

## The halophyte moss species *Bryum marratii* Wilson in Slovakia

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Abstract: The halophyte moss *Bryum marratii* has been recorded in Slovakia, at the Hornádska kotlina basin in 1948. A search was made and apart from original locality, 460 m eastwards another locality has been found at the Hornádska kotlina basin. Phytocoenological relations of the species were investigated, the relevés are included.

Keywords: *Bryum marratii*, halophyte vegetation, Slovakia.

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### Introduction

Although *Bryum* species are not easy to identify, *Bryum marratii* is an exception, having characteristically oblong-ovate or elliptic leaves (Fig. 1) with margins sometimes reflexed below and distinctive, broadly pyriform capsules.

In Europe, the moss occurs on moist, sandy soil near the sea. SMITH (1980) reported its occurrence in Scandinavia, Latvia, Estonia, Faroes, Holland, France, Germany, N. America, but did not include the published localities in Slovakia. NYHOLM (1958) mentioned its occurrence along the coasts of the Baltic countries, North Germany, France and Britain. In Britain it occurs as patches on damp dune slacks (SMITH 1980) and is considered a plant of damp, usually calcareous sandy ground (HILL et al. 1994). DURING (1973) collected *B. marratii* in the dunes of Jutland (the Netherlands) in the communities of the alliance *Nanocyperion flavescens*.

The species is rare in N. America with locations in a spring in Alberta, and in North Dakota in a wet place along a creek in open pasture land (CRUM & ANDERSON 1981).

In Slovakia, the species was firstly collected in Hornádska kotlina basin by ŠMARDÁ (1948), determined by Podpěra. The author collected *Bryum marratii* near Spišské Podhradie, Sivá brada in rich fen, fed by water coming from active travertines. The locality was confirmed by PILOUS (1964). Later, ŠMARDÁ (1961) reported the find near Gánovce, on travertines near a spa, but the locality has never been confirmed.

The moss has in Europe an oceanic distribution (DÜLL 1994).

## Material and Methods

The study was carried out in 2008 where localities of *Bryum marratii* were located in the field with the help of published data (ŠMARDÁ 1948; PILOUS 1964). The phytocoenological sampling was made following procedures of the Zürich-Montpellier School (BRAUN-BLANQUET 1964; WESTHOFF & VAN DEN MAAREL 1978), using the modified 9-degree Braun-Blanquet's sampling scale (BARKMAN et al. 1964). The geographical coordinates are recorded in the system WGS 84, Garmin eTrex Vista device.

## Results and discussion

The moss grows scattered in the community *Scorzonera parviflorae-Juncetum gerardii* (WENZL 1934) WENDELBERGER 1943.

### Relevé 1

August 25, 2008, 461 m a.s.l., 49°00,409'N ; 20°43,088'E, accuracy 3 m, SW, 2°, area 2 x 2 m, total cover 100%, E<sub>1</sub> 100%. E<sub>0</sub> 10%.

E<sub>1</sub> (herb layer)

*Plantago maritima* 2a, *Schoenoplectus tabernaemontani* 2b, *Centaureum litorale* ssp. *uliginosum* 2m, *Triglochin maritimum* 1, *Eleocharis uniglumis* 2a, *Glaux maritima* 1, *Centaureum pulchellum* 1, *Scorzonera parviflora* r, *Blysmus compressus* +, *Plantago uliginosa* +.

E<sub>0</sub> (moss layer)

*Campylium stellatum* 2b, *Bryum marratii* 1.

We also recorded another occurrence in degraded fen 460 m eastwards.

### Relevé 2

August 25, 2008, 470 m a.s.l., 49°00,400'N ; 20°43,464'E ; accuracy 2 m, plane, area 2 x 2 m, total cover 95%, E<sub>1</sub> 95%, E<sub>0</sub> 1%.

E<sub>1</sub> (herb layer)

*Eleocharis uniglumis* 3, *Blysmus compressus* 1, *Plantago maritima* 2b, *Centaureum litorale* ssp. *uliginosum* 3, *Triglochin maritimum* 2b, *Carex distans* +, *Schoenoplectus tabernaemontani* +, *Festuca pseudovina* 2a, *Succisa pratensis* r, *Potentilla anserina* +, *Parnassia palustris* +, *Scorzonera parviflora* r.

