

## ***Oberonia marnkuliensis* (Orchidaceae), a new species from Western Ghats, Karnataka, India**

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### **Abstract**

A survey carried out in the Western Ghats made it possible to collect an interesting species of *Oberonia* unknown to science. The unusual morphological shapes, the arrangement of the flowers, the petals larger than the sepals and the large lateral lobes of the lip with a sinuous margin, do not correspond to the characters of any known representative of the genus. The plant is described here as new. A key to *Oberonia* species from the state of Karnataka is also provided.

### **Résumé**

Une prospection réalisée dans les Ghâts occidentaux a permis de collecter une espèce intéressante d'*Oberonia* encore inconnue de la science. Les formes morphologiques inhabituelles, la disposition des fleurs, les pétales plus grands que les sépales et les grands lobes latéraux du labelle à marge sinueuse, ne correspondent aux caractères d'aucun représentant connu du genre. La plante est ici décrite comme nouvelle. Une clé des espèces d'*Oberonia* de l'État du Karnataka est également proposée.

Keywords: Marnkuli village, miniature orchid, new species, Shivmogga.

Mots clés : nouvelle espèce, orchidée miniature, village de Marnkuli, Shivmogga.

## Introduction

*Oberonia* Lindley (1830: 15) is a miniature epiphytic or lithophytic genus which includes 273 species across tropical South Africa to Pacific (POWO, 2024). The genus *Oberonia* was first described by Lindley in 1830 who dedicated it to Oberon, the mythological king of fairies. While establishing the genus, Lindley recognized 13 species of *Oberonia* from India. There are around 1256 species of orchids under 155 genera, of these 307 are endemic to India. 50 *Oberonia* species are recorded in India. According to the different authors (Rao & Sridhar, 2007; Singh, *et al.*, 2019; Laxminarasimhan, *et al.*, 2019) 13 to 16 species are present in Karnataka.

A prospecting survey, carried out in the Shivmogga district of the Western Central Ghats, in Karnataka, allowed us to discover a species of *Oberonia* new to science. The plant is compared to the closest species (tab.1): *Oberonia bicornis* Lindley (16: 1830), *Oberonia brachyphylla* Blatter & McCann (35: 1931), *Oberonia proudlockii* King & Pantling (1897: 580) and *Oberonia recurva* Lindley (14: 1839).

## Taxonomic treatment

***Oberonia marnkuliensis* Shreyas & Kotresha *sp. nov.***

Type: India, Karnataka, Shivmogga district, Marnkuli village, 14°09'52.7" N - 74°55'36.6" E, 10/03/2024, *S. Betageri* & *K. Kotresha 0337* (Holotype: UASB 5721 [University of Agricultural Sciences, Bengaluru]).

Paratype: India, Karnataka, Shivmogga district, Marnkuli village, 10/03/2024, *S. Betageri 0339* (Paratype: HKSCD 20219 [Herbarium of Karnataka Science College, Dharwad]).

Etymology: The specific name is based on the region where the plant was collected, Marnkuli hill, "Marnkuli village" that is situated near Talaguppa, Sagara Taluk, Shivmogga district.

This species is distinguished from other *Oberonia* by a hook-shaped spathe and loose flowers on the raceme, by the position of sepals and petals, petals larger than the sepals and large and spreading side lobes of lip with a sinuous margin.

**Description** (fig. 1-3): Epiphytic plant, pendulous, 3-5 cm high; leaves 3-4, small, 1-2 × 0.6-0.8 cm, linear, straight, smooth, apex attenuate, slightly bent; inflorescence 1-4 cm long, pendulous, green, from a hook-shaped spathe, loose flowers; floral bract 1 mm long, lanceolate with dentate margin and acute apex; flower 1 × 0.6 mm, globally cream to orange-yellow; dorsal sepal 0.4 mm long, ovate with broad base and acute apex; lateral sepals, 0.4 mm long, broadly oval, acute to sub-acuminate, retrorse; petals 0.6 mm long, obovate with sinuate margin, apex somewhat retuse, spreading outwards; lip trilobed, 1 × 0.5 mm, spreading, midlobe subrectangular emarginate; side lobes rounded, spreading, sinuate margin; column small, greenish white; anther cap small, white with two loculars; ovary 2-3 mm long, greenish-white; pollinia 1 pair, ovoid, orange; fruit green, 1 mm across, fusiform.

**Ecology and phenology:** The plant grows in semi-evergreen forest along hill slope on small *Gardenia latifolia* Aiton (1789: 1). Flowering occurs from February to March, fruiting from March-April.

