

## SHORT COMMUNICATION

***Salvia roborowskii* Maxim. — an addition to flora of Western Himalaya, India**Partha Lodh<sup>1\*</sup>, V. Sampath Kumar<sup>2</sup>, Sobhan Kr. Mukherjee<sup>3</sup> and Sankar Narayan Sinha<sup>3</sup><sup>1</sup>Department of Botany, Govt. General Degree College at Kaliganj, Debagram, Nadia - 741137, West Bengal<sup>2</sup>Botanical Survey of India, Southern Regional Centre, T.N.A.U. Campus, Lawley Road (P.O.), Coimbatore - 641003, Tamil Nadu<sup>3</sup>Department of Botany, University of Kalyani, Kalyani - 741235, West Bengal

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## ABSTRACT

The species *Salvia roborowskii* Maxim. (Lamiaceae) was previously known in India from Sikkim Himalaya is reported here as an addition to the flora of Western Himalaya. A brief description along with illustration of floral parts, which was lacking in earlier literature has been provided.

## KEYWORDS

*Salvia roborowskii*, new record, Western Himalaya, India

## Introduction

The genus *Salvia* L. (Lamiaceae), represented by about 980 species, is chiefly tropical to temperate in distribution, Sub-cosmopolitan, absent only in Australia and New Zealand with an exception of one species (Harley *et al.*, 2004; Walker *et al.*, 2004; Mabberley, 2008; Gonzalez-Gallegos, 2014; Hu *et al.*, 2018). In India the genus is represented by ca 25 species of which majority of them are distributed in the Himalayas (Sampath Kumar and Murthy, 2004; Sampath Kumar, 2014). During the revisionary study of the genus in India, the authors came across two specimens collected from Vasudhara, Garhwal Himalaya at an altitude of 3500m, deposited at BSD, identified as *Salvia nubicola* Sweet and at CAL, kept in unidentified folder. Subsequent studies revealed that these specimens are *Salvia roborowskii* Maxim., which was previously reported from Central and Eastern Himalayas in Indian region (Mukerjee, 1940; Li and Hedge, 1994; Clement, 1999; Singh *et al.*, 2019). The present report of this species is an addition to the flora of Western Himalaya. A detailed illustration of this species was also lacking in the literature. Therefore, in the present paper a brief description and illustrations of dissected parts, distribution along with other relevant information has been provided.

## Taxonomic Account

***Salvia roborowskii* Maxim.**, Bull. Acad. Imp. Sci. Saint-Petersbourg, Ser. 3, 27: 527. 1881; Mukerjee, Rec. Bot. Surv. India 14(1): 112. 1940; H.W. Li and I.C. Hedge in C.Y. Wu and P.H. Raven, Fl. China 17: 212. 1994; R.A. Clement in A.J.C. Grierson and D.G. Long, Fl. Bhutan 2(2): 974. 1999. (Fig. 1)

Annual or biennial erect herb, 20–50 (–70) cm high; stem simple or branched, slender, dark greenish often black along edges, hirsute with glutinous hairy throughout, hairs glandular and eglandular. Leaves ramal, opposite decussate, petiolate; lamina triangular or sometimes slightly sagittate, 3–8 × 2–5 cm, truncate or rarely slightly cordate at base, acute-obtuse at apex, margins crenate, membranous, rugulose, adaxially sparsely pubescent, abaxially adpressedly strigose along veins; lateral nerves (4–) 5–6 pairs; petioles 1–6 (–7) cm long, longer in lower leaves. Inflorescence axillary or terminal, verticillasters in racemes or

sometimes in panicles with 4–6 flowers per each verticils, verticils (3–) 3.5–5.0 cm apart, successively distant in basal parts; bracts 3–4 × (1)1.5–2.0 mm, subsessile, lanceolate-elliptic, shorter than calyx, acute-acuminate, margins slightly undulate, ciliate, villous hairy intermixed with sessile glands. Flowers pale yellow, 15–18 (–20) mm, shortly pedicellate; pedicels 2–3 mm long, glandular. Calyx 8–11 mm long, tubular, fruiting calyx dilated, 12–13 mm long, glandular hirsute, with sessile oil glands, markedly striated, dark green; upper lip 3–3.5 × 4–4.5 mm, entire, triangular, apex mucronate or slightly disappearing 3-mucronate, prominently 3-nerved, nerves black, sparsely glandular hairy along nerves; lower lip almost equal to upper lip, 2.5–3.5 × 3–4 mm, deeply 2-cleft upto half, lobes deltoid-triangular, aristate in both lobes, prominently 6-nerved, adpressedly glandular hairy along veins. Corolla 14–17 mm, bilabiate; tube 9–12 mm long, slightly exerted, abaxially inflated; upper lip hooded, straight, apex retuse; lower lip 3-lobed, reflexed, median one larger, ovate, entire; lateral lobes smaller, rounded, entire; sparsely pilose outside, incompletely pilose annulate inside. Stamens 2, filaments longer than connective, connective arcuate, joint articulated, upper arm subequal or sometimes slightly shorter than lower arm, upper arm with fertile anther, 1–1.5 mm long, oblong, straight-slightly recurved, lower arm with shorter deformed anther like, subspheroidal, most often polleniferous, punctate, ca 0.5 mm, coherent; staminodes 2 on upper lip, minute. Gynoecium without prominent gynobasic disc, styles 12–15 mm long, stigma unequally bifid. Mericarps dark brownish or yellowish, obovoid, slightly trigonous, 3 (–3.5) × 2 (–2.2) mm, smooth.

