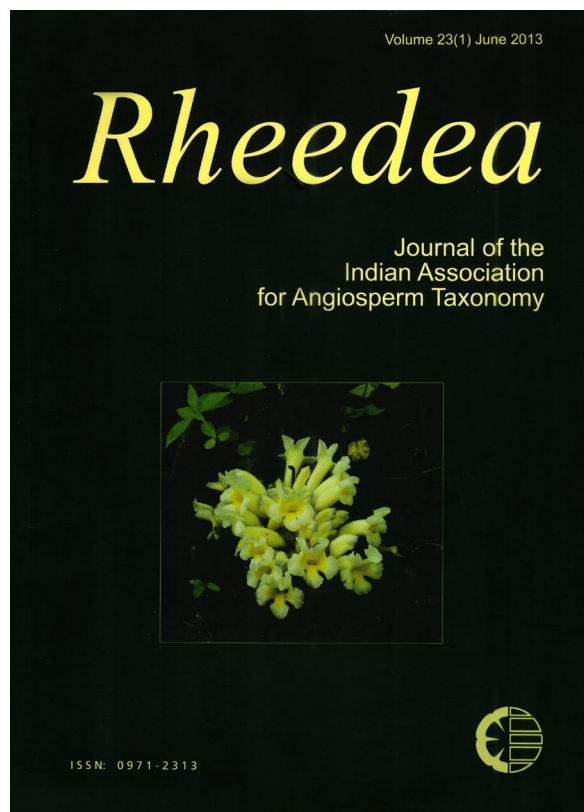




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## Rediscovery of *Ophiorrhiza radicans* (Rubiaceae) from the Western Ghats of Peninsular India

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### Abstract

*Ophiorrhiza radicans* Gardn. was rediscovered from Shenduruney Wild Life Sanctuary, Western Ghats of Kerala region after a lapse of 120 years. A detailed taxonomic description and illustration of this species is provided for easy identification.

**Keywords:** Camptothecin, *Ophiorrhiza radicans*, rediscovery, Rubiaceae, Western Ghats

### Introduction

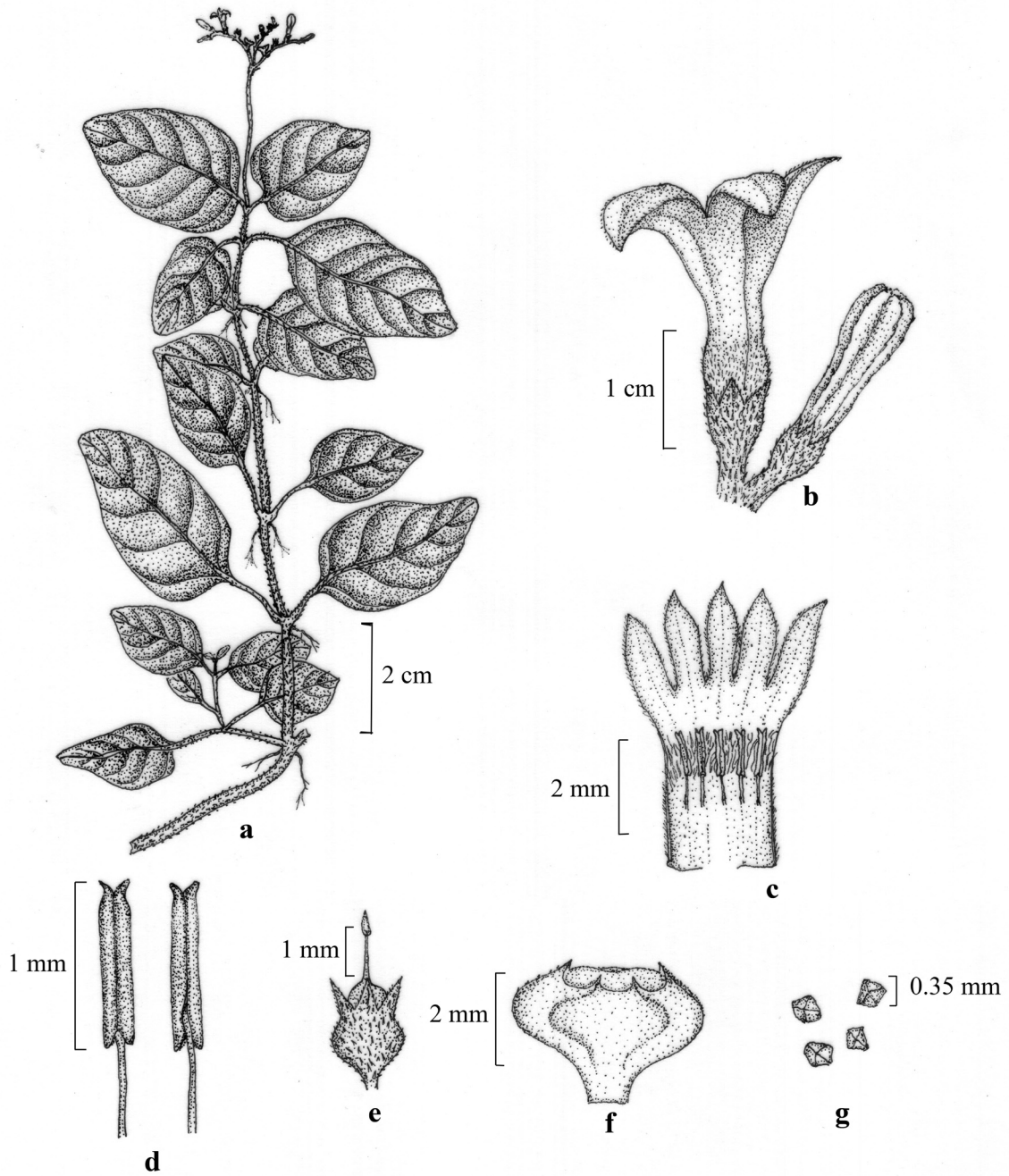
The genus *Ophiorrhiza* consists of 31 species and 10 varieties in India (Deb & Mondal, 1997; Mabberley, 2008). While conducting the studies on RET species in Kerala part of the Western Ghats, the authors collected an interesting specimen of *Ophiorrhiza* from Shenduruney Wild Life Sanctuary. After critical studies and comparison with type specimen it is revealed to be *Ophiorrhiza radicans* Gardn., a species thought to be possibly extinct in India by many authors (Nayar & Sastry, 1988; Deb & Mondal, 1997). This species was first described by Gardner in 1864 based on a specimen (*C. P. 1706*) collected by Thwaites from Sri Lanka. Later M.A Lawson collected this species from "Colatoorpolay" of the present Kulathoorpuzha in Kollam District of Kerala. Deb and Mondal (1997) while revising the genus in India has commented that "it has not been collected in India after 1893, though Kerala and adjoining areas have been fairly well explored in recent years. Possibly it is extinct". Despite intensive botanical exploration in this region during the last several years, this species seems to have escaped the attention of botanists.

