

Scapania gracilis Lindb. (Hepaticae, Scapaniaceae), new to bryophyte flora of Turkey

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Abstract: *Scapania gracilis* Lindb. is a hygro- to mesophytic liverwort species which is reported for the first time from Turkey. The species is described from material collected from the north-west Anatolia (Sakarya) which has very warm summers and mild winters with high annual rainfall (800–1000 mm) in Marmara region and very humid conditions. Turkish plants are described and illustrated.

INTRODUCTION

The genus *Scapania* (Dumort.) Dumort. is the largest genus of leafy hepatic family Scapaniaceae. About 230 species have been described in the world, they are widespread mainly in temperate regions (Ben-Rong et al., 2007). According to the latest list of Turkish liverworts (Kürschner & Erdağ, 2005; Özenoğlu Kiremit & Keçeli, 2009) eleven taxa of the genus (*S. aequiloba* (Schwägr.) Dumort., *S. aspera* Bernet et M. Bernet, *S. compacta* (Roth) Dumort., *S. curta* (Mart.) Dumort., *S. irrigua* (Nees) Nees, *S. paludosa* (Müll. Frib.) Müll. Frib., *S. nemorea* (L.) Grolle, *S. subalpina* (Nees ex Lindenb.) Dumort., *S. umbrosa* (Schrad.) Dumort., *S. undulata* (L.) Dumort., *S. verrucosa* Heeg) have been recognized as occurring in Turkey.

In this study *Scapania gracilis* Lindb. is recorded for Turkey as twelfth species. Description and illustrations of the species further contribute to the liverwort flora of Turkey.

MATERIAL AND RESULTS

Scapania gracilis Lindberg, Morgonblad et (Helsinki) 1873(286): 2. 1873.

Description of the Turkish specimens: plants medium size to robust, yellowish brown or pale brown; leafy shoots to 5(7) cm long and 2.5–3.5 mm wide, procumbent to erect; stem dark reddish brown, occasionally branched; leaves unequally bilobed, antical lobe not decurrent or slightly decurrent, ovate or ovate-orbicular, 0.9 mm long, 0.7 mm wide, apex rounded to obtuse, entire to strongly ciliate-dentate at base, postical

lobe ovate or ovate-lingulate with slightly curved, winged keel, 1.7 mm long, 0.9 mm wide, decurrent, apex usually broadly rounded, margins dentate or dentate-serrate, teeth 1–3 cells long; leaf cells in middle of postical lobe 15–20 µm wide; oil-bodies 2–4 per cell; gemmae abundant, in green clusters, ovate to ellipsoid, 1–2 celled, thick-walled, 12–20 µm long (Fig. 1 and Fig. 2). Sporophytes unknown in Turkey.

Specimens examined: Turkey, north-west Anatolia. Sakarya: Akyazı district, on soil, alt. ca 223 m, (40°39'37.56"N 30°38'42.99"E), 08 Nov 2011, herbarium no T.E. 1702 and R.K.1741 (Herbarium of Niğde University and special collections of EZER & KARA (Niğde) (Fig. 1 and Fig. 2).

According to literature the species is dioecious; male bracts are in 2–8 pairs, bases often weakly inflated; female bracts are similar to and slightly larger than leaves; perianths to 2.5 × 3.5 mm, mouth lacinate with apical cilia 8(12) cells long, mouth sometimes gemmiferous; sporophytes are frequent in March to July; spores 12–16 µm (Smith, 1990; Paton, 1999; Casas et al., 2009).

S. nemorea and *S. umbrosa* are similar species to *S. gracilis*. Pale brownish-green colour is characteristic for *S. gracilis* but *S. nemorea* is green or dull green, rarely reddish or brownish. *S. gracilis* has gemmae in greenish clusters, whereas *S. nemorea* has gemmae in brownish clusters. While gemmae of *S. gracilis* are 1–2 celled and thick-walled, gemmae of *S. nemorea* are unicellular and thin-walled. The smallest forms of *S. gracilis* somewhat resemble *S. umbrosa* but *S. umbrosa* is pale or brownish green and has very pointed lobes, and shoot

