

FLORA OF NEPAL NOTULAE I: TAXONOMIC NOTES ON NEPALESE SALVIA

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While preparing the account of *Salvia* L. for the *Flora of Nepal*, two unnamed species were noted. These species are described here as *Salvia clementae* Pendry & Y.K.Weï and *S. manasluensis* Pendry & Y.K.Weï. *Salvia transhimalaica* Yonek., recently described from Mustang, is reduced to synonymy under *S. przewalskii* Maxim. A key to the species of *Salvia* in Nepal is presented.

Keywords. Nepal, *Salvia*, *Salvia clementae*, *Salvia manasluensis*, *Salvia transhimalaica*, taxonomy.

Received 24 October 2018 Accepted 13 July 2020 Published 09 March 2021

Introduction

The *Flora of Nepal* (Watson *et al.*, 2011) is the first comprehensive account of Nepal's estimated 7000 species of vascular plants. The *Flora's* taxonomic accounts are being published in ten volumes and are also made available online (Royal Botanic Garden Edinburgh, [continuously updated](#)), but neither of these formats include nomenclatural novelties. These will be published in an intermittent series entitled *Flora of Nepal Notulae*, of which this is the first.

Salvia clementae Pendry & Y.K.Weï

Peter (1936) described *Salvia campanulata* var. *hirtella* E.Peter primarily on indumentum characters, but Clement (1999), in her account of *Salvia* for the *Flora of Bhutan*, noted that this taxon is distinct from both *S. campanulata* Wall. ex Benth. and *S. castanea* Diels, the other Bhutanese species it most resembles. Clement did not formally name this species but listed it as '*Salvia* Species A' in her account. The straight, purplish red corollas of these plants clearly distinguish them from the yellow-flowered *Salvia campanulata*, and they are easily separable from *S. castanea*, whose corollas are dark purple-brown, sigmoid and much larger (30–35 mm long versus 20–28 mm long). Furthermore, the leaves of the new taxon are broadly ovate with pronounced cordate bases and occasionally with slightly hastate upper leaves, whereas those of the other two species are more narrowly ovate, and are sometimes elliptic in *Salvia castanea*.

Clement suggested that more research would be necessary to ensure that the species had not been described elsewhere, but because no such description has been found, it has

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been decided to formally publish this species here. The name *Salvia hirtella* is not available, because it was used by Vahl to describe a Peruvian species (Vahl, 1804), so this species is named *S. clementae* in recognition of Clement's work on Himalayan Labiatae.

Salvia clementae is also found in Nepal, and most of the Nepalese specimens of *S. clementae* had previously been determined as *S. hians* Royle ex Benth. This name has been a source of considerable confusion, and it has also been misapplied to specimens of both *Salvia castanea* and *S. przewalskii* Maxim. (see below). *Salvia hians* has large (27–35 mm long), purplish blue flowers with a conspicuous white lower lip and is a western Himalayan species that does not occur east of Mustang. *Salvia przewalskii* is Chinese species with purplish pink flowers similar to those of *S. clementae*, and although there are no published records of it from Nepal, L. S. Springate annotated several Nepalese specimens at E with this name. *Salvia clementae* and *S. przewalskii* are easily distinguished, because the leaves of the latter are much narrower and whitish tomentose below.

***Salvia clementae* Pendry & Y.K.Wei, nom. et stat. nov.**

Salvia campanulata var. *hirtella* E.Peter, Feddes Repert. 39: 179 (1936).

Salvia 'species A' Clement, Fl. Bhutan 2(2): 973 (1999).

Species close to *Salvia przewalskii* Maxim. but differing in its broadly ovate leaves that are almost glabrous below, compared with the narrower, more hastate leaves of the latter, which are tomentose below. Differs from *Salvia campanulata* Wall. ex Benth. in its pinkish purple, not yellow, flowers, and from *S. castanea* Diels, which has larger, dark purple-brown sigmoid flowers. – Holotype: India, Sikkim, Laghep, 11,000 ft, 15 viii 1913, R.E. Cooper 508 (holo E [E00317504]). **Figure 1.**

