

New records of recently described moss *Orthotrichum affine* var. *bohemicum* Plášek & Sawicki in western Bohemia (Czech Republic)

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New records of recently described moss *Orthotrichum affine* var. *bohemicum* Plášek & Sawicki in western Bohemia (Czech Republic). – Čas. Slez. Muz. Opava (A), 62: 151-154, 2013.

A b s t r a c t: *Orthotrichum affine* var. *bohemicum* is epiphytic moss described in 2011 based on material from the Czech Republic. During bryological survey in 2013, five new localities were recorded in the western part of the Czech Republic. Description of the new localities and ecology are presented.

K e y w o r d s: *Orthotrichum affine* var. *bohemicum*, epiphytic moss, Czech Republic

Introduction

Orthotrichum affine var. *bohemicum* Plášek & Sawicki was recently described as the new variety based on material from three localities in the Czech Republic (Plášek et al. 2011). Subsequently, during revision of herbaria (LE, S and LOD), historical specimens of this taxa collected in USA (Ellis et al. 2012a), Poland (Ellis et al. 2012b) and Sweden (Ellis et al. 2013) were found. Bryological research in western Bohemia has been carried out by second author as a part of her thesis in 2013. Five new localities of *O. affine* var. *bohemicum* were recorded there.

The names of the bryophytes follow the Check list of the bryophytes of the Czech Republic by Kučera et al. (2012). Phytogeographical characterization was taken from Hejný & Slavík (1997).

Diagnostic features

Orthotrichum affine var. *bohemicum* is an epiphytic moss, up 2.5 cm high. Plants are pale green. Stem leaves are erect-appressed when dry, erect when moist, elongate to lanceolate in shape, up to 1.8 mm long, with recurved margins. Seta is up to 1.2 mm long. Vaginula is naked. Capsule is emergent, from 2/3 to 3/4 exserted, yellowish brown or pale brown, with 8 strong ribs that do not reach the capsule base. Exothecial bands are 4 cells wide. Stomates are superficial, situated in the central part of the capsule. Peristome is double. Endostome is formed by 16 segments, whitish to pale brown, incurved when dry. Exostome teeth are 8 (usually split into 16 when old), light brown, often remarkably cleft or perforated in upper parts. Calyptra is conic-oblong, in the upper part with several papillose hairs. Asexual propagules have never been observed.

Orthotrichum affine var. *bohemicum* is similar to type *O. affine*. But it can be easily distinguished by 16 endostome segments; whereas the latter species has only 8 ones (see Fig. 1).

Orthotrichum pallens, which seems superficially related to *O. affine* var. *bohemicum*, can be differentiated due to the cryptopore type of stomates and shorter and blunter ended leaves. In addition, *O. pallens* has endostome segments alternately longer and shorter, whereas in *O. affine* var. *bohemicum* all segments are equally long (practically as long as exostome teeth).

New recorded localities

Phytogeographical division: **Mesophyticum**

Phytogeographical province: **Mesophyticum Massivi bohemic**

Phytogeographical district: **28. Tepelské vrchy**

- 12 km E of Mariánské Lázně town, 3 km S of Teplá town, S edge of Křepkovice village, valley of Teplá river, 665 m a.s.l., GPS (WGS 84): N= 49°57'4.6", E= 12°52'50.5", 21. IX. 2013 leg. H. Benešová, det. V. Plášek (herb. University of Ostrava).

Total tree moss cushions were recorded growing vertically on bark of *Alnus glutinosa* at a height between 100-150 cm above the ground. Total size of the population was about 7 cm². Associated species (alphabetically): *Dicranum montanum*, *Hypnum cupressiforme*, *Orthotrichum affine*, *O. speciosum*, *Pylaisia polyantha* and *Ulota crispa*.

- 12 km E Mariánské Lázně town, 1 km S of Teplá town, 0.2 km N of Klášter village, 300 m E of Pivovarský rybník pond, valley of Teplá river, 650 m a.s.l., GPS (WGS 84): N= 49°58'5.6", E= 12°52'37.8", 4. X. 2013 leg. H. Benešová, det. V. Plášek (herb. University of Ostrava).

