

Strobilanthes reptans (Acanthaceae): a new addition to the flora of India

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Abstract: *Strobilanthes reptans* (G.Forst.) Moylan ex Y.F.Deng & J.R.I.Wood is reported here for the first time from India. A brief description of the plant along with a photo plate and distribution map is provided to facilitate its future identification. Its taxonomic affinities and differences with closely related species are examined and discussed.

Keywords: Arunachal Pradesh, Flora of India, Naturalization, New record, *Strobilanthes*.

Introduction

Strobilanthes Blume is the second largest genus of family Acanthaceae after *Justicia* L. (Wood & Scotland, 2009), comprising about 448 species (POWO, 2019). It is distributed throughout tropical Asia (Hu *et al.*, 2011). In India, the genus is represented by about 150 species (Karthikeyan *et al.*, 2009; Thomas *et al.*, 2020).

During a field exploration in July 2019 in the Tippi region of the West Kameng district of Arunachal Pradesh, the first author came across a *Strobilanthes* species. The plant was brought into cultivation, in order to study its floral morphology. Critical examination of flowering material revealed its identity as *Strobilanthes reptans* (G.Forst.) Moylan ex Y.F.Deng & J.R.I.Wood, a species native to Southeast Asia and Australia. Screening of the relevant literature (Kanjilal *et al.*, 1939; Venu, 2006;

Chowdhery *et al.*, 2008; Karthikeyan *et al.*, 2009) further confirmed that this plant had not been reported from India. Hence, the present collection of the species not only forms a new addition to the flora of India, but also extends its distributional range up to the foothills of eastern Himalaya. A brief description of the plant along with a photo plate and distribution map is provided.

Taxonomic Treatment

Strobilanthes reptans (G.Forst.) Moylan ex Y.F.Deng & J.R.I.Wood, Fl. China. 19: 390. 2011. *Ruellia reptans* G.Forst., Fl. Ins. Austr. 44. 1786. *Hemigraphis reptans* (G.Forst.) T.Anderson ex Hemsl., Rep. Voy. Challenger, Bot. 1(3): 173. 1885. *Lectotype* (designated by Moylan *et al.*, 2002): VANUATU, Tana Island, *G. Forster* 148/242 (BM [BM000810986 digital image!]).

Ruellia primulifolia Nees, Prodr. 11: 144. 1847. *Hemigraphis primulifolia* (Nees) Fern.-Vill., Nov. App. 153. 1880. *Strobilanthes primulifolia* (Nees) Y.F.Deng & J.R.I.Wood, J. Trop. Subtrop. Bot. 18: 483. 2010. *Lectotype* (designated by Moylan *et al.*, 2002): PHILIPPINES, **Sorsogon**, *T.P.X. Haenke s.n.* (PR).

Hemigraphis pacifica Hosok., Trans. Nat. Hist. Soc. Formosa 25: 127. 1935. After 1935. *Type*: MELANESIA, **Palau Islands**, *T. Hosokawa* 7400 (holo, TAI) **Fig. 1**

Herbs up to 20 cm tall. Stems short, erect, with shallow ridges, densely covered with multicellular trichomes. Leaves basal, opposite, isophyllous; lamina

