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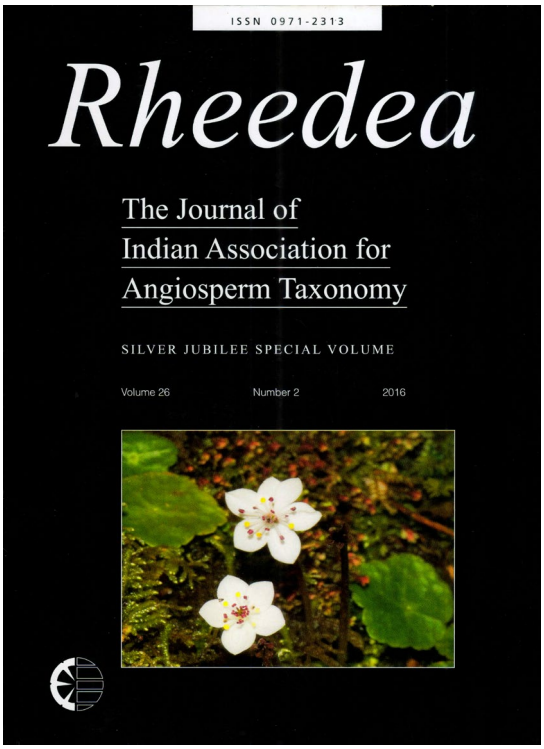

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Occurrence of *Vernonia anamallica* (Asteraceae) in Agasthyamalai Biosphere Reserve, southern Western Ghats, India

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Abstract

Vernonia anamallica Bedd. ex Gamble was described based on the collection from the Anamalai hills, southern Western Ghats. This species was remained unknown until it was rediscovered after 92 years from the Rajamala hills and subsequently known by two more collections from Pettimudi and Konalar. A detailed description along with photographs is provided here for the first time based on our recent collection from the Agasthyamalai Biosphere Reserve (ABR), which also forms an extended distribution of this species.

Keywords: Agasthyamalai Biosphere Reserve, Endemic, Southern Western Ghats, *Vernonia anamallica*

Introduction

The genus *Vernonia* was established by a German naturalist, Johann Christian Daniel von Schreber in 1791. It is represented by *c*. 685 taxa (www.theplantlist.org) and distributed both in Old and New Worlds with centres of diversity in East Africa and Brazil (Keeley *et al*., 2007, 2009). Hooker (1881) enumerated a total of 45 species and 3 varieties from the Indian subcontinent. Subsequently, Uniyal (1995) and Karthikeyan *et al.* (2009) have reported 52 species and 10 varieties and 55 species, 1 subspecies and 7 varieties, respectively from India. Nayar *et al*. (2014) reported 17 taxa, including 12 endemics from the Western Ghats.

Gamble (1920) described *Vernonia anamallica* based on the collection of R.H. Beddome made during 1873 from the Anamalai hills in southern Western Ghats. The Beddome's collection was originally with two specimens on same sheet; however, Gamble had removed one of them and annotated on the type sheet as ''I have taken the liberty of keeping the upper specimen for Kew – please excuse'' and incorporated this specimen (K000814740) at K. This species was remained unknown until it was rediscovered after more than 92 years from Rajamala hills in 1965 and Pettimudi in 1970 by Shetty & Vivekananthan (1972) without any illustrations or photographs. It was also collected from Konalar in the Anamalais of Tamil Nadu during the early and late 1980s by Chandrabose. During the recent exploration tour to Agasthyamalai Biosphere Reserve, two individuals of this species were found, an evidence of its extended distribution from the earlier known localities. Therefore, a brief description of the species along with colour photographs is provided here for the first time to facilitate its precise identification.

Vernonia anamallica Bedd. ex Gamble, Bull. Misc. Inform. Kew 1920: 339. 1920 & Fl. Madras: 675. 1921; B.V. Shetty & Vivek., Bull. Bot. Surv. India 14: 19. 1972; Uniyal in Hajra *et al*., Fl. India 13: 353, f. 110. 1995; Karthik. *et al*., Fl. Pl. India 1: 291. 2009. Type: INDIA, **Tamil Nadu**, Coimbatore district, Anamalai hills, in higher ranges, 1873, *R.H. Beddome* s.n. (K000814740, image!). **Fig. 1**

Shrub, to 2 m high. Stems angled with prominent nodal scars, woody; branches appressed-hairy when young, glabrous on maturity. Leaves simple, opposite, elliptic, elliptic-lanceolate or elliptic-ovate, 3.5–10.5 × 1.5–5 cm, shortly attenuate, rarely oblique at base, serrate to crenate at margins, acuminate, rarely mucronate at apex, pale greenish above, golden pubescent beneath; lateral veins 5–8 pairs, convergent towards apex, conspicuous beneath; petioles 0.5–1 cm long. Synflorescence corymbose, *c*. 4 cm long; peduncles 2–3 cm long. Heads *c*. 1 cm long; phyllaries ovate, *c*. 3 × 1.5 mm, mucronate at apex, tomentose. Florets 5–7 mm long. Corolla tubular, white, 5-lobed; lobes

Fig. 1. *Vernonia anamallica* Bedd. ex Gamble: **a**. Flowering Twig; **b**. Head; **c**. Floret; **d**. Corolla split-open; **e**. Anthers; **f**. Pistil; **g**. Phyllary; **h**. Achene; **i**. Type specimen (*R.H. Beddome* s.n., K000814740).

lanceolate, 2–4 mm long. Stamens 5; filaments short; anthers *c*. 2.5 mm long, purple; style linear, white; stigma bifurcated, arching down. Achenes 5-angled, glabrous; pappus 2-seriate.

Flowering & Fruiting: November–March.

Habitat: Moist rocky localities near shola forest, 1580–2075 m. Only two individuals were found growing along with *Phyllanthus macraei* Müll.Arg., *Ixora undulata* Roxb., *Aenhenrya rotundifolia* (Blatt.) C.S. Kumar & F.N. Rasm., *Exacum travancoricum* Bedd. and *Crotalaria scabra* Gamble.

Distribution: India (Kerala and Tamil Nadu). **Endemic**.

Specimens examined: INDIA, **Kerala**, Idukki district, Rajamallay, 2075 m, 21.11.1965, *B.V. Shetty* 26598 (MH); Pettimudi, 1675 m, 8.2.1970, *B.V. Shetty* 33450 (MH); Thiruvananthapuram district, Agasthyamalai Biosphere Reserve (Druiry hills), 1580 m, 23.12.2015, *R. Jagadeesan* 8020 (KUBH, TBGT). **Tamil Nadu**, Coimbatore district, Konalar, 15.2.1980, 1850 m, *M. Chandrabose* 65816 (MH).

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