



Taxonomic notes on the *Cephalaria* sect. *Atrocephalae* (Caprifoliaceae) from Iran

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Abstract

Cephalaria bojnordensis (Caprifoliaceae) is described and illustrated as a new species from Khorasan Province, north-east Iran. The characters that distinguish this new species from *C. microcephala* and *C. isurica* are provided along with a key to the Iranian species in *Cephalaria* sect. *Atrocephalae*. In addition, a lectotype is designated for *C. microcephala*.

Key words: *Cephalaria*, Khorasan, new species, taxonomy

Introduction

The genus *Cephalaria* Schrader ex Roemer & Schultes (1818: 43) belongs to the family Caprifoliaceae (Dipsacales) and consists of about 100 species (Reveal & Chase 2011, Mayer & Ehrendorfer 2013). The members are herbaceous (rarely shrubby) hemicryptophytes with ovoid or globose capitula, coriaceous involucre and receptacular bracts in several rows, receptacular bracts larger than the involucre bracts, cupuliform calyx, 4-lobed corolla and the common chromosome base number of $x = 9$ (Verlaque 1980, Mayer & Ehrendorfer 2013).

The main centers of distribution of *Cephalaria* are in Europe, eastern Mediterranean, north and central Africa, east Asia, Iran and the Middle East (Szabó 1940).

Candolle (1830: 647) separated *Cephalaria* species into three groups based on the following characters: (1) perennials, with acuminate and pubescent receptacular bracts; (2) annuals, with membranous and apiculate to aristate at apex receptacular bracts; and (3) perennials, with only external obtuse receptacular bracts.

Boissier (1875: 117) divided *Cephalaria* into two sections: (1) *Phalacarpus*, with the involucre bald at apex, (2) *Lepicephalus*, with the involucre having teeth or being 4–8 aristate.

Szabó (1940: 115) placed the 53 species of *Cephalaria* into four subgenera: (1) *Lobatocarpus*, (2) *Fimbriatocarpus*, (3) *Phalacrocarpus*, and (4) *Cephalaria* (formerly called “*Denticarpus*” Szabó). The number of epicalyx grooves and differences in the reduced corona were the characters used for distinguishing these subgenera.

Cephalaria subg. *Cephalaria* has an epicalyx ending in short or long awns, is the largest subgenus with 43 species and is divided into seven sections, five of which are for the perennial species and two for the annuals (Szabó 1940, Carlson *et al.* 2009).

In the *Flora Iranica* (Lack 1991), there are seven species of *Cephalaria* listed, three of which belong to section *Atrocephalae*. Since then five species have been newly recorded for Iran (Jamzad 1993). These include *C. transsylvanica* (L.) Schrad, Cat., *C. uralensis* (Murr.) Schrad., *C. hirsuta* Stapf., *C. tchihatchewii* Boiss., *C. kotschyi* Boiss & Hohen. The three latter species are placed in *C.* section *Atrocephalae*.

Material and methods

The present study is based on herbarium material of *Cephalaria* deposited at BASU, BM, E, FUMH, G, JE, K, W and WAG and our own collections and field observations made around Reen, near Bojnord in Khorasan Province, north-east Iran. The collected specimens were identified using the *Flora Iranica* (Lack 1991), the *Flora USSR* (Bobrov 1957) and the *Flora of Turkey* (Matthews 1972). One species was found to be new to science.