



Notes on taxonomy and distribution of *Desmodium zonatum* (Leguminosae: Papilionoideae) in Peninsular India

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Abstract

Desmodium zonatum Miq. (Leguminosae: Papilionoideae), a species native to Asia and Australasia, hitherto recorded only from the Western Ghats in Peninsular India, is reported here for the first time from the Eastern Ghats of Andhra Pradesh with detailed description, colour photographs and relevant notes.

Keywords: Andhra Pradesh, *Desmodium zonatum*, Eastern Ghats, New Record

Introduction

The Eastern Ghats is a floristically rich phytogeographical region with c. 2000 species of flowering plants in India (Ahmedullah & Nayar, 1986). While exploring the flora of Visakhapatnam district, which comprises part of the Eastern Ghats ranges in Andhra Pradesh, the last author has collected a few specimens of *Desmodium* species from Uppa Sacred Grove (18°06'44.7" N, 082°50'02.9" E) at 1040 m elevation. After a thorough consultation with the relevant literature and herbarium specimens, it was identified as *Desmodium zonatum* Miq.

Desmodium zonatum was reported from Andaman and Nicobar Islands, Assam, Karnataka, Manipur, Meghalaya, Nagaland and Tamil Nadu in India (Ohashi, 1973; Sanjappa, 1992). Earlier records or collections indicate that in peninsular India this species occurs only in the Western Ghats and not in the Eastern Ghats (Pullaiah & Chennaiah, 1997; Pullaiah & Ramamurthy, 2001; Reddy *et al.*, 2008; Rao *et al.*, 2010). Therefore, the present collection from the Uppa Sacred Grove forms a new record for the Eastern Ghats in peninsular India.

Since a complete description for this species is not available in any of the Indian floras or taxonomic accounts, a detailed description along with colour photoplate is provided to facilitate accurate identification.

Desmodium zonatum Miq., Fl. Ned. Ind. 1: 250. 1855; Ohashi, Ginkgoana 1: 107. 1973; Sanjappa, Legumes India: 166. 1992. *D. ormocarpoides* auct. non DC. 1825; Baker in Hook.f., Fl. Brit. India 2: 164. 1876; Gamble, Fl. Madras: 345. 1918. **Fig. 1**

Undershrub, erect, 30–70 cm high. Stems slightly angular; branches usually covered with fine hooked hairs intermixed with sparse appressed hairs when young, glabrescent at maturity. Leaves 1-foliolate, ovate or elliptic, 5–10.5 × 2.8–5 cm, obtuse-rounded at base, entire, appressed-hairy at margins, acute to acuminate at apex, chartaceous, sparsely hooked-hairy, especially on midvein or almost glabrescent above, densely appressed-hairy intermixed with sparse hooked hairs beneath; lateral veins 7–10 pairs, prominent; petioles 1–2.8 cm long, pulvinate for 2–3 mm long, spreading hairs intermixed with short hooked hairs; stipules 2, subulate, 6–9 × 2–2.5 mm, hairy at margins, acuminate at apex, 18–20-veined, persistent; stipels 2, subulate, 5–7 × 0.6–0.8 mm, 4 or 5-veined. Inflorescences a raceme, terminal, to 15 cm long; rachis angular, with densely spreading hooked hairs intermixed with appressed hairs. Flowers 2–4 on each node; pedicels 5–6 mm long, spreading hooked-hairy; bracts triangular, 3–7 × 0.8–1 mm, appressed-hairy at margins, acuminate at apex, minutely hooked-hairy. Calyx campanulate, c. 3 mm long; tube c. 1.5 mm long, strigose with minute hooked hairs outside; lobes 4, unequal; upper lobe deltoid, minutely 2-fid at apex; lateral lobes narrowly triangular; lower lobe triangular, longer