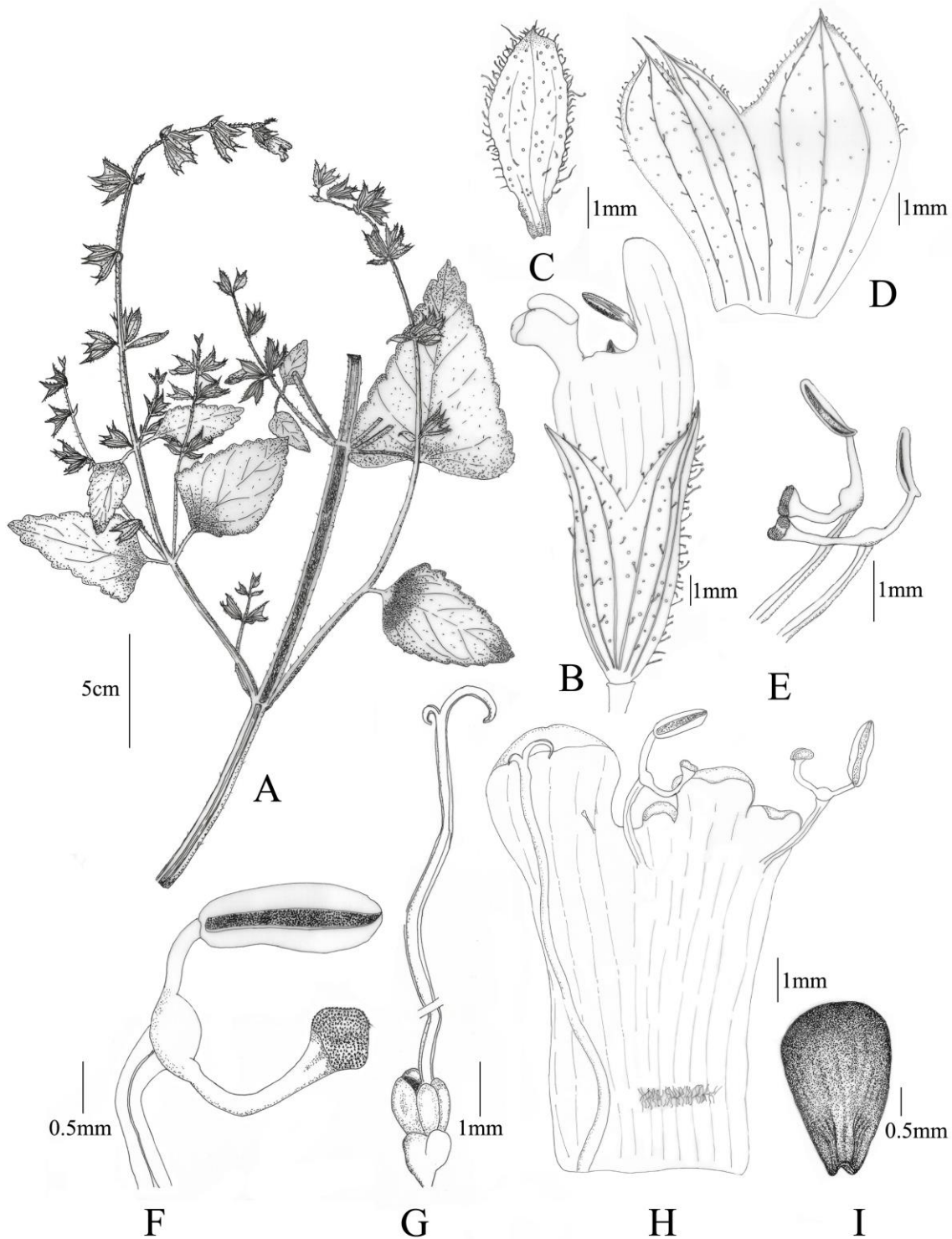
**Flowering and Fruiting:** July to October.

