

Salvia marashica (Lamiaceae), a new species from Turkey

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Received 5 Oct. 2007, revised version received 21 Nov. 2007, accepted 28 Nov. 2007

İlçim, A., Celep, F. & Doğan, M. 2009: *Salvia marashica* (Lamiaceae), a new species from Turkey. — Ann. Bot. Fennici 46: 75–79.

Salvia marashica A. İlçim, F. Celep & Doğan *sp. nova* (Lamiaceae) is described from Turkey and illustrated. It is confined to C6 Kahramanmaraş 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* (Hamzaoglu & Duran 2005) have been identified from Turkey.

The species described in this report was collected in Kahramanmaraş, 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 Kahramanmaraş. 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 Iversen (1975).



Fig. 1. Habit of *Salvia marashica* (from the holotype).

***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 capituli glanduloso piloso, calycibus infundibuliformis, 12–22 mm longis, videlicet duos lipped, dense longis eglanduloso villosis.

TYPE: Turkey. C6 Kahramanmaraş: Yukarı Ceyhan vadisi (upper Ceyhan valley), Ahır Dağı, (Ahır Mt.), around Maksudlu 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 suffrutescent 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

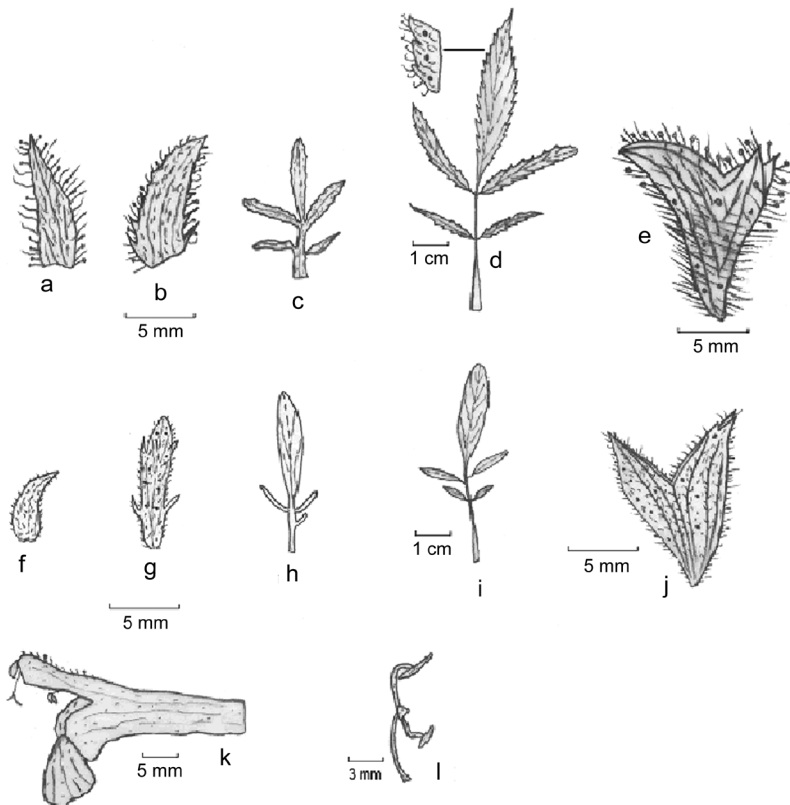


Fig. 2. *Salvia marashica* (from the holotype). — a and b: Bracts. — c: Floral leaf. — d: Stem leaf. — e: Calyx. — f and g: Bracts. — h: Floral leaf. — i: Stem leaf. — j: Calyx. — k: Corolla. — l: Stamen. *S. rosifolia*.

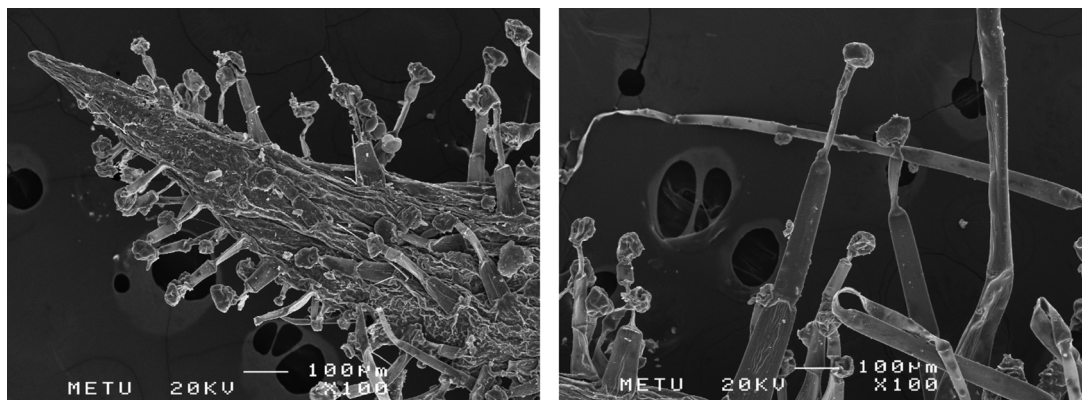


Fig. 3. *Salvia marashica*. SEM micrographs of the black-headed glandular hairs from calyx tips.

