Draba orientalis (Brassicaceae), a new species from 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, Yıldırımli 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 linearioblonga, 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, densu pilis simplicibus et furcatis obsita (nec 1–3, glabra vel sparsim stellato-pilosa) differt.

Type: Turkey. B9, East Anatolia Region, Van Province, Erçiş District, northeast of Aksakal village, Kirdekar hill, 2746 m, 39°11’650”N, 43°25’930”E, rocky crevices, 8.VI.2007 O. Karabacak 6131 (holotype VANF).
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.


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, Cerinthe minor subsp. auriculata, Chaerophyllum crinitum, Cotononaster nummularia, Cruciata taurica, Erysimum pulchellum, Gagea bulbifera, Geranium libanoticum, Juniperus excelsa, Lamium amplexicaule, Myosotis alpestris, Nepeta betonicifolia, Ornithogalum oligo-
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Phyllum, *Papaver orientale* var. *orientale*, *Poa bulbosa*, *Rinderia lanata* var. *canescens*, *Silene araratica* subsp. *davisii*, *Taraxacum scurutigrinum*, *Valeriana leucophaea*, *V. sisymbrifolia* 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*
2. Silicula linear-oblong or oblong, glabrous or with branched hairs .......................................................... 2.
4. Petals completely glabrous ........................................... *D. anatolica*

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

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

*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), Caucasus, Turkey (in E and NE Anatolia), E and S Transcaucasica, 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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