BOOK REVIEW. **Trees of Tropical Asia. An Illustrated Guide to Diversity. *James V. LaFrankie, Jr.*** 2010.
Philippines: Black Tree Publishing, Inc. 22.9 cm × 15.5 cm, card cover. 750 p. ISBN 978–971–94794–0–6. Price SGD 125 / US$ 149.

The author has 20 years of field experience in several countries of SE Asia, including a considerable time in the company of the legendary Malaysian botanist K.M. Kochummen. This collaboration must have been very profitable for the author, which probably explains why Kochummen is the only person consistently referred to as "Mr.".

SE Asia is defined as the tropical area from Burma to Borneo and the Philippines. The flora in this part of the world is so rich that a choice has to be made: 157 families and 887 genera are treated, with notes on description, ecology and possible confusion. Numerous illustrations, mostly of good quality, help to give an idea of the taxa discussed. Some genera not occurring in "SE Asia" are also included, such as *Schumacheria*, a Sri Lankan endemic; *Eriandra*, a Papuasian endemic; *Galbulimima*; *Pigafetta* and *Macadamia*, extending west to Sulawesi.

Although the book deals principally with trees, also lianas, shrubs and even some herbs are mentioned, giving the reader more than promised. On the other hand I wonder why some prominent woody taxa such as *Dracaena* and the omnipresent Bambusoideae are left out.

The book is said to be aimed at beginning students, young staff of local herbaria and overseas botanists who want to know more about Asian plants. To this aim the author has condensed a large amount of information by using a very small lettertype and leaving out author names. In the introductory chapters the author explains that modern molecular and cladistic research has led to changes in traditional systematic concepts. Although the new phylogeny often confirms some "suspicions" based on morphological grounds, more often than not the conclusions can be quite baffling. Who would suspect that *Rafflesia* is closer to Euphorbiaceae *s.s.* than *Daphniphyllum* or *Dichapetalum*? On the other hand, the author allows morphological evidence to prevail in the case of *Bischofia*. This genus belongs to the Phyllanthaceae (split off from Euphorbiaceae) on molecular grounds, but is placed in a separate family because it is morphologically aberrant.

The author urges his readers to look at trees as living populations and not as dried specimens in the herbarium. He also warns that DNA-based information, albeit necessary and sensible, should not lead to the assumption that inventory and enumerations are in the eclipse. I would like to add that young botanists are perhaps best advised to learn to recognise genera rather than families. The last word in modern family phylogeny is far from being said. Generic concepts seem to be less prone to changes.

An extensive list of references is given in which, to my surprise, many prolific authors of the Flora Malesiana series (Ding Hou, Leenhouts, Sleumer) are not mentioned. Indices to scientific names are added as well as to Malay, Thai and Vienamese names, but not to Indonesian names. The few Indonesian names in the text are often wrong. My main point of criticism is the number of spelling and printing errors.

All the same, I want to compliment Dr. LaFrankie for bringing together a vast amount of information on one of the most diverse floras of the world. It is the first work of its kind.

Max van Balgooy
Nationaal Herbarium Nederland

BOOK REVIEW. **Flora of Peninsular Malaysia. Series II: Seed Plants, Volume 1.** (Malayan Forest Records No. 49) ***R. Kiew, R.C.K. Chung, L.G. Saw, E. Soepadmo & P.C. Boyce*** (eds). 2010.

Kepong: Forest Research Institute Malaysia. 25.7 cm × 18 cm, hard cover. 329 p. ISBN 978–967–5221–32–3. Price RM 100 / US$ 75.

This is the first volume of the long-awaited Flora in the wake of the *Tree Flora of Malaya* and *Tree Flora of Sabah and Sarawak*. The volume is well structured, beginning with a historical overview of botanical interest in the area, followed by highlighting the latest family realignments adopted and the families affected. Subsequent to that is an account of the vegetation of Peninsular Malaysia and current conservation measures, as well as criteria used to categorise the conservation status of species, before embarking on the Flora proper.

'A Brief History of Taxonomic Research in Peninsular Malaysia' (Kiew, Chung, Saw & Soepadmo) provides an insight into the botanical interest, collecting activity, as well as the establishment of various herbaria in old Malaya (today's Peninsular Malaysia and Singapore), chronologically listing many botanists who have done taxonomic research work pertinent to this region, from Hooker to the present day and indicating why a flora account is long overdue since Ridley's five-volume work, *The Flora of the Malay Peninsula*. In the account that highlights taxonomic changes in family composition, as well as the recognition of families based on molecular phylogenetic work, the inclusion of a phylogenetic tree showing the evolutionary relationships of the affected families could have been helpful. Some useful statistics, such as the number of species of seed plants in Peninsular Malaysia (estimated 7,834 species with 1,564 genera in 220 families), with detailed breakdown, are provided with the families arranged alphabetically, such that the number of species and genera in the families at a glance are available (pages 16–20). The account of vegetation (Saw), well compiled and easy to follow, is a useful accompaniment to forming better impressions of the ecology of the species in this flora. L.S.L. Chua gives a brief outline of species assessment and conservation in Peninsular Malaysia.