Perennial herb, 30–80 cm. *Stems* erect, with a short indumentum of simple or viscid glandular hairs. *Petioles* of lower leaves up to 13 cm. *Leaves* all cauline, broadly ovate, 5–26 × 1.5–15 cm, smaller above, base cordate or rarely slightly hastate in upper leaves, apex acute to acuminate, margin crennate to doubly crennate or serrate, glabrous to sparsely pubescent above, almost glabrous and minutely gland-spotted below. *Inflorescence* a panicle of 2(–6)-flowered verticillasters. *Bracts* broadly elliptic, 8–20 mm, entire. *Bracteoles* linear to broadly elliptic, 3–5 mm. *Calyx* campanulate 10–12 mm, upper lip rounded, 3–5 mm, mucronate or 1-toothed, lower lip 5–6 mm, teeth 3–4 mm, acute. *Corolla* purplish pink, 20–28 mm, tube 14–20 mm, 8–10 mm wide, obliquely annulate c.5 mm above base, upper lip straight, 6–8 mm, lower lip 6–10 mm, middle lobe to 6 × 9 mm. *Stamens* fused, filaments 6–7 mm, connective upper arm 3–4 mm, lower arm 1.5–3 mm, upper theca 2.5–3 mm, lower theca fertile, 1.5–2 mm. *Staminodes* present. *Style* 24–27 mm, included or up to 3 mm exerted. *Nutlets* flattened, broadly ellipsoid, 2.5–3 mm.

Altitudinal range. 2200–3900 m.

Ecology. In *Abies* and *Quercus* forests, under shade and in clearings, or on open slopes.

