

Preissia quadrata (Marchantiaceae), new to the liverwort flora of Turkey

Özcan Şimşek¹, Kerem Canli², Barbaros Çetin²

¹ Department of Biology, Faculty of Science, Ankara University, 06100, Tandoğan, Ankara, Turkey, e-mail: ozcan_simsek@hotmail.com (corresponding author)

² Department of Biology, Faculty of Science, Dokuz Eylül University, 35100, Buca, İzmir, Turkey

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Abstract. The thalloid liverwort *Preissia quadrata* is reported as a new record for the liverwort flora of Turkey. The species was collected in the Ilgaz Mts, about 8 kilometers northeast of the Ilgaz Mountain National Park. A detailed morphological description and ecological notes are provided.

Key words: *Hepaticae*, liverwort, *Marchantiophyta*, *Preissia quadrata*, Turkey

Introduction

Being in the transition zone of three phytogeographical regions, Turkey has an important flora which forms a bridge between the floras of Europe and Asia. Irrespective of the flora's richness, researches conducted into the cryptogamic plants are still insufficient. Further studies about their flora will provide new information about biodiversity in Turkey, conditioned by the specific climatic and ecological features. So far 169 liverwort species belonging to 66 genera have been recorded in Turkey (Özenoğlu & Keçeli 2009). However, this number does not reflect the real potential of Turkey owing to the different climatic zones and diverse topographic characteristics.

The genus *Preissia* Corda belongs to the family of *Marchantiaceae*. The members of *Marchantiaceae* are thalloid liverworts with barrel-shaped pores and air chambers in one layer. Receptacles arise at thallus apices. Female receptacles are lobed, or palmately or stелately rayed (Smith 1990).

Preissia quadrata (Scop.) Nees is identified by the pale-green colour and deep-violet or red-brown mar-

gins of its thalli. It doesn't have gemma cups, which is a typical characteristic of genus *Marchantia*. This species grows most frequently on moist calcareous rocks located in the subalpine mountains.

Material and methods

The specimen was collected in 2007, from the Ilgaz Mts (41°08' N, 33°50' E, 1385 m a.s.l.), about 8 kilometers northeast of the Ilgaz Mountain National Park located in A2 square, according to Henderson's grid adopted in 1961 (Henderson, 1961). (Fig. 1). The material was photographed in its natural habitat. The specimen was cleaned to remove soil and brought to the laboratory in a paper bag. After the process of drying, it was put into special envelope.

The specimen was identified according to Conard (1975), Petrov (1975), Watson (1981), Smith (1990), Paton (1999), Schumaker & Vana (2005), Casas & al. (2009), and Atherton & al. (2010). A voucher is kept at the herbarium of the University of Ankara, Faculty of Science, Department of Biology, (ANK).

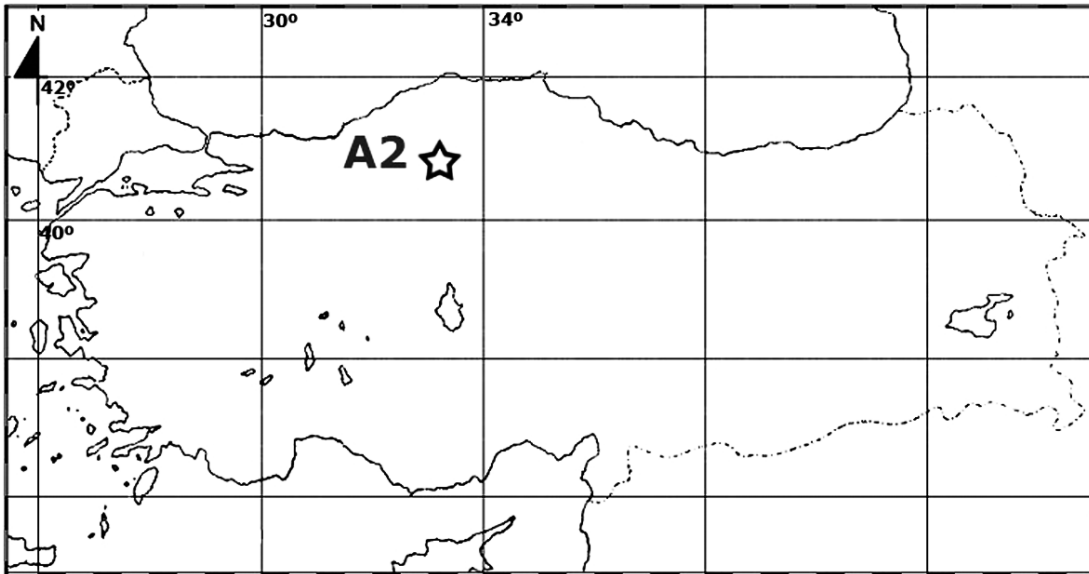


Fig. 1. Henderson's grid square system and study area.