The format of the enumeration comprehensively provides accepted name, etymology, key references and type citation, description, vernacular name and distribution. Identification keys are well-formed and provided when applicable, but it is sometimes clear that it has been necessary to depend on reproductive instead of vegetative characters. Mention of the uses of the species, a species distribution map, conservation status, ecology, taxonomic notes and the italicising of key characters make the account informative and concise. Given under 'Notes' are nuggets of information either to provide some identification tips, clarify misconceptions or provide further useful information pertaining to a species, such as phenological attributes.

In this first volume, the families treated are: Ancistrocladaceae, Araucariaceae, Balanophoraceae, Bonnetiaceae, Casuarinaceae, Chloranthaceae, Clethraceae, Cruciferae (naturalised species only), Ctenolophonaceae, Daphniphyllaceae, Datiscaceae, Erythroxylaceae, Illiciaceae, Myricaceae, Nelumbonaceae, Pedaliaceae (naturalised), Pentaphylacaceae, Pittosporaceae, Podocarpaceae, Portulacaceae (many escapes and weeds), Schisandraceae, Symplocaceae, Tetrameristaceae, Torricelliaceae, Trigoniaceae, and Turneraceae (naturalised).

Overall, this may be considered a well-illustrated volume. On the first page, there is a useful reference coloured map of Peninsular Malaysia indicating general

topography and drainage. The demarcations of the states are not well defined in certain areas, though. Another map on page 25 that shows the vegetation should be enlarged to full-page, as the text is too small for comfortable reading. Included are 17 pages of colour plates and 42 well-drawn figures of species treated, in varying detail.

This flora is long overdue, not just useful to the taxonomist, but also others interested in identifying plants. It is accessible also to students and others wishing to know more about the rich plant life of Peninsular Malaysia.

Paul K.F. Leong
K.M. Wong
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BOOK REVIEW. **Malaysia Plant Red List, Peninsular Malaysian Dipterocarpaceae. (**FRIM Research Pamphlet No. 129) ***L.S.L. Chua, M. Suhaida, M. Hamidah & L.G. Saw.*** 2010.

Kepong: Forest Research Institute Malaysia. 25.5 cm × 18.5 cm, card cover. 210 p. ISBN 978–967–5221–34–7. Price RM 20.00 / USD 15.00.

In view of the worldwide threat to our environment through habitat degradation and land use change, conservation efforts with the aim to protect the world's biodiversity have increased dramatically over the last few decades. They are generally based on the understanding that any measures to ensure successful conservation and sustainable utilisation of the biological diversity require a detailed understanding of the plant and animal species to be protected, including their distribution, ecology and conservation status. In Malaysia, one of the aims of the National Strategy for Plant Conservation is to obtain preliminary assessments of the conservation status of all plant species of the country, and as a consequence a project on the conservation monitoring of rare and threatened plants was initiated. Families Dipterocarpaceae, Palmae (= Arecaceae) and Begoniaceae have been identified for the first phase of this project. Being an economically important 'keystone family', the dipterocarp family is treated in the present book which is the first in a series of Red Data assessments.

Although many Malaysian tree families are included in a recent global IUCN Red List, there is currently no national Red Data List, and the present publication is intended to fill this gap for the dipterocarp family. The introductory part of this book gives background information on family Dipterocarpaceae (distribution, habitat ecology, uses), on land use changes in Malaysia and threats to dipterocarp trees. A section explains the IUCN Red List Categories and Criteria version 3.1 (2001) that have been used in the assessments. Existing conservation policies and laws are discussed, and future steps in the conservation monitoring are outlined. The scope and objectives of the conservation monitoring project which forms the basis for the present book are explained. The present Red List is intended as the first critical step towards prioritisation of national conservation measures. Several conservation recommendations are made, most importantly the need to incorporate conservation principles at the planning stage of developments, to make additions to legal and policy provisions with regard to habitat protection, to further fundamental research to increase our knowledge of threatened species, to organise educational programmes aimed at local involvement, and to increase networking efforts among stakeholders. One of the important outcomes of the conservation monitoring project is that the cooperation between the Forest Research Institute Malaysia (FRIM) and various stakeholders has resulted in an increased awareness of rare and threatened species and the need to conserve them. Rescue operations are encouraged which, apart from rescuing threatened populations, would also increase *ex situ* collections of Dipterocarpaceae.

