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RESEARCH ARTICLE

***Hygrophila ringens* ssp. *longifolium* (Acanthaceae): A new taxa from southern Western Ghats, India**Jose Mathew¹ & K.V. George²

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Abstract

A new subspecies of *Hygrophila ringens*, belonging to family Acanthaceae from Achankovil forest of southern Western Ghats is described as *Hygrophila ringens* ssp. *longifolium*. A detailed description, distribution, ecology and relevant taxonomic notes are provided.

Key words:

Achankovil, *Hygrophila*, New species, Southern Western Ghats

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Introduction

Hygrophila R. Br., Prodr. Fl. Nov. Holl. 479. 1810., commonly known as swamp weeds. There are about 100 species (Hai and Huyen, 2011), of which many are aquatic plants (Deng et al., 2011). The genus is distributed across the tropical and subtropical world. In Kerala the genus is represented by 4 species (Sasidharan, 2013). *Hygrophila* is Annual or perennial herbs. Leaves opposite, ovate to linear, entire, sessile. Flowers solitary or in axillary clusters, bisexual, zygomorphic. Bracts resembling leaves. Calyx deeply 5-lobed, sometimes one lobe longer and broader than the others. Corolla 2-lipped, tube cylindric below, upper lip 2-lobed with lobes recurved, lower lip 3-lobed, lobes sometimes reflexed. Stamens 4, didynamous. Fruit a linear capsule. Wet or marshy habitats of forests and open lands of southern Western Ghats is a potential centre of *Hygrophila* in Kerala (Joseph, 1991).

Hygrophila ringens (L.) Steud., has a wide area of distribution: from India and Sri Lanka to South-East Asia., is an erect or ascending annual herb, growing up to 80 cm tall. Stem roots at the lower nodes. Leaves are arranged decussately opposite, simple, elliptical-oblong or elliptical-obovate, 1-10 x 1-5 cm, narrowing into petiole at base. Margin is entire to wavy and irregularly marked with cystoliths. Inflorescence is a dense axillary cluster and conspicuously bracteate. Flowers are bisexual. The sepal is 0.6-1.2 cm long and with unequal linear-lance-shaped lobes. The petal is with ventricose, 0.7-1 cm long hairy tube, 2-lipped where the upper lip is about 5 mm long and divided into 2, while the lower lip is about 5 mm long and pale violet-blue or whitish. There are 4 stamens, below the middle of the petal tube. Fruit is a linear-oblong to linear-ovoid, 1-2 cm long, many-seeded capsule. Recent floristic exploration in the evergreen forests of Achankovil yielded some additional specimens of *Hygrophila ringens*. Critical study with the literature and authentic specimens in various Herbaria revealed that our specimens do not agree with the described species. These studies resulted in the finding of a new sub species, which is described here as *Hygrophila ringens* (L.) Steud. ssp. *longifolium* Jose & George, ssp. Nov. (Fig.1)

Type:—INDIA. Kerala: Kollam District, Kanayar, ± 400 M, November 29th 2011, Jose Mathew & K.V.George CMS 02740(Flowering twig) (Holotype: CAL; Isotypes: Herbarium of the CMS college- Kottayam, School of Environmental Sciences- Mahatma Gandhi University- Kottayam- Kerala) Perennials to 1.2 M tall, branched. Stems erect or decumbent at base, 4-angled, striate, slightly pubescent. Internodes size 8 cm. Petiole 0.5–1.5cm, glabrous; leaf blade linear, 9–17 × 0.5–1 cm, both surfaces with numerous cystoliths and glabrous or slightly pubescent, secondary veins 8–11 on eachside of midvein, base attenuate and decurrent onto petiole, margin entire or slightly undulate, apex acute to obtuse. Flowers solitary in leaf axils, sessile; Bracts resembles leaves, bracteoles narrowly ovate, 3–5 mm, margin pubescent, apex obtuse. Calyx narrowly campanulate, ca. 6 cm, 5-lobed to middle; lobes linear-lanceolate, grayish pubescent or fulvous strigose, apex acuminate. Corolla pale purple, 1–2.5 cm; tube ca. 7

mm, ca. 2 mm wide, glabrous; limb 2-lipid; lower lip obovate, ca. 3 mm, 3-lobed to middle, lobes ovate with an obtuse apex; upper lip elliptic, ca. 3 mm, shallowly 2-lobed, outside puberulent. Stamens 4, included; filaments glabrous, longer pair ca. 5 mm, shorter pair ca. 3 mm; anther thecae 1–2 mm. Ovary glabrous; style filiform, ca. 8 mm, included; stigma unequally 2-lobed. Capsule narrowly oblong, 0.8–2.2 cm, ca. 1.5 mm wide, glabrous, 12–18-seeded. Seeds ca. 1 mm, pubescent. Fl. Sept.-Mar., Fr. Oct.-April.



Fig 1: *Hygrophila ringens* (L.) Steud. ssp. *longifolium* Jose & George, ssp. Nov. A. Flowering twig.

Table 1. Prominent morphological differences between *Hygrophila ringens* ssp. *ringens* and *Hygrophila ringens* ssp. *longifolium*

Character	<i>Hygrophila ringens</i> ssp. <i>ringens</i>	<i>Hygrophila ringens</i> ssp. <i>longifolium</i>
Size	Up to 80 cm	100cm- 120 cm
Inter- nodal length	3-5 cm	6-8 cm
Shape and size of Leaf	Oblong, 3-10 x 1-5cm	lanceolate, 9-17 x 0.5-1 cm
Flower	Inflorescence dense axillary cluster	solitary
Bracts	Small, 6 mm	Resembles leaves, 2-5 cm

Distribution & Ecology: —The new taxa grows in moist localities in the deciduous forest $\pm$ 400 m, associated with *Centella asiatica* (L.) Urban., *Chloris barbata* Sw., *Eragrostis gangetica* (Roxb.) Steud., *Trianthema portulacastrum* L., *Eriocaulon xeranthemum* Mart., and *Cyanotis axillaris* (L.) D. Don.

Etymology: The sub specific epithet refers to the distinctly lengthy leaf form.

Conservation status:— The new taxa is seen in undisturbed wet pockets of deciduous forests of Kanayar valley of Achankovil belongs to Agasthyamala Biosphere Reserve. A total of 150 individuals were scattered along Kanayar swamp.

Additional specimens examined: INDIA. Kerala: Kollam District, Pulikkayam, $\pm$ 350 m, 24th January 2012, Jose & George CMS02785.

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