



A contribution to the taxonomy of *Centaurea* sect. *Cynaroides* (Asteraceae, Cardueae–Centaureinae) in Iran

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Abstract

The taxonomy of *Centaurea* sect. *Cynaroides* is revised in Iran. A new species *Centaurea karamianiae* closely related to *C. regia* and *C. amadanensis* is described from Kermanshah Province, W Iran. In addition, *C. gabrielliae* and *C. wendelboi* are transferred from *C.* sect. *Cynaroides* to the new section *C.* sect. *Ranjbarianae*.

Key words: Flora Iranica, Kermanshah, new section, new species

Introduction

Taxonomic confusions associated with *Centaurea* Linnaeus (1753: 909) are the most long-lasting problems encountered in Asteraceae as the largest family among flowering plants (Bremer 1994, Wagenitz & Hellwig 1996, Hellwig 2004, Garcia-Jacas *et al.* 2006, Susanna & Garcia-Jacas 2007). Reviewing the relevant literature shows that Iran is among the main centers of *Centaurea* diversity in west Asia (Boissier 1875, Czerepanov 1963, Wagenitz 1975, 1980). Subsequently, *Centaurea* s.l. was sorted into four genera: *Centaurea* s. str., *Rhaponticoides* Vaillant (1754: 165), *Psephellus* Cassini (1826: 488) and *Cyanus* Miller (1754: 4) (Wagenitz & Hellwig 2000, Greuter 2003). The reflect of the above splitting on the flora of Iran led to publishing many new combinations; in addition, field studies resulted in the discovery of many new species of *Centaurea* during the recent decades (Wagenitz & Esfandiari 1983, Mozaffarian 2006, 2010, Ranjbar *et al.* 2012a, 2013b, 2013b, 2013d, Ranjbar & Negaresh 2012, 2013a, 2013b, 2013c).

According to Susanna & Garcia-Jacas (2009), three main morphological evolutionary trends are recognizable in subtribe Centaureinae: the development of marginal sterile radiant florets (which in most primitive genera still are staminodes, e.g. in *Mantiscalca* Cassini (1818: 141)); changing the disposition of hilum from the basal part of the achene to a lateral one; and a trend towards the development of complicated appendages in the phyllaries (Dittrich 1968, Wagenitz & Hellwig 1996, Garcia-Jacas *et al.* 2001, 2006).

The sectional classification of *Centaurea* is mainly based on the diagnostic features taken from the morphology of the appendage of phyllaries, the achenes and the pappus (Garcia-Jacas *et al.* 2001). *Centaurea* sect. *Cynaroides* Boissier ex Walpers (1846: 330) includes mainly large biennial plants that, except for *C. charrelii* Halácsy & Dörfler in Dörfler (1894: 6) which occurs in Greece, otherwise are Irano-Turanian, Mediterranean and Zagrosian elements (Wagenitz 1975, 1980, Constantinidis *et al.* 2002). Regarding the taxonomic treatments (Walpers 1846, Boissier 1875, Wagenitz 1960, 1975, 1980, Dostál 1973) it is obvious that except for the classification of *C.* sect. *Cynaroides* and the position of *C. gabrielliae* (Bornmüller 1939: 303) Wagenitz (1960: 492) which were the matter of some controversies (Bornmüller 1939, Czerepanov 1960, Wagenitz 1960), otherwise *C.* sect. *Cynaroides* was of a relative taxonomic consistency among *Centaurea* researchers (Boissier 1875, Wagenitz 1960, 1975, 1980).

This study is aimed to accommodate a new *Centaurea* species discovered in Iran in *C.* sect. *Cynaroides*. Furthermore we attempt to improve the delimitation of this section by transferring two heterogeneous species i. e., *C. gabrielliae* and *C. wendelboi* Wagenitz (1980: 370) from *C.* sect. *Cynaroides* to their own new section.



FIGURE 9. Habit of *Centaurea wendelboi* Wagenitz; after Wagenitz (1980).

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