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The lectotypification of *Centaurea kotschyi* subsp. *persica* (Asteraceae, Cardueae–Centaureinae)

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Abstract

Centaurea kotschyi (BOISS. & HELDR.) HAYEK subsp. *persica* (BOISS.) GREUTER was previously lectotypified based on Kotschy 629 at G. However, three duplicates of the type collection exist there and second-step lectotype is thus designated here. Photos of the taxon in its natural habitat and an image of the lectotype are provided.

Kew Words: Asteraceae, *Centaurea*, taxonomy, typification

Introduction

Centaurea L. s.l. is one of the largest genera in the family Asteraceae (BREMER 1994, SUSANNA & GARCIA-JACAS 2007). In Iran it is represented by 109 species which are placed in 31 sections (NEGARESH & RAHIMINEJAD 2014, 2018, NEGARESH 2019). It is considered as a taxonomically unnatural taxon. In the course of recent studies it was split into more natural genera, namely *Centaurea* s.str., *Cyanus* MILL., *Psephellus* CASS. and *Rhaponticoides* VAILL. (WAGENITZ & HELLWIG 2000, GREUTER 2003, HELLWIG 2004).

Based on morphological and molecular studies (WAGENITZ 1975, GARCIA-JACAS et al. 2006, UYSAL et al. 2007, HILPOLD et al. 2014, ÇITAK & DURAL 2018) the sections *Pteracantha* WAGENITZ, *Pseudoseridia* WAGENITZ and *Plumosipappus* (CZEREP.) WAGENITZ have been included in *Centaurea* sect. *Cheirolepis* (BOISS.) O.HOFFM. which is now represented by 18 species. The members of this section are perennial and are characterized by: stem simple or branched above, erect or decumbent; leaves undivided or with few teeth; capitula medium-sized; involucre ovoid to nearly cylindrical, appendages small, firm, triangular with 2–4 lateral cilia and a terminal spinule or larger and more scarious with irregularly fringed margins; flowers yellow; achenes large; pappus longer than the achene, plumose, the inner row not differentiated (WAGENITZ 1975, 1980).

Centaurea kotschyi (BOISS. & HELDR.) HAYEK is an Irano-Turanian element and is distributed in N Iran and in Turkey. In the "Flora of Turkey", WAGENITZ (1975) recognized *C. kotschyi* as a complex species with four varieties, namely var. *kotschyi*, var. *decumbens* WAGENITZ, var. *persica* (BOISS.) WAGENITZ and var. *floccosa* (BOISS.) WAGENITZ. Recently, GREUTER (2003) treated the two latter varieties as subspecies, i. e. subsp. *floccosa* (BOISS.) GREUTER and subsp. *persica* (BOISS.) GREUTER. The latter is more common than the other subspecies and is the only subspecies that grows outside

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Fig. 1. Lectotype (second-step) of *Centaurea kotschyi* (BOISS. & HELDR.) HAYEK subsp. *persica* (BOISS.) GREUTER [G (G00076551)]. Photo provided by the Conservatoire et Jardin botaniques de la Ville de Genève.

