



First Turkish record of a species from family asteraceae (compositae): *Onopordum carduiforme* boiss.

Süleyman Mesut PINAR ^{a,*}, Hüseyin EROĞLU ^b

^a Yüzüncü Yıl University, Van School of Health, 65080, Tuşba -Van, Turkey

^b Yüzüncü Yıl University, Faculty of Sciences, Department of Biology, 65080, Tuşba -Van, Turkey

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ABSTRACT

In this study *Onopordum carduiforme* (Asteraceae) is recorded for the first time from South Anatolia region (Hatay) of Turkey. The diagnostic characters of *Onopordum carduiforme* are given. Besides to description of the new record, photograph of the general habitus in nature is provided. Geographical distribution is mapped, and also IUCN threat category of the species at the regional scale is proposed as VU.

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1. Introduction

The genus *Onopordum* L. (Asteraceae: Cardueae) is represented by approximately 60 taxa, mostly growing mainly in Northern hemisphere (Susanna and García-Jacas, 2007). According to the latest checklist for *Onopordum* (The Plant List, 2013), this genus comprises 46 taxa distributed worldwide. The latest revision of *Onopordum* in Turkey, by Danin (1975), accepts 17 species, five of which endemics. Since, two new taxa and three new records have been added to the Turkish Flora (Davis et al., 1988; Tuzlacı, 2000; Özhatay et al., 2009; Pinar and Behçet, 2014a, 2014b). At present, genus *Onopordum* is represented in Turkey by 21 species and two varieties (totalling 22 taxa), of which seven are endemics. In this study, one more species of *Onopordum* (Asteraceae or Compositae) are recorded for Turkey.

2. Materials and methods

The specimens of *O. carduiformis* were collected by the authors in April 2014, in the course of field trips to South Anatolia at Hatay province. Initially, they seemed to be close to *O. boissierianum*. These specimens were compared with the related taxonomic sources (Eig, 1942; Tamamschyan, 1963; Danin, 1975; Amaral, 1976; Feinburn, 1978; Rechinger, 1979). For confirmation, our plants were compared with the type specimens and authenticated materials in the herbaria: ANK, BM, EGE, E, G, GAZI, HUB, ISTE, JE, K, KNYA, P, VANF and W (abbreviations as per Thiers, 2017). After compared with specimens of morphologically similar taxa, we decided that the presented specimens are belongs to a new record *O. carduiforme* close to *O. boissierianum*. The morphological description was prepared based on our newly collected materials. Voucher specimens are deposited at the Van Yuzuncu Yil University herbarium (VANF).

* Corresponding author.

Tel.: +90 432 2251180; fax: +90 432 2251180

E-mail address: mesutpinar@hotmail.com



Figure 1. Distribution map of *O. carduiforme* (*). Blue symbol indicated by the arrow is the new Turkish locality.

3. Results and discussion

Asteraceae (Compositae), tribe *Cardueae* Cass.

Onopordum L.

Onopordum carduiforme Boiss., *Diagn. Pl. Orient.* 10: 92 (1849) (Figure 1, 2).

Syn.: *Onopordum libanoticum* Boiss. & C.I. Blanche in Boiss., *Diagn. Pl. Orient.*, ser. 2, 3: 48 (1856), *Onopordum telavivense* Eig, *Palestine J. Bot.*, Jerusalem Ser., 2:187 (1942).

Type: Palaestina, Gaza, Apr.-May 1846, *Boissier* (G-BOIS; isotype: G photo!).

