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A new species of *Campanula* (Campanulaceae) from Turkey

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Abstract

Campanula malatyaensis Mutlu & Karakuş is described as a new species from the Malatya province (Eastern Turkey). The new species belongs to section *Tracheliopsis* (Buser) Damboldt and morphologically resembles *C. myritifolia* Boiss. & Heldr. and *C. fruticulosa* (Schwarz & Davis) Damboldt. Morphological differences between *C. malatyaensis* and these taxa are discussed. This study presents SEM images (pollen, seed, corolla hair, and stylus hairs), photographs (type specimen, habitat, flowering specimens, and fruiting specimens), and conservation status of the new species.

Key words: Campanulaceae, pollen, seed, SEM

Introduction

Campanula L. is the largest genus of the *Campanulaceae* family, including approximately 350–500 species across a wide range of habitats in the Northern Hemisphere (Federov,1957). The highest diversity in the genus is found in the mountain ranges of the eastern Mediterranean and the Caucasus area (Fedorov & Kovanda, 1978). According to Rosatti (1986) and Lammers (2007), 420 species of the genus are distributed around the Mediterranean Region. The genus is represented in Turkey by 6 subgenera [*Campanula*, *Megalocalyx* Damboldt, *Roucela* (Dumort.) Damboldt, *Brachycodonia* (Fedorov) Damboldt, *Sicyodon* (Feer) Damboldt and *Rapunculus* (Boiss.) Kharadze] and 133 taxa (7 subspecies and 3 varieties), 66 which are endemic to the country (Damboldt 1978, İkinci, 2012).

Campanula is distinct from other genera (*Asyneuma* Griseb. & Schenk, *Jasione* L., *Legousia* Durande, *Michauxia* L'Herit., *Symphyandra* A.DC.) in terms of habitual forms (annual, biennial, and perennial), corolla shape (5-lobed, usually campanulate, cylindrical, elongate or infundibular), position of anthers (free or rarely connate in only young flowers), and capsule dehiscence (apical, basal or lateral pores) (Damboldt, 1978).

The extensive floristic study in the Malatya province of Turkey resulted in collections of many flowering and fruiting specimens of Campanulaceae. This province is the centre of the "Anatolian diagonal", which topographically divides Anatolia into two parts as east and west. The flora of this province is one of the richest in Turkey (Davis, 1962; Mutlu & Karakuş, 2015). Some of the collected specimens, which are only found in the Hekimhan village, have been identified under the subgenus *Campanula* (genus *Campanula*) due to differences in corolla shape, anther position, and opening shape of the capsule. Four such species (*C. peshmenii* Güner, *C. demirsoyi* Kandemir, *C. hacerae* A.İlcim, and *C. alisan-kilincii* Yıldırım & Şenol), which have local distributions on the diagonal, have been published as new species in the last thirty years (Güner, 1983; Kandemir, 2007; İlçim *et al*., 2011; Yıldırım & Şenol, 2014). The specimens collected from Hekimhan represent a species distinct from these previously described species and belong to *Campanula* section *Tracheliopsis*.

Material and Methods

Collected specimens were prepared as herbarium vouchers according to Bridson and Forman (1998). These specimens are kept at the INU herbarium. Morphological characters of studied specimens were examined by a binocular stereoscopic microscope. SEM micrographs of seed, pollen, and hair samples, coated with gold, were obtained by

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