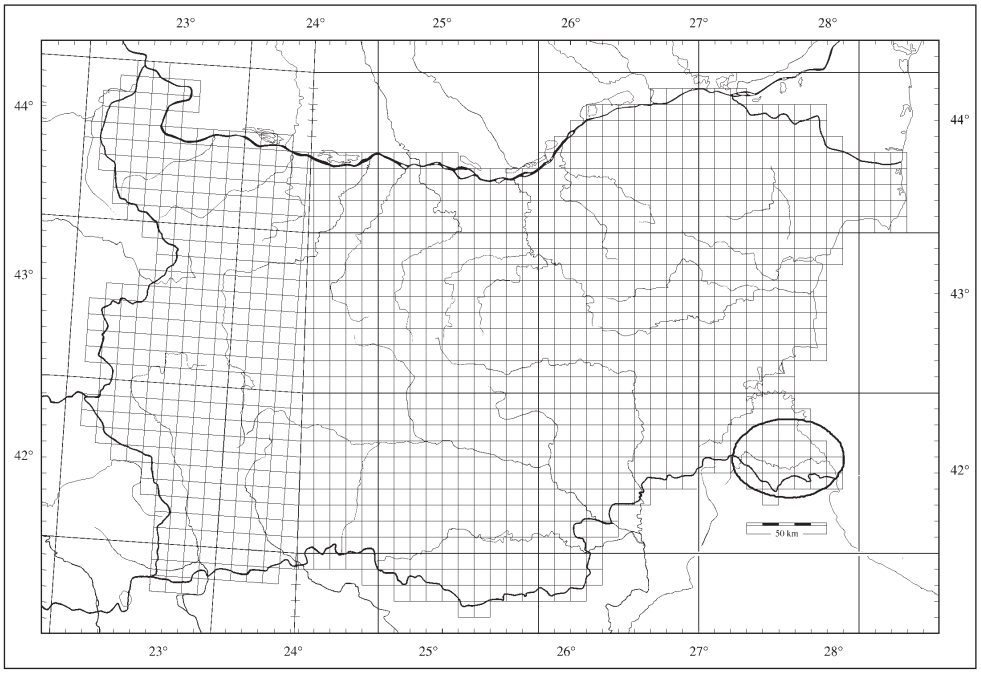

Fig. 1. Map of Bulgaria showing the study area.

18. Cherna river at Izgrev village, volcanic rocks, 85 m, UTM NG66, 42°08'24.4" N, 27°47'57.6" E, 23.04.2008.
19. Marina Reka Nature Reserve at Bulgari village, 255 m, UTM NG66, 42°07'01.0" N, 27°45'54.4" E, 23.04.2008.
20. Piren Nature Reserve at Kosti village, heathland, 255 m, UTM NG66, 42°07'01.0" N, 27°45'54.4" E, 23.04.2008.
21. Mechi Dol river at Malko Tarnovo, along the road to Burgas after the junction to Stoilovo, limestone rocks, 270 m, UTM NG35, 42°01'50.3" N, 27°28'25.0" E, 23.04.2008.
22. Along the road to Burgas at Malko Tarnovo, limestone rocks, 340 m, UTM NG44, 41°59'37.1" N, 27°30'47.5" E, 23.04.2008.

Voucher specimens were deposited at BP and SOM.

Results

List of species
(* new to Strandzha, ** new to Bulgaria)

Mosses (*Bryophyta*)

1. *Amblystegium serpens* (Hedw.) Schimp. – 10 (on the bank of the stream), 12 (on shaded limestone rock), 12 (on the bark of *Alnus glutinosa*), 13 (on the bark of *Alnus glutinosa*), 21 (on limestone rocks)
2. * *Anomodon attenuatus* (Hedw.) Huebener – 1 (on the bark of *Fagus orientalis*), 3a (on acidic rocks), 9 (on acidic rocks and soil), 12 (on shaded limestone rock and on the bark of *Alnus glutinosa*), 13 (on rocks along the river), 21 (on limestone rocks)
3. * *A. longifolius* (Schleich. ex Brid.) Hartm. – 13 (on rocks along the river)
4. * *A. rostratus* (Hedw.) Schimp. – 12 (on shaded limestone rock)
5. *A. viticulosus* (Hedw.) Hook. & Taylor – 3 (on the bark of *Fagus orientalis*), 5 (on shistose rocks), 7 (lime-containing schist), 7a (on acidic rocks), 8 (on the bark of *Quercus* sp.), 9 (on acidic rocks and soil), 10 (on shaded limestone rocks), 12 (on shaded limestone rock and on the bark of *Alnus glutinosa*), 13 (on rocks along the river), 15a (on limestone rocks), 16 (on limestone rock), 21 (on limestone rocks)
6. * *Atrichum angustatum* (Brid.) Bruch & Schimp. – 9 (on acidic rocks and soil), 14 (on schist), 19 (on soil)
7. * *A. undulatum* (Hedw.) P. Beauv. – 1 (on soil)
8. * *Barbula convoluta* Hedw. – 16 (on limestone rocks along the stream), 21 (on limestone rocks)