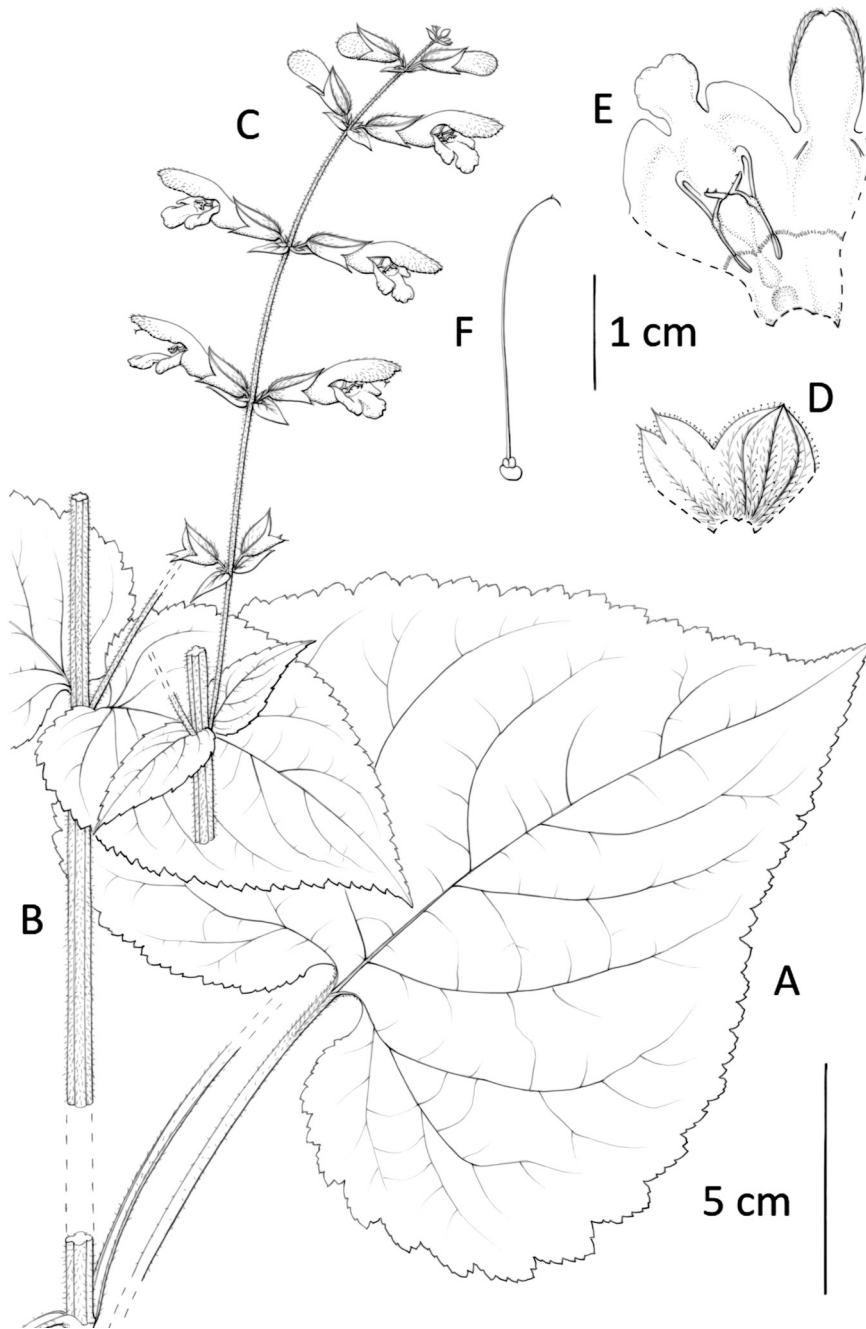


Figure 1. *Salvia clementae* Pendry & Y.K.Wei, nom. et stat. nov. A, Basal leaf; B, upper leaves and stem; C, inflorescence; D, opened calyx (outer view); E, opened corolla (inner view); F, ovary and style. Scale bars: A–C, 5 cm; D–F, 1 cm. Drawn by Claire Banks from D.G. Long et al. 225 (E).

Phenology. Flowering June to September, fruiting July to October.

Distribution. Nepal, India, Bhutan and Southwest China.

Additional specimens examined. BHUTAN. **Punakha:** Naki to Hing Lai La, 6500–11,300 ft, 6 vii 1938, *B.J. Gould* 848 (E). **Thimpu:** Above Chenkaphug, 3250 m, 20 vii 1979, *A.J.C. Grierson & D.G. Long* 2803 (E); Dotena to Barshong, 3050 m, 20 viii 1989, *R. King* (E); Above Changri Monastery, 2500 m, 3 vii 1987, *J.R.I. Wood* 5562 (E); Above Dotena to Barshong, 2500 m, 11 ix 1988, *J.R.I. Wood* 6664 (E); Above Dotena, 2600 m, 22 vii 1989, *J.R.I. Wood* 7016 (E); Below Barshong, 3300 m, 25 vii 1990, *J.R.I. Wood* 7298 (E). **Upper Mo Chu:** Koina, 3000 m, 28 vii 1983, *C. Sargent* 60 (E).

CHINA. **Xizang:** Yatung, 1897, *H.E. Hobson s.n.* (K).

INDIA. **Darjeeling:** Phalut, 11,000 ft, 21 vii 1919, fl., *Anon. s.n.* (E); Kalipokhri, 10,000 ft, 12 viii 1913, fl., *Rohmoo Lepcha* 1209 (E); *s. loc.*, 7000 ft, viii 1881 fl., *J.S. Gamble* 9620 (K [K000939542]). **Sikkim:** Megu, 14,000 ft, 21 vii 1913, fl., *Rohmoo Lepcha* 813 (E); Phedup, 13,000 ft, 12 viii 1913, fl., *Rohmoo Lepcha* 1126 (E).

NEPAL. **Kaski:** Seti Khola, 11,500 ft, 28 vii 1954, *J.D.A. Stainton et al.* 6535 (E). **Myagdi:** 10,000 ft, 17 vii 1964, *T.B. Shrestha & M.S. Bista* 1958 (E); Ghorepani, 2200 m, 20 vii 1973, *C. Grey-Wilson & B. Phillips* 323 (BM). **Rasuwa:** 3900 m, 21 viii 1972, *A. Maire, AMA* 423 (E); Gatlang, 3200 m, 20 viii 1974, *J.H. de Haas* (BM). **Sankhuwasabha:** Kasuwa Khola, 10,000 ft, 11 vi 1956, *J.D.A. Stainton* 618 (E); Thasi Gaon to Bhainsi Kharka, 2470 m, 3 viii 1990, *M. Minaki et al.* 9010101 (BM); Thasi Gaon, 2450 m, 3 viii 1990, *D.G. Long et al.* 225 (E, KATH). **Syangja:** Bhurungdi Khola, 9500 ft, 15 vi 1954, *J.D.A. Stainton et al.* 5781 (BM, E). **Taplejung:** Topke Gola, 10,500 ft, 13 vii 1956, *J.D.A. Stainton* 979 (BM).

