

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

K. Negaresh\*

### 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

\* Kazem Negaresh, Department of Horticulture, Faculty of Agriculture, Agricultural Sciences and Natural Resources University of Khuzestan, Mollasani, Ahvaz, Iran. – negaresh@asnrkh.ac.ir



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.



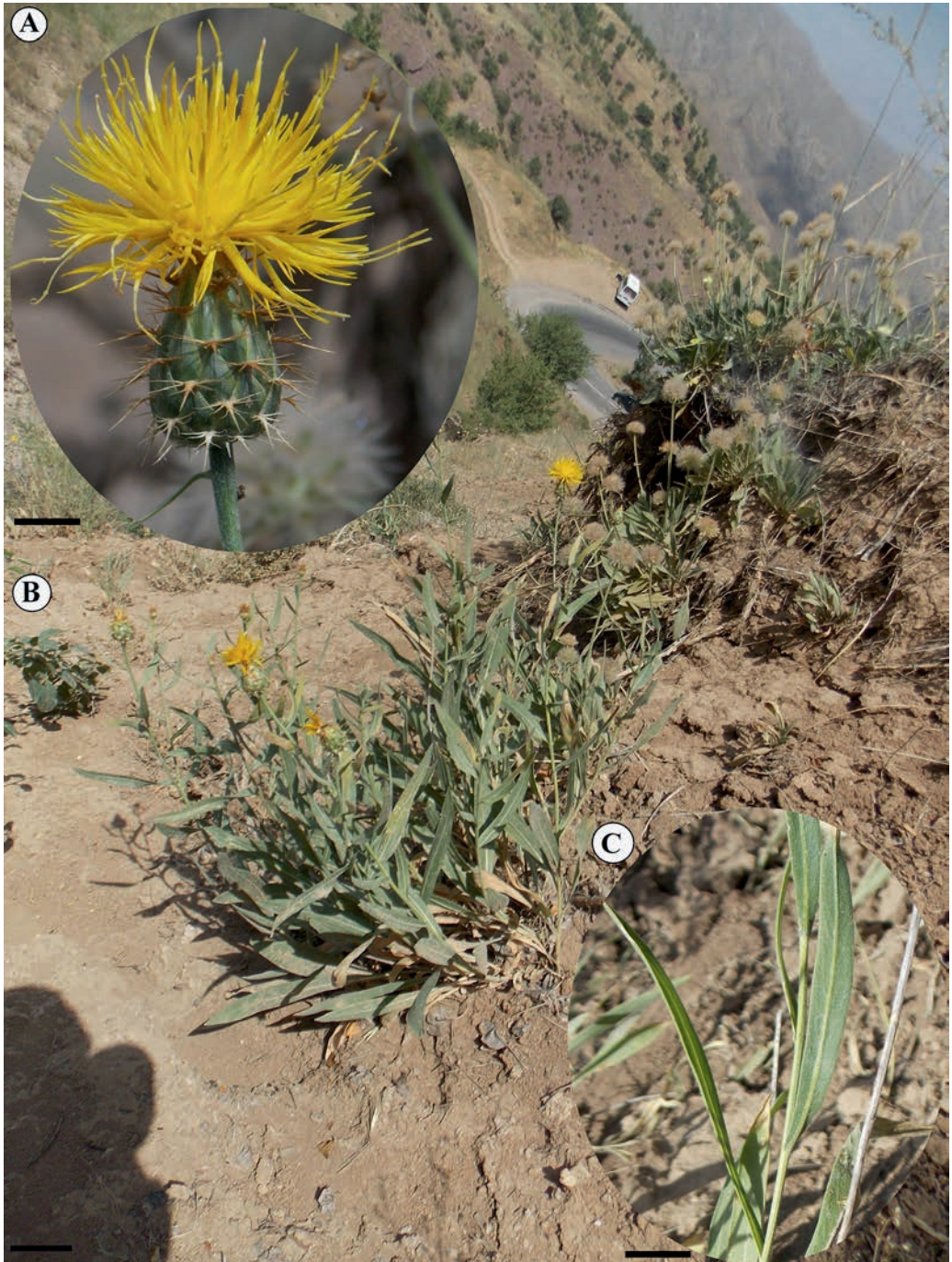


Fig. 2. *Centaurea kotschyi* subsp. *persica*. A: close up of a capitulum; B: habit and habitat; C: leaves. Scale bars A = 1 cm; B = 5 cm; C = 2 cm. Voucher: Negaresh 255 [KHAU].