9. **B. unguiculata* Hedw. – 9 (on acidic rocks and soil), 10 (on calcareous grassland), 12 (on shaded limestone rock), 22 (on limestone rocks)
10. **Bartramia pomiformis* Hedw. – 9 (on acidic rocks and soil), 14 (on schist)
11. *Brachytheciastrum velutinum* (Hedw.) Ignatov & Huttunen – 1 (on soil and on the bark of *Quercus* sp.), 3 (on acidic rocks and on decaying wood), 6 (on soil), 14 (on soil), 22 (on limestone rocks)
12. **Brachythecium glareosum* (Bruch ex Spruce) Schimp. – 1 (on soil), 3a (on acidic rocks), 14 (on soil), 18 (on soil), 21 (on limestone rocks)
13. *B. rivulare* Schimp. – 3 (along the stream), 7a (on acidic rocks), 10 (on shaded limestone rocks and on the bank of the stream), 14 (on schistose rock along the stream), 19 (along the stream)
14. *B. rutabulum* (Hedw.) Schimp. – 1 (on soil), 3 (on decaying wood and acidic rocks), 5 (on shistose rocks), 7 (on lime-containing schist), 12 (on shaded limestone rock and on the riverbank), 14 (on soil), 16 (on limestone rock), 16 (on limestone rocks along the stream), 18 (along the stream)
15. **Bryoerythrophyllum recurvirostrum* (Hedw.) P.C. Chen – 21 (on limestone rocks)
16. **Bryum alpinum* Huds. ex With. – 3 (along the stream and on acidic rocks)
17. **B. argenteum* Hedw. – 3b (on exposed sandstone rocks), 22 (on limestone rocks)
18. ***B. bornholmense* Wink. & R. Ruthe – 20 (on soil)
19. **B. caespiticium* Hedw. – 16 (on limestone rocks along the stream)
20. **B. capillare* Hedw. – 3 (on exposed acidic rocks), 3b (on exposed sandstone rocks), 6 (on acidic rocks), 8 (on acidic rocks), 9 (on acidic rocks and soil), 12 (on shaded limestone rock), 18 (along the stream)
21. *B. dichotomum* Hedw.– 18 (on soil), 22 (on limestone rocks)
22. **B. moravicum* Podp. – 1 (on the bark of *Quercus* sp.), 15a (on the bark of *Fraxinus excelsior*)
23. **B. pseudotriquetrum* (Hedw.) P. Gaertn. et al. – 3 (along the stream), 12 (on shaded limestone rock and on the riverbank), 18 (along the stream)
24. *B. ruderale* Crundw. & Nyholm – 21 (on limestone rocks)
25. *B. torquescens* Bruch & Schimp. – 20 (on soil)
26. **B. turbinatum* (Hedw.) Turner – 3 (along the stream), 10 (on the bank of the stream)
27. **Campyliadelphus chrysophyllus* (Brid.) R.S. Chopra – 10 (on shaded limestone rocks)
28. *Campylophyllum calcareum* (Crundw. & Nyholm) Hedenäs – 3a (on acidic rocks), 7 (on lime-containing schist), 7a (on acidic rocks), 8 (on the bark of *Quercus* sp.), 9 (on acidic rocks and soil), 12 (on shaded limestone rock), 21 (on limestone rocks)
29. **Ceratodon pupureus* (Hedw.) Brid. – 2 (on acidic rocks and soil), 3 (on exposed acidic rocks), 3b (on exposed sandstone rocks), 6 (on acidic rocks), 9 (on acidic rocks and soil), 11 (on exposed acidic rocks), 14 (on soil), 18 (on soil), 19 (on soil), 20 (on soil)
30. *Cinclidotus fontinaloides* (Hedw.) P. Beauv. – 12 (on the riverbank), 13 (on rocks along the river)
31. *Cirriphyllum crassinervium* (Taylor) Loeske & M. Fleisch. – 3 (on the bark of *Fagus orientalis* and acidic rocks), 3a (on acidic rocks), – 7 (on schist-containing lime), 7a (on acidic rocks), 9 (on acidic rocks and soil), 10 (on shaded limestone rocks and on the bank of the stream), 12 (on shaded limestone rock, on the bark of *Alnus glutinosa* and on the riverbank), 13 (on the bark of *Alnus glutinosa*), 14 (on schistose rock along the stream), 15a (on limestone rocks), 16 (on limestone rocks), 18 (along the stream)
32. *Cratoneuron filicinum* (Hedw.) Spruce – 1 (along the stream), 3 (alng the stream), 5, 7 (on schist-containing lime), 9 (on acidic rocks and soil), 10 (on the bank of the stream), 12 (on the riverbank), 14 (on schistose rock along the stream), 16 (on limestone rocks along the stream), 19 (along the stream)
33. *Ctenidium molluscum* (Hedw.) Mitt. – 3 (on the bark of *Fagus orientalis* and acidic rocks), 3a (on acidic rocks), 5, 7 (on lime-containing schist), 7a (on acidic rocks), 9 (on acidic rocks and soil), 12 (on shaded limestone rock), 16 (on limestone rock), 19 (along the stream), 21 (on limestone rocks)
34. **Cynodontium bruntonii* (Sm.) Bruch & Schimp. – 6 (on acidic rocks)
35. **Dialytrichia mucronata* (Brid.) Broth. – 3a (along the stream), 12 (on the riverbank), 13 (on rocks along the river and on the bark of *Alnus glutinosa*)
36. **Dicranella heteromalla* (Hedw.) Schimp. – 19 (on soil)

