

Title : Integrative taxonomy of *Goniothalamus* sp. (Annonaceae) from Thailand:
morphological & molecular insights

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ABSTRACT

Goniothalamus Hook.f. & Thomson (Annonaceae, Annonoideae, Annoneae, Annoninae) is a large genus of shrubs or trees, with about 138 species distributed in tropical Asia and Oceania. The genus is primarily characterized by the presence of (1) inner petals that are smaller than the outer petals and connivent at anthesis, and (2) tetrad pollen. In Thailand, 27 species of *Goniothalamus* have been recorded. Recent botanical explorations in Satun Province, southern Thailand have led to the discovery of an unidentifiable *Goniothalamus* species. Phylogenetic reconstructions using ten plastid regions (*matK*, *ndhF*, *rbcl* and *ycf1* exons; *trnL* intron; *atpB-rbcl*, *psbA-trnH*, *psbM-trnD*, *trnL-trnF* and *trnS-trnG* intergenic spacers) have revealed that this *Goniothalamus* sp. is a member of one of the two major clades in the genus. However, the affinities of *Goniothalamus* sp. are still obscure. Based on morphological comparisons of *Goniothalamus* sp. with all other species of *Goniothalamus*, it is most similar to *G. acehensis*

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R.M.K.Saunders native to Sumatra. The two differ in several traits, for example, leaf base, number of secondary veins per leaf, flowering pedicel length, proportion of inner petal to outer petal length and number of stamens per flower. Consequently, it is concluded that *Goniothalamus* sp. warrants recognition as a new species, which is described and illustrated in this study.