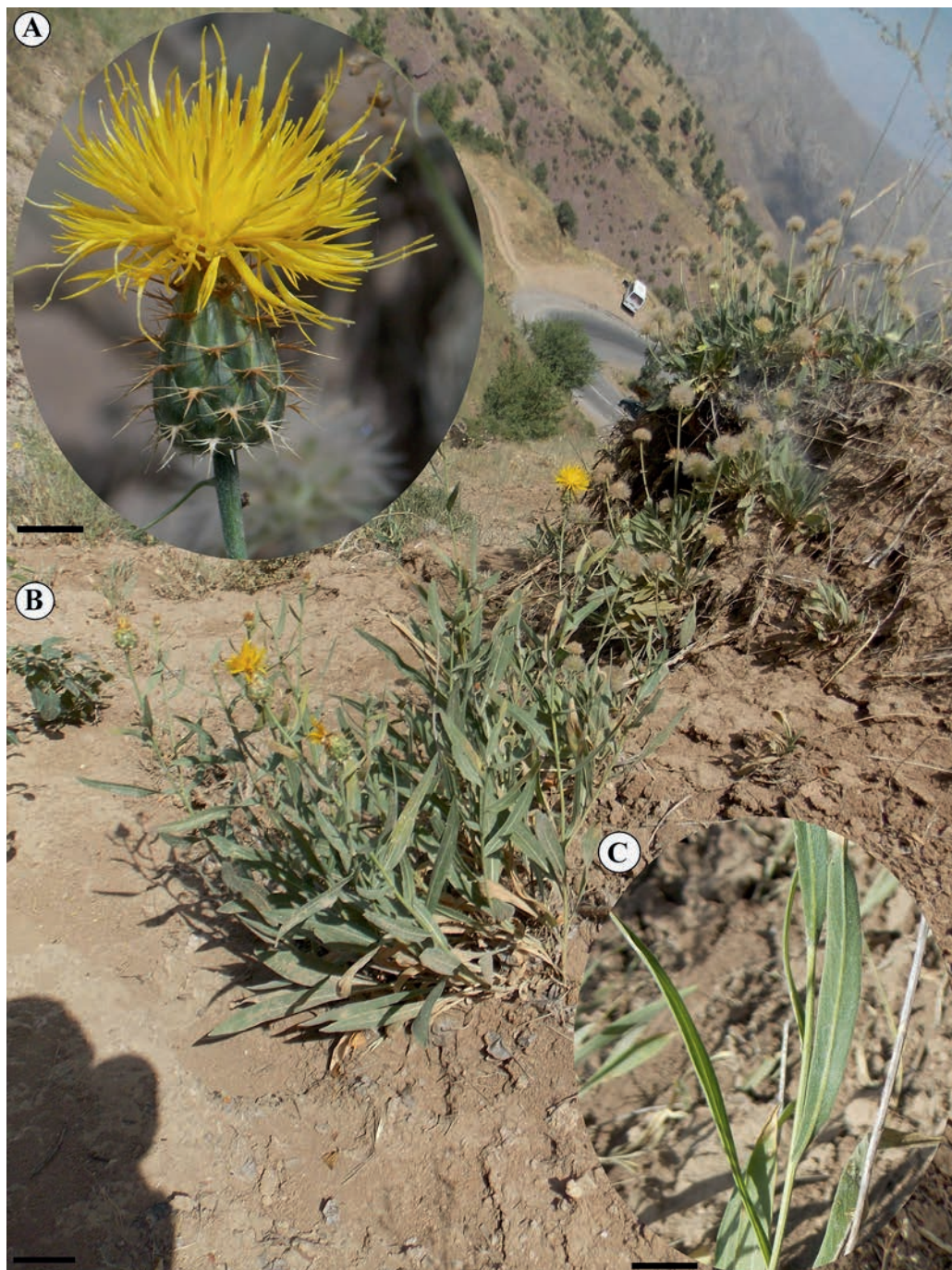


Fig. 2. *Centaurea kotschyi* subsp. *persica*. A: close up of a capitulum; B: habit and habitat; C: leaves. Scale bars A = 1 cm; B = 5 cm; C = 2 cm. Voucher: Negaresh 255 [KHAU].

of Turkey in the northern and western parts of Iran. According to WAGENITZ (1975), it is distinguished from the other subspecies by the following characters: stem erect, terminal spinule of appendages 4–6 mm long and cilia 3–4 (–5) mm long.

Two syntype collections (Kotschy 629 and Aucher-Eloy 4836) were cited in the protologue of *Cheirolepis persica* (BOISSIER 1849). CZEREPANOV (1963) lectotypified the name *Centaurea kotschyi* (BOISS. & HELDR.) HAYEK subsp. *persica* (BOISS.) GREUTER based on Kotschy 629 in G. However, during a nomenclatural revision of *Centaurea*, I realized that at least three sheets of that collection are present in G. In the "Flora of Turkey" (WAGENITZ 1975) and in the "Flora Iranica" (WAGENITZ 1980) Kotschy 629 in G was cited as the type, but no lectotype was designed. The sheet G00076548 is selected here as the lectotype because the specimen has leaves, well developed phyllaries and capitula.

Typification

Centaurea kotschyi (BOISS. & HELDR.) HAYEK subsp. *persica* (BOISS.) GREUTER, Willdenowia 33 (1): 55 (2003); – Figs. 1 and 2.

Basionym: *Cheirolepis persica* BOISS., Diagn. Pl. Orient. ser. 1, 10: 108 (1849).

≡ *Phaeopappus kotschyi* (BOISS. & HELDR.) BOISS. var. *persicus* (BOISS.) BOISS., Fl. Orient. 3: 595 (1875).

≡ *Centaurea kotschyi* var. *persica* (BOISS.) WAGENITZ, Bot. Jahrb. Syst. 82: 169 (1963).

Type: Iran, in declivibus meridiem versus spectantibus ad radices m. Demawend pr. pagum Ask., 30.7.1843, K.G.T. Kotschy 629 [first-step lectotype, designated by CZEREPANOV (1963: 356): G; second-step lectotype, designated here: G (G00076551!); isolectotypes: BM (BM000883844!), E (E00201459!), G (G00076548!), G-DC (G00016432!), GOET (GOET001273!), JE (JE00001660!), K (K000251330!), MO (M0030568!), P (on the left side of the sheet P00646471!), P (P00730177!), P (P00646472!), P (P00703863!), P (on the left side of the sheet P00646463!), W (0044966!), WAG (WAG0000536!)] – further syntypes: Iran, in monte Demavend, P.M.R. Aucher-Eloy 4836 [K (on the left side of the sheet K000794134!), P (P00646464!)]].

Additional specimens seen: Iran. Qazvin province: Alamout, 40 km to Moallem Kolieh, 36°24'57.29" N, 50°14'34.96 E", 1740–1800 m, 19.6.2015, K. Negaresh 255 [KHAU].

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