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PHYSCOMITRIUM EURYSTOMUM AND *POHLIA PROLIGERA*, NEW MOSSES IN THE BRYOPHYTE FLORA OF SERBIA

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Abstract - Physcomitrium eurystomum Sendtn. and *Pohlia proligera* (Kindb.) Lindb. ex Broth. were recently discovered as new moss species for the bryophyte flora of Serbia. Both species were recorded in the Vlasina Lake area, a large highland wetland plateau in southeastern Serbia.

Key words: Mosses, the Balkans, Serbia, new national records

INTRODUCTION

Even in comparison to other European countries, Serbia has a rich bryophyte flora containing 118 liverworts (Sabovljević and Natcheva, 2006) and 555 moss species (Sabovljević et al., 2008, 2011). Bryophyte research, however, has received very little attention, and has been a secondary discipline within the botany of the country until the last decade (Sabovljević et al. 2001; Sabovljević, 2004), when our work started and resulted in the expansion of known bryophytes by 25% (hepatics) and 15% (mosses), respectively (Papp et al., 2009).

Nevertheless, new discoveries are being made and can be expected at a regular pace, adding continually to the existing bryophyte records of Serbia (Ellis et al., 2011, 2012; Papp et al., 2012).

MATERIALS AND METHODS

Field trips to the Vlasina Lake and its surroundings in southeastern Serbia were carried out in June of 2010 and June of 2011. The specimens are preserved in the Herbarium of the Hungarian Natural History Museum, Budapest (BP). Our nomenclature follows Hill et al. (2006).

Study area

Vlasina Lake is situated in southeastern Serbia as part of the Rhodopian area (Fig. 1). The area is a huge highland plateau surrounded by the peaks Vardenik (1875 m), Čemernik (1638 m), Plana (1721 m) and Bukova Glava (1472 m). The lake itself is of artificial origin: between 1949 and 1954 a dam was built by flooding a major part of the original peat bog, which, by the way, was the biggest in the Balkans (Randjelović and Zlatković, 2010). The plateau has an average altitude above 1200 m (the lake surface is at 1213 m). Geologically, the region is characterized by metamorphic schists and silicates and many subtypes of these bedrocks; it also has various soil types (Blaženčić, 1997). The climate of Vlasina is montane-temperate with a yearly average of 5.7°C. The hottest month is August (average 14.7 °C), and the coldest month is January (average -4°C). The mean yearly precipitation is 722.9 mm. During the growing season, the average tem-

