

Morphological study of four sections of genus *Dendrobium* Sw. (Orchidaceae) in Peninsular Malaysia

ABSTRACT

A morphological study of the four sections (*Aporum*, *Crumenata*, *Strongyle*, and *Bolbidium*) of the genus *Dendrobium* (family Orchidaceae) was conducted by using 18 morphological characters. One of the three largest Orchid genera in Orchidaceae is genus *Dendrobium*. This genus is distributed from South- East Asia, west to the Himalayas, east to Japan, and south to the Pacific Islands, New Zealand and Australia. *Dendrobiums* are one of the most popular orchids for their medicinal and commercial values. This plant occurs in the tropical regions with high annual rainfall and without a significant dry season for growth. In this study, 17 fresh samples of *Dendrobium* species were collected and identified upto the species level. The statistical analysis indicated the occurrence of two groups. The first group had four sections (*Aporum*, *Crumenata*, *Strongyle* and *Bolbidium*) and the other group had three sections (*Dendrobium*, *Callista* and *Latouria*), which were closely related. The morphological analysis showed that the four sections formed a monophyletic group compared to three other sections *Dendrobium*, *Callista* and *Lautoria*. The results demonstrated that sections *Aporum*, *Crumenata*, and *Strongyle* were close to one another and were grouped into one clade. Although section *Bolbidium* was close to them but it formed a different clade by itself. The three other sections included in the analysis formed a separate clade from these four sections. In all, according to the cluster and cladistics analysis, these four sections (*Aporum*, *Crumenata*, *Strongyle* and *Bolbidium*) can be put in the separate clade compared to the other sections of genus *Dendrobium* and can be named *Aporum* based on ICBN rules.

Keyword: Morphological study; Morphological characters; *Dendrobium*; Orchidaceae