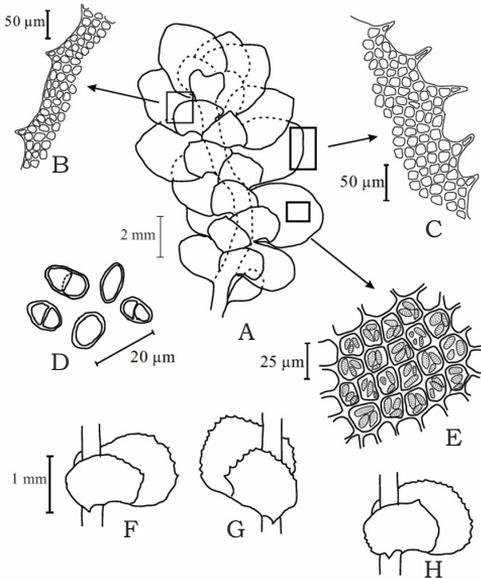


Fig. 1. *Scapania gracilis*. A – sterile shoot, antical view; B – leaf margin of antical lobe; C – leaf margin of postical lobe; D – gemmae; E – cells from middle of postical lobe; F, G, H – leaves.

tips deflexed. Also, thin-walled red gemmae are diagnostic of *S. umbrosa*.

Ecology and distribution.

Scapania gracilis Lindb. is acidophyt-subneutrophytic [pH 4.1–4.8; 5.7–7.0 (–7,5)], hygrophyt-mesophytic, sciophytic-photophytic. The taxon preferentially grows on rocks and tree trunks, scree, ravines, on heaths and moorland, cliffs, occasionally on rotting logs and peat, calcifuge. (Smith, 1990; Paton, 1999). It is one of the characteristic species of the alliance Scapanio-Dicranetum scottiani (Dierssen, 2001) and the association Scapanio gracilis-Dicranetum scottiani Zippel 1998 (Kürschner et al., 2007).

In Turkey *Scapania gracilis* was collected on soil surface from Akyazı district. It was found together with the moss species *Leucobryum juniperoideum* (Brid.) Müll.Hal., *Dicranum scottianum* Turner ex R.R.Scott, *Hypnum cupressiforme* Hedw. and *Atrichum angustatum* (Brid.) Bruch & Schimp., and the liverwort species *Calypogeia fissa* (L.) Raddi and *Cephalozia bicuspidata* (L.) Dumort.

Scapania gracilis is distributed in Portugal, Germany, Spain, France, Netherlands, Den-

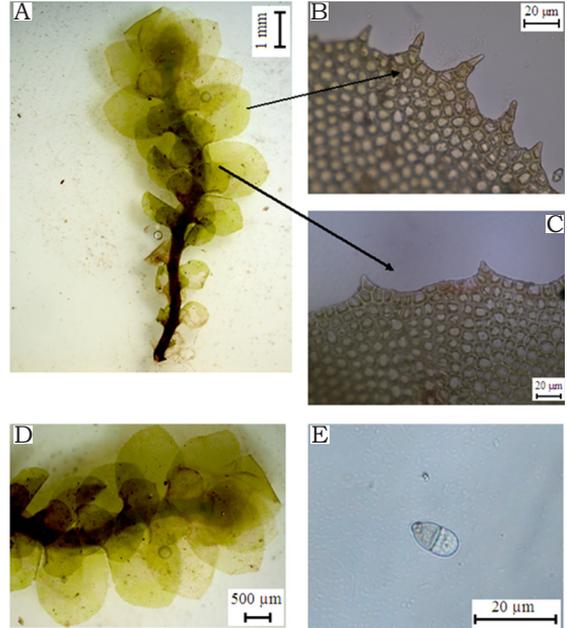


Fig. 2. *Scapania gracilis*. A – wet habit, antical view; B – leaf margin of postical lobe; C – leaf margin of antical lobe; D – apex of leafy shoot, antical view; E – gemma.

mark, Norway, Sweden, Faroe Islands, British Isles and Ireland, Macaronesia, Corsica, Italy, Greece, Romania and Morocco (Sotiaux et al., 1998).

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