The moss cushion was recorded growing vertically on bark of *Salix fragilis* at a height of 150 cm above the ground. Total size of the population was about 1 cm². Associated species (alphabetically): *Amblystegium serpens*, *Hypnum cupressiforme*, *Orthotrichum affine*, *Pterigynandrum filiforme* and *Syntrichia ruralis*.

Phytogeographical division: **Oreophyticum**

Phytogeographical province: **Oreophyticum Massivi bohemic**

Phytogeographical district: **86. Slavkovský les**

- Slavkovský les Protected Landscape Area, 2 km NNW of Teplá town, 1.4 km NE of Jankovický vrch hill, near Hoštice railway station, valley of Teplá river, 615 m a.s.l., GPS (WGS 84): N= 49°59'41.9", E= 12°50'49.6", 4. X. 2013 leg. H. Benešová, det. V. Plášek (herb. University of Ostrava).

The species was recorded growing vertically on bark of three trees standing side by side (*Salix fragilis*, *Tilia cordata* and *Alnus glutinosa*). The cushions were observed at a height between 80-150 cm above the ground. Total size of the populations was 8 cm². Associated species (alphabetically): *Hypnum cupressiforme*, *Orthotrichum affine*, *O. diaphanum*, *O. pallens*, *O. pumilum*, *O. stramineum*, *Ulota bruchii* and *U. crispa*.

- Slavkovský les Protected Landscape Area, between Popovice and Tisová villages, 1 km SSE of Skalka hill, 0.5 km WSW of Nad Zastávkou hill, near Louka u Mariánských Lázní railway station, valley of Teplá river, 590 m a.s.l., GPS (WGS 84): N= 50°2'15.7", E= 12°49'37.8", 9. XI. 2013 leg. H. Benešová, det. V. Plášek (herb. University of Ostrava).

The moss cushions were recorded growing vertically on bark of *Sambucus nigra* and *Salix caprea* at a height of 200 cm above the ground. Total size of the population was 3 cm². Associated species (alphabetically): *Amblystegium serpens*, *Brachythecium sebrosum*, *Hypnum cupressiforme*, *Pylaisia polyantha*, *Orthotrichum affine*, *O. pallens*, *O. speciosum*, *Sanionia uncinata*, *Ulota bruchii* and *U. crispa*.

- Slavkovský les Protected Landscape Area, 3 km ENE of Horní Slavkov town, 1 km W of Zimní stráň hill, near Teplička u Karlových Varů railway station, valley of Teplá river, 455 m a.s.l., GPS (WGS 84): N= 50°8'51.8", E= 12°51'12.0", 9. XI. 2013 leg. H. Benešová, det. V. Plášek (herb. University of Ostrava).

The moss cushion was recorded growing vertically on bark of *Salix caprea* at a height of 200 cm above the ground. Size of the population was about 1 cm². Associated species (alphabetically): *Amblystegium serpens*, *Hypnum cupressiforme*, *Leskea polycarpa*, *Orthotrichum affine*, *O. speciosum* and *Sanionia uncinata*.

