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Gundelia asperrima (Compositae) – a species endemic in Turkey

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Abstract

Gundelia asperrima (Trautv.) Çakilcioğlu, Yüce & Vitek is a distinct taxon that merits the rank of species. The characters and the distribution are discussed.

Key Words: Compositae, Gundelieae, *Gundelia*, *G. asperrima*; Flora of Turkey.

Introduction

When it was realized that *Gundelia tournefortii* L. (1753) consists of several clearly distinguishable taxa (Vitek et al. 2010) it was the next step to check all species and infra-specific taxa described later and treated as synonyms for their content. *Gundelia glabra* Miller (Vitek & al. 2017) and *G. rosea* M. Hossain & Al-Taey (Vitek & Noroozi 2017b) have been re-established as distinct species, *G. microcephala* (Bornm.) Vitek is classified as species in the meantime (Vitek 2018). Another variety which needed to be checked is *G. tournefortii* var. *asperrima*, described by Trautvetter (1876).

Material and methods

The locality given in the description of var. *asperrima* – Mt. Palandöken near Erzurum – has been visited and material collected (Çakılcıoğlu & Yüce 1416, 1417, 1418, 1419, 1420). The specimens have been compared with the description. Additional material has been collected c. 45 km SSW of Mt. Palandöken (Gilli CG-187). This locality belongs basically to the same mountain – there is no deep river valley in between. It is still in Prov. Erzurum, not far from the border to Prov. Bingöl. One more specimen from Mt. Palandöken has been found in the herbarium of the Real Jardin Botanico, Madrid (Herrero & al. AH 1672).

The morphological terminology follows Classen-Bockhoff & al. (1989). Abbreviations for herbaria refer to Thiers (accessed 2017).

Specimens: **Turkey,** Erzurum, Palandöken, c. 4 km S of Erzurum center, [2130 m,] 39°52'23"N 41°17'14"E, 2014-06-21, U. Çakılcıoğlu & E. Yüce 1416 [Tunceli University 14-0001, W 2014-0015395, W 2014-0015396, NY]; U. Çakılcıoğlu & E. Yüce 1417 [Tunceli University 14-0002, W 2014-0015399, W

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Fig. 1: *Gundelia asperrima*, near Erzurum, 2014-06-21, U. Cakilcioglu & E. Yüce.

2014-0015400, E, MSB]; U. Çakılcıoğlu & E. Yüce 1418 [Tunceli University 14-0003, W 2014-0015392, W 2014-0015393, W 2014-0015394, B]; U. Çakılcıoğlu & E. Yüce 1419 [Tunceli University 14-0004, W 2014-0015397, W 2014-0015398, BC]; U. Çakılcıoğlu & E. Yüce 1420 [Tunceli University 14-0005, W 2014-0015401, W 2014-0015402, W 2014-0015403, W 2014-0015404]; – Erzurum, monte Palandöken, 39°51'N 41°17'E, 2800 m, 2001-06-30, A. Herrero & al. AH 1672 [MA 687297]; – Erzurum, district Çat, roadside in D 950 between Bingöl and Erzurum, about 8.5 km SE Çirişli Köyü, 2310 m, 39°28'26"N 41°02'22"E, 2014-06-30, C. Gilli CG-187 [W 2015-0005313].