Salvia manasluensis Pendry & Y.K.Weii

A single population of this large-flowered *Salvia* was recorded during fieldwork in the Manaslu region of western Nepal. Although only one specimen was collected, it is considered to be sufficiently distinct from other species of *Salvia* to merit its description as a new species.

Salvia manasluensis Pendry & Y.K.Weii, *sp. nov.*

Species of *Salvia* close to *S. campanulata* Wall. ex Benth. but with markedly larger flowers (33 mm versus 23–26 mm). – Holotype, here designated: Nepal, Manang, southwest of Bimtang, 28°37'11"N, 84°27'57" E, 3380 m, 14 viii 2008, *Ikeda et al.* 20818143 (holo TI; iso E [E00662247], KATH). [Figure 2](#).

Perennial herb to 1.5 m. Stems erect, with an indumentum of long, brown, simple or glandular hairs. Basal leaves not seen. Petioles of upper leaves 0.5–3 cm, shorter above. Leaves broadly ovate, 5–22 × 4–20 cm, markedly smaller above, base deeply cordate to obtuse in uppermost leaves, apex acute to acuminate, margin serrate to crenate, glabrous above, brown villous and minutely gland-spotted below, denser along the veins. Inflorescence a panicle of 2(–6)-flowered verticillasters. Bracts ovate, acuminate, 8–22 mm, entire. Bracteoles elliptic, 5 × 3 mm. Calyx campanulate 18 mm, upper lip rounded, 2 mm, 1-toothed, lower lip 7 mm, teeth 4 mm, cuspidate. Corolla yellow, 33 mm, tube 21 mm,

