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Rediscovery of *Orthotrichum rogeri* Brid. (Bryophyta) in Poland

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Abstract: This paper presents the new locality of moss *Orthotrichum rogeri* Brid, the species stated to be extinct in Poland, which was found in autumn 2009 in Katowice.

Key words: *Orthotrichum rogeri, Bryophyta, mosses, distribution, protected plants, Katowice, Silesian Upland, Upper Silesia, Poland*

Introduction

Orthotrichum rogeri Brid. is one of the nineteen representatives of the genus *Orthotrichum* in the Polish flora (Ochyra et al. 2003; Plášek and Sawicki 2009). Since the middle of the twentieth century overwhelming majority of these species have been very rare or extinct on the large areas of Poland. In the recent years their number of localities have increased, but the reason of this phenomenon is uncertain. In this paper a description of the locality of *Orthotrichum rogeri* Brid., a species regarded as extinct in Poland, is provided. It was found in the autumn of 2009 in Katowice, Silesian Upland. It is especially interesting, because Katowice is a capitol of the Upper Silesian Industrial Region, an area considered as the most changed by human activity in Poland. It is a new species for this area (Fojcik and Stebel 2000).

Orthotrichum rogeri in Poland

In Poland *Orthotrichum rogeri* was known from the only station located in the Łomniczka stream valley at the altitude of 1250 m in the Karkonosze range (German Riesengebirge; in English Giant Mountains). It was reported from this place by Limpricht (1883), who described the specimens as a separate species *O. subalpinum* Limpr., lately considered as identical to *O. rogeri* (Limpricht 1895). Other localities given for Poland (Rehman 1879; Szafran 1961; Bloch 1974; Karczmarz 1979; Karczmarz and Bloch 1985) have appeared to be the result of misidentifications (Stebel 2004). During the bryological research in

the Łomniczka stream valley (Fudali et al. 2003) its locality has not been confirmed. In 2004 because of the lack of new stations, the species was formally declared to be extinct (Stebel 2004; Żarnowiec et al. 2004).

Status of Orthotrichum rogeri in Europe and Poland

Orthotrichum rogeri was placed in the Appendix I of the Bern Convention (1979) and in the Annex II of the Habitats Directive (1992). In European 'Red-list of bryophytes" it is in category V (Schumacker and Martiny 1995). Since 2001 the species has been placed on the list of strictly protected plants in Poland. This category was supported in the last Order of the Minister of Environment (Official Gazette Announcing Current Legislation No. 168, item 1764, 2004). On the "Red-list of mosses in Poland" (Żarnowiec et al. 2004) it is considered as extinct species. It is a species which need protection in the form of mark out of Natura 2000 areas (Official Gazette Announcing Current Legislation No. 94, item 795, 2005)

New locality

The new station of *Orthotrichum rogeri* was found on September 15, 2009 in Katowice-Muchowiec (Silesian Upland, southern Poland), in the R. Stachoń Katowice Forest Park which is an extensive area located to the south of the city centre (geographical position: 50º13'53.9"N 19º01'27.7"E; alt. ca. 286 m; ATMOS grid square Fd 43). Only a part of the park serves as a recreation ground with a developed infrastructure, the rest is of a natural or seminatural character with forest, meadow and pond complexes. *Orthotrichum rogeri* was found in the recreation area, near Francuska St. It is an open place with tended lawns and some clumps of trees, mainly *Salix alba* L. 'Tristis'. On one of them a small turf of *O. rogeri* was found (Fig. 1). It consisted of several dozen stems of gametophytes and two ripe sporophytes covering about 0.5 cm^2. *Orthotrichum rogeri* occurred on a western facing trunk about 1.5 m above the ground, together with such species as *Ceratodon purpureus* (Hedw.) Brid., *Hypnum cupressiforme* Hedw., *Orthotrichum pumilum* Sw. *ex* anon., *O. speciosum* Nees, *O. stramineum* Brid. and *Rosulabryum moravicum* (Podp.) Ochyra & Stebel (Fig. 2). In the year 2010 the location was re-examined, but no new specimens of *O. rogeri* were found. There were, on the other hand, many localities of different species of *Orthotrichum* growing especially on willows and poplars, mainly the common *O. pumilum.* Their turfs were developed from the bases of trunks to boughs several meters above ground level.

Discussion

It is not known whether the appearance of *O. rogeri* in Katowice was incidental only, or whether it marked the beginning of the process of the spread of the moss. Its discovery in the Czech Republic, where for many years it was also regarded as extinct (Biedermann et al. 2009), and Germany (Meinunger and Schröder 2007) suggest the latter. It is also not known how it should be treated from a legal point of view. *Orthotrichum rogeri* is a strictly protected species in Poland so its place of occurrence should be protected. However, it is not known whether the turf found was the only one or whether it also grows on other trees maybe high in their crowns, which is not practical to verify. It seems that,

at this stage, the location of *O. rogeri* in Katowice-Muchowiec should be periodically monitored and the results used to develop appropriate methods of its protection.

Current distribution of *Orthotrichum rogeri* in Poland is shown on the Figure 3.