Most species of *Ophiorrhiza* are characterized by the presence of a cytotoxic alkaloid, camptothecin, which is the only naturally occurring topoisomerase-1 inhibitor (Martin *et al.*, 2007; Yamazaki *et al.*, 2003). The presence of camptothecin gives great importance to *Ophiorrhiza* species in cancer research and hence this rediscovery has added significance.

***Ophiorrhiza radicans*** Gardn. in Thwaites, Enum. Pl. Zeyl. 139. 1864 (*Type: Sri Lanka, Thwaites C.P. 1706 CAL!, BM!*); Hook.f., Fl. Brit. India 3: 80. 1880; Trimen, Handb. Fl. Ceylon 2: 321. 1885; Deb & Mondal in Nayar & Sastry, Red Data Book Indian Pl. 2: 227 fig. 1. 1988; Deb & Mondal, Bull. Bot. Surv. India 39: 99. 1997; Sasidharan, Biod. Doc. Kerala Pt. 6: Fl. Pl. 227. 2004; T.S. Nayar *et al.*, Fl. Pl. Kerala-Handb. 532. 2006.

**Fig. 1**

Annual creeping herbs, 15–25 cm long, rooting at the nodes; branches densely pubescent; leaves 1.5–3 × 0.8–1.8 cm, ovate to orbicular, obtuse to acute apex, cordate or rounded base, upper surface glabrous, nerves beneath the upper and lower surface pubescent, lateral nerves 5–6 pairs, petiole 0.3–1.2 cm long, pubescent, stipules 1 mm long subulate, pubescent and persistent. Inflorescence terminal corymbose cyme, 0.7–1.8 cm across, few flowered, pubescent, peduncle 2–3.2 mm long, slender, pubescent. Flowers 4–8 mm long, white, bracts and bracteoles similar, puberulous, caducous, linear, 2–3 mm long, hypanthium 0.75–1 × 0.5–0.75 mm, obovoid, puberulous, calyx lobes 1.5–1.75 × 1 mm long, subulate, obtuse, puberulous midrib prominent, corolla 7–8 mm long, infundibuliform, glabrous outside, middle of the corolla tube villous, lobes 1–1.75 mm long, slightly curved inwards, acute at apex, shortly keeled at back; stamens 5, adnate to the middle of the corolla, filaments 0.5–0.75 mm long; anthers 1–1.25 mm long. Ovary 0.5–0.75 × 0.5–0.6 mm, obovoid, disc 0.3 mm long;



**Fig.1.** *Ophiorrhiza radicans* Gardn.: **a.** Habit; **b.** Flower and flower bud; **c.** Corolla split opened; **d.** Stamens; **e.** Pistil; **f.** Fruit; **g.** Seeds (all from Jinu Joseph & Hareesh 11076).

style 1–1.5 mm long, glabrous; stigma 0.75–1 mm long, 2-lobed, lanceolate, glabrous. Capsules 2 × 3–4.5 mm, glabrous, locules ovate to oblong with straight tip; seeds 0.3–0.4 × 0.3–0.4 mm, numerous, angular, glabrous, brown.

*Flowering:* September – November.

*Habitat:* Evergreen forest, usually in wet shady

places at an elevation above 500 m.

*Distribution:* India: Kerala, Kollam District.

*Specimens examined:* INDIA. **Kerala.** Kollam district, Rosemala, 28.09.2012, *Ginu Joseph & Hareesh.V.S.* 11076 (KFRI); *Ginu Joseph & Hareesh.V.S.* 6696 (CALI); “Colatoorpolay”, 28.11.1893, *M.A Lawson* 61 (CAL!).

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