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Collaborative Activity 1



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SHORT COMMUNICATION

Salvia roborowskii Maxim. — an addition to flora of Western Himalaya, India

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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; Hsu *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 subincala* 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. Saine-Petersbourg, Ser. 3, 27: 527, 1881; Mukerjee, Rec. Bot. Surv. India 14(1): 112, 1940; H.W. Li and L.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. Bhotan 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 cm 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.*

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Collaborative Activity 2

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