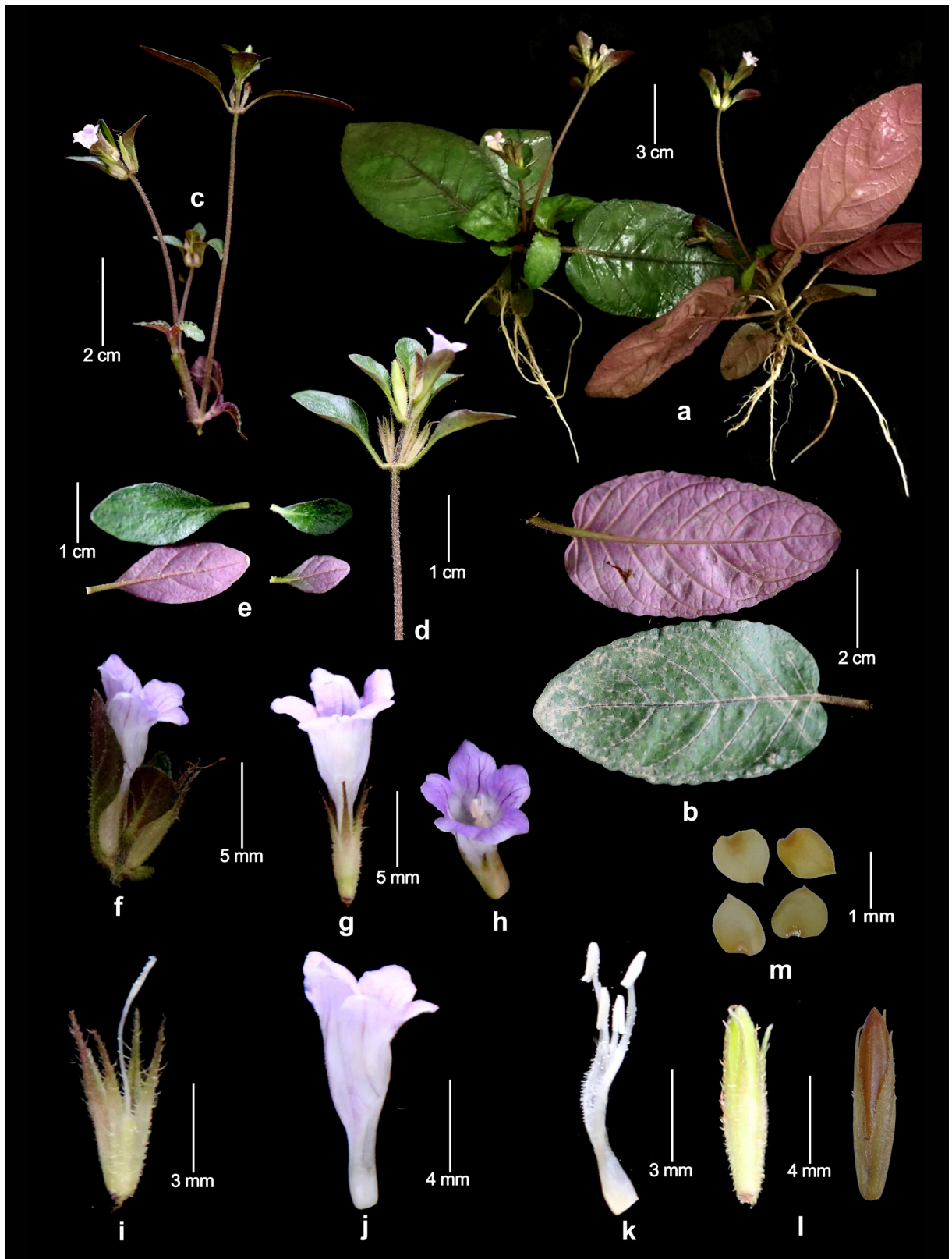


Fig.1. *Strobilanthes reptans* (G.Forst.) Moylan ex Y.F.Deng & J.R.I.Wood: **a.** Habit; **b.** Dorsal and ventral surface of leaves; **c.** Inflorescence; **d.** Close-up of inflorescence; **e.** Bracts; **f.** Flower with bracts; **g.** Flower-side view; **h.** Flower-oblique top view; **i.** Calyx with gynoecium; **j.** Corolla-side view; **k.** Androecium; **l.** Immature (left) and mature (right) capsules with calyx; **m.** Seeds (from *J. Sarma s.n.*; photos by J. Sarma & H.A. Barbhuiya).

oblong-ovate or elliptic, 1–6 × 0.6–3.5 cm, adaxially dark green, sparsely pubescent, ventrally light pink, densely pubescent with multicellular trichomes especially along the midrib and lateral veins, margins sub-entire to repand or shallowly crenate, apex obtuse or obtusely acuminate, base subcordate; lateral veins 3–7 pairs, raised beneath; petioles 0.5–2.6 cm long, pubescent. Spikes terminal on main stems and from axils of upper leaves, elongating at maturity; peduncles 2–7 cm long, pubescent; bracts oblanceolate to elliptic, foliaceous, 1.3–2.7 × 0.6–1 cm, pubescent, margins entire, persistent. Calyx 5-lobed, 6.5–7.7 mm long, pubescent; lobes linear-lanceolate, 3.4–4.6 × 0.3–0.5 mm, divided to the middle, margins ciliate. Corolla slightly 2-lipped, 1.1–1.2 cm long, white or pale violet with darker veins, glabrous; tube funnel-shaped, slightly ventricose, 8.8–9.1 mm long, base 1.1–1.3 mm in diam., mouth 3.5–4.1 mm wide; lobes sub-orbicular, 2.1–2.8 mm in diam. Stamens 4, included, didynamous; filaments united at base, pubescent, shorter pair with 0.5–0.8 mm free part, longer pair with 2.2–2.5 mm free part; anthers oblong, 1.2–1.5 × 0.4–0.5 mm, 2-theous, sub-basifixed. Ovary oblong, *c.* 2.8 mm long; style filiform, *c.* 5.7 mm long, sparsely pubescent.

Capsules oblong, 8–9 mm long, 1.4–1.5 mm in diam., pubescent at apex. Seeds flat, ovate-orbicular in outline, 0.9–1.1 × 0.8–0.9 mm, apex acute.

Flowering & fruiting: Flowering from June to September and fruiting from July to December.

Habitat: The plants grow on grassy hill slopes at an elevation of *c.* 180 m.

