



Tragopogon anatolicus (Asteraceae), a new species from east Turkey

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Abstract

The new species, *Tragopogon anatolicus* A.Duran, B.Doğan & Coşkunç. sp. nov. (Asteraceae) is described and illustrated from Cilo Mt. (Hakkari), south-east Anatolia, Turkey. *Tragopogon anatolicus* is a local endemic, most similar to *T. buphthalmoides* (DC.) Boiss. Diagnostic morphological characters of these two closely related taxa are discussed. A phylogenetic analysis based on nrDNA ITS sequence data indicated that *T. buphthalmoides* is the sister species of the new taxon. Ecology, biogeography and conservation status of the new species are also presented.

Key words: Anatolia, Compositae, ITS, pollen, taxonomy

Introduction

The genus *Tragopogon* Linnaeus (1753: 789) (Asteraceae, Cichorieae, Scorzonnerinae) encompasses about 100–150 species. This genus is ancient Mediterranean by origin; it is distributed in Europe, temperate Asia and North Africa, mainly in south-western to Central Asia, with a number of widely introduced species (Bremer 1994, Mavrodiev *et al.* 2005, Lack 2007). While most of the *Tragopogon* taxa are diploids, polyploidy was also recorded within the genus (Ownbey 1950, Mavrodiev *et al.* 2005, Mavrodiev *et al.* 2008). The genus includes annual, biennial and perennial herbaceous plants with entire and parallel-veined leaves, involucre bracts in one row, achenes generally scabrous and beaked. It is almost impossible to diagnose *Tragopogon* taxa without adequate knowledge of the colour of ligulae and mature achenes (Borisova 1964, Matthews 1975). The genus is taxonomically complex because the morphological variability (Mavrodiev *et al.* 2005) and hybridization increase difficulties in distinguishing between its species (Ownbey 1950).

Tragopogon is represented by 79 species in *Flora of the USSR* (Borisova 1964), 37 species in *Flora Iranica* (Rechinger 1977) and 20 species in *Flora Europaea* (Richardson 1976). In Turkey, the number of species in *Tragopogon* is 21, excluding doubtfully recorded taxa (Coşkunçelebi & Gültepe 2012). Seven of these taxa are endemic to Turkey resulting in an endemism ratio of 33%. In this paper, one more new *Tragopogon* species is described and illustrated.

Material and methods

During a field trip, we collected some specimens belonging to the genus *Tragopogon* from Cilo Mountain, Hakkari (Turkey). After studying species descriptions in the accounts of Borisova (1964), Matthews (1975), Richardson (1976), Rechinger (1977), Davis *et al.* (1988), Özhatay *et al.* (1999, 2009, 2011), Şida & Tan (2000), Özhatay & Kültür (2006), as well as comparing with specimens in the herbaria GAZI, HUB, KNYA, KTUB, ANK, E, K, P, G, we concluded that our specimens represent a species new to science.

Morphological features of the new species and *T. buphthalmoides* (Candolle 1838: 121) Boissier (1875: 750) from herbarium specimens kept in the herbaria of KNYA and KTUB were recorded and examined. At least ten measurements from different specimens for each character were scored for descriptions. Pollen grains were prepared for light

an oblique belt running from the north-east, south to the Anti-Taurus; it was then divided into two branches, with one branch to the Amanous (Amanos Mountain Ranges), the other to the Cilician Taurus (Davis 1971). Thirty three percent of the total species growing in Turkey are found along the Diagonal, while 5% are more or less restricted to it. One explanation for the present richness of species here is neo-endemism (Ekim & Güner 1986). *Tragopogon anatolicus* grows south-eastwards of the Diagonal which is influenced by the Irano-Turanian phytogeographic region (Fig. 2).

Acknowledgements

We express our thanks to TÜBİTAK (Project no. TBAG-109T243 and TBAG-110T954) for financial support.

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