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Aeginetia indica L. var. *alba Santapau* (Orobanchaceae) and *Scutellaria discolor* Colebr. (Lamiaceae): New additions to the flora of Garhwal Himalaya, Uttarakhand

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Abstract: Updation of the floristic inventories at the regional scale through new discoveries and new distributional records is a necessary prerequisite to assess the conservation status of plant species. The present account communicates new distributional record of *Aeginetia indica* L. var. *alba* Santapau (Orobanchaceae) and *Scutellaria discolor* Colebr. (Lamiaceae) from Garhwal Himalaya. A brief description based on field characters, phenology, local distribution and figures has been provided for easy identification

Keywords: Flora • New additions • Mandakini alley • Garhwal

Introduction

Garhwal is part of the Western Himalayan phytogeographic zone of India (Hooker, 1904; Chatterjee, 1962) and is one of the two administrative divisions of Uttarakhand state. The breathtaking snow capped mountain peaks of world repute, emporium of bio- resources, places of aesthetic values, socio-cultural diversity, famous Hindu pilgrimage places, *etc*., define the significance of this landscape within Indian Himalayan Region (IHR). This biodiversity rich area has been extensively explored by a number of workers since long past to document its biotic wealth. Some of the significant floristic contributions particularly from Garhwal region are associated with Kanjilal (1928), Raizada and Saxena (1978), Semwal and Gaur (1981), Kala and Gaur (1982), Sharma and Gaur (1983), Naithani (1984, 1985), Wadhw *et al*. (1987), Gaur (1987, 1999), Negi *et al*. (1988), Samant (1993), Uniyal and Rao (1993), Hajra and Balodi (1995), Kala *et al*. (1998), Rawat *et al*. (2001), Singh and Prakash (2002), Pusalkar and Singh (2012), Tiwari *et al*. (2015), Rawat *et al*. (2016a) and Kumar *et al*. (2016).

Updation of the floristic inventories at the regional scale through new discoveries and new distributional records is a necessary prerequisite to assess the conservation status of plant species. Thorough collection, identification and documentation of plants from any smaller ecoregion is an essential step that evaluates the total

biodiversity wealth of the district, state and country (Singh, 2016; Rawat *et al*., 2016b). During the course of floristic exploration in the Garhwal Himalaya (Uttarakhand state, India), the authors came across several notable plat species with their extended distribution including *Aquilegia nivalis* (Baker) Falc. ex B.D. Jacks. (Ranunculaceae), *Arenaria curvifolia* Majumdar (Caryophyllaceae), *Dendrobium moniliforme* (L.) Sw. (Orchidaceae), *Dipcadi serotinum* (L.) Medik. (Asparagaceae), *Dicranostigma lactucoides* Hook.f. & Thomson (Papaveraceae), *Doronicum falconeri* C.B. Clarke ex Hook.f. (Asteraceae), *Exacum paucisquamum* (C.B. Clarke) Klack. (Gentianaceae), *Goodyera viridiflora* (Blume) Blume (Orchidaceae), *Gentiana seginoides* Burkill (Gentianaceae), *G. tetrasepala* Biswas (Gentianaceae), *Sarcopyramis napalensis* Wall. (Melastomaceae), *Tetrastigma affine* (Gagnep. ex Osmaston) Raizada & H.O. Saxena (Vitaceae), *etc*. (Rawat and Rana, 2007; Rawat *et al*., 2009, 2016c, 2016d; Rana *et al*., 2011, Rana and Rawat, 2012; Rawat *et al*., 2016a; Tiwari *et al*., 2015a, 2015b, 2016a, 2016b).

During recent floristic explorations as stated above the authors have spotted some populations of *Aeginetia indica* L. var. *alba* Santapau (Orobanchaceae) and *Scutellaria discolor* Colebr. (Lamiaceae) in the Mandakini valley, Rudraprayag, Garhwal Himalaya. These taxa, hitherto known to occur in Kumaon Division (Uniyal *et al*., 2007) of Uttarakhad Himalaya, is reported here as new additions for Garhwal Himalayan flora. The voucher specimens are deposited and maintained at the Herbarium of Department of Botany , HNB Garhwal University, Srinagar (Garhwal), Uttarakhand (GUH).

Observation

Aeginetia indica L. var. **alba** Santapau, Kew Bull. 3: 491–492. 1948. [family: Orobanchaceae]

Herbs, leafless, parasite on roots; stem subterranean with suckers. Scape solitary or branched at base, glabrous, 15–20 cm long. Flowers solitary, emerging from axils of bracts, 2.7–9 cm long, pale white. Calyx spathaceous, *ca*. 4 cm long. Corolla tubular–campanulate, *ca*. 3 cm across, incurved; lobes spreading, subequal, suborbicular. Stamens 4, included. Ovary 1-celled. Style slender; stigma pale yellow. Capsule conical–globose, sub 2-valved, 1.7-3 cm long. Seeds ellipsoid, yellowish-white. (Fig 1).

Flowering and fruiting: September–November.

Ecology: Grows in shady habitats or in rock crevices; three populations each with *ca*. 13–15 individuals were observed during the present study (1000–1300 m).

Status: *Aeginetia indica* var. *alba* has not yet been assessed for the IUCN Red List but the occurrence of the taxon is 'rare' in the Garhwal Himalaya.

Distribution: Maharashtra and Uttarakhand [Kumaon and Garhwal (present study)].

Figure 1 *Aeginetia indica* L. var. *alba* Santapau

Specimen examined: Uttarakhand, Garhwal Himalaya, Mandakini valley, Guptkashi, 09.09. 2007, *C.S. Rana* 19592 (GUH!).

Scutellaria discolor Colebr., Pl. Asiat. Rar. 1: 66. 1830. *S. colebrookiana* Zoll. and Moritzi, Syst. Verz. 54. 1846. *S. heteropoda* Miq., Fl. Ned. Ind. 2: 972. 1859. *S. salvia* H.Lév., Bull. Acad. Int. Géogr.

Bot. 24: 252. 1914. *S. zollingeriana* Briq., Annuaire Conserv. Jard. Bot. Genève 2: 104. 1898.(family: Lamiaceae)

Herbs, erect, 20–30 cm tall; stem terete. Leaves elliptic, 2–4×1.2–3 cm, glabrous, toothed or crenate at margin, cordate at base, apex obtuse; petiole 1–2.5 cm long. Racemes secund, 10–15 cm long. Flowers blue, alternate; pedicel pubescent. Calyx 2-lipped, *ca*. 2 mm, enlarg in fruiting. Corolla 2-lipped, 1–1.8 cm long, purple blue from outside, throat white inside; upper lip hooded, lower lip broad 3-lobed. Stamens 4, didynamous. Style subulate. Nutlets minute, globose, brownish. (Fig. 2).

Flowering and fruiting: September–October.

Ecology: Grows in moist hill slopes; four populations, each with *ca*. 2–3 individuals were observed during the present study (650–800 m).

Figure 2 *Scutellaria discolor* Colebr

Status: *Scutellaria discolor* has not yet been assessed for the IUCN Red List but the occurrence of the taxon is 'rare' in the Garhwal Himalaya.

Distribution: Arunachal Pradesh, Himachal Pradesh, Sikkim and Uttarakhand [Kumaon and Garhwal (present study)].

Specimen examined: Uttarakhand, Garhwal Himalaya, Mandakini valley, Kamera, 09.09.2007 C.*S. Rana* 19593 (GUH!).

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