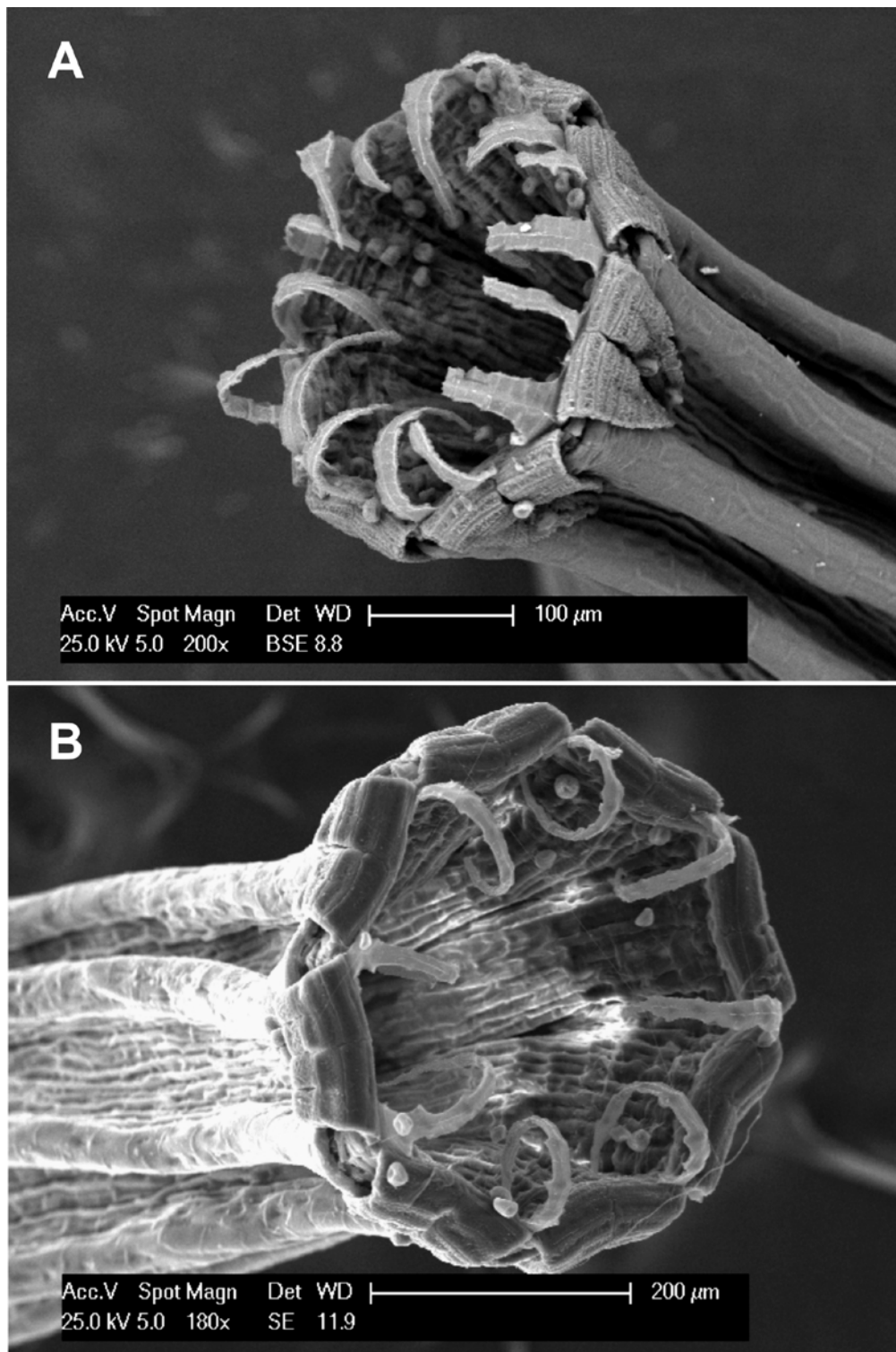


Fig 1: SEM micrographs of *Orthotrichum affine* var. *bohemicum* (A) and *O. affine* (B). Photos by V. Plášek.

Discussion

Orthotrichum affine var. *bohemicum* is the second taxon belonging to *Orthotrichum* genus which was described as a new from the Czech Republic (Plášek et al. 2009, Plášek et al. 2011, Plášek & Sawicki 2012).

It was depicted based on material from three localities in the Czech Republic (Plášek et al. 2011) and currently more than 10 localities are known. Most of localities of the epiphytic

moss are situated in western part of the country but it was also collected in northern Bohemia (*locus classicus*) and in both of northern and southern Moravia.

Based on such a small number of findings there is not possible to draw conclusions regarding the ecological requirements of the epiphytic moss. Current results from the Czech Republic show that *Orthotrichum affine* var. *bohemicum* prefer to grow on bark of deciduous trees, mainly *Salix* sp. and *Alnus glutinosa*. Rarely the populations were recorded growing on *Fraxinus excelsior*, *Tilia cordata* and *Sambucus nigra*. Size of observed populations varied between 1 to 8 cm².

It is very presumable that subsequent bryological surveys in other regions will bring next new data on occurrence of this variety.

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