

## *Dendrobium georgei* (Orchidaceae): A new species from southern Western Ghats, India

Jose Mathew

School of Environmental Sciences, Mahatma Gandhi University, Kottayam, Kerala, India  
[polachirayan@yahoo.co.in](mailto:polachirayan@yahoo.co.in)

### Abstract

*Dendrobium georgei* (Orchidaceae) is described as a new species from southern Western Ghats, India.

### Introduction

*Dendrobium* Swartz (1799, p. 82) is one of the largest genera of orchids, comprising between 1,100 and 1,450 species of epiphytic, occasionally lithophytic and terrestrial herbs, depending on how it is circumscribed (Cribb and Govaerts 2005; Schuiteman 2014). The genus includes numerous species with beautiful flowers, occupying diverse habitats throughout much of south, east and south-east Asia and Australasia, including the Philippines, Borneo, Australia, New Guinea and New Zealand. According to Misra (2007) the genus is represented by 116 Indian species. *Dendrobium* is characterised by a combination of features such as the floral lip and lateral sepals, presence of a mentum (chin-like structure at the base of the column), and the absence of caudicles in their hard, waxy pollinia. In India, evergreen forests and montane grasslands of the southern Western Ghats form a potential centre of diversity for *Dendrobium* with 20 taxa reported from the Kerala part of the Western Ghats (Sasidharan 2013). Among these, 14 are endemic, while one species is categorized as critically endangered (IUCN 2012). Recent floristic exploration in the evergreen forests of Achankovil has yielded some interesting additional specimens of *Dendrobium*. The evaluation of specimens in various herbaria revealed that some accessions do not belong to any described species. This has resulted in the recognition of a novel species, which is described here as *Dendrobium georgei* Mathew.

### Taxonomic treatment

*Dendrobium georgei* Mathew, *sp. nov.*

**Diagnosis:** Similar to *Dendrobium herbaceum* Lindl., differing in stem apically thickened into pseudo bulb, branching pattern, very limited number of branches (4), short internodes, leaf size thinner and shorter (6 cm vs 1.2 cm), flower larger and white .

**Type:** INDIA: Kerala: Kollam District, Kottavasal, ± 1250 m, 25 Feb. 2011, *Jose Mathew CMS2721* (flowering) (holo: MH; iso: KFRI, CSMH, SESH).

Epiphytic herbs; roots smooth; stems clavoid, 150–300 mm long, tufted, cane-like, 3–6 mm wide at base, 10–14 mm wide towards tip; internodes 7–15 mm long in main stem and 3–7 mm in branchlets. Leaves alternate on terminal branches or branchlets only, 30–60 mm long, 0.1–0.12 mm wide, usually short-lived, with or without a tubular sheath at base, narrowly linear-lanceolate, acute, leafless when flowering. Flowers white, in 4–6-flowered racemes, formed on the subapical nodes of a pseudobulb, c. 16 mm across; pedicel up to 10 mm long, dorsal sepal 7 mm long, 2 mm wide, 3-veined, oblong-lanceolate and acute; lateral sepals 5 mm long, 2 mm wide 3-veined, oblong, subacute, apiculate; petals 5 mm long, 1.5 mm wide, 1-veined subfalcately oblong, obtuse, apiculate; labellum 5 mm long, 3 mm wide; side lobes ovate-orbicular; mid-lobe thick, orbicular, obtuse, tinged with yellow, with margin erose; mentum 8–12 mm long, incurved, anterior surface of the column base hollowed and broadened around stigma; rostellum bifid; pollinia 0.2–0.3 mm long, pale yellow, obliquely ovoid. Capsules 12–15 mm long, 6–7 mm wide (Fig. 1).



**Fig. 1.** *Dendrobium georgei* Mathew sp. nov. **a**, habit; **b**, flowering twig; **c**, flowers; **d**, regenerating shoots during the monsoonal season; **e**, leafy twigs.

**Table 1. Prominent morphological differences between *D. georgei* with its allied taxa**

Character	<i>D. georgei</i>	<i>D. herbaceum</i>
Habit	straight to slightly curved 2–4 branches per stem	multiple up-curving branches, 15–20 branches right angles to each stem.
Stem	narrow at base (3–6 mm), swollen towards tip (10–14 mm), 150–300 mm in length	linear to fusiform, up to 1000 mm in length
Leaf	thin, narrowly linear-lanceolate, acute, up to 60 mm long, 120 mm wide	thick, narrowly linear-lanceolate, acute or subobtusate, up to 120 mm long and 150 mm broad
Pseudobulb	apically thickened pseudo bulb present	apically thickened pseudo bulb absent
Inflorescence	formed on the nodes of pseudobulb	formed on the terminal or lateral nodes of the stem
Floral parts	white	yellow
	pedicel up to 10 mm	pedicel 6–7 mm long
	dorsal sepal 7 × 2 mm	dorsal sepal 5 × 1.5 mm
	lateral sepals 5 × 2 mm	lateral sepals 4 × 1.5–2 mm
	lateral petals 5 × 1.5 mm	lateral petals 4 × 1 mm
	labellum 5 × 3 mm	labellum 3 × 2 mm

**Distribution and Ecology:** Found in montane grassland (alt. ± 1250 m) of the Kottavasal Hills, Agasthyamalai Biosphere Reserve, Western Ghats, Kerala, India. Grows on the trunks of *Schefflera wallichiana* (Wight & Arn.) Harms (Harms 1894–1897, p. 38), in association with bryophytes.

**Phenology:** Flowering and fruiting recorded from October to February.

**Conservation status:** The current conservation status is data deficient; however the distribution is limited with only a few plants observed at the few known locations (each with c. 60 plants – e.g. *George 2929, 2933*). Although this species occurs in the Agasthyamalai Biosphere Reserve, it appears to have a very restricted distribution and so should, at least, be considered vulnerable.

**Etymology:** The specific epithet honours Dr. K.V. George, Associate Professor of Botany, CMS College, Kottayam, and recognizes his immense contributions to botany, especially in the fields of angiosperm biodiversity and taxonomy.

**Notes:** *Dendrobium georgei* is fairly similar to *D. herbaceum* in both vegetative and floral morphology, but differs mainly in having stems apically thickened into a pseudobulb that is deeply furrowed, stems of 15–30 cm in length, 2–4 branches with very short internodes, thin and smaller leaf size (6 cm × 1.2 cm). In *D. georgei* inflorescences develop on nodes of the pseudobulb, and flowers are white, relatively large and showy. Specimens collected by Wood (2006) under his *Dendrobium* section *Herbacea*, fit the description of this new species.

**Additional specimen examined:** INDIA. Kerala: Kollam District, Kanayar, 9°11'08"N, 77°13'04"E, alt. ± 1200 m, *Jose Mathew and K.V. George CMS2789*, 28 November 2011 (flowering)(CMS).

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