Description

The plant is a medium-sized thalloid liverwort, dichotomously branched and dull pale-green. The thalli are about 1 cm wide and 3–4 cm long, their upper surface dark-green, without gemma cups. The margin of thalli is dark-purple (Fig. 2). Dorsal epidermis is faintly reticulate, without trigones. Pores are elevated and surrounded by 4–6 rings of superposed thick-walled cells (Fig. 3). In the cross-section, barrel shape of the pores could be seen, as well as the fact that the air pores are with thin-walled chlorophyllose cells (Fig. 4) and the chlorenchyma layer is narrow (Fig. 5). The collected sample does not contain any antheridiophore or archegoniophore.



Fig. 2. General view of the plant.

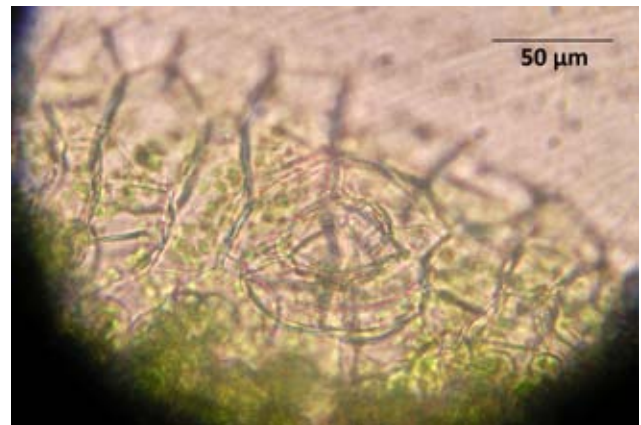


Fig. 3. Air pore of the plant.

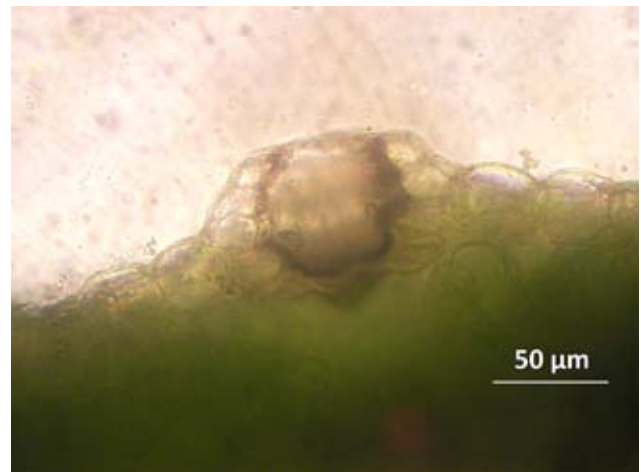


Fig. 4. Barrel-shaped air pore in cross-section.

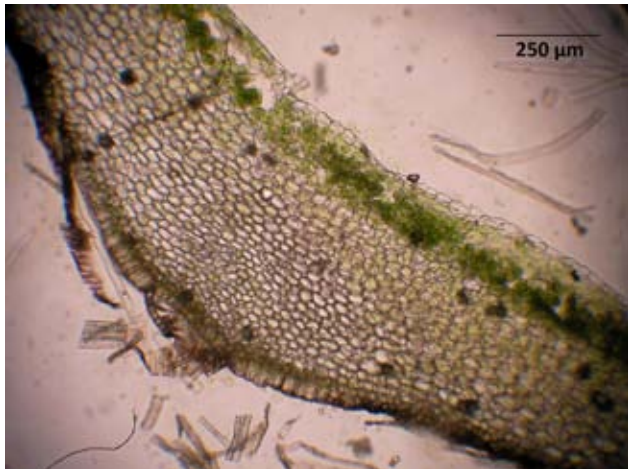


Fig. 5. Chlorenchyma layer in cross-section.

Discussion

In 1913, Schiffner has reported *Preissia quadrata* (Scop.) Nees as a new record from grid-square B9 of Turkey, but after Crundwell and Nyholm's checked the sample in 1979, they reported that Schiffner's record was a misidentification of *Reboulia hemisphaerica* (L.) Raddi. As that misidentified sample was the only record, the latest checklist of liverworts in Turkey (Özenoğlu & Keçeli 2009) did not include *Preissia quadrata*. Considering that the genus *Preissia* Corda is monotypic with *Preissia quadrata* (Scop.) Nees, the new species record of *Preissia quadrata* is also a new genus record for Turkey's bryophyte flora.

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