Description: Biennial, up to 150 cm, sparsely arachnoid, greenish-yellow or green. Stem mostly branched 30–100 cm above the base, winged and leafy all along, 4–6 wings, with triangular long-spiny lobes, wings united with a narrow green margin at lobes, 3–15 mm wide (inc. spines), spines 2–5 mm. Leaves almost glabrous on upper surface, often arachnoid and greyish on the lower; sessile glands or glandular hairs absent. Radical and cauline leaves broadly oblong-elliptic to elliptic in outline, pinnatisect; segments remote, oblong to lanceolate, irregularly and grossly dentate, 30–50 × 8–12 cm (including spines), spines 3–5 mm, yellow. Capitula homogamous and discoid, only one capitula on peduncles 10–30 cm; involucre depressed-globose, 2–4 × 3–7 cm (inc. spines), involucre 2–5 cm diameter (exc. spines), concave at base; phyllaries 6–7 seriate, imbricate, purple, outer and median phyllaries are sparsely arachnoid at base, glands absent, scabrid, inner phyllaries glabrous, margin scabrid, outer phyllaries recurved, 11–25 × 3–4 mm (inc. spines), spines 2–4 mm, lanceolate, median phyllaries reflexed, 20–30 × 3–4 mm (inc. spines), spines 2–4 mm, lanceolate, inner phyllaries erect, 18–20 × 2–3 mm (inc. spines), spines 1–2 mm, linear; receptacle tetragonal pitted, pits 1.5–2 mm, edges lacerate. Florets monoic, corolla pink to purple, 18–20 mm, 5 lobed, linear, four corolla lobes equal, 5–8 mm; fifth corolla lobe longer than others, 10–12 mm. Achenes obovate, greyish, 4–6 × 2–3 mm, transverse-rugose,

irregularly and finely undulate at surface; pappus setae of 2 lengths, thin setae 6–8 mm, thick setae up to 10 mm, scabrous, creamy.

Phenology: Flowering from March to August.

Habitat: Roadside, glades, waste places.

Distribution: Egypt, Palestine, Israel, Lebanon, Jordan, Syria; new to Turkey.

Material: Turkey, C6 Hatay: Arsuz, Amanos, road of radar, roadside, 36° 18.15' N, 36° 02.59' E, 1430 m, 13.04.2014, *M.Pınar* 5045 & *H.Eroğlu*.

Other examined specimens: Ajlun Castle, 01.vi.1945, *Davis* 9663 E photo!

Conservation Status in Turkey: *Onopordum carduiforme* is classified by us as 'Vulnerable' in Turkey, VU(D1; E), based on IUCN criteria (IUCN 2014). Its population is very small and restricted (the approximate area of occupancy is c. 0.30 km²) (criterion D), and mature individuals number less than 1000 (criterion D1). Also, we consider probability of extinction in the wild to be more than 10 % within the next 100 years (criterion E).

It was not surprising to extend the distribution of this species in Turkey, because this species also grows in nearby Syria, Lebanon, Palestine, Israel, Jordan, and Egypt. *Onopordum carduiforme* is very similar to *O. boissierianum* Raab-Straube & Greuter, which is endemic to Turkey. However, there are some morphological differences between them: *O. carduiforme* differs from *O. boissierianum* in having indumentum in leaves (only arachnoid hair, glandular hair or gland absent), stem branching 30–100 cm above the ground (not near the ground), shorter flower (ca. 20 mm, not 25–35 mm), and higher number of capitula (not 2–8). The differences between the two species are shown in Table 1. Consequently, the total number of *Onopordum* species in Turkey increased to 22 (23 taxa) with this new record.

Table 1. Comparison of morphological characteristics of *Onopordum carduiforme* and *O. boissierianum*

Characters	<i>Onopordum carduiforme</i>	<i>Onopordum boissierianum</i>
Leaf indumentum	almost glabrous on adaxial face, often arachnoid abaxially, without glands or glandular hairs	sparsely arachnoid, glandular beneath
Branching	30–100 cm above the ground	almost at ground level
Peduncle length (cm)	10–30	4–20
Capitula	numerous	2–8
Involucre diameter (cm)	2–4	2–5
Flower length (cm)	ca. 2	2.5–3.5
Phyllary shape	lanceolate	broadly lanceolate
– length (cm)	2–3	0.8–3