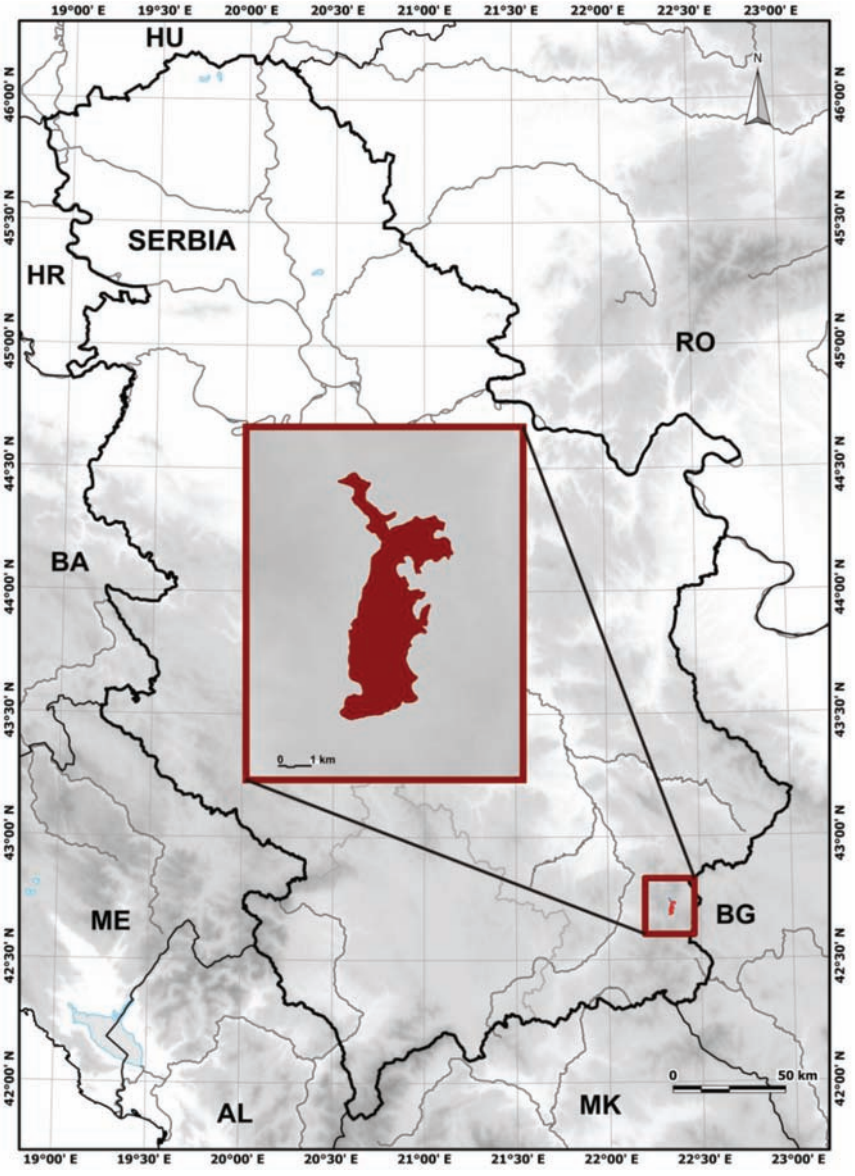

Fig. 1. Map of Serbia with the position of the investigated area (Vlasina Lake).

perature is 12.5°C, and the rainfall is 309.1 mm, with high averages of air humidity (79-82%). There are many windy days on the Vlasina plateau, with prevailing western, northern and eastern winds.

The natural biological diversity of the plateau is marked by various vegetation types including beech and spruce forests, pine plantations, wetland vegetation, meadows, peat bogs and even some dry pastures and chasmophytic communities. The plateau with the lake and its surroundings is protected as a Nature Park.

RESULTS

Physcomitrium eurystomum and *Pohlia proligera* were discovered for the first time in Serbia. The collecting data are as follows:

Physcomitrium eurystomum Sendtn.

Southeastern Serbia, north of Vlasina lake, on soil near Vlasina River (stream), 42°46'29,3" N, 22°18'56,4" E, 1195 m, 2010.06.19. BP 183643

Pohlia proligera (Kindb.) Lindb. ex Broth.

Southeastern Serbia, at Vlasina Lake, Vlasina Stojkovićeva, valley at Skela village, 42°41'52,8" N, 22°23'04,8" E to 42°41'59,8" N, 22°23'21,0" E, 1300 m, 2010.06.22. BP 183644

Southeastern Serbia, Mt Strešer at Ravnište near Okruglica, exposed siliceous rocks, 42°38'48,0" N, 22°15'44,0" E, 1660 m, 2011.06.24. BP 183645

DISCUSSION

Physcomitrium eurystomum is a sub-Mediterranean species (Düll, 1984) occurring on muddy soil along streams, margins of lakes with fluctuating water level (Dierssen, 2001). In Southeast Europe, it is reported only from Bulgaria, Romania and Slovenia (Sabovljević et al., 2008). Additionally, in the Mediterranean area Ros et al. (in press) cited this species from Syria, Israel, Italy and France. This species is quite rare and its occurrence is interesting since it is taxonomically well defined and reproductively isolated from the other *Physcomitrium-Physcomitrella* species complexes. However, McDaniel et al. (2009) suggest its hybrid origin by assuming an event between two early diverging lineages in the complex, and that the ancestral population size of these lineages was much smaller than the current population sizes.

Pohlia proligera is a boreal, montane species (Düll, 1985) living usually on disturbed open habitats, in rock crevices or on muddy soil mostly on acidic bedrock (Dierssen, 2001). In southeastern Europe, it is known only from Bulgaria, Montenegro, Romania and Slovenia (Sabovljević et al., 2008), while in other places around the Mediterranean it is apparently present but infrequent (Ros et al., in press).

This species was sometimes treated as a intraspecific taxon of *P. annotina* which is known from the Vlasina (Okruglica) area (Pavletić, 1955). However, it was not recorded previously in Serbia, neither as a species nor as an intraspecific taxon. With the new investigations, *P. annotina* s. s. was also reported from the Okruglica site in the Vlasina region.

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