**Table 1: Comparison of *O. bicornis*, *O. brachyphylla*, *O. proudlockii* and *O. recurva* with *O. marnkuliensis***

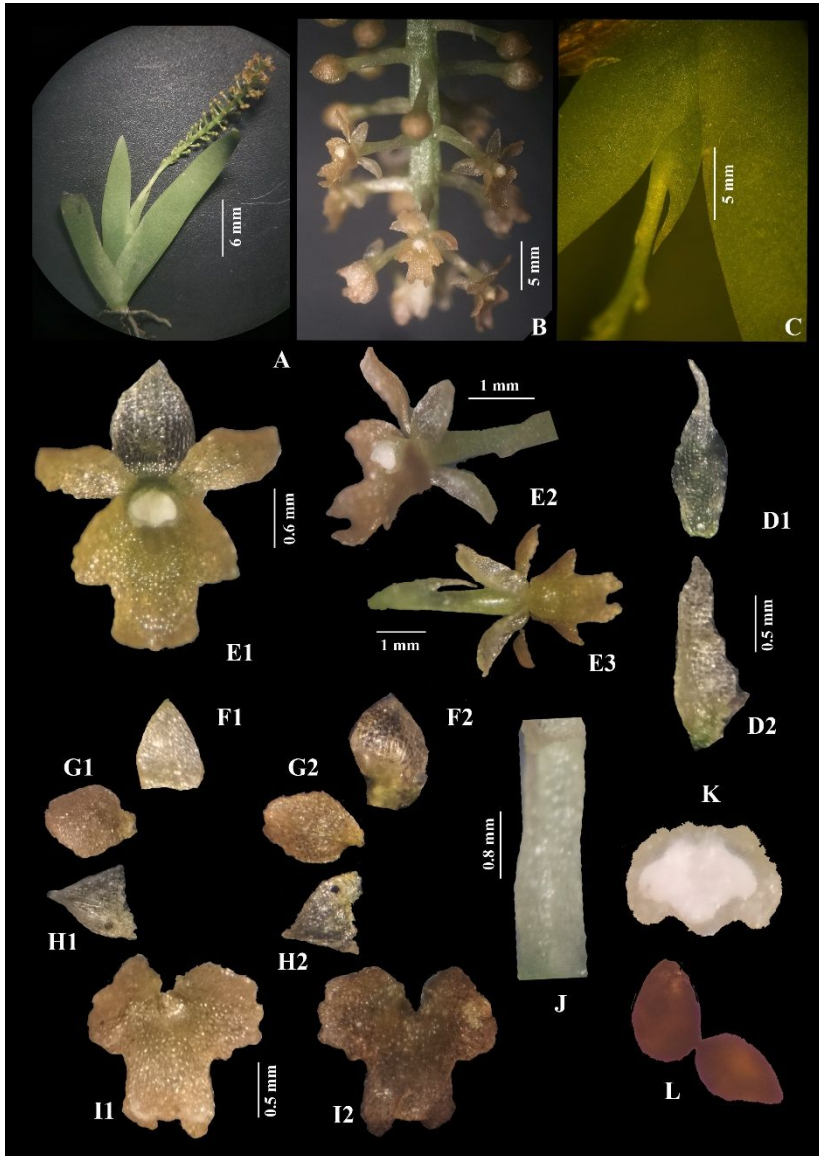
|                       | <i>O. bicornis</i>                               | <i>O. brachyphylla</i>                           |
|-----------------------|--|--|
| <b>Habit and size</b> | Pendulous, 5-6 cm long                           | Pendulous, 3-4 cm long                           |
| <b>Inflorescence</b>  | 5-8 cm long, pendulous, densely arranged flowers | 6 cm long, pendulous, densely arranged flowers   |
| <b>Spathe</b>         | 4-8 mm long                                      | 1-3 mm long                                      |
| <b>Floral bract</b>   | Lanceolate, subacute                             | Ovate, acute                                     |
| <b>Flower</b>         | 1.5 mm long                                      | 1 mm long  |
| <b>Petals</b>         | Lanceolate-acute, entire margin, brick-red       | Oblong-elliptic, obtuse, undulate margin, yellow |

|               |   |  |
|---------------|---|--|
| <b>Sepals</b> | Ovate-lanceolate, acute, brick red  | Ovate, obtuse or acute to acuminate, yellow                                    |
| <b>Lip</b>    | Trilobed, side lobes horn like, crenate margin, median lobe crescent shape with entire margin | Trilobed, sidelobes elliptic, lacinate margin, median lobe with dentate margin |