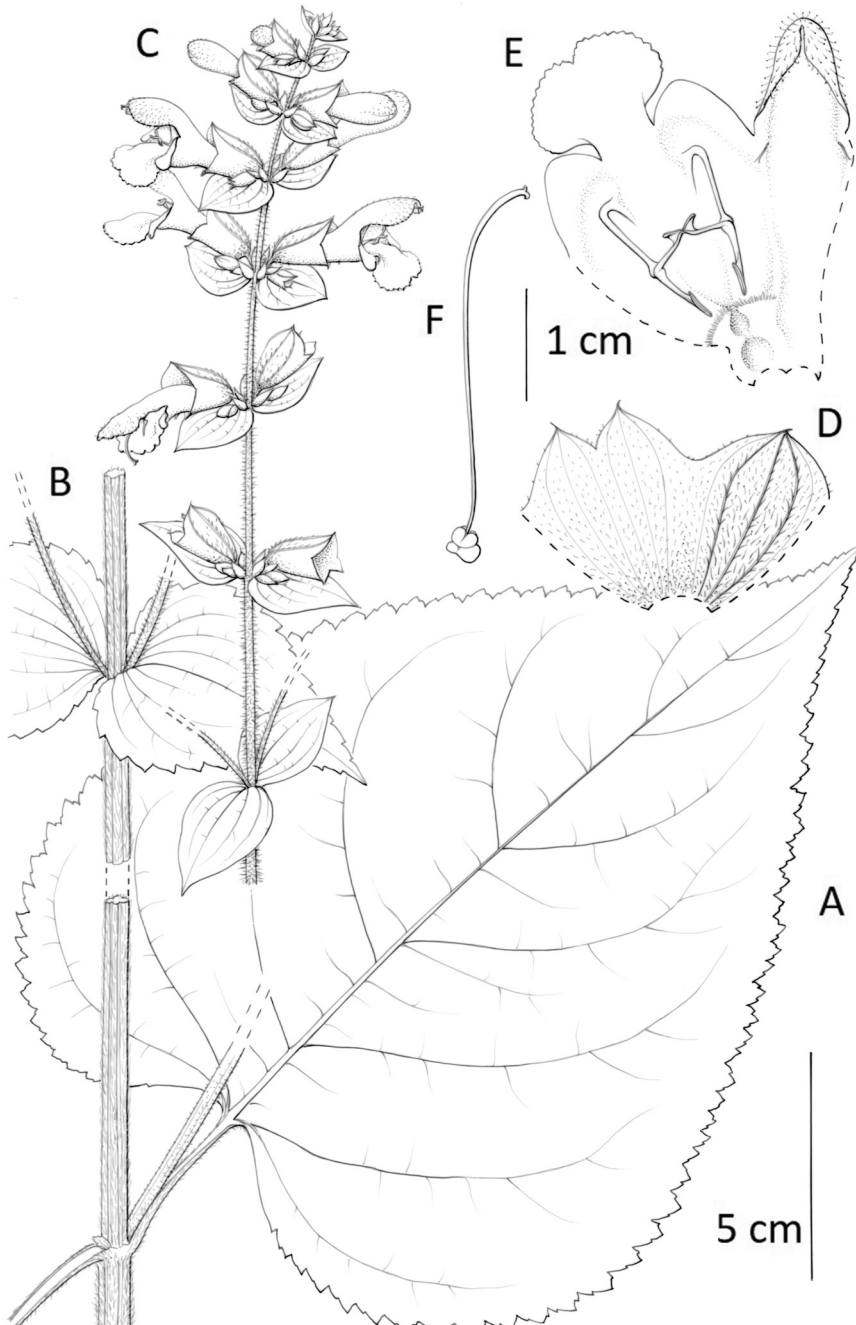


Figure 2. *Salvia mansluensis* Pendry & Y.K.Wei, sp. nov. A, Basal leaf; B, upper leaves and stem; C, inflorescence; D, opened calyx (outer view); E, opened corolla (inner view); F, ovary and style. Scale bars: A–C, 5 cm; D–F, 1 cm. Drawn by Claire Banks from Ikeda et al. 20818143 (E and TI).

12 mm wide, annulus 7 mm from base, upper lip straight, 12 mm, lower lip 14 mm, middle lobe to 8 × 14 mm. *Stamens* fused, filaments 7 mm, connective upper arm 4 mm, lower arm 3 mm, upper theca 3.5 mm, lower theca fertile, 2 mm. *Staminodes* 2 mm. *Style* 33 mm, included or up to 2 mm exerted. *Nutlets* not seen.

Altitudinal range. c.3400 m.

Ecology. Open areas in *Abies* woodland.

Phenology. Flowering in August, fruiting in September.

Distribution. Endemic to Nepal. Known only from the type collection.

Salvia manasluensis is clearly closely related to *S. campanulata*, but it is easily distinguished by its very much larger flowers.

***Salvia przewalskii* Maxim.**

Yonekura (2008) described *Salvia transhimalaica* Yonek. for specimens from Mustang that had previously been identified as *S. hians*. His Latin diagnosis can be translated as:

Species similar to *Salvia castanea* and *S. przewalskii* but differing from the former by the straight not sigmoid corolla tube and triangular-hastate leaf with hastate-cordate base, and from the latter in purple-blue corolla and leaves densely tomentose above and densely strigose-tomentose below. It is distinguished from *Salvia hians* by the purple, not white, lower lip.

The Mustang specimens are clearly distinguished from *Salvia castanea* and *S. hians* by the characters discussed by Yonekura, but the distinction between them and *S. przewalskii* is not at all clear. *Salvia przewalskii* is widespread in China and is found from 2100 to 4000 m in Gansu, Hubei, Sichuan, Xizang and Yunnan. *Salvia przewalskii* also has purplish flowers, and its leaves are tomentose below, but it is a rather variable species and the *Flora of China* account includes four varieties that are distinguished by differences in their indumentum and flower colour (Li & Hedge, 1994). The specimens from Mustang, and others from Manang and Dolpa, show no clear differences from material of *Salvia przewalskii* at either CSH or E, and there is a complete overlap in floral measurements. *Salvia transhimalaica* is therefore considered within the circumscription of *S. przewalskii* and so is treated here as a synonym.

