

# New and interesting bryophyte records for Montenegro

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**Abstract.** Seven species, two varieties and one genus have been newly recorded for the bryophyte flora of Montenegro.

**Key words:** Mediterranean flora, Montenegro, mosses

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## Introduction

Bryology has been neglected in the region of Southeastern Europe for quite a long time (Sabovljević & al. 2001). Most data on bryophytes within the territory derive from the first half of the last century and from investigations of foreign botanists. Due to instability in the region, very few investigations have been performed during the last 15 years.

According to the checklists of Sabovljević & Stevanović (1999) and Sabovljević (2000) and some other contributions to the Montenegrin bryoflora (Sabovljević & Stevanović 2000; Dragičević & al. 2001; Milikić et al. 2001; Sabovljević 2003), it consists of 372 moss, 81 liverwort and one hornwort species. Some interesting data on bryology and bryophyte protection in Montenegro can be found in Sabovljević & al. (2001).

## Materials and Methods

Several field expeditions were made by the authors. The senior author visited Boka Kotorska Bay several times during 2001 and 2002. The junior author made some collections in 1998 and 2003 and some of the

material was collected by D. Grubišić in 2000, 2001 and 2002. The new and interesting taxa cited here are limited to the region of Boka Kotorska Bay (Fig. 1). The specimens are deposited in the private herbarium of the first author and BEOU.

### Site details

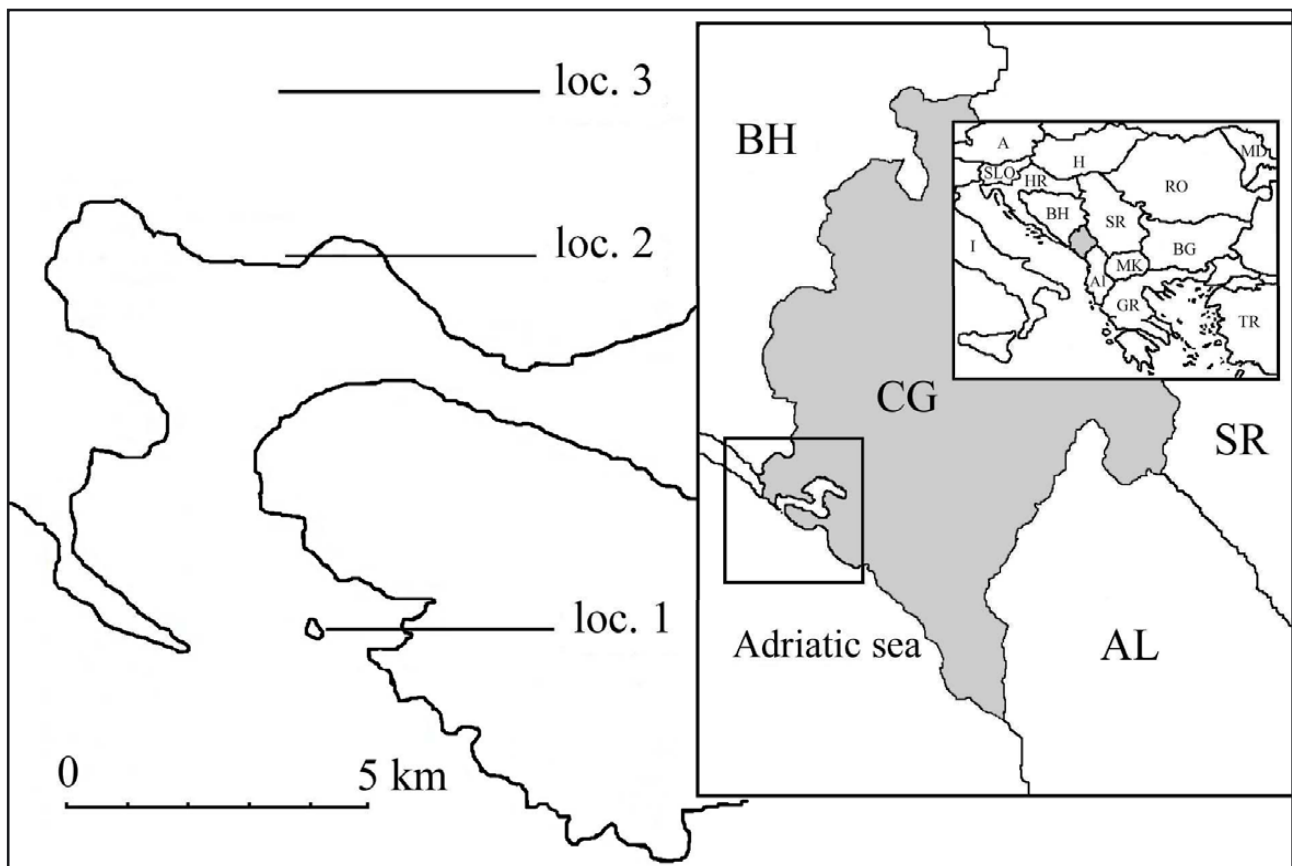
Locality 1. Mamula: UTM 34TBM99, a rocky, exposed, extremely dry small isle with no fresh water and sparse vegetation. A great part of the isle is occupied by an abandoned fortress built of calcareous rocks.