**Distribution:** INDIA: Uttarakhand (reported during this study), Sikkim; NEPAL, BHUTAN, CHINA). (Fig. 2)

**Habitat:** Slightly rare, grows in moist areas especially near streams or springs between 3200 and 4300 m altitude.

**IUCN Category:** Not Evaluated (NE).

**Specimens Examined:** INDIA. Sikkim: Thangu, 4267m, 3 Nov 1909, *Lepcha Collector* 2830 (CAL!); without precise locality, *s.coll.*, *s.n.* Acc.



**Figure 1.** *Salvia roborowskii* Maxim.: A. Habit, B. Flower, C. Bract, D. Calyx split open, E. Stamens, F. Single stamen enlarged, G. Gynoeceium, H. Corolla Split open, I. Mericarp (M.A.Rau, 10558).

no. 357583 (CAL!); without locality, *G.H. Cave* 192 (CAL!); Thangu, 19 July 1997, *S.S.Dash* 19401 Acc. nos. 24770–72 (BSHC!); Uttarakhand : Garhwal, Vasudhara, 3200m, *M.A.Rau* 10458 (BSD!,CAL!).

#### DISCUSSION

*Salvia roborowskii* is a Sino-Himalayan species, distributed from China to Indian part of Himalayas. This report records extension of its distribution to Western Himalaya, additionally it marks the farthest distribution of this species towards West whereas Gansu, China remains the distribution limit to the East. The species is known from a very few

collections in India and the studied materials are not sufficient to calculate EOO and AOO and further research and specimen collection is needed to ascertain its conservation status correctly.

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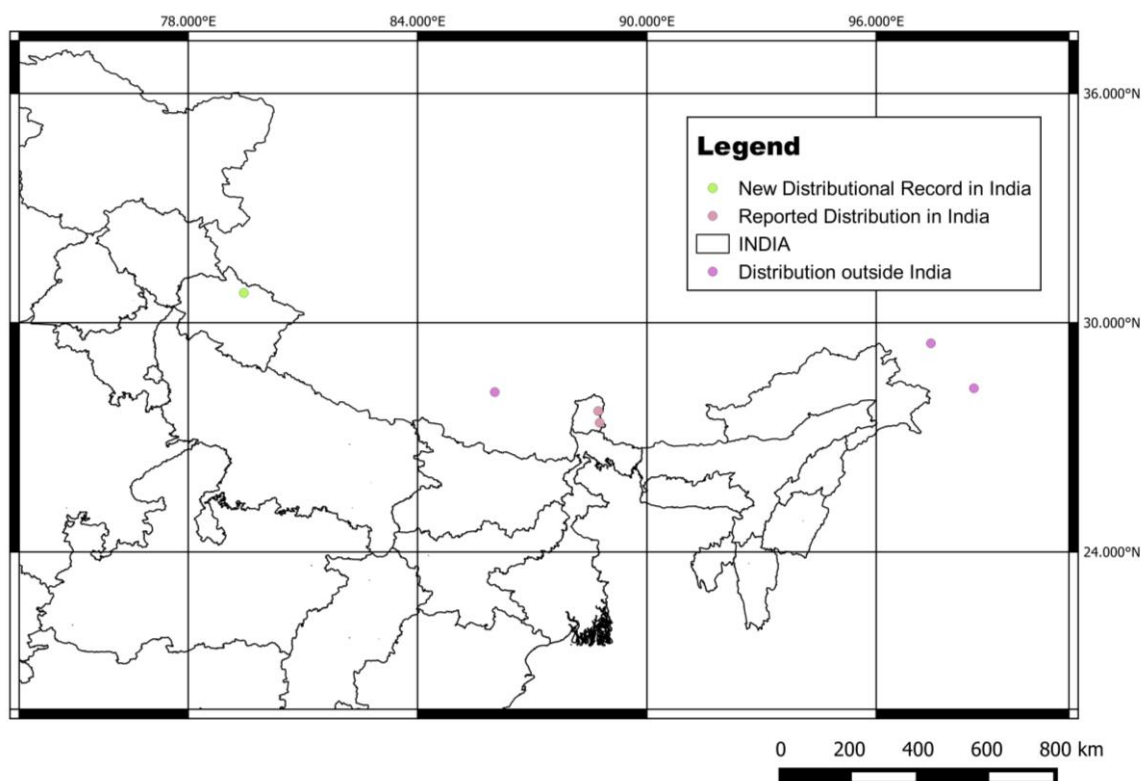


Figure 2. Distribution of *Salvia roborowskii* in Himalayas.

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