



## *Oberonia saint-berchmansii* (Orchidaceae): A new species from south Western Ghats, India

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### ABSTRACT

A new species of *Oberonia*, *O. saint-berchmansii* (Orchidaceae) is described based on samples collected in the Cardamom Hills of southern Western Ghats, Kerala, India. Taxonomic descriptions, morphological differences to their allied taxa and colour photographs are provided to facilitate identification in the field.

**Keywords:** *Oberonia saint-berchmansii*, Orchidaceae, new distribution, India, taxonomy

## 1. INTRODUCTION

*Oberonia* Lindley consists of 200-300 species, reported in tropical Asia, and further extending to the pacific islands, Australia, Madagascar and topical Africa (Chen *et al.*, 2009; Chowlu *et al.*, 2015). All species of this genus are either epiphyte / lithophyte, medium-sized plants characterized by with coriaceous or fleshy, flat, ensiform leaves; sub-erect or drooping inflorescence bearing minute (1–4 mm) flowers; subsimilar sepals and petals; entire or 3 lobbed lip; very short column and 4 pollinia. In India, it contains c. 67 species (Misra 2007; Chowlu *et al.*, 2015) and Western Ghats 31 species (Sasidharan 2013, Prasad *et al.*, 2018).



**Figure 1** *Oberonia saint-berchmansii*. – A– D: Habit showing erect inflorescence and chocolate coloured leaves. – E-F: Flowers in inflorescence. – G: Fruits.

Botanical explorations in the forests of Cardamom Hills in Idukki District in Kerala, part of south Western Ghats, during 2015–2017, yielded some interesting specimens of the genus *Oberonia*. Critical analysis of the literature as well as of herbarium specimens revealed that some of the collected specimens do not match any of the described species. These specimens are considered to be sufficiently distinct to warrant taxonomic recognition as a new species and are here described and illustrated as *Oberonia saint-berchmansii*.

## Description

*Oberonia saint-berchmansii* Kad.V.George & J.Mathew, *sp. nov.* (Fig. 1)

## 2. DIAGNOSIS

*Oberonia saint-berchmansii* is similar to *Oberonia falconeri* Hook. f. but differing by chocolate brown coloured large, ensiform leaves; spike to 20 cm long; brick red coloured flowers; lip triangular in outline; ear like, serrated, obovate lateral lobes and a concave disc. Prominent morphological differences distinguishing *Oberonia saint-berchmansii* from the allied species are indicated in Table 1. This new species also showing some similarity to *Oberonia santapau* Kapad, a south Indian element. However, it differs by chocolate brown coloured leaf (vs. green colour leaf in *Oberonia santapau*), inflorescence with lax flowers (vs. inflorescence with compactly arranged flowers in *Oberonia santapau*) and lateral lobules of lip is pointed towards sinus (vs. ovate and straight lobules in *Oberonia santapau*)

**Table 1** Diagnostic morphological comparison of *Oberonia saint-berchmansii* and *O. falconeri*

Characters		<i>O. saint-berchmansii</i>	<i>O. falconeri</i>
Habit		Erect	Pendent
Leaves	Colour	Chocolate brown	Green
	Shape	Ensiform	Oblong-lanceolate
	Size	15 x 2.5 cm	8 x 1.3 cm
Inflorescence	Scape	Winged	Wings absent
	Spike	Up to 20 cm long	Up to 12 cm long
	Colour	Brown	Yellow-green
Flower	Colour	Brick red	Yellow
	Size	3.5 mm across	2.5 mm across
Lip	Shape	Ovate to triangular	Quadrangular
	Lateral lobes	Ovate-auriculate	Round
	Size	1.85 mm x 1 mm	1.5 mm x 0.75 mm
	Mid lobe size	1mm x 0.7 mm	1.5 mm x 0.5 mm
	Lobule	Acute, encircled the sinus	Pendulous
Fruit	Colour	Brown	Yellowish green
	Shape	Globose	Obliquely ellipsoid

## Type

INDIA: Kerala, Idukki District, way to Nedukandam, Cardomom Hills, 3<sup>rd</sup> mile, altitude 1310 m, Jan 2014, KVG & SA 0126 (holo: RHK [SB College Herbarium, Changanassery, Kerala]; iso: MSSRF!).

Erect acaulescent epiphytes, Leaves articulate at base, 6, to 15 x 2.5 cm, ensiform, acuminate, acute, chocolate brown in colour. Scape distinct, with two small wings, slightly terete. Peduncle connate in lower part to uppermost leaf, appearing to arise from leaf blade. Spike up to 20 cm long, brown coloured. Flowers lax, numerous, pedicelled, 3.5 mm across, rusty brown, scattered on the rachis; bracts longer than the pedicel and ovary, 3 by 1 mm, lanceolate, acuminate, lacerate along margins. Sepals sub similar or broader than petals, 1 x 0.5 mm, ovate or obliquely ovate, acute, entire. Petals 1 x 0.35 mm, oblong or linear, subacute. Lip ovate to triangular in outline, 3-lobed, 1.85 mm long, 1 mm across in lateral lobes and 1mm long and 0.7 mm across in the mid lobe; lateral lobes ovate to auricular, spreading in flower, serrated and wavy; midlobe resembles human teeth (molar) oblong, 2-lobuled; lobules pointed towards sinus, ligulate, acute, entire, sinus deep, with a triangular protuberance; disc concave, cushion-like. Ovary with

pedicel 1.5 mm long. Column 0.4 mm long, 0.5 mm thick, globose; rostellum not prominent, obtuse; stigma semi orbicular. Pollinia 0.25 by 0.15 mm, oblong-obovoid. Fruit is a capsule, obliquely ellipsoid, with 6 narrow membranous, longitudinal wings, brown in colour and 3 x 1.2 mm in size.

### Phenology

Flowering and fruiting of the new species were recorded in January - February

### Etymology

The specific epithet (viz. *saint-berchmansii*) refers to St. Berchmans College, Changanassery, Kerala, India, where the authors worked and the type specimen was deposited.

### Additional specimen examined

INDIA: Kerala, Idukki District, (Kadsassikadavu) 10<sup>th</sup> mile way to Vandanmedu, Amayar, Puliyanmala, altitude 1361 m, Feb 2016, KVG 0128 (RHK).

### Distribution, habitat and ecology

This new species found in Cardamom Hill forests (altitude  $\pm$  1200 m) of the Idukki, Western Ghats, Kerala, India. *Oberonia saint-berchmansii* occasionally grows on trees of *Vernonia arborea* Buch.-Ham., *Artocarpus heterophyllus* Lam. and *Grevillea robusta* Cunn. Here, the temperature varies from 14°C to 31°C and mist is common on the higher slopes during November to February. This forests region get heavy rain showers from both south-west monsoon (June to mid-August) and north-east monsoon (mid-September to mid-November). Bulk of the precipitation is from the south-west monsoon. The average rainfall received during the last ten years is 3100.10 mm and the average number of rainy days in a year is 135.

## 3. CONSERVATION STATUS

In the field survey, about nine individuals were located in the Kadsassikadavu Hills covering an area of 2 km<sup>2</sup>. The threat status of this species has been assigned as 'Critically Endangered' as per the guidelines of IUCN (2001). Hence, adequate measures should be adopted to ensure the protection of this species in its natural habitat. Apart from habitat destruction caused by anthropogenic intervention (thinning of trees for ensure light in Cardamom plantation), no other specific threats were determined during the field studies. However, further explorations are required to ensure the status of its distribution.

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