

***Orthotrichum scanicum* Grönvall (*Orthotrichaceae*, *Musci*), rediscovered in the Czech Republic**

Vítězslav Plášek & Radka Mudrová

Orthotrichum scanicum Grönvall (*Orthotrichaceae*, *Musci*), rediscovered in the Czech Republic. - Čas. Slez. Muz. Opava (A), 55: 229-234, 2006.

Abstract: The moss *Orthotrichum scanicum* was rediscovered after 38 years on the territory of the Czech Republic. The historical distribution of the species and detailed description of the new locality are given.

Key words: epiphytic moss, new locality, rediscovery, threatened species, *Orthotrichum scanicum*, Czech Republic

Introduction

The moss *Orthotrichum scanicum* Grönvall was described as *O. leucomitrium* Bruch & Schimper from materials collected in several localities in Germany, Austria and France (Bruch & Schimper 1837). Subsequently, Grönvall (1885) redescribed this *Orthotrichum* giving it the legitimate name in use today (Garilleti et al. 1999). The species occurs in most European countries except oceanic areas, like Britain and Ireland (Düll 1985, 1992; Vondráček 1993a, 1993b). However, this distribution is based mostly on old reports, except Belgium (Sotiaux et al. 1998), the Iberian Peninsula (Garilleti et al. 1999) and the Netherlands (Van der Pluijm 2004). It is considered endangered or regionally extinct in several countries. Its overall range seems to be declining in Europe.

In the Czech Republic the species was historically recorded in 7 localities. For the last time in 1962 in the Moravskoslezské Beskydy Mts. (Vondráček 1993a). As late as after 38 years, the moss *O. scanicum* was rediscovered in the Czech Republic by the second author.

Historical localities of *O. scanicum* in the Czech Republic

According to Vondráček (1993a) there were 7 historical localities known in the Czech Republic. First it was recorded in 1892 by Velenovský, for the last time in 1962 by Pospíšil. The subsequent list of known localities is arranged by date of findings:

- Bohemia, Brdy Mts., Rožmitál pod Třemšínem village, Třemšín hill, August 1892 leg. Velenovský (PRC)
- Bohemia, Český les Mts., Klenčí pod Čerchovem village, a slope of a hill near the village, *Fagus sylvatica*, 900 m a.s.l., April 1897 leg. Velenovský (PRC)
- Bohemia, Senohraby village, forest, *Quercus* sp., June 1897 leg. Velenovský (PRC)
- Silesia, Jeseník town, Studniční vrch hill, *Betula pendula*, 23rd of June 1899 leg. Paul (PRC, SUM, BRNU)
- Moravia, Olomouc town, Radíkov village, *Quercus* sp., June 1908 leg. Podpěra (PR)
- Moravia, Brno town, part Židenice, in a valley, *Fraxinus excelsior*, 22nd of July 1958 leg. Jedlička (BRNM)
- Moravia, Moravskoslezské Beskydy Mts., Horní Bečva village, NW slope of Vysoká Mt., near a public road and Bečva stream, 650 m a.s.l., *Fraxinus excelsior*, 28th of July 1962 leg. Pospíšil (BRNM).



Fig. 1 and 2. View on the locality Mutěňnský lom Natural Monument - dumping area near the quarry (above) and the detailed view on the moss cushions on the stones (below).

Description of the new locality

Orthotrichum scanicum was rediscovered after 38 years on 4th of August 2000 by R. Mudrová in the Mutěňínský lom Natural Monument. The herbarium specimen (housed in the Museum in Tachov, Bohemia) was identified by V. Plášek during the revision of the collections in 2006.

Mutěňínský lom is a flooded former quarry of medium-grained amphibolitic biotite diorite (Vejnar et al. 1984). It is situated 500 m NW of Mutěňín village (ca. 18 km NW of Domažlice town, on the edge of the Český les Mts.) at an altitude of 500 m a.s.l. The GPS coordinates in the WGS-84 system are N= 49° 32,955' & E= 12° 44,247'. The vicinity of the quarry is overgrown by a wood of deciduous trees such as *Quercus robur*, *Populus tremula*, *Prunus avium*, *Salix caprea* and *Coryllus avellana*.

Although *Orthotrichum scanicum* is reported mainly as an epiphytic moss, there it was found living on stones in a dumping area near the quarry together with *Orthotrichum lyellii* and *Ulota bruchii*. Since all of the above mentioned species have previously been considered to be strict epiphytes (Lewinski-Haapasaaari 1995) it is very surprising they grew on the stones. Moreover, *O. scanicum* and *Ulota bruchii* produced lots of sporogones there.

