

BOOK REVIEW

Flora of Peninsular Malaysia—Series I: Ferns and Lycophytes. Volume 1. Malayan Forest Records No. 48. Edited by BS Parris, R Kiew, RC K Chung, LG Saw & E Soepadmo. Forest Research Institute of Malaysia, Kepong. 2010. 249 pp.

This is the first of six volumes of the ‘Pteridophyte’ Flora covering nine of the 40 families distributed in Peninsular Malaysia—Selaginellaceae (1 genus, 29 species), Psilotaceae (1 genus, 2 species), Equisetaceae (1 genus, 1 species), Osmundaceae (1 genus, 2 species), Matoniaceae (1 genus, 2 species), Schizaeaceae (2 genera, 6 species), Cibotiaceae (1 genus, 1 species), Loxogrammeaceae (1 genus, 5 species) and Grammitidaceae (12 genera, 52 species). Along with descriptions about each species, brief articles on the taxonomy adopted in the publication (by BS Parris), the history of collection in the region (by BS Parris and R Kiew), species assessment and conservation (by LSL Chua), and key to the families and glossaries (both by BS Parris) are also included in this volume. In the part of species description, keys to the species, meaning of the scientific names, synonymies, information on type material (including designation of lectotypes), morphology, distribution, distribution maps in Peninsular Malaysia based on herbarium specimens (except for taxa widely distributed in the area due to shortage of records), conservation status, ecology and uses are provided for the taxa. Line drawings (whole plants and details) illustrate more than half of the taxa whose specimens are presumably deposited in any of the Malaysian herbaria, and 18-page colour plates mostly consisting of field photographs are also given at the end of the book. This *Flora* is one of the most information-rich publications of this kind, and thus useful for both professional botanists and non-specialists who want to identify Peninsular Malaysia ferns and lycophytes.

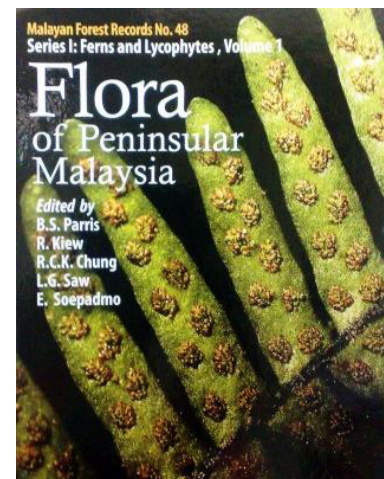
Peninsular Malaysia is one of the areas constituting the Malesia region; we nevertheless still consult Holttum’s *Ferns of Malaya* when we need comprehensive floristic information about ferns of the area since the Flora Malesiana publication, a grand project, has not yet been completed. The delay of the publication is mainly due to shortage of material and information on

New Guinea taxa, and probably it will still take considerable

time before it is completed. Considering this situation, publication on the local modern flora is highly significant especially in the areas where native habitats are rapidly disappearing. As stated in the preface, this flora series enriches information about the conservation status of the taxa. Another feature worth mentioning is specimen-based distribution maps. Even though the number of records seems not to have reached the saturation level, we can access the specimen identification lists via the FRIM web site.

The nine families selected for the first volume have no systematic relationships with each other, and are all small families (< 10 taxa) with little taxonomic problem that remains except for Selaginellaceae and Grammitidaceae. Families for which no recent taxonomic revision is present or families that include many ill-defined taxa are presumably scheduled to be published in later volumes, and on-time publication of all the succeeding volumes is highly expected, in collaboration with specialists abroad if necessary.

The family-level classification adopted in the flora generally follows Smith *et al.* (2006) [*Taxon* 55: 705–731] which redefined families corresponding to monophyletic groups found in the most reliable molecular phylogenetic tree at that time, and the editors made several modifications to it ‘for the convenience of *Flora* users’, e.g. dividing Pteridaceae into Parkeriaceae, Adiantaceae, Cryptogrammeaceae, Sinopteridaceae and Pteridaceae (s.s.); and separating Grammitidaceae and Loxogrammeaceae from Polypodiaceae. I recognise that the application of molecular-phylogeny-based classification to floristic publication often faces problems such as difficulty in making keys using morphological characters and too wide circumscription of a family, and the



treatment of Polypodiaceae–Grammitidaceae are typical examples—morphologically distinct Grammitidaceae is embedded in Polypodiaceae according to the molecular phylogeny and the acceptance of Grammitidaceae makes Polypodiaceae a paraphyletic taxon. My colleagues and I came to a compromise of dividing the descriptions of Polypodiaceae into two parts corresponding to traditional Polypodiaceae and Grammitidaceae in *Illustrated Flora of Ferns and Fern-allies of South Pacific Islands* published in 2008 to avoid both generation of a paraphyletic family and users' inconvenience. In the present publication, the editors gave priority to convenience over naturalness and accepted Grammitidaceae. In addition, there seems to be little reason to divide Loxogrammeaceae with the separation of Polypodiaceae and Grammitidaceae. Even if *Loxogramme*, the most basal genus, is removed from Polypodiaceae, Grammitidaceae is still nested in the remaining members of Polypodiaceae. As far as I know, this is the first example of key to the families following the system by Smith *et al.* and no less than 100 dichotomous keys for 40 families imply a long laborious process to prepare the publication.

Apart from the taxonomic issue, Grammitidaceae is the most impressive of the families treated in the present volume because of its high species diversity and the high rate of significantly

rare species represented by a single or a few collections. The only way to secure the survival of grammitid ferns which are hard to cultivate is to preserve their preferable environments in montane forests, and the inclusion of half the number of species of the family in the local Red List seems to reflect the situation Malaysian Flora is in.

The number of species, approximately 640, in Peninsular Malaysia is probably underestimated. Since cytological information about Malesian ferns is still limited, 'infraspecific' cytotypic variation including allopolyploids will be discovered in future careful studies. There may also be a number of interspecific hybrids that are overlooked, while it is not clearly stated whether hybrid taxa are treated as independent entries or not in this flora series (the present volume does not enumerate hybrid taxa). This reader-friendly publication will undoubtedly contribute to future collection of information about unexplored floristic diversity of the area.

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