

“Molecular Taxonomy of Spiny-backed Orb-weavers (Araneae; Araneidae) and related Genera in Peninsular Malaysia”

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Orb-weavers are spiders of the family Araneidae capable of constructing circular webs. These spiders are ubiquitous and serve as an important component of the ecosystem. Although 174 genera have been described in Araneidae, these spiders are poorly studied in the biologically diverse region of Southeast Asia. Spiny orb-weavers of the genera *Actinacantha*, *Gasteracantha*, *Macracantha* and *Thelacantha* are spiders with rigid abdomens and prominent spines that are mostly endemic to Asia. The taxonomy and phylogeny of these spiders are poorly studied due to their intraspecific morphological variations, the rarity of male specimens in collections and the lack of distinctive morphological characters in older descriptions. Therefore, this study has employed for the first time, a multigene approach using three mitochondrial (CO1, CO2 and 16S) and two nuclear-encoded (H3A and 18S) molecular markers to aid in the identification and phylogenetic reconstruction of these spiny orb-weavers collected from Peninsular Malaysia. Concatenated genetic datasets supported the monotypy of *Thelacantha* and *Macracantha*, respectively. The genus *Gasteracantha* as presently circumscribed was not monophyletic, with *G. hasselti* forming a lineage with *A. globulata* and *M. arcuata*. Our results also revealed two different morphotypes of *G. diardi* which are morphologically different from *G. mengei*. Species that are considered new in some way or other are described and illustrated. The morphology and epigynal structures of *G. diardi* and *G. mengei* are detailed for the first time.

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