37. ***D. howei* Renauld & Cardot – 2 (on acidic rocks and soil)
38. *D. schreberiana* (Hedw.) Dixon – 3a (on soil)
39. **Dicranoweisia cirrata* (Hedw.) Lindb. – 3a (on the bark of tree)
40. **Dicranum scoparium* Hedw. – 3 (on acidic rocks), 6 (on acidic rocks), 9 (on acidic rocks and soil), 11 (on exposed acidic rocks), 14 (on soil), 20 (on soil)
41. **Didymodon acutus* (Brid.) K. Saito – 2 (on soil), 22 (on soil)
42. **D. ferrugineus* (Schimp. ex Besch.) M.O. Hill – 2 (on acidic rocks and soil)
43. **D. insulanus* (De Not.) M.O. Hill – 3 (along the stream), 3b (on exposed sandstone rocks), 3a (on acidic rocks), 6 (on acidic rocks), 7 (on lime-containing schist), 9 (on acidic rocks and soil), 10 (on the bank of the stream), 12 (on shaded limestone rock and on the riverbank), 16 (on limestone rocks along the stream), 21 (on limestone rocks)
44. *D. luridus* Hornsch. – 2 (on acidic rocks and soil), 3 (on exposed acidic rocks), 7 (on lime-containing schists), 12 (on shaded limestone rock), 16 (on limestone rocks along the stream), 21 (on limestone rocks), 22 (on limestone rocks)
45. **D. sinuosus* (Mitt.) Delogne – 2 (on acidic rocks and soil), 10 (on the bank of the stream), 18 (along the stream)
46. **D. spadiceus* (Mitt.) Lim – 7 (on lime-containing schists), 10 (on the bank of the stream), 16 (on limestone rocks along the stream)
47. *D. tophaceus* (Brid.) Lisa – 3 (along the stream)
48. *D. vinealis* (Brid.) R.H. Zander – 10 (on the bank of the stream), 22 (on limestone rocks)
49. *Diphyscium foliosum* (Hedw.) D. Mohr – 14 (on schist)
50. *Ditrichum pallidum* (Hedw.) Hampe – 19 (on soil)
51. *Encalypta streptocarpa* Hedw. – 7 (on schist-containing lime), 10 (on shaded limestone rocks), 12 (on shaded limestone rock), 21 (on limestone rocks)
52. **Eucladium verticillatum* (With.) Bruch & Schimp. – 4, 7 (on lime-containing schist), 10 (on the bank of the stream), 15a (on limestone rocks), 16 (on limestone rocks along the stream)
53. **Eurhynchium striatum* (Hedw.) Schimp. – 3 (on acidic rocks), 5, 14 (on schist), 16 (on limestone rock)
54. **Fissidens bryoides* Hedw. – 1 (on soil), 3a (on soil), 5 (on soil), 12 (on shaded limestone rock)
55. **F. crassipes* Wilson ex Bruch & Schimp. subsp. *crassipes* var. *rufipes* Schimp. – 10 (on the bank of the stream)
56. ***F. crispus* Mont. – 8 (on soil)
57. *F. dubius* P. Beauv. – 3a (on acidic rocks), 5, 7 (on lime-containing schist), 12 (on shaded limestone rock), 16 (on limestone rock), 21 (on limestone rocks)
58. **F. pusillus* (Wilson) Milde – 1 (along the stream), 3a (on acidic rocks), 10 (on the bank of the stream), 13 (on rocks along the river), 15a (on limestone rocks), 16 (on limestone rock)
59. *F. rivularis* (Spruce) Schimp. – 1 (along the stream), 12 (on the riverbank), 14 (on schistose rock along the stream)
60. *F. taxifolius* Hedw. – 1 (on soil), 3a (on soil), 5, 9 (on acidic rocks and soil), 13 (on rocks along the river), 14 (on schistose rock along the stream), 16 (on limestone rock), 18 (along the stream), 19 (along the stream)
61. **Fontinalis antipyretica* Hedw. – 10 (on the bank of the stream), 12 (on the riverbank), 13 (on the bark of *Alnus glutinosa*)

F. antipyretica Hedw. var. *gigantea* (Sull.) Sull. – 3 (along the stream)

62. *Funaria hygrometrica* Hedw. – 16 (on limestone rocks along the stream)
63. *Grimmia decipiens* (Schultz) Lindb. – 6 (on acidic rocks), 11 (on exposed acidic rocks), 20 (on volcanic rock)
64. **G. hartmanii* Schimp. – 8 (on acidic rocks)
65. **G. laevigata* (Brid.) Brid. – 3 (on exposed sandstone rocks), 3b (on exposed acidic rocks), 6 (on acidic rocks), 11 (on exposed acidic rocks)
66. **G. lisae* De Not. – 3 (on exposed acidic rocks), 3b (exposed sandstone rocks), 6 (on acidic rocks), 11 (on exposed acidic rocks), 20 (on volcanic rock)
67. *G. pulvinata* (Hedw.) Sm. – 2 (on acidic rocks and soil), 3 (on exposed acidic rocks), 3b (exposed sandstone rocks), 6 (on acidic rocks), 9 (on acidic rocks and soil), 10 (on calcareous grassland), 21 (on limestone rocks), 22 (on limestone rocks)
68. **G. trichophylla* Grev. – 9 (on acidic rocks and soil), 10 (on calcareous grassland)
69. **Gymnostomum calcareum* Nees & Hornsch. – 7 (on lime-containing schist)
70. **G. viridulum* Brid. – 10 (on calcareous grassland)

71. ** *Gyroweisia tenuis* (Hedw.) Schimp. – 7 (on lime-containing schist)
72. *Hedwigia ciliata* (Hedw.) P. Beauv. – 6 (on acidic rocks), 8 (on acidic rocks), 11 (on exposed acidic rocks)
73. * *H. stellata* Hedenäs – 20 (on volcanic rock)
74. *Homalia trichomanoides* (Hedw.) Brid. – 3 (on acidic rocks), 3a (on acidic rocks), 1 (on soil), 13 (on rocks along the river)
75. *Homalothecium lutescens* (Hedw.) H. Rob. – 2 (on acidic rocks and soil), 22 (on limestone rocks)
76. *H. philippeanum* (Spruce) Schimp. – 10 (on shaded limestone rocks), 21 (on limestone rocks)
77. *H. sericeum* (Hedw.) Schimp. – 1 (on soil and on the bark of *Quercus* sp.), 3 (on exposed acidic rocks), 6 (on acidic rocks), 7 (on lime-containing schist), 8 (on acidic rocks and on the bark of *Quercus* sp.), 10 (on calcareous grassland, on shaded limestone rocks, and on the bark of *Quercus* sp.), 12 (on shaded limestone rock), 14 (on the brak of *Quercus* sp.), 18 (on the bark of *Quercus* sp.), 21 (on limestone rocks), 22 (on limestone rocks)
78. *H. incurvatum* (Schrad. ex Brid.) Loeske – 3a (on acidic rocks), 8 (on acidic rocks), 12 (on shaded limestone rock), 16 (on limestone rocks along the stream)
79. * *Hygroamblystegium tenax* (Hedw.) Jenn. – 3 (along the stream), 10 (on the bank of the stream), 12 (on the riverbank), 13 (on the bark of *Alnus glutinosa*), 16 (on limestone rocks along the stream), 18 (along the stream)
80. *H. varium* (Hedw.) Mönk. – 18 (along the stream)
81. * *Hygrohypnum luridum* (Hedw.) Jenn. – 16 (on limestone rocks along the stream)
82. * *Hypnum cupressiforme* Hedw. var. *cupressiforme* – 1 (on soil, on the bark of *Fagus orientalis* and *Quercus* sp.), 3 (on decaying wood and on the bark of *Fagus orientalis*), 6 (on acidic rocks and on the bark of *Quercus* sp.), 8 (on acidic rocks and on the bark of *Quercus* sp.), 9 (on acidic rocks and soil), 10 (on the bark of *Quercus* sp.), 11 (on exposed acidic rocks), 14 (on soil and on the brak of *Quercus* sp.), 18 (on soil and on the bark of *Quercus* sp.), 19 (on soil and on the bark of *Quercus* sp.), 20 (on soil), 21 (on limestone rocks), 22 (on limestone rocks)

