

**Molecular phylogenetics of the orchid genus *Spathoglottis* (Orchidaceae  
Collabieae) in Peninsular Malaysia and Borneo**

**ABSTRACT**

Phylogenetic relationships of the orchid genus *Spathoglottis* (Orchidaceae: Collabieae) in Peninsular Malaysia and Borneo were inferred using the internal transcribed spacer of a nuclear ribosomal DNA (nrITS), a plastid gene maturaseK (matK) and the plastid region trnL-F. Eleven species and three infraspecific taxa of *Spathoglottis* were examined, with two outgroup species, were included in the phylogenetic analysis. The combined plastid and nuclear data revealed *Spathoglottis* as monophyletic. From the maximum likelihood, maximum parsimony and Bayesian analyses, *Spathoglottis* is divided into four major groups which are, (1) the Dwarf Purple *Spathoglottis*, (2) the Dwarf Yellow *Spathoglottis*, (3) the Large Purple *Spathoglottis*, and (4) the Large Yellow *Spathoglottis*. The split in the Dwarf and Large *Spathoglottis* groups might reflect an early differentiation of plant size, flower colours and flower size. Phylogeny reconstruction of the orchid genus *Spathoglottis* also exhibited strong support towards the taxonomic delimitation of the two mostly debated taxa in the genus, *S. aurea* and *S. microchilina*.