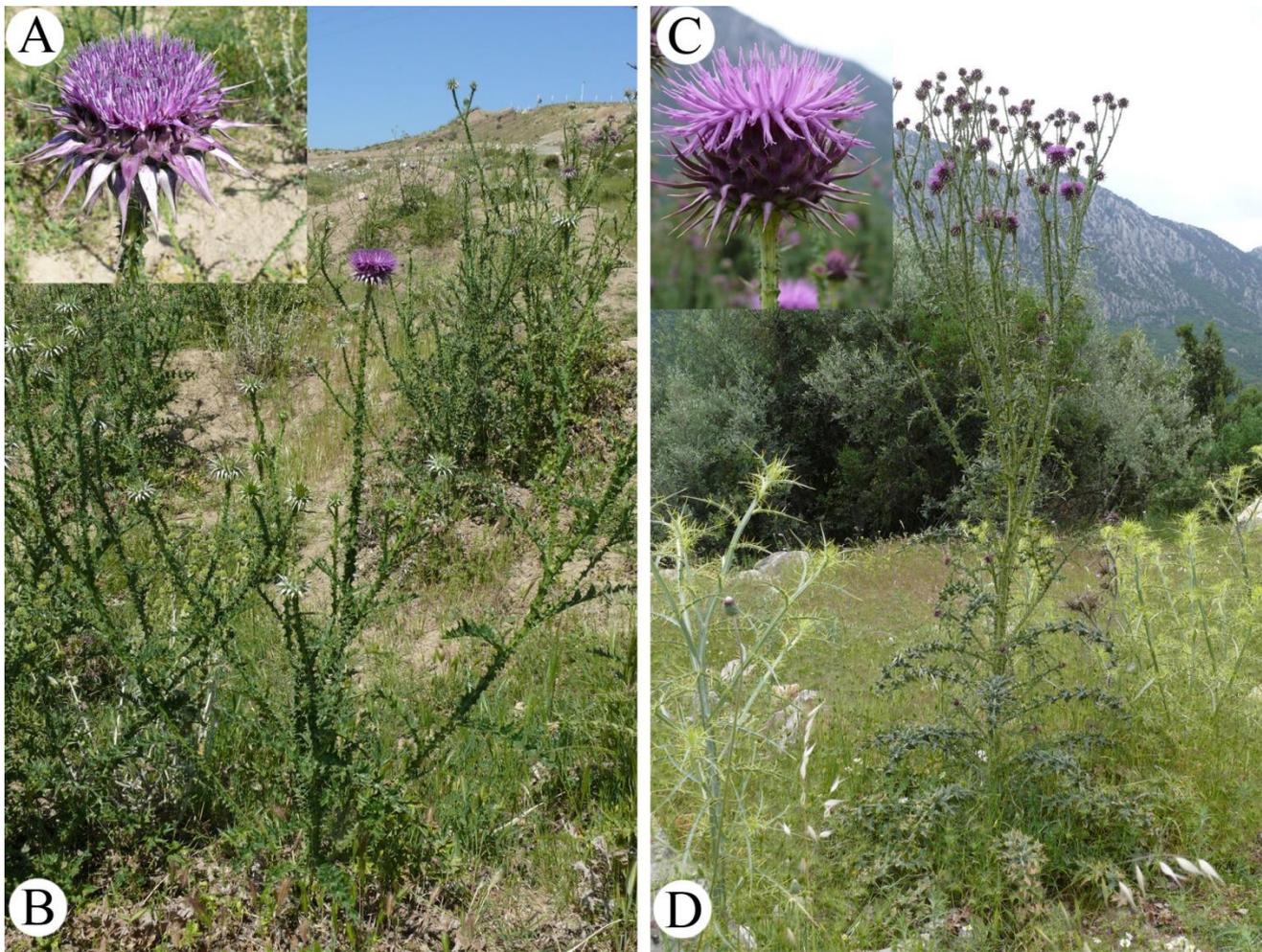


Figure 2. Habits and capitula of *O. boissierianum* (A, B) and *O. carduiforme* (C, D) (photographs by SM Pinar).

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