

“Classification and phylogeny of the genus *Dendrobium* Sw. section *Dendrobium* (Orchidaceae)”

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The subject of this doctoral dissertation is: „Classification and phylogeny of the genus *Dendrobium* Sw. section *Dendrobium* (Orchidaceae)”.

The genus *Dendrobium* was described more than 220 years ago (Swartz'a 1799), and to date, nearly 1,600 species have been described within it. Their range is wide, extending from Korea and Japan through Southeast Asia, west to the Himalayas, east to the Philippines, and south through Indonesia, the Pacific Islands, New Guinea, Australia, to New Zealand (Moudi et al. 2013). Representatives of the genus have a lateral, mostly clustered inflorescence, a mentum, four naked pollinia, and a swollen rostellum. However, despite these common features, they also show strong variation, both in vegetative and floral traits.

Due to the large number of species belonging to *Dendrobium*, the main goal of the study was to reconstruct the phylogeny and classification of the nominal section, which includes more than 50 taxa (Wood, 2006). The research work was carried out using the scanning electron microscopy technique (analysis of micromorphological structures on labellum), molecular biology methods (PCR, DNA sequencing), and phylogenetic and phenetic analyses (reconstruction of ancestral morphological features, UPGMA analyses).

Based on the obtained and collected results, descriptions of the micromorphological structures present on the labellum of selected representatives of the genus were prepared, and the optimal marker for estimating the phylogeny of the type section was indicated. In addition, the utility of the low-copy *Xdh* gene was compared with the multicopy ITS fragment (ITS1-5.8S-ITS2) and plastid markers. Phylogenetic and morphological data of taxa were compiled, which allowed us to verify the taxonomic affiliation of selected species - especially those belonging to the nominal section. The detailed results and conclusions of the work to date are either already published or prepared for publication in open access journals, and are included in the following sections of the dissertation.