Additions to the Bryophyte Flora of Bulgaria

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Abstract – New and noteworthy records of bryophytes from Bulgaria are reported. *Bartramia stricta*, *Bryum funckii*, *Calypogeia integristipula*, *Dicranella humilis*, *Dicranoweisia compacta*, * Ditrichum gracile*, *Grimmia anomala*, *G. lisae*, *G. meridionalis*, *Hedwigia ciliata var. leucophaea*, *Hypnum bambergeri*, *Hypnum recurvatum*, *Schistidium crassipilum*, *S. elegantulum*, *S. robustum*, *S. singarense* and *Tortella bambergeri* are new to Bulgaria, and some additional species are new to different regions of Bulgaria.

Mosses/ liverworts/new records / distribution / Bulgaria

The collections for this article were made during excursions with the Nordic Bryological Society from 10 to 15 July 2005 throughout Bulgaria, invited and led by Anna Ganeva and Rayna Natcheva, and during two subsequent weeks travelling with Florian Hans through the country. Specimens are deposited in SOM and in the private herbarium of the author, or as otherwise indicated. Nomenclature and distribution data are based on the two check-lists of Bulgaria (GANEVA & NATCHEVA 2003, NATCHEVA & GANEVA 2005), which contain 2 species of hornworts, 173 liverworts and 531 mosses. In a country like Bulgaria, with high diversity of climate, geology and morphology, about 800-1000 species of bryophytes could be expected. So there is a high probability of further discoveries. The novelties are indicated by an asterisk (*).

Liverworts

*Calypogeia integristipula* Steph.


Widespread in the Northern Hemisphere.

*Lophozia bicrenata* (Hoffm.) Dumort.

**Bulgaria**: PIRIN MT.: Sandanski, path from Sandanski Chalet to Kamenitsa Chalet, 41°42’N 23°09’E, 1550 m a.s.l., shady bank beside path, 22 July 2005. *M. Lüth 4975*.

This species is not listed in the check-list of Bulgaria (GANEVA & NATCHEVA 2003); however, DAMSHOLT (2002) includes Bulgaria in its distribution range.

*Marsupella brevissima* (Dum.) Grolle

**Bulgaria**: RILA MT.: Blagoevgrad, path from Makedonija lodge to German (peak), 41°42’N 23°09’E, 2200 m a.s.l., on soil in snow-bed together with *Anthelia juratzkana* and *Kiaeria blyttii*, 18 July 2005, *M. Lüth 4925*.

Hitherto only known from Pirin Mt., new to Rila Mt.

Mosses

*Bartramia stricta* Brid.

**Bulgaria**: STROUМА VALLEY: Kresna, Moravksa, NE-exp. dry slope, 42°12’N 23°24’E, 250 m a.s.l., between rocks on steep part of the slope, 21 July 2005, *M. Lüth 4954*.

The dry slopes near Kresna are known for Mediterranean plants, for example *Homalotheicum aureum* (Spruce) Robins.. The region of Strouma Valley is adjacent to Greece and warm and dry climatic conditions reach Bulgaria through the gap formed by the valley in the high mountains around. *Bartramia stricta* is a mainly Mediterranean species and is new to Bulgaria.
*Bryum funckii* Schwägr.

**Bulgaria:** STROUMA VALLEY: Kresna, Moravska, NE-exp. dry slope, 42°12’N 23°24’E, 250 m a.s.l., on dry soil over rock, 21 July 2005, *M. Lüth* 4953.

This species grows rare to scattered through Europe on dry basic soil.

*Dicranella humilis* R. Ruthe

**Bulgaria:** RILA MT.: Path to Malyovitsa chalet, 41°38’N 24°24’E, 1800 m a.s.l., on bank with acid soil beside the path, 11 July 2005, *M. Lüth* 4858.

Pioneer plant of unstable substrates, rare to scattered through Middle- and North Europe.

*Dicranoweisia compacta* (Schwägr.) Schimp.


Distinguished by the cucullate leaf apex, the short seta of just a few millimetres and the completely papillose peristome. This Nordic and alpine species grows only above timber line, in the Alps above 2000 m.

*Dicranum spadiceum* J. E. Zetterst.

**Bulgaria:** PIRIN MT.: Bansko, path from Vihren chalet to Glavnishka porta, 41°48’N 24°36’E, 2300 m a.s.l., on soil in rocky grass with *Pinus mugo*, 20 July 2005, *M. Lüth* 4941.

In Bulgaria this alpine species was hitherto is known only from Rila Mt.. New to Pirin Mt.

*Ditrichum gracile* (Mitt.) Kuntze

**Bulgaria:** RHODOSES MT.: Chudnite mostove (Miracle Bridges), 43°13’N 23°28’E, ~900 m a.s.l., basic rock at the bottom of the gorge, 15 July 2005, *M. Lüth* 4881.

This taxon has been separated from *D. flexicaule* at species level by FRISVOLL (1985). With the characters given in this paper, clear separation is not always possible. However, leaf sections are distinct in both taxa. Whereas *D. flexicaule* has a perfect round and smooth section with the nerve not differentiated from the lamina, the section of *D. gracile* is somewhat keeled, papillose and with the nerve well differentiated (pictures in LÜTH 2006).

*Grimmia anomala* Hampe ex Schimp.

**Bulgaria:** RILA MT.: Blagoevgrad, plateau at German, 43°13’N 23°28’E, 2340 m a.s.l., shady side of a rock in alpine grass, 18 July 2005, *M. Lüth* 4939.

This species looks similar to *Grimmia hartmanii*, and like it has gemmae at the leaf apex, but it has a papillose lamina and a different nerve structure in section. It replaces *G. hartmanii*, which is mainly a forest plant, in higher altitudes above the timber line.