***Salvia przewalskii* Maxim.**, Bull. Acad. Imp. Sci. Saint-Pétersbourg 27: 526 (1881).

Salvia transhimalaica Yonek., Fl. Mustang: 265, pl. 4 (2008), **syn. nov.**

The Nepalese collections are all from trans-Himalayan areas to the north of the main ranges of the Himalayas, growing at elevations between 2810 and 4090 m, where the climate is similar to that of the regions of the Tibetan Plateau where *Salvia przewalskii* is found. It should be noted that the lower elevational limit of 1100 m reported in the *Flora of China* is

probably incorrect. During extensive fieldwork in the region, the second author has rarely seen this species below 2500 m, and the account in *Florae Republicae Popularis Sinicae* gives a range of 2100 to 4050 m (Wu & Li, 1977).

The following specimens, previously identified as *Salvia hians*, and also as *S. castanea*, *S. lanata* Roxb. (= *S. mukerjeei* Bennet & Raizada), *S. nubicola* Wall. ex Sweet and *S. transhimalaica*, are redetermined as *S. przewalskii*.

Specimens examined. NEPAL. **Dolpa:** Phoksumdo Tal, 3800 m, 5 ix 2014, BRD A274 (E, KATH, TI); Lulo Khola, 13500 ft, 18 ix 1952, O.V. Polunin et al. 3463 (BM, E); Lulo Khola, 13500 ft, 18 ix 1952, O.V. Polunin et al. 3493 (BM, E). **Manang:** Marsiandi, 12000 ft, 23 vii 1950, D.G. Lowndes 1224 (BM, E); Manang, 12000 ft, 29 vii 1983, R.J.D. McBeath et al. 1546 (E); Lower Pisang, 3000 m, 15 viii 1994, M. Mikage et al. 9485435 (E, KATH); Manang, 3100 m, 24 ix 1969, T. Wraber 396 (BM). **Mustang:** Samar, 3700–3880 m, 11 vii 2000, Y. Iokawa et al. 20020092 (E); Kagbeni-Muktinath, 2810–3650 m, 11 ix 1999, S. Ishizawa et al. 99911017 (E); Bhona, 3860 m, 16 viii 2002, F. Miyamoto et al. 20220141 (E); Alubari Kharka, 3730 m, 31 vii 2001, S. Noshiro et al. 20104047 (E); Muktinath, 12000 ft, 26 vi 1966, T.B. Shrestha 5460 (BM); Thinigaon, 11500 ft, 24 v 1954, J.D.A. Stainton et al. 1370 (BM, E); Tukucho, 11000 ft, 18 vii 1954, J.D.A. Stainton et al. 1878 (BM, E); Dzong, 12000 ft, 27 vii 1954, J.D.A. Stainton et al. 2023 (BM, E); Ghemi, 12000 ft, 14 viii 1954, J.D.A. Stainton et al. 7229 (BM, E); Muktinath, 13500 ft, 1 ix 1954, J.D.A. Stainton et al. 8055 (BM, E).

Key to the native and naturalised species of *Salvia* in Nepal

- 1a. Herbs to 30 cm. Leaves all in a basal rosette _____ 2
- 1b. Herbs or shrubs to 120 cm. Cauline leaves present _____ 3
- 2a. Leaves elliptic-oblong, entire, lanate below _____ *S. mukerjeei*
- 2b. Leaves ovate, crenate, sparsely hairy on veins below _____ *S. saxicola* Wall. ex Benth.
- 3a. Bracts caducous. Corolla red or white. Cultivated or naturalised _____ 4
- 3b. Bracts persistent. Corolla blue, violet, yellow, pinkish purple or purple-brown. Native ____ 5
- 4a. Corolla white. Calyx lanate, venation obscured _____ *S. leucantha* Cav.
- 4b. Corolla red. Calyx sparsely hairy, venation evident _____ *S. coccinea* Buc'hoz ex Etl.
- 5a. Corolla up to 18 mm. Calyx 2.5–11 mm _____ 6
- 5b. Corolla 23–35 mm. Calyx 10–18 mm _____ 7
- 6a. Corolla less than 6 mm _____ *S. plebeia* R.Br.
- 6b. Corolla 12–18 mm _____ *S. roborowskii* Maxim.
- 7a. Corolla yellow _____ 8
- 7b. Corolla blue, violet, maroon or purple brown _____ 10
- 8a. Lower theca sterile. Leaves hastate _____ *S. nubicola*
- 8b. Lower theca fertile. Leaves cordate, rarely slightly hastate _____ 9

