

A NEW ARABIS FROM TURKEY

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Arabis graellsiiiformis I. C. Hedge, spec. nov. (Sect. *Alliariopsis* N. Busch) Affinis *A. christiana* N. Busch sed indumento sparso vel subglabro, petiolis vetustis persistentibus, foliis radicalibus margine rotundato vel subacuto, seminibus oblongis apteris recedit. Ab *A. nepetifolia* Boiss. foliis majoribus et indumento efarinoso inter alia divergit.

Planta perennis alpina saxatilis. *Radix* crassa, lignosa, 1-1.5 cm. lata; caudices plures basibus petiolorum vetustorum persistentibus vestiti. *Caules* floriferi herbacei, 30-45 cm. alti, suberecti vel arcuato-ascendentes, pilis stellatis numerosis praediti, foliis 2-5-muniti. *Folia radicalia* longe petiolata; petiolus 5-10 cm. longus pilis stellatis provisus; lamina reniformis vel reniformi-ovata, basi cordata vel truncata, 1-8-4 cm. longa, 2-4 cm. lata, 8-12-lobata, lobis 3-7×4-10 mm. rotundatis vel subacutis, utrinque pilis aequaliter stellatis parvis parce vestita vel supra glabra. *Folia caulina* (2-)3-5 cm. longa×1-5 cm. lata, sessilia, amplexicaulia, ovata-lanceolata, 10-14 lobis subacutis vel acutis provisa, pilis stellatis parvis parce munita. *Racemus* in fructu elongatus, 10-17 cm. longus, substrictus, 8-30-florus, simplex vel ramis brevibus 3-5 praeditus. *Pedicelli* 4-7 mm. (in fructu 6-13 mm.) longi, erecti. *Flores* albi, ebracteati. *Calyx* 4-5.5 mm. longus, viridis, bisaccatus; sepala basi haud cohaerentia, glabra, margine albo-membranaceo. *Petala* obovata, 10-13 mm. longa, in unguem sensim attenuata. *Nectaria* 1 mm. longa. *Stamina* longiora 8 mm. longa, breviora 4-5 mm. longa; filamentum planum. *Ovarium* sessile, anguste subcylindricum, circa 30-ovulatum, 6-8 mm. longum, stigmatibus depresso-capitato. *Siliquae* maturae 3-5 cm. longae, 2-2.5 mm. latae, lineari-subcylindricae, erectae vel erecto-curvatae, inter semina strangulatae, brevissime stylosae, ex toto dehiscentes, 8-12 seminatae; valvae glabrae reticulato-nervatae; septum membranaceum hyalinum; funiculi 1 mm. longi. *Semina* 2-2.5 mm. longa, 1-1.5 mm. lata, compressa, nigra, oblonga, aptera, minute rugosa. Floret Jul-Aug.

TURKEY: Prov. *Hakkâri*; 10 km. west of Cilo Tepe, on shady cliffs and beneath them, perennial, flowers white, 3660 m., 9 Aug. 1954, *Davis & O. Polunin* (D. 24178); Cilo Tepe, shady ledges on cliffs, 3200 m., 8 Aug. 1954, *Davis & O. Polunin* (D. 24122); Cilo Tepe, shady rock crevices, perennial, fls. white, 3120 m., 8 Aug. 1954, *Davis & O. Polunin* (D. 24084). Prov. *Bitlis/Van*; mt. 10 km. S.E. of Pelli, foot of shady rocks, erect perennial, fls. white, 2890 m., 8 July 1954, *Davis & O. Polunin* (D. 22574, holo. E; iso. K, BM.)

This new high alpine species of *Arabis* belongs to the small section *Alliariopsis* N. Busch, so named because of the similarity of its members to *Alliaria petiolata* (Bieb.) Cavara & Grande, i.e. longly petioled radical leaves, clasping stem leaves and long narrow siliques. Including the new species, *A. graellsiiiformis*, there are 5 species in the section, all with very limited distributions. They are saxatile or chasmophytic species growing at

high altitudes in the mountains between the Caspian and Black Seas: *A. nepetifolia* Boiss. in the Persian Elburz; *A. christiana* N. Busch in the eastern Caucasus; *A. brachycarpa* Rupr. (*A. stylosa* Boiss.) in the Turkish Pontic mountains and the Trans-Caucasus; *A. nordmanniana* Rupr. in the Caucasus and Trans-Caucasus; and the new species in the mountains of Turkey's south-eastern frontier with Persia.

A. graellsiformis is most closely allied to the east Caucasian endemic *A. christiana*. Morphologically, it differs in the sparse or almost absent indumentum (composed of very fine stellate hairs) and the black oblong wingless seeds; in *A. christiana* there is a fairly dense indumentum which makes the leaves rather soft to touch and the seeds are winged and usually brown. Furthermore, the basal leaves in *A. christiana* are acutely serrated on the margin as opposed to the rounded or sub-acute lobation in *A. graellsiformis*. Although I have not seen much or very adequate material of *A. christiana* or any of the other Russian species, there also seems to be a difference of habit. *A. graellsiformis* has a very thick caudex densely covered with the remains of old petioles whereas in *A. christiana* the caudex is much more slender and without petiolar remains.

It is of interest that this distinct type of habit involving longly petiolate and more or less reniform basal leaves has been evolved in three of the Crucifer tribes recognized by Schultz, viz:—

Drabeae—*Draba hederifolia* Coss., and all *Graellsia* (including *Physalidium*) species (cf. Poulter in Notes Roy. Bot. Gard. Edin. xxii, 85: 1956).

Arabideae—*Arabis* sect. *Alliariopsis* Busch.

Sisymbrieae—some species of *Eutrema*, *Alliaria*.

The following key to the species in *Arabis* Sect. *Alliariopsis* is essentially a translation of the key by N. Busch in Komarov, Fl. U.R.S.S. viii, 173 (1939) with the new species interpolated:

1. Plant finely pubescent, farinaceous; lower leaves 15–25 mm. longly petioled, acute-cordate, bluntly notched with 12–14 lobes
A. nepetifolia Boiss.
- + Plant pubescent, not farinaceous; leaves larger and of different shape 2
2. Siliqua very slender, 1–1.25 mm. broad, 4–5 cm. long, constricted between the seeds, with a long pedicel 1.5–2 cm. long. Radical leaves large 4–8.5 cm. long and 4–6.5 cm. broad; seeds black, wingless
A. nordmanniana Rupr.
- + Siliqua far broader, 2.25–2.5 mm. broad, radical leaves smaller 3
3. Siliqua 1.3–2.8 cm. long, pedicels 1.5–1.6 cm. long, seeds broadly elliptic
A. brachycarpa Rupr.
- + Siliqua 3–6.5 cm. long, pedicels 0.6–10 mm. long, seeds rounded or oblong 4
4. Basal leaves with rounded lobes, upper leaf surfaces glabrous or subglabrous; seeds oblong, wingless, black *A. graellsiformis* Hedge
- + Basal leaves with acute serration; upper leaf surface with dense stellate indumentum; seeds rounded, winged *A. christiana* Busch.



PLATE 3. Type specimen of *Arabis graellsiiiformis* I. C. Hedge (D. 22574).