

Some additions to the flora of Afghanistan, China, Kyrgyzstan, and Mongolia from the family Cruciferae

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Abstract

Aphragmus oxycarpus, *Draba stenobotrys*, and *Sisymbrium altissimum* are reported as novelties to the flora of Kyrgyzstan, China, and Mongolia, respectively, while *Lepidium apetalum* and *Parrya turkestanica* are newly recorded from Afghanistan.

Introduction

During taxonomic studies on selected groups of Asian Cruciferae by the present author and Ihsan A. Al-Shehbaz, the following floristic findings were revealed.

Results

Aphragmus oxycarpus (HOOK.f. & THOMS.) JAFRI

Specimen: Kyrgyzstan: Trans-Alai range, vicinities of the Lenin peak, alpine belt, ca. 3900 m. 19–21.7.1975, I. Rusanovich s. n. [MHA (sub nom. *Braya* sp.)].

The species is widely distributed in Tibet and neighboring mountain systems and currently is known from Afghanistan, Bhutan, China, India, Kashmir, Nepal, Pakistan, and Tajikistan (AL-SHEHBAZ, 2003). This is a second species of *Aphragmus* O.E. SCHULZ recorded from Kyrgyzstan. From the first one, *A. involucratus* (BUNGE) O.E. SCHULZ, *A. oxycarpus* differs in larger petalas, $3.5\text{--}5\text{ (} -6\text{)} \times 1.5\text{--}3\text{ (} -4\text{)}\text{ mm}$ (vs. $2.3\text{--}2.5 \times 1\text{--}1.2\text{ mm}$); shortly stipitate (vs. sessile) fruits; distinct styles, $0.5\text{--}1\text{ (} -2\text{)}\text{ mm}$ (vs. obscure, to 0.3 mm); and racemes elongated (vs. not elongated and remaining umbellate) in fruit. Additionally, the two species are separated geographically: *A. involucratus* is known in Kyrgyzstan only from Tian-Shan in NE part of the country (EBEL 1998) whereas *A. oxycarpus* is found in SW part of republic.

Aphragmus oxycarpus was mentioned in the Flora of Kirgizian SSR as a species that can potentially be found on the ridge of the Trans-Alai range (NIKITINA 1955) but until the present finding this suggestion was not confirmed. The cited locality represents the northern limit of the distribution area of the species.

Draba stenobotrys GILG et O.E. SCHULZ

Specimens: China, Xinjiang, Tian Shan, Glacial Station, Bing DaBan, Cheo Tai-yien et

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al. 651298 [PE]; – Xizang: Subansiri tributary Lhunze-Cona, 28°23'N, 92°08'E, 1.8.1994 Dickoré 10359 [GOET, MO]; – Namchabarwa, above Nam La Tso, 29°35'N, 95°00'E, 13.8.1989 Dickoré 5207 [GOET, MO]; – Mekong-Salween divide, Bamda-Nujiang, 30°10'N, 97°17'E, 5.7.1994 Dickoré 8951 [GOET, MO]; – Everest E, Kama Chu, N bank of Upper Kangchung Glacier (Camp Ev7), 28°59'N, 87°04'E, 14.10.1989 Dickoré 6445 [GOET, MO]; – Riowoqe Xian, WSW of Riowoqe on hwy 317 to Dingqing, 31°05'15"N, 96°28'53"E, 13.9.2003 G. & S. Miehe 03-098-06 [MO]; – Chang La, N of Sangsang, 30°09'N, 87°02'E, 4.9.2003 G. & S. Miehe 03-069-03 [MO].

Since the time of its description (SCHULZ 1927), *Draba stenobotrys* was treated as endemic to the Himalayas within India (Sikkim) (HENRY & JANARTHANAN 1993). A revision of numerous collections of Asian *Draba* L. by I.A. Al-Shehbaz demonstrated its wider distribution extending to Nepal (AL-SHEHBAZ, pers. comm.), Kyrgyzstan (GERMAN & EBEL 2009), and China. The species is closest to the C Asian *D. lasiophylla* ROYLE, from which it can be separated by less dentate (often entire) leaves, perianth persistent almost until fruit maturity, (broadly) ovate and usually not twisted (rarely to half turn twisted) silicles 3–5 mm long, and seeds 0.7–0.8 mm long. By contrast, *D. lasiophylla* is characterized by usually distinctly dentate leaves, caducous perianth, ovate-lanceolate to lanceolate or linear-lanceolate, usually strongly twisted silicles (5–) 7–10 (–11) mm long, and seeds 0.8–1.1 mm long (SCHULZ 1927, AL-SHEHBAZ, pers. comm.).

***Lepidium apetalum* WILLD.**

Specimen: Afghanistan, [Hindukush], Wakhan: Ortschaft Ward, Geranit, 2600 m. 17.8.1970, R. Senarclens de Grancy 185 [W (sub nom. *Lepidium* sp.)].

This species is the most common representative of *Lepidium* L. in the mountains of Inner and East Asia, a distribution area that covers India, Japan, Kazakhstan, Korea, Mongolia, Nepal, Pakistan (ZHOU & al. 2001), Kyrgyzstan, Russia (Siberia), and Tajikistan. From the morphologically closest SW Asian annuals *L. ruderale* L. and *L. pinnatifidum* LEDEB., *L. apetalum* differs in being pubescent with clavate or subcapitate (vs. narrowly conical) trichomes; additionally, the bases of at least the biggest stem leaves of *L. apetalum* are subamplexicaul (vs. attenuate). Finding the species in any other part of Afghanistan seems unlikely.

***Parrya turkestanica* (KORSH.) N. BUSCH**

Specimen: Afghanistan: Grosser Pamir, Issiktal, Frostbodenflur, 4400 m, 6.8.1975, H. Huss 425 [M (sub nom. *Neuroloma kunawarensis* (ROYLE ex REGEL) BOTSCH.)].

Parrya turkestanica is endemic to Pamir-Alai (Kyrgyzstan and Tajikistan) (BOTSCHANTZEV 1972) but is rather common within its distribution area. The new locality obviously represents the southern distribution limit of the species. From other *Parrya* species of 'Flora Iranica' area, *P. turkestanica* is readily distinguished by the mixed indumentum of stipitate glands and soft simple trichomes (vs. either glands or trichomes, or absence of indumentum) and broad fruits, (4–) 5–8 (not 3–5) mm wide.

***Sisymbrium altissimum* L.**

Specimen: Mongolia, Mongolia borealis: vallis silvatica Zajsan ad declivia borealia montium Bogd-ul versus meridionem ab oppido Ulan-Bator; declivia stepposa et saxosa, 1400–2000 m, 29.8.1965, M. Deyl et J. Soják 4636 [PR].

Contrary to the above mentioned taxa, representing a natural fraction of the flora of the relevant regions, *S. altissimum* is an adventive element in Mongolia. It can be easily separated from any of the other six *Sisymbrium* species currently known from that country by stout pedicels as thick as mature fruits (vs. distinctly or at least slightly narrower) and upper leaves dissected into linear to filiform lobes (vs. entire).

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