Distribution: Taiwan, Japan (Ryukyu Islands), Singapore, Indonesia (Borneo, Seram, Sulawesi, Java, Moluccas, Talaud Islands, Irian Jaya), Philippines (Bohol, Guimaras Island, Leyte, Luzon and Samar), northern Australia, Melanesia (Palau Islands, Marshall Islands and Solomon Islands), New Caledonia (Loyalty Islands), Papua New Guinea (Bismarck Islands). Possibly escaped from cultivation and naturalized in India, Myanmar, Thailand, Laos, Vietnam, Malaysia, Sri Lanka, La Réunion, Hawaii, French Polynesia, and other parts of world (Fig. 2).

Specimen examined: INDIA, **Arunachal Pradesh**, West Kameng district, Tippi, N 27°02'04.58", E 92°36'22.93", 06.07.2019, *J. Sarma s.n.* (HBARC [HBARC00006506]).

Notes: *Strobilanthes reptans* shows close affinity with *S. hirta* (Vahl) Blume [= *Hemigraphis hirta* (Vahl)

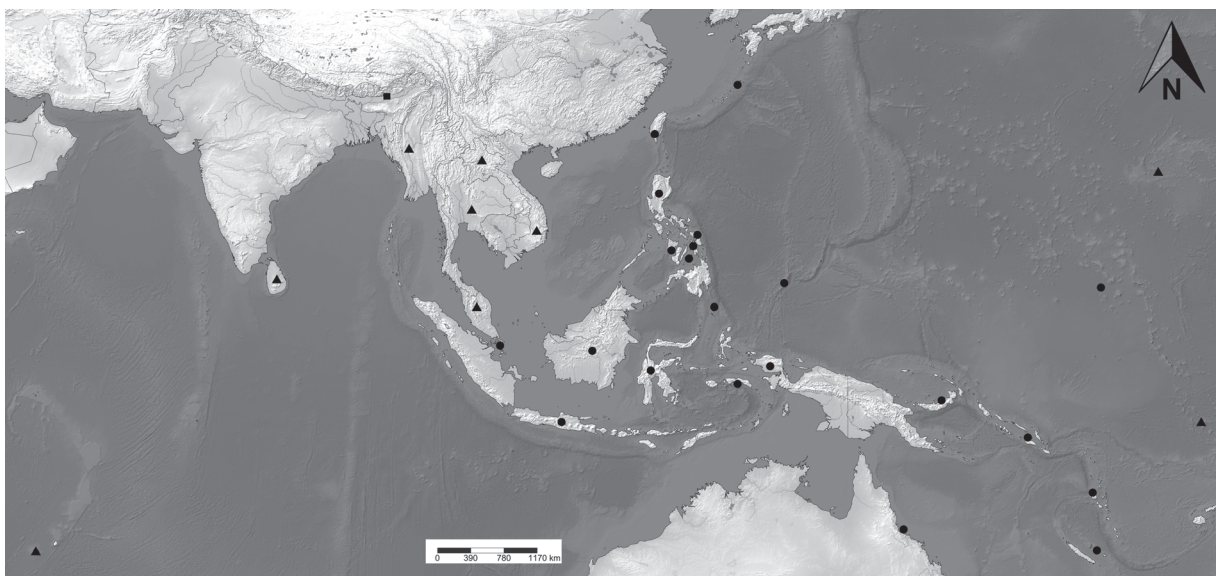


Fig. 2. Distribution map of *Strobilanthes reptans* (G.Forst.) Moylan ex Y.F.Deng & J.R.I.Wood: Solid circle (●) indicates native distribution, solid triangle (▲) indicates the countries where the species is naturalized, and solid square (■) indicates the currently reported locality. Map created with SimpleMapp (Shorthouse, 2010).

T.Anderson]. However, the latter is clearly distinct by its prostrate habit, woolly pubescent texture (whole plant densely covered with long white hairs), smaller leaves (up to 2.5 cm long), sessile and compact inflorescences (Wood, 2001). Whereas, in *S. reptans* the stem is short and erect, plants not woolly, comparatively larger leaves (up to 6 cm long), inflorescence lax, usually borne on long peduncles, elongating at maturity.

It is worthwhile to mention here that *S. reptans* is an invasive weed in tropical Indo-Pacific Islands (Meyer & Lavergne, 2004). It has also apparently escaped from cultivation and has naturalized in Malaysia, Vietnam, Thailand and Laos, and countries neighboring India, i.e. Myanmar, and in Sri Lanka. The corridor of naturalization seems to represent an expansion of the natural distribution range Northeast towards India (Fig. 2). As such, it is likely that the occurrence in India is also the result of a recent naturalization rather than representing a disjunct, natural distribution of the species. However, in India no invasive growth was observed at the site of occurrence or during the cultivation of the plant at the Forest nursery in Tezpur, Assam. Also, the species is restricted to a single locality and the area of occupancy is estimated to be less than 1 sq. km. Therefore, in the current scenario no action needs to be taken to control its spread. As the plant is a little-known ornamental, no history of its cultivation in India could be traced. There is evidence for escape and naturalization as the report here indicates because the plant was encountered in a semi-disturbed area. Hence, further investigation and monitoring of its population is recommended.

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