



Amberboa maroofii (Asteraceae, Cardueae–Centaureinae), a new species from Kurdistan, Iran

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Abstract

Amberboa maroofii is described and illustrated as a new species from Kurdistan Province, W Iran. It is a diploid species ($2n = 2x = 32$) and morphologically most similar to *A. glauca*. The new species is also compared with *A. moschata*, *A. sosnovskyi* and *A. zanjunica*. Its distribution range covers a small area; it grows on clay at elevations of 1400–1800 m.

Key words: chromosome counts, Compositae, Kurdistan, taxonomy

Introduction

Amberboa (Persoon 1805: 481) Lessing (1832: 8) is an Old World genus. Its systematic position has been determined as a distinctive genus within the subtribe Centaureinae (Wagenitz & Hellwig 1996, 2004, Garcia-Jacas *et al.* 2001, Susanna & Garcia-Jacas 2007), tribe Cardueae and family Asteraceae.

The genus *Amberboa* includes annual or biennial herbs. The genus is characterized by often subglabrous, pinnatifid or lyrate or pinnately incised or entire leaves, involucre ovoid, phyllaries multiseriate, flowers pink or yellow, much surpassing involucre, heteromorphic, all achenes similar, oblong, weakly compressed laterally, densely appressed hairy, truncate at apex, hilum lateral and surrounded by light-colored annular ridge (Tzvelev 1963, Rechinger 1980). In the Flora Iranica, 5 species of *Amberboa* were included by Rechinger (1980). A new contribution of the genus in Iran was provided by Ranjbar & Negaresh (2013) that described a new species, i. e. *A. zanjunica* Ranjbar & Negaresh (2013: 272), and presented a new key for this genus.

During recent floristic studies in West of Iran, I collected two specimens belonging to *Amberboa* that could not be assigned to any known species. Maroofi (2002), reported *A. glauca* (Willdenow 1803: 2278) Grossheim in Grossheim & Sakhokia (1931: 105) as new to the flora of Iran from same area from which my specimens originated. According to him, there are however some differences between these specimens and *A. glauca*. After thorough examination of the relevant floristic literature (Tzvelev 1963, Wagenitz 1975, Rechinger 1980, Gabrielian 2011, Ranjbar & Negaresh 2013), and comparison with specimens in the herbaria B, FUMH, G, HKS, HUI, LE, P, W and WU, I concluded that (2) this material as well as one specimen at HKS collected in the same area in W Iran in 2001 by Maroofi & Yosefi and determined as *A. glauca* in fact represent a species new to science. So, I decided to describe these specimens as a new species, i. e. *A. maroofii* Negaresh, which increases the total number of *Amberboa* known from Iran to 7 species.

Materials and methods

Morphology

Plants were collected from different localities during several excursions in Iran, both in the flowering and fruiting phases, between 2011 and 2014. In addition, the collections of B, BASU, FUMH, G, HKS, HUI, LE, P, W and WU (acronyms follow Index Herbariorum online at <http://sweetgum.nybg.org/ih/>) were examined. Digitized specimens were received upon request from the relevant Herbaria, viewed via online herbarium catalogues of the Herbaria or via JSTOR (2012).

Taxonomic and distributional remarks:—The new species is very interesting because it is the largest of all the *Amberboa* species in the world. The new species has potential as an ornamental plant, and after *A. zanjanica* it is the second endemic species of the genus in Iran. *Amberboa maroofii* is similar to *A. glauca* in the indumentum of its leaves and the color of its flowers, but it differs from the latter by some important characters listed in Table 1. The latter species is endemic to the Caucasus and Transcaucasia (Ranjbar & Negaresh 2013).

Amberboa maroofii shares some characters such as the indumentum of leaves, the radiant flowers, the shape of achenes and pappus with *A. sosnovskyi* Iljin (1932: 114), but differs from that species as stated in Table 1. *Amberboa sosnovskyi* occurs in Armenia, Nakhchivan, Azerbaijan and NW Iran (Tzvelev 1963, Rechinger 1980, Ranjbar & Negaresh 2013). *Amberboa maroofii* occurs at elevations higher than 1400 m, whereas in Iran the *A. sosnovskyi* occurs at elevations lower than 1400 m. Furthermore, *A. sosnovskyi* is flowering from June to July and fruiting from July to August.

This species is also similar to *A. moschata* (Linnaeus 1753: 909) Candolle (1838: 560), from Turkey and Transcaucasia (Tzvelev 1963, Wagenitz 1975), especially because of the shape of inner appendages, color of flowers, and number of lobes of peripheral flowers. However, it differs from *A. moschata* in some characters of its habit, dissection of leaves and shape and size of involucre (Table 1).

In addition, *A. maroofii* shares some characters such as color of flowers, status of peripheral flowers rather than central flowers, and length of achenes and pappus with *A. zanjanica*, endemic to western Iran, but there are several differences that are listed in Table 1. Furthermore, *A. zanjanica* is flowering from May to June and fruiting from June to July (Ranjbar & Negaresh 2013).

Chromosome number report:—My study showed that *A. maroofii* is a diploid species with the chromosome number of $2n = 2x = 32$ (Fig. 1C), which is consistent with the known (or reported) basic number of $x = 16$ for the genus. This basic number of $x = 16$ is already known in other species of the genus (Gupta & Gill 1981, 1989, Garcia-Jacas *et al.* 1998a, 1998b, Ranjbar & Negaresh 2013).

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