* *H. cupressiforme* var. *lacunosum* Brid. – 2 (on acidic rocks and soil), 6 (on acidic rocks)

83. *Isothecium alopecuroides* (Lam. ex Dubois) Isov. – 1 (on the bark of *Quercus* sp.), 3 (on the bark of *Fagus orientalis*), 5, 9 (on acidic rocks and soil), 12 (on shaded limestone rock), 13 (on rocks along the river), 16 (on limestone rock), 14 (on soil), 19 (on the bark of *Fagus orientalis*), 21 (on limestone rocks)
84. * *Kindbergia praelonga* (Hedw.) Ochyra – 1 (on soil), 3 (on acidic rocks), 5 (on soil), 14 (on soil), 18 (along the stream)
85. *Leptodictyum riparium* (Hedw.) Warnst. – 10 (on the bank of the stream)
86. * *Leskea polycarpa* Hedw. – 6 (on the bark of *Juglans*), 12 (on the bark of *Alnus glutinosa*)
87. *Leucobryum glaucum* (Hedw.) Ångstr.– 3 (on soil)
88. * *Leucodon sciuroides* (Hedw.) Schwägr. – 1 (on the bark of *Quercus* sp.), 6 (on the bark of *Quercus* sp.), 8 (on the bark of *Quercus* sp.), 10 (on the bark of *Quercus* sp.), 12 (on the bark of *Alnus glutinosa*), 14 (on the brak of *Quercus* sp.), 17 (on bark of *Celtis* trees), 18 (on the bark of *Quercus* sp.), 19 (on the bark of *Quercus* sp.)
89. * *Mnium marginatum* (Dicks.) P. Beauv. – 3 (on acidic rocks), 7a (on acidic rocks), 10 (on the bank of the stream), 13 (on rocks along the river), 19 (along the stream)
90. *M. stellare* Hedw. – 1 (on soil), 3 (on acidic rocks), 7 (on lime-containing schist), 7a (on acidic rocks), 9 (on acidic rocks and soil), 10 (on the bank of the stream), 12 (on shaded limestone rock), 13 (on rocks along the river), 14 (on schist), 15a (on limestone rocks), 16 (on limestone rock)
91. *Neckera besseri* (Lobarz.) Jur. – 10 (on shaded limestone rocks), 12 (on shaded limestone rock), 21 (on limestone rocks)
92. *N. complanata* (Hedw.) Huebener – 3 (on the bark of *Fagus orientalis*), 5, 7 (on lime-containing schist), 8 (on the bark of *Quercus* sp.), 10 (on shaded limestone rocks), 12 (on shaded limestone rock), 13 (on rocks along the river), 15a (on limestone rocks), 16 (on limestone rock), 21 (on limestone rocks)
93. *N. crispa* Hedw. – 10 (on shaded limestone rock), 12 (on shaded limestone rock), 16 (on limestone rock), 21 (on limestone rocks)
94. *N. menziesii* Drumm.– 15a (on limestone rocks)
95. *N. pennata* Hedw. – 7a (on the base of a tree)
96. *Orthotrichum affine* Schrad. ex Brid. – 3a (on the bark of tree), 6 (on the bark of *Juglans*), 12 (on the bark of *Alnus glutinosa*), 14 (on the brak of *Quercus* sp.), 17 (on bark of *Celtis* trees)

97. *O. anomalum* Hedw. – 3b (exposed sandstone rocks), 6 (on acidic rocks), 10 (on calcareous grassland), 22 (on limestone rocks)
98. *O. cupulatum* Hoffm. ex Brid. var. *cupulatum* – 2 (on acidic rocks and soil), 10 (on calcareous grassland), 22 (on limestone rocks)

O. cupulatum Hoffm. ex Brid. var. *riparium* Huebener – 3 (along the stream), 3a (along the stream), 10 (on the bank of the stream), 16 (on limestone rocks along the stream)