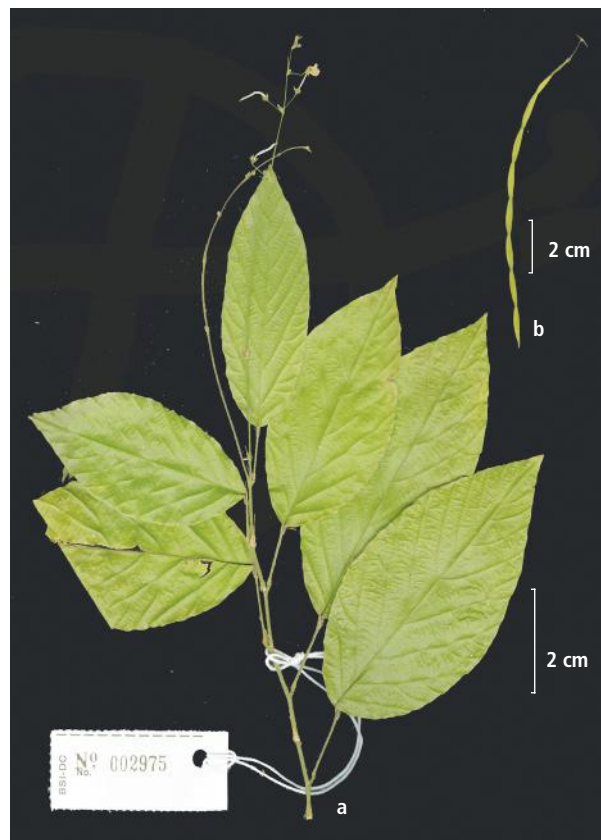


Fig. 1. *Desmodium zonatum* Miq.: a. A flowering-twig; b. Pod (M. Tarakeswara Naidu 002975, BSID)

than others. Corolla papilionaceous, pale pink; standard obovate-orbicular, *c.* 5.5 × 3 mm, clawed, emarginate at apex; wings obovate, *c.* 5.2 × 1.2 mm, shortly clawed, rounded at apex, adnate to keel; keels oblanceolate, *c.* 6 × 2 mm, slightly auriculated at base, rounded at apex. Stamens diadelphous; filaments to 6 mm long; anthers uniform. Ovary *c.* 5 mm long, puberulent; style *c.* 1.2 mm long, incurved, glabrous; stigma capitate. Pod a lomentum, sessile, linear, to 10.5 cm long, densely hooked-hairy, 7 or 8-jointed; articles narrowly elliptic, *c.* 1.3 cm long, 5–6 times longer than wide. Seeds transversely oblong, 1.5–2 × 4–5 mm.

Flowering & fruiting: August–November.

Distribution: China, India, Indonesia, Laos, Malaysia, Myanmar, Philippines, Pacific Islands, Sri Lanka, Thailand and Taiwan.

Specimens examined: INDIA, Andhra Pradesh, Visakhapatnam district, Uppa, 10.8.2014, M. Tarakeswara Naidu & M. Sankara Rao 005043

(BSID); 28.9.2015, M. Tarakeswara Naidu 002975 (BSID). Tamil Nadu, Coimbatore district, Anamalai hills, Karian Shola, 30.8.1915, C.E.C. Fischer 9637 (CAL); Theni district, near Kumili town, 850 m, 22.6.1959, K. Subramanyam 8135 (MH).

Notes: The species was collected from a single locality in Uppa Sacred Grove, an area protected by the local communities. Probably, the species was hitherto overlooked during the earlier surveys. The species is characterized by the leaflets with densely appressed-hairy intermixed with sparse hooked hairs on lower surface, lomentum sessile, linear, 7 or 8-jointed and densely hooked-hairy and seeds transversely oblong. The local belief, harming any plant from the sacred grove would invite the wrath of the local deity, Goddess Gunnalamma, has helped to conserve this species as well as other species. However, with the erosion of local beliefs and cultural values, this sacred grove is increasingly being threatened by overexploitation of plant resources, including firewood collection, grazing and 'podu' (slash and burn) cultivation.

This species grows in association with *Aristolochia tagala* Cham., *Lasia spinosa* (L.) Thwaites, *Mesua ferrea* L., *Ophiorrhiza chandrasekharanii* Subba Rao & Kumari and *Zingiber roseum* (Roxb.) Roscoe.

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