**Heliotropium amplexicaule** (Boraginaceae-Heliotropioideae): A new record for Indian sub-continent

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**Abstract**

*Heliotropium amplexicaule* Vahl belonging the family Boraginaceae is native of South America and a widespread noxious weed in Australia, United States and some parts of Central America. The species is now recorded for the first time from the Indian sub-continent. A brief taxonomic description with illustrations is provided here.

**Keywords:** *Heliotropium amplexicaule*, Indian sub-continent, Bangalore, new record

**Introduction**

*Heliotropium* L. (Boraginaceae: Heliotropioideae) is one of the widespread genus originating from the Old World tropics and sub-tropics with c. 350 species. It is spread to the warm and warm temperate zones of all continents (Mabberly, 2008; Zheng-yi & Raven, 1995). In India, this genus is represented by 18 species (Digital flora of Karnataka, 2014; Gamble, 1921; Hooker, 1885; Matthew, 1995).

*Heliotropium amplexicaule* Vahl, a native of South America, is now naturalized in other parts of America and is reported as a noxious weed in Australia (Parsons & Cuthbertson, 1992). In Asia, the species is reported from Malaysia and parts of south-east Asia (Steenis, 1997). The present collection from Bangalore, Karnataka, India makes this a new distribution record for the Indian sub-continent.

**H. amplexicaule** is found growing in the semi-wilderness habitat of Indian Institute of Science, Bangalore campus, which is a part of the southern Deccan Plateau with an elevation of about 962 m. The species is found associated with other herbs such as *Synedrella vialis* (Less.) A.Gray, *Tridax procumbens* (L.) L., *Senecio tenuifolius* N.Burman, *Richardia scabra* L. and *Emilia sonchifolia* (L.) DC. ex DC.

A small population of this taxon comprising of c. 10 individuals was spotted by the authors which on critical study determined as *H. amplexicaule* Vahl.

A thorough scrutiny of literature in consultation with the type revealed that the species was hitherto not known to occur in Indian subcontinent. A brief description along with illustration and photographs (Fig 1 & 2) is provide for easy identification of the taxon.


Perennial sub-erect hairy herbs upto 45 cm high. Root, dark-brown to black. Stem hirsute, much branched from the root stalk, cylindric, ascending. Leaves sub-sessile, crowded at apex, 3.5–6 × 1.5–2 cm, elliptic-oblong, strigose on both sides, more below, base attenuate, margin undulate, apex obtuse, nerves 6–10-pairs, impressed above, pale green. Inflorescence in terminal helicoid cyme, 10 cm long, dichotomously branched; penduncle up to 5 cm long, hirsute. Flowers c. 4.8 mm, in two rows on the peduncle, purplish-blue to violet, turning brownish when dry, sessile, ebracteate. Calyx 5-lobed, c. 3.5 mm long linear, light-green, glandular hairy without, glabrous within, tube 1 mm long. Corolla 5-lobed, upto 6 mm long, pubescent without, tube upto 4 mm long and greenish-yellow; throat yellowish, villous hairy within in 5 vertical lines. Stamens 5, glabrous,
Fig. 1. *Heliotropium amplexicaule* Vahl: a. Habit; b. Corolla opened; c. Calyx opened; e1. Seed dorsal view; e2. Seed ventral view; f. Pistil.
Fig. 2. *Heliotropium amplexicaule* Vahl: a. Habit; b1 & b2. Inflorescence; c. Infructescence; d. Corolla split open; e. Pistil; f. Seeds.
Fig. 3. *Heliotropium amplexicaule* Vahl SEM Pictures showing the seed surface ornamentation: a. Outer view; b. Testa surface, inset showing the fine structure; c. Inner view showing the hilum; d. Hilum surface.

white, oblong-lanceolate, c. 1.2 mm long, sessile, adhered to the base of the tube, intorse. Ovary green, c. 0.5 mm long, glabrous; style minute; stigma conical, strigose hairy. Fruits of 2 bilocular nutlets, glabrous, dark green when mature, turning black when dry enclosed in persistent calyx. Seeds discoid, c. 1.5 mm across, plano-convex; testa hard, rough, dark; hilum pitted, reticulate.

**Flowering & Fruiting:** Throughout the year.

**Habitat:** Dry to semi-arid locations.

**Distribution:** Tropical America, Africa, Australia, India, Malaysia and South-east Asia

Specimens examined: INDIA, Karnataka, Bangalore, IISc campus, 15.9.2014, 13° 01’ 54.4″N and 77° 56’ 70″E, 940 m KRKS, AS & SR 0138 (Herbarium, JCB Centre for Ecological Sciences IISC, Bangalore). USA, South Carolina, Edgefield County, June 1996, A.E.Radford 44810, (CAL). BOLIVIA, Vicinity of Cochabamba, 1891, Bang Miguel 926 (MO), MO: 694704, Type. 2516390.

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Literature Cited


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