*Grimmia decipiens* (Schultz) Lindb.


Hitherto known only from Pirin Mt. and Strandzha Mt. New to Rila Mt. and Strouma Valley.

*Grimmia elatior* Bruch ex Bals.-Criv. & De Not.


Hitherto only known from West Stara Plania (Balkan range) and West Rhodopes Mt., new to Rila Mt. and Pirin Mt..

*Grimmia lisae* De Not.

**Bulgaria:** STROUMA VALLEY: Kresna, Moravska, NE-exp. dry slope, 42°13’N 23°38’E, 250 m a.s.l., on little rock, 21 July 2005, *M. Lüth* 4957.

A species with mainly Mediterranean distribution. One of the expected species at this locality with a warm climate (see above at *Bartramia stricta*).

*Grimmia meridionalis* (Müll. Hal.) E. Maier

**Bulgaria:** STROUMA VALLEY: Kresna, Moravska, NE-exp. dry slope, 42°13’N 23°38’E, 250 m a.s.l., on soil over rock, 21 July 2005, *M. Lüth* 4958. WEST FRONTIER MT.: Gorna Breznitsa above Kresna,
A Mediterranean species like *G. lisae* (see above), newly circumscribed by MAIER (2002).

**Grimmia muehlenbeckii** Schimp.


Hitherto known only from Rhodope Mt.. New to Rila Mt..

**Hedwigia ciliata** var. *leucophaea* Bruch & Schimp.


This taxon is distinguished by a long hyaline leaf apex (22-55% of the leaf length, HEDENÄS 1994), that is pure white and contrasts strongly with the rest of the leaf and is papillose up to the apex. The var. *leucophaea* is mostly found in hot and sunny places, whereas the var. *ciliata* grows in more sheltered and even shaded sites (but also there exists mixed stands).

**Hedwigia stellata** Hedenäs

**Bulgaria:** PIRIN MT.: Sandanski, path from Sandanski Chalet to Kamenitsa Chalet, 41°45'N 23°07'E, 1100 m a.s.l., exposed rock at roadside, 22 July 2005, *M. Lüth* 4978.

Hitherto only known from West Stara Plania and Rhodope Mt., new to Pirin Mt..

**Hypnum bambergeri** Schimp.

**Bulgaria:** RHODOPEZ MT.: Road to Trigrad Gorge, 41°42'N 23°09'E, ~600 m a.s.l., half shady basic rock at roadside, 14 July 2005, *M. Lüth* 4874.

Arctic-alpine species, probably a relict in this lowland and southern area.

**Hypnum recurvatum** (Lindb. & Arnell) Kindb.

**Bulgaria:** RILA MT.: Borovets, road to Maritsa, south of Chernata Skala, 41°42'N 23°09'E, 1380 m a.s.l., exposed rock along road, 17 July 2005, *M. Lüth* 4900.

Hitherto known from the Alps, the Pyrenees, the Balkan Mt. (not written which country) and the Tatra Mt. (FREY et al. 2006).


Hitherto only known from Pirin Mt., new to Rila Mt..

**Schistidium confertum** (Funck) Bruch & Schimp.

**Bulgaria:** PIRIN MT.: Sandanski, road to Sandanski Chalet, 41°45'N 23°07'E, 1100 m a.s.l., exposed rock at roadside, 22 July 2005, *M. Lüth* 4978.

In Bulgaria only known from West Stara Plania and Rhodope Mt., new to Pirin Mt..

**Schistidium crassipilum** H. H. Blom

**Bulgaria:** RHODOPEZ MT.: Road to Trigrad Gorge, 41°45'N 23°07'E, ~600 m a.s.l., shady basic rock at roadside, 14 July 2005, *M. Lüth* 4875.

On basic rocks and concrete the most frequent species of the genus. Described as new by BLOM (1996), therefore its known distribution is still incomplete.

**Schistidium elegantulum** H. H. Blom


Common on basic rocks, but not as frequent as *S. crassipilum*. Another new species described by BLOM (1996).
**Schistidium papillosum** Culm.
**Bulgaria:** PIRIN MT.: Sandanski, road to Sandanski Chalet, 41°41’N 23°24’E, 1350 m a.s.l., half shady granite rock in humid beech forest, 22 July 2005, M. Lüth 4965.
Not a rare species on damp acid rocks, newly circumscribed by BLOM (1996).

*Schistidium robustum* (Nees & Hornsch.) H. H. Blom
**Bulgaria:** RHODOPES MT.: Road to Trigrad Gorge, 41°41’N 23°26’E, ~600 m a.s.l., half shady basic rock at roadside, 14 July 2005, M. Lüth 4873.
One of the typical and common species of the genus on basic rocks, newly circumscribed by BLOM (1996).

*Schistidium singarense* (Schiffn.) Laz.
**Bulgaria:** WEST STARA PLANINA MT. (Balkan): Vrachanska planina, plateau at Ledenika, 41°41’N 23°26’E, 1200 m a.s.l., sunny rocks in pasture, 16 July 2005, M. Lüth 4884.
A black lustrous plant on sunny, hot and basic rocks.

*Tortella bambergeri* (Schimp.) Broth.
**Bulgaria:** WEST STARA PLANINA MT. (Balkan): Vrachanska planina, plateau at Ledenika, 41°39’N 23°22’E, 1200 m a.s.l., sunny rocks in pasture, 16 July 2005, M. Lüth 4886.
Close to *T. tortuosa*, but with easily broken leaf apex and with short cells covering the nerve dorsally near apex.

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**References**