

Draba orientalis (Brassicaceae), a new species from Turkey

Osman Karabacak¹ & Lütfi Behçet²

¹ Department of Biology, Faculty of Science and Arts, Siirt University, 56100 Siirt, Turkey

² Department of Biology, Faculty of Science and Arts, Yüzüncü Yıl University, 65080 Van, Turkey

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Draba orientalis O. Karabacak & L. Behçet *sp. nova* (Brassicaceae) from Turkey is described and illustrated. Diagnostic characters of the species along with taxonomic notes are given. It is compared with the morphologically similar *D. siliquosa*, *D. lanceolata* and *D. anatolica*.

Key words: Brassicaceae, *Draba*, new species, taxonomy

The Brassicaceae, or mustard family, is a monophyletic group of about 338 genera and some 3709 species distributed worldwide (Al-Shehbaz *et al.* 2006) and consisting of 13–19 tribes (Onyilagha *et al.* 2003). *Draba* is a large genus of about 370 taxa (Al-Shehbaz *et al.* 2007), mostly arctic or alpine in the northern hemisphere and in Central and South America (Townsend 1980). *Draba* is divided into 17 sections. The *Leucodraba* section in which the species described here is included consisted of 59 species (Schulz 1927). Twenty-eight *Draba* taxa are currently known to occur in Turkey (Coode & Cullen 1965, Yıldırlı 2001, Duran *et al.* 2008).

In 2007, the first author collected some *Draba* specimens with flowers and fruit in Aksakal village (Van, Turkey). The specimens were not referable to any known species. After thorough consultation of Schulz (1927), Townsend (1980), Coode and Cullen (1965), Hedge (1968), Tolmachev (1970), Tutin *et al.* (1993), and Duran *et al.* (2008), we concluded that the closest species to our material appeared to be *D. siliquosa*, *D.*

lanceolata (distributed in Iran and Russia) and *D. anatolica* (known only from NW Turkey). It was also concluded that this material represents a new species.

***Draba orientalis* O. Karabacak & L. Behçet *sp. nova* (Figs. 1 and 2)**

Species Draba siliquosae affinis, sed silicula elliptica, pilosa, 3.5–5 × 2–3 mm, (nec lineari-oblonga, glabra, 5–10 × 1.5–2 mm); sepala ovato-oblonga, 2–2.3 mm longa (nec ovata, 1–1.5 mm longa); pedicelli fructiferi 3–5 mm longis, pilis simplicibus et pramosis obsita (nec 2–6 mm, glabra); folia caulina 1–2, densus pilis simplicibus et furcatis obsita (nec 1–3, glabra vel sparsim stellato-pilosa) differt.

TYPE: Turkey. B9, East Anatolia Region, Van Province, Erciş District, northeast of Aksakal village, Kırdekar hill, 2746 m, 39°11'650"N, 43°25'930"E, rocky crevices, 8.VI.2007 O. Karabacak 6131 (holotype VANF).



Fig. 1. Habit of *Draba orientalis* (holotype).

Perennial, in loose cushions, 2.5–5.5 cm tall; caudex branched, ca. 5 mm diam., covered with leaf remains from previous years; stems ascending-erect, with simple and branched hairs. Basal leaves rosulate, persistent, sessile, oblong-lanceolate, 6–9 × 2–3 mm, densely covered with branched hairs, base attenuate, margin entire, apex rounded; cauline leaves 1–2, sessile, oblong-lanceolate, similar to basal leaves, with simple or branched hairs, 7–10 × 2–3 mm. Raceme 4–10 flowered, ebracteate, strongly elongating in fruit; fruiting pedicels 3–5 mm, straight, simple and with branched hairs. Sepals ovate-oblong, green, 2–2.3 × 1–1.3 mm,

with branched hairs; petals white, spathulate, 3–3.5 × 2 mm, apex obtuse or slightly emarginate; claw 1.5 mm; filaments 1.3–1.5 mm long; anthers ovate, 0.3–0.5 mm long; ovules 15 to 18 per ovary. Silicula ovate-oblong, 3.5–5 × 2–3 mm, with simple hairs, reticulate-veined, base rounded and apex acute; style 0.5–0.7 mm; seeds brown, ovate, biseriate, ca. 1 × 0.7 mm. Flowering in May–June, fruiting in June–July.

ADDITIONAL SPECIMENS EXAMINED (paratypes). **Turkey.** East Anatolia Region, Van Province, Erciş District, northeast of Aksakal village, Kurdekar hill, 2692 m, 39°11'938"N, 43°25'667"E, rocky crevices, 28.V.2007 *O. Karabacak 6081* (VANF, in flower). Same locality, 2715 m, 39°11'648"N, 43°25'883"E, rocky crevices, 29.VII.2007 *O. Karabacak 7339* (VANF, in fruit).

