Salvia marashica (Lamiaceae), a new species from Turkey

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Salvia marashica A. İlçim, F. Celep & Doğan sp. nova (Lamiaceae) is described from Turkey and illustrated. It is confined to C6 Kahramanmaras in South Anatolia where it flowers early in the year and grows on rocky mountain slopes. The diagnostic morphological characteristics from closely similar species are discussed. Notes are also presented on its ecology and pollen characteristics along with scanning electron micrographs of the calyx hairs. A distribution map of the new and the similar species is also provided.

Key words: new species, Salvia, taxonomy

The first revision of Salvia in Turkey was made by Hedge (1982a), who recognized 86 species and one doubtful species. Since then, four more species, S. nydeggeri (Huber-Morath 1982), S. aytachii (Vural & Adıgüzel 1996), S. hedgeana (Dönmez 2001) and S. anatolica (Hamzaoğlu & Duran 2005) have been identified from Turkey.

The species described in this report was collected in Kahramanmaras, Turkey (C6, sensu Davis 1965) by the author İlçim in 2000–2001. In 2006, while conducting field work in the area, the author Celep found another population on Ahır Mountain above Kahramanmaras. At a first glance it resembled S. rosifolia, S. huberi and S. pisidica, which are endemic in Turkey. The specimens were cross-checked with the keys provided by Hedge (1982a) and the Salvia accounts given in the relevant literature, including Flora Orientalis (Boissier 1879), Flora Europaea (Hedge 1972), Hedge (1974), Flora Iranica (Hedge 1982b), Flora of the USSR (Pobedimova 1954) and Flora of Syria, Palestine and Sinai (Post 1933). The specimens of the new species have been cross-checked with the material housed at various herbaria (ANK, GAZI, ISTE, ISTF, E, K, and BM).

Pollen morphology was studied according to Wodehouse (1935) and the measurements were made with a Leica DM1000 light microscope. Pollen texture, ornamentation and hair properties were made using a scanning electron microscope (SEM). SEM images were used to describe the surface texture of the pollen following the terminology of Faegri and Iverson (1975).
Salvia marashica A. İlçim, F. Celep & Doğan, *sp. nova* (Figs. 1 and 2)

Affinis *S. rosifoliae* sed foliis terminalibus segmentis 1.2–7×0.3–1.8 cm longis, serratis, dense retrorse eglanduloso-piloso, inflorescentia dense multicellular niger caput capitis glanduloso piloso, calycibus infundibuliformis, 12–22 mm longis, videlicet duos lipped, dense longis eglanduloso villosa.

**Type**: Turkey. C6 Kahramanmaraş: Yukarı Ceyhan vadisi (upper Ceyhan valley), Ahır Dağı, (Ahır Mt.), around Makmuslu village, 1450–1600 m, rocky places, 17.IV.2001 A. İlçim 995 (holotype KSUH; isotypes E, K, ANK, GAZI, VANF).

**Etymology**: The specific epithet is derived from the name of Kahramanmaraş city from where the type was collected.

Perennial suffruticose herb with a woody rootstock. Stems many, ascending to erect, 30–70 cm, branched or simple, with sterile shoots, lower parts covered with old petioles, greyish green, dense retrorsely pilose (0.4–0.6 mm) and...
long villous (1.8–2.5 mm) hairs. Leaves pinnatisect, with a linear-oblong to narrowly obovate-elliptic terminal segment ca. 1.2–7 × 0.3–1.8 cm and two pairs of lateral segments or rarely one pair and single leaflet on sterile shoots, greyish-green, densely pilose hairy with sessile glands, not rugose, terminal segment slightly longer and broader than laterals, margins serrate. Petiole 0.7–3.0 cm, slightly widened at base, dense retrorsely pilose and with 2.0–4.5 mm long ciliate hairs. Inflorescence racemose, clearly exceeding leaves with 3–10(–12) verticillasters, each verticillaster with (1–)2–14 flowered, densely multicellular black-headed glandular pilose with some villous hairs, 10–20(–25) cm long, internodes 0.5–3 cm, clearly distant, sometimes upper verticillasters approximating. Bracts narrowly ovate to elliptic, acuminate, 0.7–1.5 × 0.2–1.0 cm, densely glandular pilose and with eglandular villous hairs, with sessile glands; bracteoles linear, 4–8 mm long, floral leaves similar or dissimilar to stem leaves, pinnatisect or trisect. Pedicels 2–4 mm. Calyx strongly infundibular, 12–16 mm, up to 22 mm in fruit, clearly bilabiate, scarcely expanding in fruit, upper lip ca. 1 cm longer than lower and divergent in fruit, densely with long eglandular villous (3–5 mm) and multicellular black-headed glandular hairs, with sessile glands. Corolla pink, 20–28 mm, not squamulate; tube 15–22 mm, gradually widening above, upper lip straight. Stamens 2, staminal connectives shorter than filaments, upper theca 1.8–2.1 mm, the lower theca 1.5–1.8 mm, filaments ca. 3.5–5 mm. Style glabrous, 22–33 mm long, exerted from corolla lips and divided in two part at apex. Nutlets globose-ovoid, 3.4–3.6 × 2.7–3 mm, brown and surface slightly tuberculate. Pollen grains hexacolpate, suboblate to oblate-spheroidal, ornamentation supraareticulate. Polar axis (38.2 ± 5 µm) smaller than equatorial axis (43.9 ± 5 µm), P/E: 0.78–0.95, colpi long, 33.7 ± 5 µm. Exine (1.02 ± 0.12 µm) slightly thicker than intine (0.90 ± 0.20 µm).

