

# TAXONOMY & ECOLOGY

*Beyond Classical Approaches*

Edited by  
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## DIVERSITY OF THE GENUS *BEGONIA* (BEGONIACEAE) AT THE FOOTHILL OF LIMESTONE HILLS IN BAU, PADAWAN AND SERIAN AREAS

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### ABSTRACT

A study on the diversity and density of the genus *Begonia* L. (Begoniaceae) was undertaken at the foothill of limestone hills in the Bau, Padawan and Serian areas. Field surveys were conducted during the period from October 2010 to February 2011. Five plots of 40 m x 10 m in each study sites were established. The occurrences of *Begonia* within the plots were recorded. Each of taxa then was identified up to species level as possible and the populations within the plots were counted. Eleven begonia species were identified and recorded during the field surveys. The species were *B. andersonii*, *B. burtii*, *B. chaiana*, *B. congesta*, *B. corrugata*, *B. lailana*, *B. pendula*, *B. pleioclada*, *B. paoana*, *B. rubida* and *B. speluncae*. Most of the species were much localized except *B. speluncae* ssp. *speluncae* which was the only species that occurred in the three studies sites. Astonishingly, *B. pleioclada* which distribution was widespread throughout Sarawak but never been recorded on the limestone areas was also recorded during the study. The diversity of begonia species on the foothill of limestone hills in the three selected areas considered high, approximately 65 percent of the total number species recorded from Kuching Division. Density of species in each subplot was directly related to the virginity of the study areas and the placement of the subplot at the foothill of the limestone hills. Pristine limestone areas have high diversity and density of begonias as compared to disturbed areas. The begonias are thriving well in deep shaded with high humidity and moderate temperature which regularly located on the east, northern east, south east of the hill sides.

**Keywords:** *Begonia*, Begoniaceae, foothill of limestone, Sarawak

### INTRODUCTION

Geologically, the limestone in the Kuching Division has been divided into three major areas; the Bau, Padawan and Serian limestone areas (Banda *et al.*, 2004). Among the three areas, the Bau limestone areas was the best known botanically explored by the botanists as early as 1845. Among the renowned botanists are Hugh Low, G.D Haviland and H.N. Ridley (Kiew *et al.*, 2004; Kiew and Julia, 2007).

The genus *Begonia* L. is one of the two genera in the family Begoniaceae besides the Hawaiian's monotypic genus, *Hillebrandia*. The genus *Begonia* is also known as one of the largest genera in the world with more than 1,500 species identified so far (Kiew, 2005; Sands 2001; Putthai *et al.*, 2009). The begonias are annual or perennial herbs that are found grow on moist rocks along the stream, on the forest floor or on the rock cliffs

or pockets of limestone. They typically occur together with members of various other herbaceous plant species that thrived in the same habitats (Putthai *et al.*, 2009).

The begonias are among the popular plants that sought after because of it high values for horticultural purposes. Ecologically, the begonias are also being used as keystone or flagship species as an environmental indicator because of its sensitiveness toward the environmental changes. Due to those reasons, in Sarawak all the begonias species were protected under the Forestry Ordinance. However, only little documentation has available in Sarawak particularly on the discovery of new species. As far as begonias concerned, there are no details studies on the diversity and density of this gorgeous genus. Therefore, the aim of our study is to provide a baseline data of the begonias from Kuching Division.