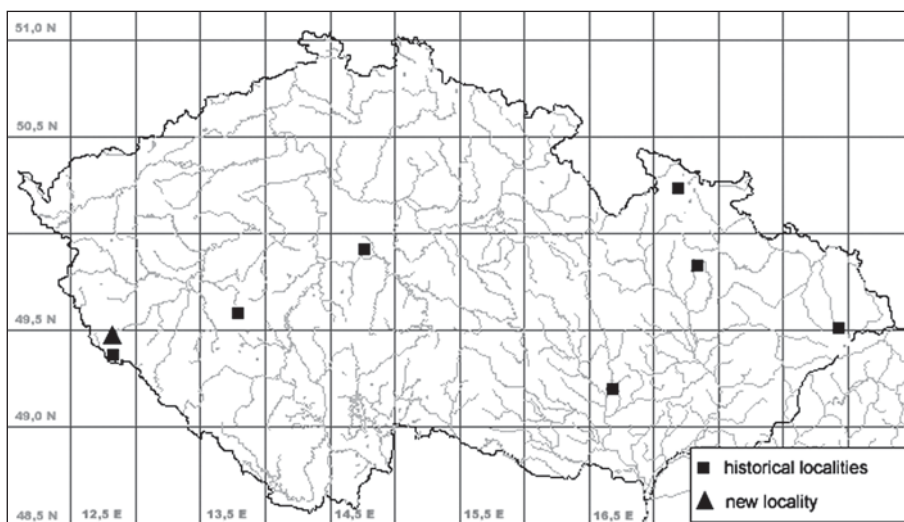


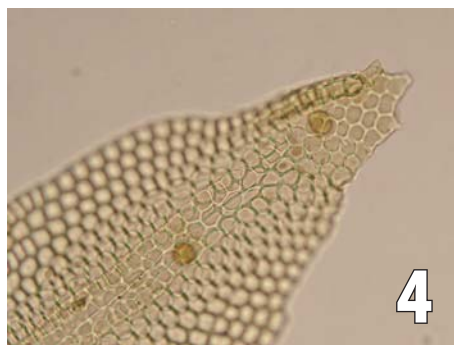
Fig. 1. The historical (squares) and recent (triangle) distribution of the moss *Orthotrichum scanicum* Grönvall in the Czech Republic.

Notation to the identification of *O. scanicum*

Orthotrichum scanicum is distinct from relative species within sect. *Pulchella* due to an immersed to emergent capsule, which has 16 endostome appendiculate segments as long as the exostome teeth. Capsules have 8 yellow narrow striae, which are furrowed only in the upper half when dry. The leaf apex is mostly denticulate.

Conservation status

In the Czech Republic *O. scanicum* has previously been ranked into **DD-va** category /data deficient – vanished/ with respect to the deficiency of information on its occurrence over nearly 40 years (Kučera & Váňa 2005). In other Central-European countries it is considered to be **CR** /critically endangered/, e.g. in Slovakia (Kubinská et al. 2001), **E** /endangered/, e.g. in Poland



4



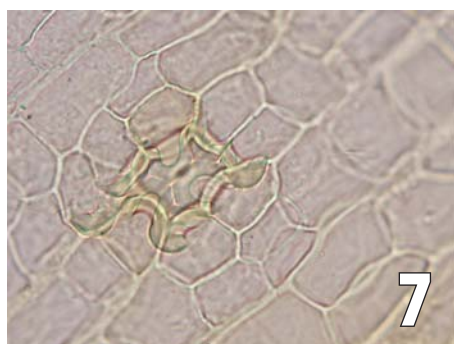
3



6



5



7

Fig. 3-7. 3 – dry capsule; 4 – denticulate leaf apex; 5 – upper part of capsule with a peristome; 6 – detailed view on appendiculate segments of endostome; 7 – immersed pore

(Żarnowiec et al. 2004), **RL1** /highly endangered/, e.g. in Baden-Württembergs (Schäfer-Verwimp 2001).

According to „The 2000 IUCN World Red List of Bryophytes” published by Tan et al. (2000) the population of *O. scanicum* is suspected to have declined by at least 20% over the last 15 years (three generations) because host trees have been cut and air pollution has lowered their vitality. It, therefore, meets the IUCN criteria for Vulnerable. – **VU (A1ce)**.

