



## CHAPTER V

### CONCLUSION

Results from the combined *trnL-F* spacer and ITS data sets showed better resolution of relationships within *Goniothalamus* than either *trnL-F* or ITS alone. The tree topology appeared fully resolved and the bootstrap supports were moderate to high. The phylogenetic tree indicated that *Goniothalamus* is likely to be monophyletic, with the *G. tamirensis*-*G. elegans* clade basal to the rest of *Goniothalamus*. The larger clade was divided into four recognizable subclades. None of the clades were congruent with Bân's infra-generic classification, suggesting as a new infra-generic classification scheme should be proposed.

The results from the assessment of the morphological character evolution showed that most of 43 characters were homoplastic. Some of 43 characters were apparently autapomorphic (e.g. habit, stamen number per flower and monocarp ornamentation), but these certainly were due to limited number of taxon in the assessment. There are only 9 out of 43 characters that were partial informative, i.e. synapomorphic characters for some clades, including velutinous primary shoots, nitid leaf surface adaxially, large outer petals, glabrous indument of the basal adaxial region of the outer petals, basally clawed outer petals, presence of glabrous basal flanges on the inner petal claws, large convoluted stigmas, the occurrence of a longitudinal ridge on monocarps and thick pericarp.

The results from this study indicated that the infra-generic classification scheme of *Goniothalamus* should emphasize to the synapomorphic characters discussed above in order to reflex the "true" phylogeny of the genus *Goniothalamus*.