

ABSTRACT

22 species, 2 varieties and 5 variants from 6 genera were selected namely *Boesenbergia* Kuntze., *Camptandra* Ridl., *Curcuma* Linn., *Hedychium* Koenig., *Kaempferia* Linn. and *Scaphochlamys* Bak. of the tribe Hedychieae. The ultrastructural features of the leaf surfaces, pollen grains, stigmatic surfaces, anther crest and labellum surfaces were examined using scanning electron microscopy (SEM). Inter and intra variation of variants, varieties, species and genera of this tribe were found to be useful additional taxonomic characteristics. Ultrastructural characteristics of species in this tribe were found to be very closely allied in their tetracytic stomata, spheroidal and psilate pollen grains, papillate stigmatic surfaces and labellum with the presence of trichome and papillae. The phylogenetic relationship within the tribe Hedychieae was examined using the ultrastructural data for the parsimony analysis, that is, Distance Analysis (Neighbour joining) and Maximum Parsimony (Heuristic). Cladistic analysis of the data strongly supports the monophyly of *Scaphochlamys* but not other genera.

ABSTRAK

22 spesies, 2 varieti dan 5 varian telah dipilih daripada 6 genus iaitu *Boesenbergia* Kuntze., *Camptandra* Ridl., *Curcuma* Linn., *Hedychium* Koenig., *Kaempferia* Linn. dan *Scaphochlamys* Bak. dalam tribus Hedychieae. Ciri-ciri ultrastruktur yang telah dikaji adalah permukaan daun, debunga, stigma, unjuran anter (anther crest) dan labelum dengan menggunakan kaedah SEM (Mikroskopi Pengimbasan Elektron). Variasi antara varian, varieti, spesies dan genus di dapati berguna sebagai maklumat dan data tambahan untuk pengcaman dan pengkelasan. Kebanyakan spesies dalam tribus ini mempunyai ciri ultrastruktur yang lebih kurang sama dari segi stoma jenis tetrasitik, debunga jenis psilat dan berbentuk sfera, stigma berpapila dan terdapat trikoma dan papila pada permukaan labelum. Perkaitan filogeni dalam tribus Hedychieae dikaji dengan menggunakan data ultrastruktur berdasarkan kaedah parsimoni iaitu analisis 'Distance' (Neighbour-joining) dan 'Maximum Parsimony' (Heuristic). Data analisis kladistik menyokong 'monophyly' dalam genus *Scaphochlamys* tetapi tidak menunjukkan keputusan yang sama untuk genera lain.