Conclusions

The rediscovery of the moss *Orthotrichum scanicum* has significant importance for the conservation of epiphytic bryophytes in the Czech Republic. First of all the species does not need to be considered as vanished there. Another valuable observation is that the usually epiphytic moss can also colonize a different habitat which should be taken into account during field surveys of epiphytic bryophytes.

References

- Bruch P. & Schimper W. L. (1837): *Orthotrichum*.- In: Bruch P., Schimper W. L. & Gumbel T.: *Bryologia Europaea, seu genera muscorum europaeorum monographice illustrata*. 3, fasc. 2/3, Stuttgart.
- Garilleti R., Lara F., Albertos B. & Mazimpaka V. (1999): *Orthotrichum scanicum* Grönv. (*Orthotrichaceae, Musci*) new to the Iberian Peninsula. – *Nova Hedwigia*, 69: 429-432.
- Grönvall, A. L. (1885): Bidrag tillkännedomen om de nordiske arterna af de båda löfmoss-slågtena *Orthotrichum* och *Ulota*. Malmö.
- Kubinská, A., Janovicová, K. & Šoltés, R. (2001): Aktualizovaný zoznam pečeňoviek, rožtekov a machov Slovenska. – *Bryonora*, Praha, 28: 4-10.
- Kučera J. & Váňa J. (2005): Seznam a červený seznam mechorostů České republiky (2005). – *Příroda*, Praha, 23: 1-104.
- Lewinsky-Haapasaari, J. (1995): Illustrierter Bestimmungsschüssel zu den Europäischen *Orthotrichum*-Arten. – *Meylania*, 9: 3-56.
- Pluijm A., van der (2004): Species of *Orthotrichum* new to the Netherlands.- *Lindbergia*, 29:17-32.
- Schäfer-Verwimp A. (2001): *Orthotrichum* Hedw. In: Nebel M. & Philippi G. (eds): *Die Moose Baden-Württembergs*, Band 2, pp. 170–197, Ulmer, Stuttgart.
- Sotiaux A., Sotiaux O. & Pierrot R. B. (1998): *Orthotrichum scanicum* (*Orthotrichaceae, Musci*) nouveau pour la bryoflore Belge, dans le district Ardennais [*Orthotrichum scanicum* (*Musci*) in the Ardenne district, new for the Belgian bryoflora]. – *Belgian Journal of Botany* 131(1): 23-27.
- Tan B., Geissler P., Hallingbäck T. & Söderström L. (2000): The 2000 IUCN World Red List of Bryophytes. – <http://www.iucn.org/themes/ssc/actionplans/bryophytes/appendix2.pdf>.
- Vejnar Z. et al. (1984): *Geologie domálické oblasti*. – 234 pp., 32 apend., map., Ústřední ústav geologický Praha.
- Vondráček M. (1993a): Revize a rozšíření druhů rodu *Orthotrichum* Hedw. v České a Slovenské republice (*Musci*).- *Sborník Západočeského muzea v Plzni*, 76 pp.
- (1993b): *Orthotrichum scanicum*, nový druh bulharské bryoflóry.- *Bryonora*, Praha, 11:8.
- Żarnowiec J., Stebel A. & Ochyra R. (2004): Threatened moss species in the Polish Carpathians in the light of a new Red-List of Poland. In: Stebel A. & Ochyra R.: *Bryological Studies in the Western Carpathians*. *Sorus*, Poznań, pp. 9-28.

***Orthotrichum scanicum* Grönvall (*Orthotrichaceae, Musci*), znovunalezené v České republice**

Epifytický mech *Orthotrichum scanicum* byl po téměř 40 letech znovu nalezen v ČR. V bývalém Mutěněnském lomu jej našla R. Mudrová (det. V. Plášek). Herbářový doklad je uložen v Muzeu Českého lesa v Tachově. Mimo vlastní nález druhu je zajímavá i jeho ekologie na lokalitě. Přesto, že jde o epifyt, rostl zde na kamenných snosech spolu s jinými epifytickými druhy mechů: *Orthotrichum lyellii* a *Ulota bruchii*.

Authors' addresses: Vítězslav Plášek, Slezské zemské muzeum Opava, Tyršova 1, CZ-746 46 Opava, Czech Republic & University of Ostrava, Dept. of Biology and Ecology, Chittussiho 10, CZ-710 00 Ostrava, Czech Republic, e-mail: vita.plasek@seznam.cz
Radka Mudrová, Muzeum Českého lesa v Tachově, tř. Míru 447, CZ-347 01 Tachov, Czech Republic, e-mail: muzeumtc.@quick.cz