99. *O. diaphanum* Schrad. ex Brid. – 2 (on the bark of *Quercus* sp.), 17 (on bark of *Celtis* trees)
100. *O. lyellii* Hook. & Taylor – 3a (on the bark of tree), 14 (on the brak of *Quercus* sp.), 18 (on the bark of *Quercus* sp.), 19 (on the bark of *Quercus* sp.)
101. *O. pumilum* Sw. ex anon. – 17 (on bark of *Celtis* trees)
102. * *O. rupestre* Schleich. ex Schwägr. – 3b (exposed sandstone rocks), 6 (on acidic rocks)
103. * *O. stellatum* Brid. – 2 (on the bark of *Quercus* sp.)
104. * *O. stramineum* Hornsch. ex Brid. – 3a (on the bark of tree)
105. *O. striatum* Hedw. – 2 (on the bark of *Quercus* sp.), 17 (on bark of *Celtis* trees), 18 (on the bark of *Quercus* sp.), 19 (on the bark of *Quercus* sp.)
106. *Oxyrrhynchium hians* (Hedw.) Loeske – 1 (along the stream and on soil), 2 (on acidic rocks and soil), 3 (along the stream), 5, 7 (on lime-containing schist), 9 (on acidic rocks and soil), 10 (on shaded limestone rocks), 12 (on shaded limestone rock), 13 (on rocks along the river), 16 (on limestone rocks along the stream), 18 (along the stream), 19 (along the stream), 21 (on limestone rocks)
107. * *O. pumilum* (Wilson) Loeske – 1 (on soil), 3 (on acidic rocks), 3a (on acidic rocks), 6 (on soil), 7 (on lime-containing schist), 7a (on acidic rocks), 9 (on acidic rocks and soil),10 (on shaded limestone rocks), 12 (on shaded limestone rock), 15a (on limestone rocks), 18 (along the stream)
108. * *O. schleicheri* (R. Hedw.) Röll – 1 (along the stream), 7 (on lime-containing schist), 7a (on acidic rocks), 9 (on acidic rocks and soil)
109. * *Oxystegus tenuirostris* (Hook. & Taylor) A.J.E. Sm. – 10 (on the bank of the stream), 13 (on the bark of *Alnus glutinosa*), 16 (on limestone rocks along the stream)
110. * *Philonotis arnellii* Husn. – 9 (on acidic rocks and soil)
111. *Plagiomnium affine* (Blandow ex Funck) T.J. Kop. – 3 (on acidic rocks), 5, 9 (on acidic rocks and soil), 11 (on exposed acidic rocks), 15a (on limestone rocks), 19 (on soil)
112. *P. cuspidatum* (Hedw.) T.J. Kop. – 12 (on shaded limestone rock), 16 (on limestone rock), 21 (on limestone rocks)
113. *P. rostratum* (Schrad.) T.J. Kop. – 3 (along the stream and on acidic rocks), 3a (on acidic rocks), 7a (on acidic rocks), 10 (on shaded limestone rocks), 12 (on shaded limestone rock), 19 (along the stream), 21 (on limestone rocks)
114. *P. undulatum* (Hedw.) T.J. Kop. – 3 (along the stream), 5, 7a (on acidic rocks), 10 (on the bank of the stream), 13 (on rocks along the river), 14 (on schist), 16 (on limestone rocks along the stream)
115. *Plagiopus oederianus* (Sw.) H.A. Crum & L.E. Anderson – 7 (lime-containing schist)
116. * *Plagiothecium cavifolium* (Brid.) Z. Iwats. – 1 (on soil), 3 (on acidic rocks), 3a (on acidic rocks), 5, 9 (on acidic rocks and soil), 13 (on rocks along the river), 14 (on schist)
117. ** *P. curvifolium* Schlieph. ex Limpr. – 1 (on soil), 3 (on acidic rocks), 7a (on acidic rocks)
118. * *P. nemorale* (Mitt.) A. Jaeger – 14 (on schist), 18 (along the stream), 19 (along the stream)
119. * *P. succulentum* (Wilson) Lindb. – 1 (along the stream), 5
120. *Plasteurhynchium striatulum* (Spruce) M. Fleisch. – 10 (on shaded limestone rocks), 12 (on shaded limestone rock), 15a (on limestone rocks), 16 (on limestone rock), 21 (on limestone rocks)
121. *Platyhypnidium riparioides* (Hedw.) Dixon – 1 (along the stream), 3 (along the stream), 5, 7 (lime-containing schist and acidic rocks), 10 (on the bank of the stream), 12 (on the riverbank), 13 (on the bark of *Alnus glutinosa*), 14 (on schistose rock along the stream), 16 (on limestone rocks along the stream), 18 (along the stream), 19 (along the stream)
122. * *Pleuridium acuminatum* Lindb. – 6 (on acidic rocks), 11 (on exposed acidic rocks), 19 (on soil), 20 (on soil)
123. * *Pleurochaete squarrosa* (Brid.) Lindb. – 3 (on exposed acidic rocks), 2 (on acidic rocks and soil), 11 (on exposed acidic rocks), 21 (on limestone rocks), 22 (on limestone rocks)
124. *Pogonatum nanum* (Hedw.) P. Beauv. – 5a (on soil)
125. * *P. urnigerum* (Hedw.) P. Beauv. – 11 (on exposed acidic rocks)