long villous (1.8–2.5 mm) hairs. Leaves pinnatisect, with a linear-oblong to narrowly obovate-elliptic terminal segment ca. $1.2\text{--}7 \times 0.3\text{--}1.8$ 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, $0.7\text{--}1.5 \times 0.2\text{--}1.0$ 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, $3.4\text{--}3.6 \times 2.7\text{--}3$ mm, brown and surface slightly tuberculate. Pollen grains hexacolpate, suboblate to oblate-spheroidal, ornamentation supracreticulate. Polar axis ($38.2 \pm 5 \mu\text{m}$) smaller than equatorial axis ($43.9 \pm 5 \mu\text{m}$), P/E: 0.78–0.95, colpi long, $33.7 \pm 5 \mu\text{m}$. Exine ($1.02 \pm 0.12 \mu\text{m}$) slightly thicker than intine ($0.90 \pm 0.20 \mu\text{m}$).

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*, *Ankryopetalum reuteri*, *Dactylis glomerata*, *Cruciata taurica*, *Thlaspi perfoliatum*, *Papaver* spp., *Arenaria* ssp., and *Matricardia* ssp. 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*.

	<i>S. marashica</i>	<i>S. rosifolia</i>	<i>S. huberi</i>	<i>S. pisidica</i>
Stem length (cm)	30–70	to 50	to 50	14–35
Terminal leaf segment (cm)	$1.2-7 \times 0.3-1.8$	$2-4 \times 0.4-1.5$	$1.5-2 \times 0.6-0.9$	$0.7-2.4 \times 0.3-1$
Leaves indumentum	densely eglandular pilose with sessile glands	eglandular pilose to pubescent	eglandular pilose to pubescent	eglandular pubescent with sessile glands
Inflorescence hairy	densely multicellular black-headed glandular pilose with some villous	densely eglandular pilose to villous	densely eglandular pilose to villous	densely eglandular pilose with some villous
Pedicel length (mm)	2–4	4–7	2–4	2–6
Calyx shape	infundibular; upper lip clearly longer than lower lip	campanulate; lips subequal	campanulate; lips subequal	tubular to campanulate; lips subequal
Calyx hair	densely long villous and black-headed glandular pilose with sessile glands	pilose to villous with sessile glands	pilose to villous with sessile glands	eglandular or capitate glandular villous with sessile glands
Calyx size in flower (mm)	12–16	10–15	7–11	10–12
Calyx size in fruit (mm)	to 22	12–17	8–14	to 14 mm
Corolla colour	pink	lilac-pink to violet	lilac-pink to violet	violet-blue
Corolla size (mm)	20–28	20–24	15–20	18–22
Flowering time	April (May)	June to August	May to August	May to July

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 bilabiate, 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).

ADDITIONAL SPECIMENS EXAMINED (paratypes). — Turkey. C6 Kahramanmaraş: Ahır Mt., around Başdervişli village, road sides, 1500–1700 m, 22.V.2000 A. İlçim 966 (with fruit, KSUH); C6 Kahramanmaraş: Ahır Dağı, Kahramanmaraş to Sarçukur village about 5–6 km, 37°39'140''N, 36°50'538''E, 871 m, road sides, 27.IV.2006 F. Celep 1020 (ANK, E, GAZI, K).

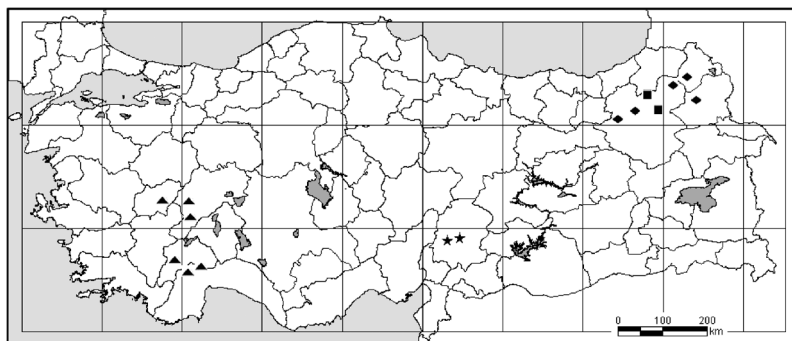
Acknowledgements

We thank Dr. Ian Hedge, Royal Botanic Garden Edinburgh, for his constructive critics about the manuscript, the curators of ANK, GAZI, ISTE, ISTF, E, K, BM, G and W for allowing us to study their *Salvia* collections, Mr. Özgür Önal (METU) for preparing the figures, and the Scientific and Technical Research Council of Turkey (TUBİTAK-TBAG-104 T 450) for their financial assistance. Miss Yana Thaker is thanked for assisting with the editing.

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Fig. 4. Distribution map of (★) *Salvia marashica*, (◆) *S. rosifolia*, (■) *S. huberi* and (▲) *S. pisidica*.



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