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 Demawend, 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].

### Acknowledgments

The author is greatly thankful to the personnel of the herbaria BM, E, G, GOET, JE, K, M, P, WAG, and W for their valuable contributions during the revision of the specimens and for providing the images of the types. I also would like to thank the Agricultural Sciences and Natural Resources University of Khuzestan for financial support.

### References

- BOISSIER E., 1849: Diagnosis plantarum orientalium novarum, ser. 1, 10. – Lipsia [Leipzig].  
 BREMER K., 1994. Asteraceae: Cladistics and Classification. – Portland (Oregon): Timber Press.

- ÇITAK B.Y. & DURAL H., 2018: The stomatal characteristics of *Cheirolepis* section of *Centaurea* genus (Asteraceae) and its relatives in Turkey. – Biological and Chemical Research 6: 63–77.
- CZEREPAKOV S.K., 1963: *Cheirolepis* BOISS. – In: BOBROV E.G. & CZEREPAKOV S.K. (eds.): Flora of the USSR, 28: 354–357. – Moscow, Leningrad: Publishing House of the Academy of Sciences of the USSR [in Russian].
- GARCIA-JACAS N., UYSAL T., ROMASHCHENKO K., SUAREZ-SANTIAGO V.N., ERTUGRUL K. & SUSANNA A., 2006: *Centaurea* revisited: a molecular survey of the *Jacea* group. – Annals of Botany 98: 741–753.
- GREUTER W., 2003: The Euro+Med treatment of Cardueae (Compositae) – Generic concepts and required new names. – Willdenowia 33: 49–61.
- HELLWIG F.H., 2004: Centaureinae (Asteraceae) in the Mediterranean–history of ecogeographical radiation. – Plant Systematics and Evolution 246: 137–162.
- HILPOLD A., GARCIA-JACAS N., VILATERSANA R. & SUSANNA A., 2014: Taxonomical and nomenclatural notes on *Centaurea*: A proposal of classification, a description of new sections and subsections, and a species list of the redefined section *Centaurea*. – Collectanea Botanica (Barcelona) 33: 1–29.
- NEGARESH K. & RAHIMINEJAD M.R., 2014: A contribution to the taxonomy of *Centaurea* sect. *Cynaroides* (Asteraceae, Cardueae–Centaureinae) in Iran. – Phytotaxa 158 (3): 229–244.
- NEGARESH K. & RAHIMINEJAD M.R., 2018: A revision of *Centaurea* sect. *Cynaroides* (Asteraceae, Cardueae–Centaureinae). – Phytotaxa 363 (1): 1–131.
- NEGARESH K., 2019: *Centaurea khosraviana* (Asteraceae, Cardueae), a new species from NW Iran. – Annales Botanici Fennici 56: 115–122.
- SUSANNA A. & GARCIA-JACAS N., 2007: Tribe Cardueae. – In: KADEREIT J.W. & JEFFREY C. (eds.): The families and genera of vascular plants, 8: 123–146. – Berlin, Heidelberg & New York: Springer.
- UYSAL T., DEMIRELMA H., ERTUGRUL K., GARCIA-JACAS N. & SUSANNA A., 2007: *Centaurea glabro-auriculata* (Asteraceae), a new species from Turkey. – Annales Botanici Fennici 44: 219–222.
- WAGENITZ G., 1975: *Centaurea* L. – In: DAVIS P.H. (ed.): Flora of Turkey and the East Aegean Islands, 5: 465–585. – Edinburgh: Edinburgh University Press.
- WAGENITZ G., 1980: *Centaurea* L. – In: RECHINGER K.H. (ed.): Flora Iranica, 139b: 313–420. – Graz: Akademische Druck und Verlagsanstalt.
- WAGENITZ G. & HELWIG F.H., 2000: The genus *Psephellus* CASS. (Composite, Cardueae) revisited with a broadened concept. – Willdenowia 30: 29–44.

# ZOBODAT - [www.zobodat.at](http://www.zobodat.at)

Zoologisch-Botanische Datenbank/Zoological-Botanical Database

Digitale Literatur/Digital Literature

Zeitschrift/Journal: [Annalen des Naturhistorischen Museums in Wien](#)

Jahr/Year: 2020

Band/Volume: [122B](#)

Autor(en)/Author(s): Negaresh Kazem

Artikel/Article: [The lectotypification of \*Centaurea kotschyi\* subsp. \*persica\* \(Asteraceae, Cardueae–Centaureinae\) 249-253](#)