Barbilophozia lycopodioides (Wallr.) Loeske, new to the liverwort flora of Turkey

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Résumé – Barbilophozia lycopodioides (Wallr.) Loeske est citée pour la première fois en Turquie, à partir de spécimens récoltés dans le forêt de Yenice (İlgaz, Çankırı).

Barbilophozia lycopodioides / Nouveau rapport / Scapaniaceae / Marchantiopsida / Turquie

Abstract – Barbilophozia lycopodioides (Wallr.) Loeske is recorded for the first time in Turkey, based on specimens collected in Yenice Forest (İlgaz, Çankırı).

Barbilophozia lycopodioides / New record / Scapaniaceae / Marchantiopsida / Turkey

INTRODUCTION

The genus Barbilophozia contains ten species in the Mediterranean countries and Bulgaria (Ros et al., 2007) and hitherto, three species [B. barbata (Schmidele ex Schreb.) Loeske, B. hatcheri (A.Evans) Loeske, B. rubescens (R.M.Schust. et Damsh.) Kar. et L.Söderstr.] of Barbilophozia have been recorded in Turkey (Özenoğlu Kiremit & Keçeli, 2009; Söderström et al., 2010; Vilnet et al., 2010). The world distribution of Barbilophozia lycopodioides includes Europe, Siberia, Russia, Transcaucasia, Middle Asia, China, Mongolia, Eastern Asia, North America (Paton, 1999; Söderström et al., 2002). The closest reported localities to Turkey are Greece, Bulgaria, Ukraine, Albania, Romania, Caucasus and Macedonia.

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During a field trip in September 2006 in the area of Çayboyu Stream between Çalpınar Hill and Dikenli Hill (İlgaz, Çankırı province), the authors found plants of a leafy liverwort, which was later identified as *Barbilophozia lycopodioides* (Wallr.) Loeske. The aim of this paper is to report this new discovery.

**THE SPECIMENS EXAMINED**

**Turkey: Çankırı province**, Ilgaz county, between Çalpınar Hill and Dikenli Hill, in the vicinity of Çayboyu Stream, 40° 98' 38.6" N, 33° 48' 75.8" E, 1803 m above sea level, 22 September 2006, Tamer Keçeli TK-4127. The locality belongs to the grid square A2 (Fig. 1) according to the system adopted by Henderson (1961). The distribution of Turkish *Barbilophozia* species are given in Table 1.

![Fig. 1. The locality of *Barbilophozia lycopodioides* in Turkey.](image-url)
Barbilophozia lycopodioides is distinguished from other Barbilophozia species (Hong & Matthews, 2001) by features such as plant size and color, leaf and underleaf shape, number and appearance of lobes, median cell size, structure of cilia of leaf and underleaf, absence of gemmae (Figs 2-7). It resembles B. rubescens (Çetin & Yurdakulol, 1986) but in B. rubescens the lamina of underleaves is only 4-6 cells wide, while in Barbilophozia lycopodioides the underleaves are 7-10 cells in width (Fig. 7). The specimens are preserved in the private collections of Serhat URSAVAŞ (Ankara, Turkey).

Table 1. The distribution of Turkish Barbilophozia species.

<table>
<thead>
<tr>
<th>Turkish distribution, grid-square according to the system adopted by Henderson (1961)</th>
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<tbody>
<tr>
<td>Barbilophozia barbata</td>
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<tr>
<td>Barbilophozia hatcheri</td>
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<tr>
<td>Barbilophozia rubescens</td>
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<tr>
<td>Barbilophozia lycopodioides</td>
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</table>

Figs 2-7. Barbilophozia lycopodioides. 2-3, leaves; 4, leaf median cells; 5, leaf lobe apex; 6, cillum of leaf base; 7, underleaf.
ECOLOGY

The locality of *Barbilophozia lycopodioides* in Turkey is 1803 m above
sea level. The study area’s climate data were taken from Ilgaz meteorological
station. Ilgaz meteorological station is 885 m above see level and latitude –
longitude value for the station is 40° 55' N, 33° 38' E. The distance between
the whether station and the site is approximately 27 km as the crow flies.

The annual average temperature is 10.3 °C; the maximum temperature is
41.4°C in July and the minimum is −20.6 °C in February (İnal, 2007). The annual
rain precipitation is 439.9 mm. The investigated area is seen to have a climate like
arid-dry sub humid, mesothermal, no or very little water surplus, close to oceanic
climate type.

According to Dierßen (2001), *Barbilophozia lycopodioides* grows in the
vegetation zones of mediterranean/subalpine – arctic; oceanity-continentally is
$\varphi_1$-$\varphi_2$ (circumpolar). The habitat features of the species is highly acidic (pH: 3-4.0) – sub-neutral (pH: 5.7-7.0); humidity is mesophytic; light availability is
moderately sciophytic, photophytic; substrate is humiculos, heat balance is
moderately cryophytic; human impact is achemerobous (absent) –
mesohemerobous (moderate) – hemerophilous (strong). This species generally
grows on basalt and mica schists, on acidic rocks, in mossy turf on sheltered
slopes, on rock ledges and in block screes (Dierßen, 2001). The basic mother rocks
of the investigated area are serpentinite, magnesite, peridotite, pyroxenite,
harzburgite, basalt, schists. The dominant tree species of vegetation of the site are
*Pinus sylvestris* L., *Pinus nigra* Arnold subsp. *pallasiana* (Lamb.) Holmboe,
*Juniperus communis* L. var. *alpina* (Sm.) Čelak.

Turkish specimens of *B. lycopodioides* were found on a stream bank; on
soil rich in humus, associated with *Lophocolea minor* Nees, *Dicranum scoparium*
Hedw., *Dicranum tauricum* Sapjegin, *Polytrichum juniperinum* Hedw., *Tortula*
*subulata* Hedw. and *Bryum capillare* Hedw.

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