Salvia nubicola Wall. ex Sweet
Lamiaceae

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Synonyms

Salvia glutinosa L., *Salvia glutinosa* subsp. *nubicola* (Wall. ex Sweet) Murata.

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Local Names

***Salvia moorcroftiana*: Jammu**: Gaddo; **Kashmiri:** Buder tuned, gankual, sholar, shollari, kaikok, kallijarri, shrematus; **Urdu:** Kherghwang; **Pashto:** Dersai.
***Salvia przewalski*: Tibetan:** də mbə ránə, a ne nə nə.
***Salvia reflexa*: Urdu:** Sugar boti.
***Salvia hians*: Kashmiri:** Pohakjal.
***Salvia plebeia*: Jammu:** Kakrondha.
***Salvia sclarea*: Kashmiri** Buder tunde.

Botany and Ecology

***Salvia nubicola*:** Plants perennial. Stems erect, 1–1.25 m. Petiole as long as to longer than blades, densely pubescent; leaf blade triangular-ovate, sparsely villous or glabrous, appressed hairy on veins, base hastate-sagittate. Inflorescences densely glandular pubescent; verticillasters 6-flowered, widely spaced, 10–12 in terminal racemes or panicles; bracts sessile, ovate to elliptic, shorter than calyx, reflexed, abaxially fine pubescent, glandular hairy, apex long acuminate; lower bracts smaller than stem leaves, 2–4 cm. Pedicel 5–6 mm. Calyx 1–1.2 cm, pubescent, long glandular hairy, minutely hispid inside, sparsely hairy at base; upper lip semicircular,

Fig. 1 *Salvia moorcroftiana* (Lamiaceae), Bakuriani, Georgia. (Photo H. Sher & I. Ur Rahman)

shorter than lower, apex short 3-dentate; lower lip deeply 2-toothed. Corolla yellow with brown markings on lower lip, finely striate or spotted on limb, 3–4 cm; tube exerted, glandular hairy outside, finely hairy inside; upper lip falcate, glandular pubescent; middle lobe of lower lip broadly obovate, slightly shorter than lateral lobes, margin revolute, strongly dentate; lateral lobes transversely elliptic-oblong, revolute. Filaments shorter than connectives, upper arms 2–3 × as long as lower arms; upper anther cells to 1 cm, lower cells deformed, semicircular, united. Nutlets brown, black reticulate, ellipsoid, ca. 3 mm, Flowering Jun–Aug (specimens not seen) (Wu et al. 1994-2013) (Figs. 1, 2, 3, 4, 5, 6, 7, 8, 9 and 10).

Phytochemistry

Tannins, anthocyanins, quinones (ureleanone, horminone, nemorone, royleanone, deacetylnemorone), essential oils (tuyen, pinene, myrcene, terpinene, cymol, limonene, ocimene, terpinolen, borneol, camphene, caryophyllene, steroids (campesterin, stigmasterol, sitostero), fatty acids (myristic, palmitic, palmitoleic, stearic, oleic, linoleic, linolenic) (Sokolov 1991).

Fig. 2 *Salvia nubicola* (Lamiaceae), Pakistan. (Photo W. Hussain)

Fig. 3 *Salvia nemorosa* (Lamiaceae), Bakuriani, Georgia. (Photo R.W. Bussmann & N.Y. Paniagua-Zambrana)

Local Medicinal Uses

Salvia nubicola*:** Used for epilepsy, as expectorant, emetic, febrifuge, and for dental care (Bhat et al. 2013). A leaf infusion is used in the Ural for diarrhea in children, and as wash for wound healing, and furuncles, also as hemostatic (Sokolov 1991). ***Salvia nemorosa*:** The leaves are used for enuresis (Bussmann et al. 2014, 2016, 2018; Bussmann 2017). ***Salvia verticillata: The leaves are used as anti-inflammatory, for enuresis and wound treatments (Bussmann et al. 2014, 2016, 2018; Bussmann 2017). ***Salvia sclarea*** is used to treat sunstroke (Yeşilada et al. 1995). ***Salvia viridis*** is used to treat eye pain (Ghorbani 2005). ***Salvia reflexa*** serves for diabetes (Ullah et al. 2019), ***Salvia nilotica*** for lymphadentitis (Giday et al. 2009, 2010). ***Salvia hians:*** Used to treat hemorrhoids (Gairola et al. 2014). ***Salvia plebeia*:** used to treat diarrhea (Gairola et al. 2014). ***Salvia sclarea***: used for burns and

Fig. 4 *Salvia nemorosa* (Lamiaceae), Bakuriani, Georgia. (Photo R.W. Bussmann & N.Y. Paniagua-Zambrana)

wounds (Gairola et al. 2014). ***Salvia moorcroftiana*:** Used for stomach pain, boils, cuts, itching, as mouth wash, for throat swelling, guinea-worm, wounds, coils, chest congestion, colds, cough, headache, stomach pain, acidity, backache, boils, colic, constipation, cough, for dysentery, as emetic, hemorrhoids, joint pain, fever, and skin infections (Ahmad and Pieroni 2016; Gairola et al. 2014). ***Salvia multicaulis*** is used for wounds (Akgul et al. 2018). Lots of species have medicinal uses in South America (Bussmann and Sharon 2006).

Local Food Uses

The leaves are used as spice (Sokolov 1991). The stem center of ***Salvia moorcroftiana*** is eaten (Ahmad and Pieroni 2016). ***Salvia verticillata:*** The leaves and shoots are eaten as phkhali (herb pie) (Bussmann et al. 2014, 2016, 2018;

Fig. 5 *Salvia nemorosa* (Lamiaceae), Bakuriani, Georgia. (Photo R.W. Bussmann & N.Y. Paniagua-Zambrana)

Bussmann 2017). ***Salvia przewalskii*** leaves are eaten in Tibet (Kang et al. 2016). ***Salvia syriaca*** is used as spice (Akgul et al. 2018).

Local Handicraft and Other Uses

The essential oils are used for perfumes. Fodder for rabbits and young cattle (Sokolov 1991). ***Salvia verticillata:*** The leaves and shoots serve as fodder and can be used as filter (Bussmann et al. 2014, 2016, 2018; Bussmann 2017). ***Salvia merjamie*** is used to treat blackleg in livestock (Yineger et al. 2007). ***Salvia multicaulis*** is used as fodder (Akgul et al. 2018).

Fig. 6 *Salvia verticillata* (Lamiaceae), Bakuriani, Georgia. (Photo R.W. Bussmann & N.Y. Paniagua-Zambrana)

Fig. 7 *Salvia verticillata* (Lamiaceae), Bakuriani, Georgia. (Photo R.W. Bussmann & N.Y. Paniagua-Zambrana)

Fig. 8 *Salvia verticillata* (Lamiaceae), Bakuriani, Georgia. (Photo R.W. Bussmann & N.Y. Paniagua-Zambrana)

Fig. 9 *Salvia sclarea* (Lamiaceae), Akhalsikhe, Georgia. (Photo R.W. Bussmann & N.Y. Paniagua-Zambrana)

Fig. 10 *Salvia sclarea* (Lamiaceae), Akhalsikhe, Georgia. (Photo R.W. Bussmann & N.Y. Paniagua-Zambrana)

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