



Redescription of *Tripleurospermum heterolepis* (Asteraceae), endemic to Turkey

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Abstract

Tripleurospermum heterolepis (Freyn & Sintenis) Bornmüller has been poorly known as a local endemic species classified within DD category of IUCN. It had not been collected since its introduction to scientific community in 1895. In 2007, *T. heterolepis* was rediscovered in its type locality. Based on its syntypes deposited at B and G as well as the new specimens collected from the type locality, a misdescription of the species in the *Flora of Turkey and the East Aegean Islands* is also reported. A new description of *T. heterolepis*, amended and extended, is presented here, and its updated conservation status is indicated. The diagnostic morphological characters that distinguish the species from its close relatives are discussed.

Key words: Compositae, *Flora of Turkey*, morphology, taxonomy

Introduction

Tripleurospermum Schultz Bipontinus (1844: 31) is a small genus of the tribe Anthemideae of the family Asteraceae with ca. 40 species that is mainly distributed in Europe, temperate Asia, North America and North Africa (Oberprieler *et al.* 2007, Himmelreich *et al.* 2008). It is also difficult to determine the exact number of species without a monographical treatment of the whole genus because its species have often been referred to other Anthemideae genera such as *Anthemis* Linnaeus (1753: 893), *Chamaemelum* Miller (1754: 315), *Chrysanthemum* Linnaeus (1753: 887), *Matricaria* Linnaeus (1753: 890) and *Tanacetum* Linnaeus (1753: 843) (Pobedimova 1995, Inceer & Hayırlıoğlu-Ayaz 2010, Inceer & Hayırlıoğlu-Ayaz 2014).

The genus was revised for the *Flora of Turkey and the East Aegean Islands* (Enayet Hossain 1975), with 26 taxa recognized. Later, two new records and three new species were added to the flora of Turkey (Inceer and Beyazoğlu 2004, Inceer & Hayırlıoğlu-Ayaz 2008, Inceer and Hayırlıoğlu-Ayaz 2010, Yıldırım 2010, Inceer & Hayırlıoğlu-Ayaz 2014). At present, the genus includes ca. 31 taxa in Turkey, of which 15 are endemic (Inceer 2012).

Tripleurospermum heterolepis (Freyn & Sintenis in Freyn 1895: 349) Bornmüller (1944: 335) has been poorly known as an endemic species classified within DD category of IUCN (Ekim *et al.* 2000, IUCN 2014a). It has not been collected since its introduction to scientific community in 1895. Taxonomic treatment of *T. heterolepis* in the *Flora of Turkey* was only based on its syntypes described from Gümüşhane Province. In July 2007, during field studies for the project “Revision of the Genera *Matricaria* and *Tripleurospermum* in Turkey”, some *Tripleurospermum* specimens in Gümüşhane Province were collected, but these specimens could not have been identified using the *Flora of Turkey*. In the field, the specimens looked like *T. callosum* (Boissier & Heldreich in Boissier 1849: 22) Hossain in Davis (1975: 435) and *T. sevanense* (Mandenova 1954: 376) Pobedimova (1961: 353) because of their habit except their life cycle. Furthermore, they have glands at apices of the disc flowers as in these species. After observing the morphological characters, checking the syntypes of *T. heterolepis* deposited at B and G in 2008, it was concluded that the specimens represented *T. heterolepis*.

Presence or absence of glands at apices of the disc flowers has a great taxonomic value in *Tripleurospermum*. Enayet Hossain (1975) reported that *T. heterolepis* possesses eglandular disc flowers, and he used this character in the identification key of the genus *Tripleurospermum* in the *Flora of Turkey*, but Freyn (1895) did not mention this character in its description. A close examination of the type specimens of *T. heterolepis* at B and G revealed that it has prominent glands at the apices of the disc flowers. In the present study, amended and extended description together with phenology, habitat, distribution and conservation status is presented for *T. heterolepis*. A dichotomous key for *T. heterolepis* and its relative species is provided.



FIGURE 1. Images of herbarium sheets of *Tripleurospermum heterolepis*. A. *Sintenis 6088b* in Berlin herbarium (B). B. *Sintenis 6088b* in Geneva herbarium (G).

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