126. * *Pohlia melanodon* (Brid.) A.J. Shaw – 3a (on soil), 4, 10 (on the bank of the stream)
127. * *P. wahlenbergii* (F. Weber & D. Mohr) A.L. Andrews – 7 (on lime-containing schist)
128. *Polytrichastrum formosum* (Hedw.) G.L. Sm. – 5, 14 (on soil)
129. *Polytrichum juniperinum* Hedw. – 6 (on acidic rocks), 11 (on exposed acidic rocks), 19 (on soil), 20 (on soil)
130. * *P. piliferum* Hedw. – 2 (on acidic rocks and soil), 6 (on acidic rocks), 9 (on acidic rocks and soil), 20 (on soil)
131. *Pseudoscleropodium purum* (Hedw.) M. Fleisch. – 20 (on soil)
132. * *Pseudotaxiphyllum elegans* (Brid.) Z. Iwats. – 14 (on schist)
133. * *Pterigynandrum filiforme* Hedw. – 1 (on the bark of *Fagus orientalis*), 3 (on the bark of *Fagus orientalis*), 5, 15a (on the bark of *Fraxinus excelsior*)
134. *Pterogonium gracile* (Hedw.) Sm. – 6 (on acidic rocks and on the bark of *Quercus*), 11 (on exposed acidic rocks)
135. ** *Racomitrium elongatum* Ehrh. ex Frisvoll – 2 (on acidic rocks and soil), 9 (on acidic rocks and soil), 11 (on exposed acidic rocks), 20 (on soil)
136. * *Rhizomnium punctatum* (Hedw.) T.J. Kop. – 3 (along the stream), 14 (on schist), 18 (along the stream), 19 (along the stream)
137. *Rhodobryum ontariense* (Kindb.) Kindb. – 21 (on soil)
138. * *Rhynchostegiella curviseta* (Brid.) Limpr. – 12 (on shaded limestone rock), 16 (on limestone rocks along the stream)
139. * *R. tenella* (Dicks.) Limpr. – 16 (on limestone rocks along the stream)
140. ** *R. teneriffae* (Mont.) Dirkse & Bouman – 1 (along the stream), 5, 14 (on schistose rock along the stream)
141. *Schistidium apocarpum* (Hedw.) Bruch & Schimp. – 18 (along the stream)
142. * *S. brunnescens* Hedw. subsp. *griseum* (Nees & Hornsch.) H.H. Blom – 22 (on limestone rocks)
143. * *S. crassipilum* H.H. Blom – 2 (on acidic rocks and soil), 3b (exposed sandstone rocks), 3a (along the stream), 7 (on lime-containing schist), 9 (on acidic rocks and soil), 10 (on calcareous grassland and on shaded limestone rocks), 12 (on shaded limestone rock), 16 (on limestone rocks along the stream), 21 (on limestone rocks), 22 (on limestone rocks)
144. * *S. helveticum* (Schkuhr) Deguchi – 10 (on calcareous grassland)
145. * *Sciuro-hypnum flotowianum* (Sendtn.) Ignatov & Huttunen – 1 (on the bark of *Quercus* sp.)
146. * *Scleropodium touretii* (Brid.) L.F. Koch – 1 (on soil), 7 (on lime-containing schist), 14 (on soil), 18 (on soil)
147. *Scorpiurium circinatum* (Bruch) M. Fleisch. & Loeske – 10 (on shaded limestone rocks), 12 (on shaded limestone rock)
148. * *Seligeria recurvata* (Hedw.) Bruch & Schimp. – 5
149. *Syntrichia calcicola* J.J. Amann – 22 (on limestone rocks)
150. *S. montana* Nees – 10 (on calcareous grassland), 22 (on limestone rocks)
151. *S. papillosa* (Wilson) Jur. – 17 (on bark of *Celtis* trees)
152. * *S. ruralis* (Hedw.) F. Weber & D. Mohr var. *ruralis* – 21 (on limestone rocks)

* *S. ruralis* (Hedw.) F. Weber & D. Mohr var. *ruraliformis* (Besch.) Delogne – 2 (on acidic rocks and soil)

153. * *S. virescens* (De Not.) Ochyra – 6 (on the bark of *Quercus* sp.), 17 (on bark of *Celtis* trees)
154. * *Taxiphyllum wissgrillii* (Garov.) Wijk & Margad. – 1 (on soil), 5, 7a (on acidic rocks), 12 (on shaded limestone rock), 15a (on limestone rocks), 16 (on limestone rock), 19 (along the stream)
155. *Thamnobryum alopecurum* (Hedw.) Gangulee – 1 (along the stream), 3 (on acidic rocks), 5, 7a (on acidic rocks), 10 (on shaded limestone rocks), 12 (on shaded limestone rock), 13 (on rocks along the river), 14 (on schistose rock along the stream), 15a (on limestone rocks), 16 (on limestone rocks along the stream), 18 (along the stream), 19 (along the stream)
156. *Timmia bavarica* Hessl. – 15a (on limestone rocks)
157. ** *Tortella inflexa* (Bruch) Broth. – 7 (on lime-containing schist)
158. * *T. tortuosa* (Hedw.) Limpr. – 7 (on lime-containing schist), 9 (on acidic rocks and soil), 16 (on limestone rock), 21 (on limestone rocks)
159. * *Tortula inermis* (Brid.) Mont. – 2 (on acidic rocks and soil)
160. *T. muralis* Hedw. – 2 (on acidic rocks and soil), 12 (on shaded limestone rock), 22 (on limestone rocks)

161. *T. subulata* Hedw. – 8 (on acidic rocks), 14 (on soil), 21 (on limestone rocks)
162. *Trichostomum brachydontium* Bruch – 6 (on acidic rocks), 7 (on lime-containing schist)
163. *T. crispulum* Bruch – 12 (on shaded limestone rock)
164. ** *Ulota bruchii* Hornsch. ex Brid. – 5 (on the bark of *Fagus orientalis*), 19 (on the bark of *Fagus orientais*)
165. *Weissia brachycarpa* (Nees & Hornsch.) Jur. – 3b (exposed sandstone rocks), 6 (on acidic rocks), 11 (on exposed acidic rocks), 19 (on soil)
166. *W. condensa* (Voit) Lindb. – 10 (on calcareous grassland)
167. * *Zygodon rupestris* Schimp. ex Lorentz – 6 (on the bark of *Quercus* sp.), 8 (on the bark of *Quercus* sp.), 10 (on the bark of *Quercus* sp.)