Locality 2. Herceg Novi: UTM 34TBN90, the specimens were collected from different sites with different ecology, mostly shaded concrete walls and trees.

Locality 3. Sedlo (Rastan): UTM 34TBN91, a mountain saddle, ca 400 m, consisting mostly of exposed, rocky slopes with sparse xerophyllous vegetation. A small area is covered by a relatively humid young beech grove.

## Results

Seven species, two varieties and one genus are newly recorded for the Republic of Montenegro



**Fig. 1.** The position of Montenegro in SE Europe, Boka Kotorska Bay and investigated localities [loc. 1. Isle of Mamula; loc. 2. Herceg Novi; loc. 3. Sedlo (Rastan)].

**Abbreviations:** A – Austria; AL – Albania; BG – Bulgaria; BH – Bosnia and Herzegovina; CG – Montenegro; GR – Greece; H – Hungary; HR – Croatia; I – Italy; MD – Moldova; MK – Macedonia; RO – Romania; SLO – Slovenia; SR – Serbia; TR – Turkey

## List of the newly-recorded species

### *Bryum algovicum* Sendtn.

Loc. 1: growing on exposed calcareous rocks partially covered by protosoil, with *Dydimodon sicculus* and *B. argenteum* var. *lanatum*

### *Dydimodon sicculus* Cano, Ros, Garcia-Zamora & J. Guerra

Loc. 1: growing on exposed, sunny calcareous rocks with protosoil, together with *B. algovicum* and *B. argenteum* var. *lanatum*.

### *Orthotrichum rupestre* Schwägr.

Loc. 3: on shaded dry rocks in a young beech grove; also found growing with *Tortella nitida* (Lindb.) Broth. on a vertical concrete wall.

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

Loc. 3: on a vertical rock in a young beech grove,

with *O. rupestre*, *Tortella inflexa* (Bruch) Broth., *Tortula muralis* Hedw. and *Neckera complanata* (Hedw.) Huebener

### *S. crassipilum* H. H. Blom

Loc. 3: on exposed asphalt road with protosoil.

### *Syntrichia pagorum* (Milde) J. J. Amann

Loc. 1: on the bark of a *Pittospora* tree, near the treetop, dry and shaded habitat. On the same tree *Habrodon perpussilus* (De Not.) Lindb., *Fabronia pusilla* Raddi and *Zygodon rupestris* Schimp. ex Lorentz were growing too.

### *Trichostomopsis trivialis* (Müll. Hall.) H. Robert

Loc. 1: on a dry fortress wall composed of calcareous rocks and concrete, growing with *Tortula muralis*. This wall was also inhabited by *D. acutus* (Brid.) K. Saito and *Tortella humilis* (Hedw.) C. Jenner.

List of the newly-recorded moss varieties:

***Bryum argenteum* Hedw. var. *lanatum* (P. Beauv.)**

**Hampe**

Loc. 1: growing on exposed calcareous rocks with protosoil, together with *B. algovicum* and *D. sicculus*. Recently it has been suggested to recognize this taxon with a species rank *Bryum lanatum* (P. Beauv.) Brid (Frahm 2002).

***Bryum capillare* Hedw. var. *ruffolium* (Dix.) Podp.**

Loc. 3: growing on soil, on sunny, west-facing slope. It was not found in close association with other bryophytes, but forming cushions alternated with cushions of *Weissia condensata* (Voit) Lindb. and with *T. muralis*.

A new genus has been recorded (*Timiella* sp.) from loc. 3. However, considering that all the recorded material was sterile, it was not possible to identify it at the species level. No species of this genus has been previously recorded for Montenegro (Sabovljević and Stevanović 1999).

## Conclusions

Seven new species, two varieties and one genus are newly recorded for the Montenegrin bryophyte flora. Such a great number of newly recorded moss species is rather due to a bryologically poorly known area, than to intensive researches. Concentration of the newly-recorded taxa in specific localities (*B. algovicum*, *B. argenteum* var. *lanatum* and *D. sicculus* as co-existing species; *S. confertum* and *O. rupestre* on the same rock) is a clear evidence of the lack of investigations in this area, especially in the wilder zones. We expect that further investigations will reveal new bryophyte taxa to be recorded for Montenegro, as well as for the whole region.

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