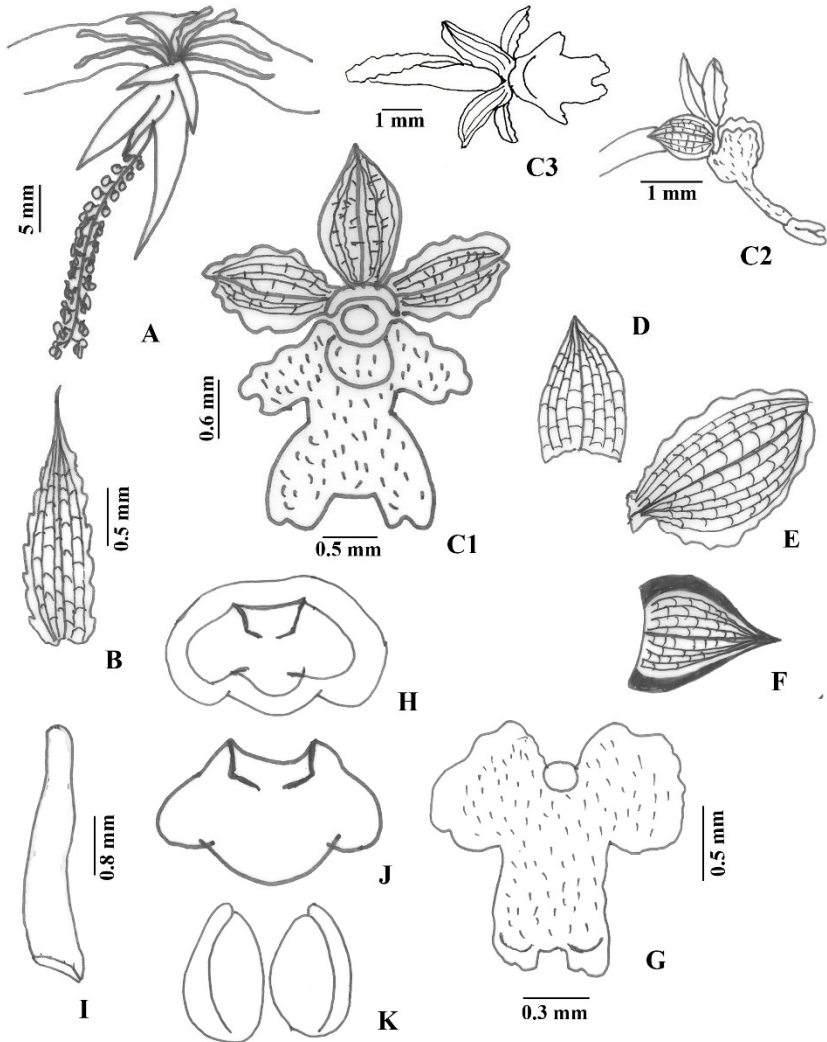
| <i>O. proudlockii</i>  | <i>O. recurva</i>  | <i>O. marnkuliensis</i>   |
|--|--|---|
| Pendulous or erect, 2-3 cm long                                    | Pendulous or erect, 3-6 cm long  | Pendulous, 3-5 cm long  |
| 1.2-3.5 cm long, pendulous or semi-pendulous, lax-arranged flowers | 6.5-8 cm long, pendulous, densely arranged flowers                         | 1-4 cm long, pendulous, lax-arranged flowers                                  |
| Absent   | 1 mm long  | 5 mm long   |
| Ovate, obtuse  | Oblong, acuminate  | Lanceolate, acuminate   |
| 0.8 mm long  | 2 mm long  | 1 mm long   |
| Obovate-obtuse, undulate margin, yellow                            | Obovate-obtuse, undulate margin, yellow                                    | Obovate, sinuate margin, orange   |
| Ovate-lanceolate, subobtusate to obtuse, yellow                    | Ovate, acute to subobtusate orange-yellow                                  | Ovate, acute to subobtusate, cream-yellow                                     |
| Entire lip saccate like, dentate margin                            | Trilobed, sidelobes rounded, entire margin, median lobe with entire margin | Trilobed, side lobes rounded, sinuate margin, median lobe with crenate margin |

### Acknowledgement

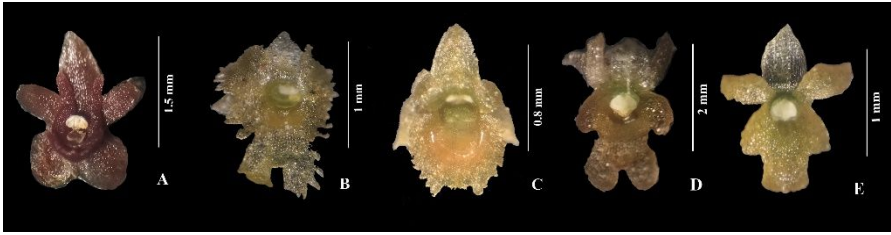
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**Figure 1:** *Oberonia marnkuliensis*. A – habit; B – inflorescence fragment; C – leafy bract; D1 – dorsal view of floral bract; D2 – side view of floral bract; E1 – front view of flower; E2 – side view of flower; E3 – lower view of flower; F1 and F2 – dorsal and ventral view of dorsal sepal; G1 and G2 – dorsal and ventral view of petals; H1 and H2 – dorsal and ventral view of lateral sepal; I1 and I2 – dorsal and ventral view of lip; J – pedicel and ovary; K – front view of column and anther cap; L – pollinia.



**Figure 2:** *Oberonia marnkuliensis*. A – habit; B – floral bract; C1 – front view of flower; C2 – side view of flower; C3 – down view of flower; D – dorsal sepal; E – petal; F – lateral sepal; G – lip; H – front view of column and anther cap; I – pedicel and ovary; J – anther cap; K – pollinia.



**Figure 3: Comparative flower of *Oberonia* species.** A – *O. bicornis*; B – *O. brachyphylla*; C – *O. proudlockii*; D – *O. recurva*; E – *O. marnkuliensis*.

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