Liverworts (*Marchantiophyta*)

1. * *Calypogeia fissa* (L.) Raddi – 1 (on soil), 5 (on soil), 9 (on acidic rocks and soil), 14 (on soil)
2. * *Cephalozia bicuspidata* (L.) Dumort. – 5 (on soil), 14 (on schist), 19 (on soil)
3. ** *Cephaloziella baumgartneri* Schiffn. – 7 (on lime-containing schist)
4. * *C. divaricata* (Sm.) Schiffn. – 2 (on acidic rocks and soil), 11 (on exposed acidic rocks), 19 (on soil), 20 (on soil), 6 (on acidic rocks), 9 (on acidic rocks and soil)
5. *C. turneri* (Hook.) Müll. Frib. – 14 (on schist)
6. * *Chiloscyphus pallescens* (Ehrh. ex Hoffm.) Dumort. – 5
7. * *C. polyanthos* (L.) Corda – 14 (on schistose rock along the stream)
8. * *Cololejeunea rosettiana* (C. Massal.) Schiffn. – 12 (on shaded limestone rock), 15a (on limestone rocks), 16 (on limestone rock)
9. *Conocephalum conicum* (L.) Dumort. – 3 (along the stream), 5, 10 (on shaded limestone rocks), 14 (on schist), 16 (on limestone rocks along the stream), 19 (along the stream)
10. * *C. salebrosum* Szweykowski, Buczkowska & Odrzykoski – 12 (on shaded limestone rock)
11. *Diplophyllum albicans* (L.) Dumort. – 14 (on schist)
12. *Fossombronia pusilla* (L.) Nees. – 9 (on acidic rocks and soil)
13. * *F. wondraczekii* (Corda) Lindb. – 5 (on soil), 5a (on soil)
14. *Frullania dilatata* (L.) Dumort. – 1 (on the bark of *Fagus orientalis*), 3 (on the bark of *Fagus orientalis*), 3b (exposed sandstone rocks), 5 (on the bark of *Fagus orientalis*), 6 (on acidic rocks and on the bark of *Juglans*), 10 (on the bark of *Quercus* sp.), 11 (on exposed acidic rocks), 14 (on the brak of *Quercus* sp.), 15a (on the bark of *Fraxinus excelsior*), 17 (on bark of *Celtis* trees), 18 (on the bark of *Quercus* sp.), 19 (on the bark of *Fagus orientais* and *Quercus* sp.)
15. *F. tamarisci* (L.) Dumort. – 14 (on schist), 19 (on the bark of *Fagus orientais*)

F. tamarisci (L.) Dumort. var. *mediterranea* De Not. – 3a (on acidic rocks)

16. *Jungermannia atrovirens* Dumort. – 3a (along the stream)
17. * *J. gracillima* Sm. – 9 (on acidic rocks and soil)
18. *Lejeunea cavifolia* (Ehrh.) Lindb. – 1 (on the bark of *Fagus orientalis*), 3 (on the bark of *Fagus orientalis* and acidic rocks), 3a (on acidic rocks), 5 (on decaying wood), 7 (on lime-containing schist), 9 (on acidic rocks and soil)), 10 (on shaded limestone rocks and on the bank of the stream), 12 (on shaded limestone rock), 13 (on rocks along the river), 14 (on schistose rock along the stream), 15a (on limestone rocks and on the bark of *Fraxinus excelsior*), 21 (on limestone rocks)
19. *Lophocolea bidentata* (L.) Dumort. – 3 (on acidic rocks)
20. *L. heterophylla* (Schrad.) Dumort. – 5 (on decaying wood), 9 (on acidic rocks and soil), 13 (on rocks along the river), 14 (on schist), 15a (on limestone rocks)
21. * *L. minor* Nees – 10 (on shaded limestone rocks)
22. ** *Leiocolea turbinata* (Raddi) H. Bruch. – 7 (on lime-containing schist)
23. *Lunularia cruciata* (L.) Lindb. – 6 (on soil), 7 (on lime-containing schist), 10 (on the bank of the stream), 12 (on the riverbank), 13 (on rocks along the river), 18 (along the stream)
24. * *Marchantia polymorpha* L. subsp. *polymorpha* – 3 (along the stream)
25. * *Marsupella funckii* (F. Weber & D. Mohr.) Dumort. – 9 (on acidic rocks and soil), 14 (on schist)
26. *Metzgeria conjugata* Lindb. – 3a (on acidic rocks), 14 (on schist)
27. * *M. furcata* (L.) Dumort. – 1 (on the bark of *Fagus orientalis* and *Quercus* sp.), 3 (on the bark of *Fagus orientalis*), 8 (on acidic rocks and on the bark of *Quercus* sp.), 13 (on rocks along the river), 14 (on schist), 15a (n the bark of *Sorbus*), 19 (on the bark of *Quercus* sp.)

28. *Pellia endiviifolia* (Dicks.) Dumort. – 1 (along the stream), 3 (along the stream), 9 (on acidic rocks and soil), 10 (on the bank of the stream), 12 (on the riverbank), 13 (on rocks along the river), 16 (on limestone rocks along the stream), 18 (along the stream)
29. *Plagiochila porelloides* (Torrey ex Nees) Lindenb. – 1 (on soil), 3 (on acidic rocks and on the bark of *Fagus orientalis*), 5, 7 (on lime-containing schist), 9 (on acidic rocks and soil), 10 (on shaded limestone rocks and on the bank of the stream), 13 (on rocks along the river), 14 (on schist), 16 (on limestone rock), 21 (on limestone rocks)
30. *Porella arboris-vitae* (With.) Grolle – 3a (on acidic rocks), 7a (on acidic rocks), 10 (on shaded limestone rocks), 21 (on limestone rocks)
31. * *P. baueri* (Schiffn.) C.E.O. Jensen – 3 (on the bark of *Fagus orientalis*)
32. * *P. cordaeana* (Huebener) Moore – 8 (on acidic rocks)
13. *P. platyphylla* (L.) Pfeiff. – 1 (on the bark of *Fagus orientalis* and *Quercus* sp.), 6 (on the bark of *Quercus*), 8 (on the bark of *Quercus* sp.), 9 (on acidic rocks and soil), 10 (on shaded limestone rocks), 12 (on shaded limestone rock), 13 (on the bark of *Alnus glutinosa*), 14 (on the brak of *Quercus* sp.)
34. * *Radula complanata* (L.) Dumort. – 1 (on the bark of *Fagus orientalis* and *Quercus* sp.), 3 (on the bark of *Fagus orientalis* and on acidic rocks), 3a (on acidic rocks), 5 (on the bark of *Fagus orientalis*), 7 (on lime-containing schist), 8 (on acidic rocks)10 (on shaded limestone rocks), 11 (on exposed acidic rocks), 13 (on rocks along the river), 18 (along the stream)
35. *Reboulia hemisphaerica* (L.) Raddi – 7 (on lime-containing schist), 10 (on shaded limestone rocks)
36. *Scapania irrigua* (Nees) Nees – 9 (on acidic rocks and soil)
37. *S. nemorea* (L.) Grolle – 14 (on schist)
38. ** *Southbya tophacea* (Spruce) Spruce – 7 (on lime-containing schist)
39. ** *Targionia lorbeeriana* Müll. Frib. – 6 (on soil)