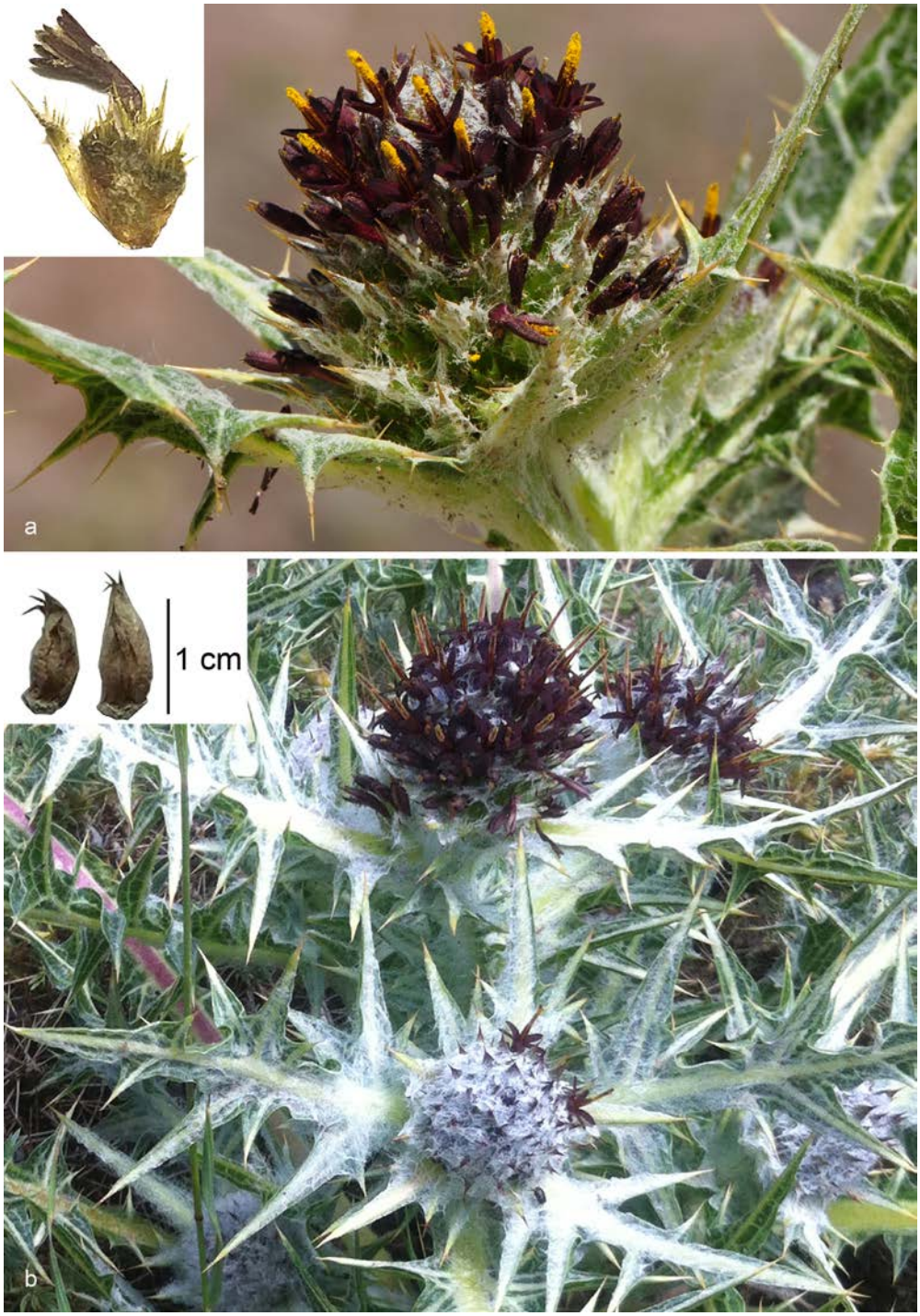

Fig. 2: *Gundelia asperrima*, (a) SE Çirişli Köyü, 2014-06-30, C. Gilli CG-187 [Foto © C. Gilli]; (b) near Erzurum, 2014-06-21, U. Cakilcioglu & E. Yüce, fruits of W 2014-0015396.

Results and discussion

***Gundelia asperrima* (Trautv.) Çakilcioğlu, Yüce & Vitek, comb.n. et stat.n.**

≡ *Gundelia tournefortii* var. *asperrima* Trautv., Trudy Imperatorskago S.-Petersburgskago botanicheskago sada 4: 146 (1876).
Type: "In Turciae districtu Erzerum, in montibus Palänteken, altit. 6300' [1920 m], Radde" [TB n.v.].

Original description (Trautvetter 1876): "var. asperrima Trautv. capituli bracteis arachnoideo-lanuginosis; calathidiis in bractearum axillis ternis, connatis, lateralibus sterilibus, medio fertili; pericliniis extus asperrimis."

The plants are small, up to 40 (–50) cm high, but the basal leaves can extend up to 80 cm (Fig. 1). The synflorescences of young plants are very densely covered by an arachnoid indumentum (Fig. 2b). Each partial synflorescence is composed of three blackish-brown flowers (Fig. 2a), of which only the central one is functional. The fruit (only unripe fruits seen) seems to be conical (Fig. 2b).

Discussion

Trautvetter (1876) gives two important characters to identify his "variety *asperrima*": the very dense arachnoid indumentum and the reduced number of three flowers in the partial synflorescence, of which only the central one is functional. The combination of these two characters is unique in the genus. The material collected near Erzurum, on the base of Mt. Palandöken (Palänteken) corresponds with this description. An additional character not given by Trautvetter (1876) is the colour of the flowers. The blackish-brown colour is also unique in the genus so far.

Trautvetter (1876) was the first one, who realized, that the number within the partial synflorescences differs between different populations of *Gundelia*. The highest number with eight flowers can be found in *G. rosea* (Vitek & Noroozi 2017b) and *G. tehranica* (Vitek & Noroozi 2017a). Species with a partial synflorescence which may be reduced to three flowers are *G. glabra* with brownish flowers (Vitek et al. 2017), *G. aragatsi* with brown flowers (Vitek et al. 2010) and *G. komagenensis* with yellow flowers (Firat 2016). They differ in flower colour, size of the plants and the indumentum from *G. asperrima*. Based on these distinct characters the taxon is classified as species.

Until today *G. asperrima* has been found only in the mountain group of Mt. Palandöken. Based on the specimens it grows from 1900 to 2800 m. The species is endemic within Prov. Erzurum.

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