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Unraveling the enigmatic charm: challenges in morphological characterisation of highly threatened *Oberonia* species of section *Scylla* in Sri Lanka

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Species of the genus *Oberonia* Lindley produce some of the smallest flowers in the family Orchidaceae. They are distributed throughout tropical Africa eastwards to the southwest Pacific Islands. The genus is characterised by epiphytic or lithophytic herbs with ensiform or terete leaves, sub-erect or drooping inflorescences with densely arranged small flowers, sub-similar sepals and petals, and an entire or three-lobed lip. The genus comprises 150–400 species although recent studies suggest the actual number of species might be far lower than previously accounted for in earlier taxonomic treatments. The limited vegetative and microscopic floral characters make accurate species delimitation challenging using conventional taxonomic approaches, leading to an excess of names. The Sri Lankan orchid flora consists of 17 *Oberonia* species including 11 endemics. The *Oberonia* section *Scylla* comprises eight species, seven endemic to Sri Lanka. Three species are Critically Endangered (CR) and five are Endangered (EN), making it the largest and most threatened section. Characteristics of the section are the following: lip is three-lobed; side-lobes linear, clavate or triangular, parallel or arching and rising above the column, midlobe trifold; lateral sepals orbicular; petals ciliate or denticulate. All members of the section exhibit overlapping characteristics. Furthermore, floral characteristics vary considerably within a single population and even between flowers of different ages along an individual inflorescence. A comprehensive taxonomic review is required for the *Oberonia* section *Scylla*. To accurately determine the number of species, an integrated approach utilising scanning electron microscopic (SEM) images and molecular phylogenetic analyses should be employed. Furthermore, it is crucial to conduct a thorough investigation involving the careful examination of herbarium voucher specimens, accompanied by a detailed analysis of inter-specific and infra-specific morphometric data pertaining to the populations and their habitats. This comprehensive study is of utmost importance for the future conservation and management of threatened fairy orchids in Sri Lanka.

Keywords: endemic species, *Oberonia*, phylogeny, section *Scylla*, SEM, risk of extinction