Discussion

General species richness

During the present study of the Bulgarian territory of Mt Strandzha, 206 species (167 mosses and 39 liverworts) were collected, which constitute *ca.* 30 % of all bryophytes occurring in Bulgaria. Eighty-nine mosses and 20 liverworts were reported for the first time for Mt Strandzha. There were 123 species (94 mosses and 29 liverworts) published (Ganeva & Natcheva 2004). Thus the bryophyte flora of Mt Strandzha appears to be diverse and with an interesting composition both of species with Mediterranean (e.g. *Dicranella howei*, *Scleropodium touretii, Tortella inflexa*) and with Boreal (e.g. *Dicranella screberiana, Dicranum scoparium, Campyliadelphus chrysophyllus*) affinities.

New taxa to Bulgaria

It is remarkable that during the present study a large number of taxa new to the country were found: 13 species and one subspecies.

Bryum bornholmense – in the Balkans occurs only in Greece and Turkey (Sabovljević & al. 2008).

Dicranella howei – on the Balkan Peninsula is known from Albania (Colacino & Marka 2009), Bosnia and Herzegovina, Greece, Croatia, Montenegro, and Turkey (Sabovljević & al. 2008), Serbia (Papp & Erzberger 2009).

Fissidens crispus – widespread on the Balkan Peninsula (Sabovljević & al. 2008).

Gyroweisia tenuis – widespread on the Balkan Peninsula (Sabovljević & al. 2008).

Plagiothecium curvifolium – widespread on the Balkan Peninsula (Sabovljević & al. 2008).

Racomitrium elongatum – known also from Greece, Macedonia, Romania, Slovenia, and Serbia (Sabovljević & al. 2008). Taxonomically problematic, probably much more widespread or missidentified for *R. ericoides*.

Rhynchostegiella teneriffae – widespread on the Balkan Peninsula (Sabovljević & al. 2008).

Tortella inflexa – widespread on the Balkan Peninsula (Sabovljević & al. 2008).

Ulota bruchii – known from Bosnia and Herzegovina, Croatia, Romania, Slovenia, and Serbia (Sabovljević & al. 2008).

Cephaloziella baumgartneri – widespread on the Balkan Peninsula (Sabovljević & Natcheva 2006).

Leiocolea turbinata – widespread on the Balkan Peninsula (Sabovljević & Natcheva 2006).

Southbya tophacea – occurs in all Balkan countries with Mediterranean influence (Sabovljević & Natcheva 2006).

Targionia lorbeeriana – occurs only in Greece and Croatia (Sabovljević & Natcheva 2006).

Conservation importance

Three species found during this study are included in the *Red Data Book of European Bryophytes* (ECCB 1995), namely *Anomodon rostratus* (R), *Neckera pennata* (VU), and *Rhynchostegiella teneriffae* (R). There are 24 nationally red-listed species (Natcheva & al. 2006) on the Bulgarian territory of Mt Strandzha: *Anomodon rostratus* (CR), *Bryum torquescens* (VU), *Fissidens rivularis* (VU), *Neckera pennata* (VU), *Orthotrichum pumilum* (NT), *O. stellatum* (EN), *Oxyrrhynchium pumilum* (EN), *O. schleicheri* (CR), *Philonotis arnelli* (VU), *Pseudotaxiphyllum elegans* (VU), *Rhynchostegiella tenella* (VU), *Sciuro-hypnum flotowianum* (VU), *Scleropodium touretii* (EN), *Scorpiurium circinatum* (EN), *Seligeria recurvata* (NT), *Syntrichia papillosa* (EN), *S. virescens* (VU), *Taxiphyllum wissgrillii* (VU), *Trichostomum brachydontium* (VU), *Calypogeia fissa* (EN), *Cephaloziella turneri* (CR), *Jungermannia gracillima* (VU), *Marsupella funckii* (VU), and *Porella baueri* (NT).

Other interesting species found during this study

Dicranoweisia cirrata – this is the third locality of this recently found species for the bryophyte flora of Bulgaria, so far known from the Sakar (Natcheva 2005) and Vitosha Mts (Ganeva 2010).

Hedwigia stellata – this Submediterranean species is perhaps more widespread, but so far it has been known only from three localities in the Rila Mts (Ganeva & Düll 1999), West Forebalkan (Ganeva & al. 2008) and Pirin Mts (Lüth 2007).

Rhynchostegiella curviseta – this is the second locality for this species, known only from the Western Balkan Range (Papp & al. 2006).

Zygodon rupestris – the species is perhaps more widespread but underrecorded in Bulgaria, having been reported only from the Rila Mts (Natcheva 2008).

Cololejeunea rosettiana – this is the first confirmed occurrence of the species in Bulgaria.

It should be underlined in conclusion that, besides being extremely important for the flowering plant conservation, Mt Strandzha is equally important for the conservation of bryophyte diversity.

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