Distribution and habitat ecology. *Draba orientalis* is endemic to E Anatolia and represents the Iran-Turan element. It grows in andesite rocky crevices with other characteristic plants such as *Aethionema trinervium*, *Alopecurus aucheri*, *Arabis caucasica* subsp. *brevifolia*, *Cerinth minor* subsp. *auriculata*, *Chaerophyllum crinitum*, *Cotonoaster nummularia*, *Cruciata taurica*, *Erysimum pulchellum*, *Gagea bulbifera*, *Geranium libanoticum*, *Juniperus excelsa*, *Lamium amplexicaule*, *Myosotis alpestris*, *Nepeta betonicifolia*, *Ornithogalum oligo-*

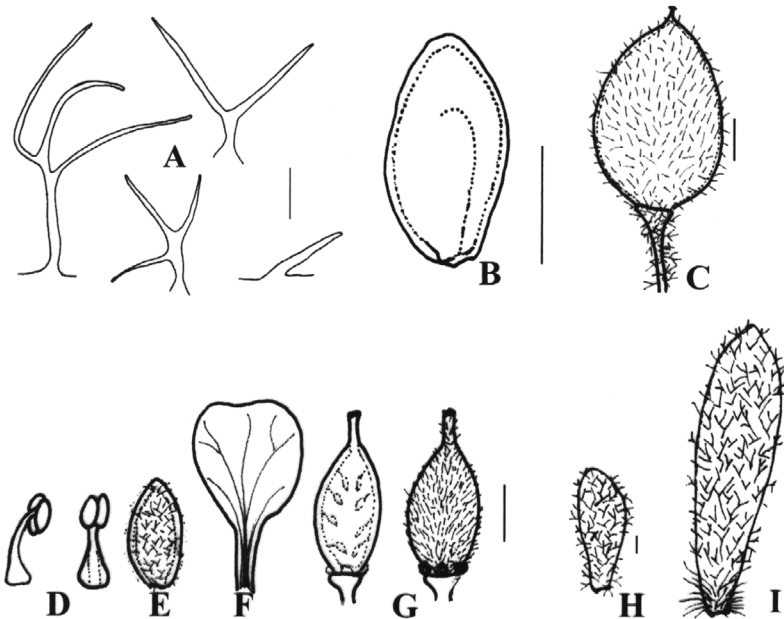


Fig. 2. *Draba orientalis* (from the holotype). — A: Hairs. — B: Seed. — C: Silicula. — D: Stamen. — E: Sepal. — F: Petal. — G: Pistil. — H: Basal leaf. — I: Stem leaf. Scale bars: A = 0.1 mm, B = 0.5 mm, C–H = 1 mm, I = 2 mm.

Table 1. Comparison of the diagnostic characteristics of *Draba orientalis* with *D. siliquosa*, *D. anatolica* and *D. lanceolata*.

Characters	<i>Draba orientalis</i>	<i>D. siliquosa</i>	<i>D. anatolica</i>	<i>D. lanceolata</i>
Silicula	ovate-oblong, with only simple hairs, 3.5–5 × 2–3 mm	linear-oblong, glabrous or with sparse simple to bifurcate hairs, 3–10(11) × 1.2–2 mm	oblong, densely stellate pubescent, 6–8 × 2.3–3 mm	oblong, densely pubescent with branched and stellate hairs, 5–10 × ca. 1.5 mm
Sepal	ovate-oblong, 2–2.3 mm long, with branched hairs	ovate, 1–1.5 mm long, glabrous or sparingly pilose	ovate-oblong, 2.5–3 mm long, sparsely pubescent with stellate hairs	oblong, ca. 2 mm long, substellate-tomentose hairy
Pedicel	simple and branched hairs	glabrous	stellate-pubescent	densely covered with branched and stellate hairs
Stem	with 1–2 leaves, densely covered with branched and simple hairs	with 1–3 leaves, glabrous or sparsely stellate-pilose	with 5 to 8 leaves, with stellate hairs	with 4–18 leaves, substellate-tomentose
Rosette leaves	oblong-lanceolate with branched hairs	linear-lanceolate with stellate-pilose hairs, rarely glabrous	oblanceolate, densely pubescent	oblong-lanceolate with substellate-tomentose hairs

phyllum, *Papaver orientale* var. *orientale*, *Poa bulbosa*, *Rindera lanata* var. *canescens*, *Silene araratica* subsp. *davisii*, *Taraxacum scutariginosum*, *Valeriana leucophaea*, *V. sisymbriifolia* and *Vicia alpestris* subsp. *alpestris*. The distribution area of *D. orientalis* has high erosion pressure because of the steep, unforested slopes, and overgrazing by domestic animals.

Key to *Draba orientalis* and similar species

1. Silicula ovate-oblong and with simple hairs *D. orientalis*
1. Silicula linear-oblong or oblong, glabrous or with branched hairs 2.
2. Silicula and pedicel glabrous *D. siliquosa*
2. Silicula densely covered with branched hairs 3.
3. Petals externally sparsely stellate-pubescent *D. anatolica*
3. Petals completely glabrous *D. lanceolata*

Draba orientalis resembles *D. siliquosa*, *D. lanceolata* and *D. anatolica*. *Draba siliquosa* (synonyms *D. carinthiaca*, *D. glabrata*, *D. hoppei*, *D. johannis*) is distributed in central European mountains (Pyrenees, Alps, Carpathians) and the Balkans (Mt. Rila and Pirin in Bulgaria and Mt. Šarplanina in Serbia), Caucasia, Turkey (in E and NE Anatolia), E and S Tran-

scaucasica, N and NW Iran, while *D. lanceolata* is distributed in Afghanistan, Pakistan, Tibet, Himalaya, central Asia, Siberia, China, North America (Schulz 1927, Coode & Cullen 1965, Hedge 1968, Tolmachev 1970, Greuter *et al.* 1986, Tutin *et al.* 1993). The recently described *D. anatolica* is endemic in NW Turkey (Duran *et al.* 2008). All the four species have sessile cauline leaves, racemes that are ebracteate, similar petal color and shape. The morphological distinctions among the species are presented in Table 1.

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