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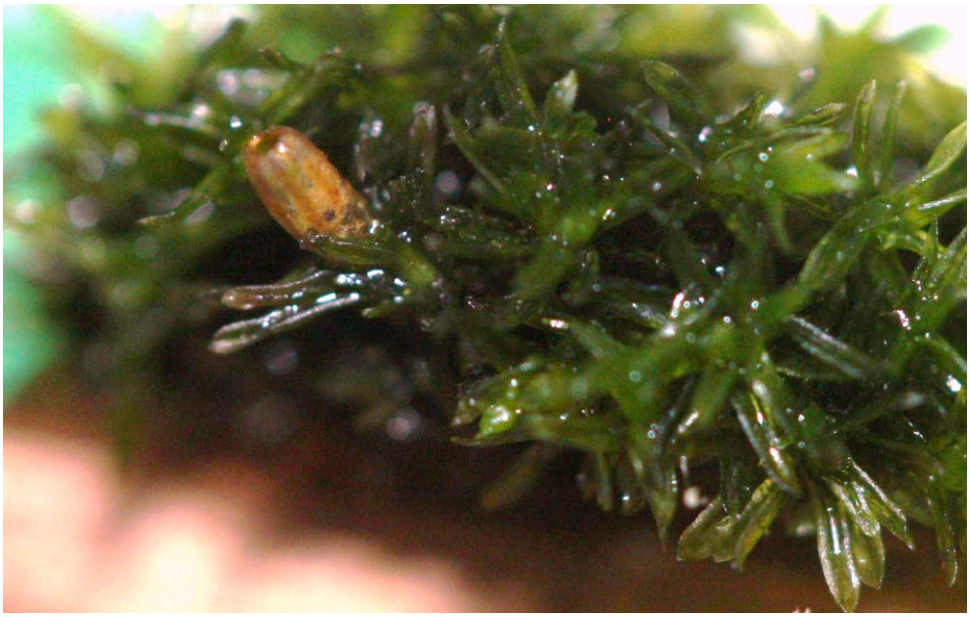

Fig. 1. *Orthotrichum rogeri*. Specimen from Katowice-Muchowiec housed in herbarium SOSN (7 December 2009, photo by A. Stebel).

Fig. 2. The willow *Salix alba* 'Tristis' in Katowice-Muchowiec. On its trunk *Orthotrichum rogeri* occurred (Katowice-Muchowiec, 13 November 2009; photo by A. Stebel).

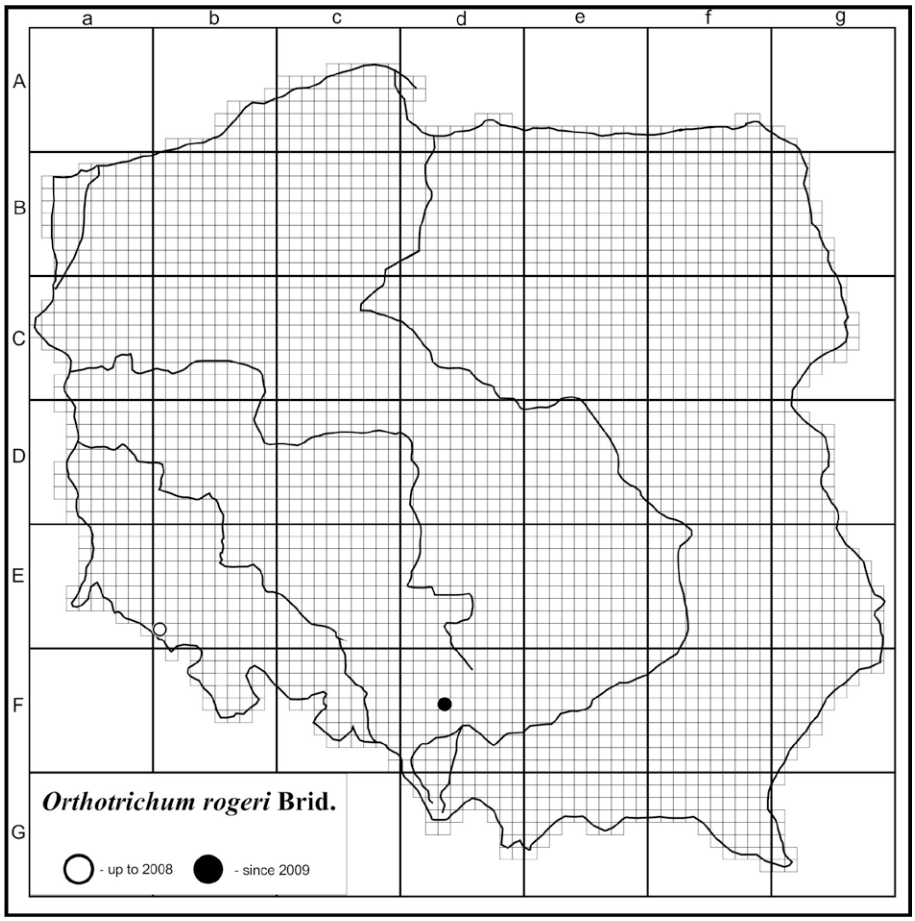

Fig. 3. Current distribution of *Orthotrichum rogeri* in Poland.

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