**Distribution.** *Salvia marashica* is an endemic species known only from Ahır Mountain above Kahramanmaraş where the species is very rare and local.

**Habitat ecology and phenology.** *Salvia marashica* grows on rocky mountain slopes at an altitude of 850–1700 m. The vegetation in this area is formed of herbaceous and woody plants including *Pinus brutia*, *Rhus coriaria*, *Centaurea tomentella*, *Salvia multicaulis*, *Ankrypetalum reuteri*, *Dactylis glomerata*, *Cruciata taurica*, *Thlaspi perfoliatum*, *Papaver* spp., *Arenaria* spp., and *Matricardia* spp. Flowering occurs in April and fruiting from May to June.

*Salvia marashica* is covered entirely on its inflorescence by multicellular black-headed glandular hairs (Fig. 3), which are not observed on otherwise morphologically similar species. This type of hair is very rare in the genus. A recent study conducted by Corsi and Bottega (1999) on *S. officinalis* proved the presence of multicellular black-headed glandular hairs. However, *S. officinalis* does not occur in Turkey and does not resemble *S. marashica*. Also, there are dense eglandular long villous hairs on calyces of *S.*
Table 1. Comparison of *Salvia marashica* with *S. rosifolia*, *S. huberi* and *S. pisidica*.

<table>
<thead>
<tr>
<th>Species</th>
<th>Stem length (cm)</th>
<th>Terminal leaf segment (cm)</th>
<th>Leaves indumentum</th>
<th>Inflorescence hairy</th>
<th>Pedicel length (mm)</th>
<th>Calyx shape</th>
<th>Calyx hair</th>
<th>Calyx size in flower (mm)</th>
<th>Corolla colour</th>
<th>Corolla size (mm)</th>
<th>Flowering time</th>
</tr>
</thead>
<tbody>
<tr>
<td><em>S. marashica</em></td>
<td>14–35</td>
<td>0.7–2.4 × 0.3–1</td>
<td>densely eglandular pilose with sessile glands</td>
<td>tubular to campionate, 2–4 cm</td>
<td>to 14 mm</td>
<td>10–12</td>
<td>pink</td>
<td>12–16</td>
<td>lilac-pink to violet</td>
<td>12–16</td>
<td>not stated</td>
</tr>
<tr>
<td><em>S. rosifolia</em></td>
<td>14–35</td>
<td>0.4–1.8 × 0.9</td>
<td>densely eglandular pilose with sessile glands</td>
<td>tubular to campionate, 2–4 cm</td>
<td>to 14 mm</td>
<td>10–12</td>
<td>pink</td>
<td>12–16</td>
<td>lilac-pink to violet</td>
<td>12–16</td>
<td>not stated</td>
</tr>
<tr>
<td><em>S. huberi</em></td>
<td>1.5–2 × 0.6–0.9</td>
<td>2–4</td>
<td>densely eglandular pilose with sessile glands</td>
<td>tubular to campionate, 2–4 cm</td>
<td>to 14 mm</td>
<td>10–12</td>
<td>pink</td>
<td>12–16</td>
<td>lilac-pink to violet</td>
<td>12–16</td>
<td>not stated</td>
</tr>
<tr>
<td><em>S. pisidica</em></td>
<td>14–35</td>
<td>0.3–1</td>
<td>densely eglandular pilose with sessile glands</td>
<td>tubular to campionate, 2–4 cm</td>
<td>to 14 mm</td>
<td>10–12</td>
<td>pink</td>
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</tr>
</tbody>
</table>

*Salvia marashica* along with multicellular black-headed glandular hairs. Furthermore, *S. marashica* differs from all other species due to its infundibular calyces with upper lips that are longer than the lower ones. Therefore, the hair and calyx properties are the main diagnostic characteristics for the identification of *S. marashica*.

*Salvia marashica* most resembles three other endemics, *S. rosifolia*, *S. huberi* and *S. pisidica*, from which it differs by its larger, serrate and densely pilose terminal leaf segment, multicellular, black-headed glandular pilose hairs densely covering the inflorescence, and clearly bilate, infundibular and long villous hairs densely covering the calyx. In addition, it differs from *S. pisidica* by its longer stems and pink corollas. *Salvia marashica* flowers in April, while *S. rosifolia* and *S. huberi* flower from June to August. Table 1 provides a morphological comparison of the three species.

*Salvia marashica* is found only in the eastern parts of the Mediterranean region, *S. rosifolia* is mainly confined to eastern Anatolia, *S. huberi* occurs in northeastern Anatolia, and *S. pisidica* in western Anatolia (see Fig. 4).

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**References**

Fig. 4. Distribution map of (∗) Salvia marashica, (✦) S. rosifolia, (■) S. huberi and (▲) S. pisidica.


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