E<sub>0</sub> (moss layer)

*Campylium stellatum* +, *Bryum marratii* +, *Aneura pinguis* +.

On the original site, the moss grows on the area of about 20 m<sup>2</sup> and, on the new site grows on the area of about 4 m<sup>2</sup>, creating patches 1-3 cm in diameter and has always been found sterile.

The community is placed in the alliance *Scorzonero-Juncion gerardii* (WENDELBERGER 1943) VICHEREK 1973 and in the ordo *Scorzonero-Juncetalia gerardii* VICHEREK 1973. These halophytic communities are restricted to persistent damp soils, fed by streamlets from travertines rich in minerals. These communities are rare and very endangered in Slovakia.

The species *Bryum marratii* was evaluated in the old IUCN system in Slovakia (KUBINSKÁ et al. 2001) as CR (Critically Endangered). Under the revised IUCN threat categories (ECCB 1995; HALLINGBÄCK et al. 1998; IUCN 1994) the species meets the criteria for CR (C2b). The moss is not included either in the Red list nor the List of the Bryophytes of Czech Republic (KUČERA & VÁŇA 2005). In Estonia, the species is rated as a rare species and its threat status is unknown (KALDA et al. 1992).

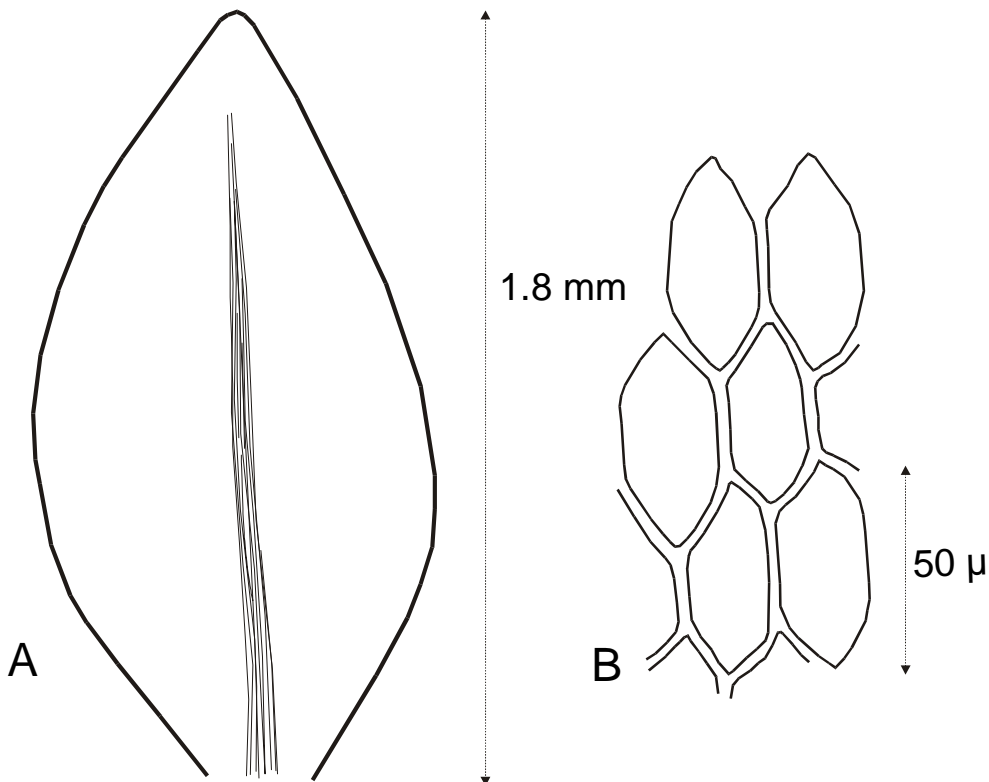


Fig. 1. *Bryum marratii*. A – leaf, B – mid-leaf cells

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