



***Begonia sandsiana* sp. nov. (Begoniaceae), a remarkable calciphile from the southern karst of Papua New Guinea**

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Abstract

Begonia sandsiana is described from previously unknown environments on the Juha limestone of Papua New Guinea's Southern Escarpment. The calciphilous species is the latest addition to *Diploclinium*, a section characterized (as presently understood) mainly by rhizomatous stems and male flowers with four tepals.

Key words: *Diploclinium*, limestone environments, Southern Escarpment, Strickland basin

Introduction

The upper reaches of the Strickland drainage includes some of Papua New Guinea's (PNG) most extensive and spectacular examples of karst physiography (Löffler 1977). Much of this terrain has been literally shrouded in mystery, owing to its location inside a world center of maximum rainfall (estimated at 5,000–8,000 mm per annum; McAlpine *et al.* 1983). The formidable combination of impassable terrain and inclement weather has historically presented impregnable obstacles to exploration. In recognition of its numerous knowledge gaps, the lands hosting the karst biome (*viz.* the Southern Escarpment) are ranked as a major terrestrial unknown and high-priority biosurvey target (in Beehler 1993, Sekhran & Miller 1995).

No prior biological survey has ever been conducted on the Juha karst. For over 70 years the geographically closest operation was by the Second Archbold Expedition (1936–1937 to an endpoint [Mt. Mabiom, 780 m] on the Palmer River; Rand & Brass 1940). Comprehensive study of the Strickland's interior environments has occurred only recently, driven by discovery of massive gas fields beneath its limestone. With the resulting introduction of helicopter logistics by multinational developers, the region's cloudy uplands have finally been prized open to investigation.

In 2008, the author was a participant on baseline studies for the PNG LNG Pipeline Environmental Impact Statement (EIS). The multidisciplinary study components included botany, entomology, herpetology, ichthyology, mammalogy and ornithology. Numerous floristic discoveries were made during the EIS investigations, from which *Begonia sandsiana* is the latest to be presented.

Methods

Taxonomic descriptions are based on the metrical and qualitative attributes from dried specimens (excepting flower and fruit measurements from bottled collections). Characters determined *in situ* from living plants are reported separately as 'field characters'.

The major wing from ovaries and fruits is measured as: length at right angles to the flower/fruit axis × width at mid-lobe × cross-sectional thickness. For the minor lobes the corresponding protocol is: length × basal width × cross-sectional thickness.