Three informative tables are given in the introductory part, showing the number of taxa arranged after genera in each of the IUCN categories, listing all of the threatened taxa, and breaking down the number of threatened taxa after the Malaysian states. Ninety-two taxa occurring in Peninsular Malaysia are considered threatened, which is roughly 56% of the total number, while one (*Shorea kuantanensis*) is considered extinct. The Malaysian state with the largest number of threatened taxa is Pahang with 59, followed by Johor (54) and Perak (53). Compared with previous assessments, the conservation status of six taxa has been upgraded to a higher threatened category, and

in 57 taxa downgraded to a lower threatened category. Fifty-eight taxa which were assessed as threatened before were here downgraded to not threatened. Another result of the present conservation monitoring project is that one new species was discovered (*Vatica yeechongii*) and two new distribution records were made (*Dipterocarpus tempehes, Dryobalanops beccarii*). Nine species which were previously thought to be extinct were rediscovered.

In the main section of the book, the conservation status of all except one of the 165 taxa of Dipterocarpaceae occurring in Peninsular Malaysia is assessed according to the IUCN Red List Categories DD (= Data Deficient), EX (= Extinct), CR (= Critically Endangered), EN (= Endangered), VU (= Vulnerable), NT (= Near Threatened) and LC (= Least Concern). In the three threatened categories CR, EN and VU the assessment criteria are indicated, e.g., VU B2b(iii)+c(ii). The assessments are based on information obtained from specimens found in Malaysian as well as in European herbaria and on fieldwork during the present conservation monitoring project. In addition, further contributions have been made through data obtained in decades of forest management. Taxa that occur in both Peninsular Malaysia and East Malaysia (= Sabah + Sarawak) are assessed separately for each region, and the higher category was chosen for the national conservation status. In each of the 164 assessed taxa the vernacular names, distribution (both worldwide and within Malaysia) and habitat are also given. Various additional conservation notes are also provided (mostly referring to the presence of the taxon in protected areas), and previous assessments are cited. Each one of the assessments is accompanied by distribution maps of Peninsular Malaysia and East Malaysia (if occurring here also). Grey shading in these maps indicates, a) in case of Peninsular Malaysia the extent of the forest cover of the region, and b) in case of East Malaysia the Extent of Occurrence of the dipterocarp taxon (using grey shading for different attributes in the maps seems somewhat confusing to me, but this is perhaps just a matter of personal preference; in any case it is the only negative point noted in this review). Attached to these maps are several selected localities, the Extent of Occurrence of the taxon, the Area of Occupancy of the taxon and, for Peninsular Malaysia, also the extent of the forest cover within the Extent of Occurrence. In many of the distribution maps also *ex situ* collections are marked. For a number of taxa, line drawings of various plant features (leaves, flowers, fruits) are provided in this assessment section.

The text is followed by a large section with high-quality colour illustrations, comprising well over 150 photos grouped in 39 plates. A total of 68 taxa are illustrated. Most of the photos show the bark, leaves and young or mature fruits, and in some cases also the entire tree, the flowers or seedlings are shown. An index to scientific names and another to vernacular names conclude the book.

The book is the first complete assessment of the conservation status of Peninsular Malaysian dipterocarps, and, with its clear and well-arranged text and the many informative distribution maps and plant illustrations, should be recommended to everyone with an interest in tropical trees.

Hubert Kurzweil
Singapore Botanic Gardens

BOOK REVIEW. **Alexander von Humboldt and the Botanical Exploration of the Americas. *H. Walter Lack*** (translated from the German by Stephen Telfer, Edinburgh). 2009.
London: Prestel Publishing Ltd. 278 p. ISBN 978–3–7913–4142–2. Price £ 125.

This book is, quite simply, a sumptuous treat to indulge oneself. Beautifully produced on quality paper, boxed in a fine slipcase, the colour reproductions a delight to the eye, it has been a long time since I so enjoyed the sensory experience of exploring a new book such as this. And it is a compliment to the publishers, Prestel Verlag and their international offices, that such beautiful books are still being produced, albeit at a price.

So who is Alexander von Humboldt, the subject of this beautiful tome, and why would a reader in Asia care about his explorations of the Americas? To those who are not familiar with the name, Humboldt (1769–1859) was one of the greatest explorers of the early nineteenth century, a man who pioneered the field methods now used around the world in disciplines as diverse as botany, geology, geography, and oceanography. He belonged to a generation of European scientists that was no longer content to remain cocooned in an academic institute lecturing about places he had never seen on subjects he knew only from second hand. Instead he traveled to tropical America and endured 5 years of hardship to see first-hand the lands, peoples, cultures, and biodiversity there. Humboldt's name is commemorated in a multitude of geographic features and living things; indeed, virtually any landform, oceanic phenomenon, plant, or animal that includes 'Humboldt' is surely named in honor of this German scientist and philosopher.

The author of this book, Professor H. Walter Lack, is the pre-eminent scholar of Humboldt's botanical legacy, but until now his publications have been entirely in German. Prestel's decision to translate Lack's book into the English language makes the story of the expedition and the importance of its scientific contributions more widely available.

The book begins with a brief overview of Humboldt's early life and education, then takes up the story of the "great expedition" to the Americas. This lasted for five years (1799–1804) and is summarised succinctly in 18 pages that include numerous colour illustrations. The rationale for this brief treatment is that, in the author's words, "The story of the expedition ...has been told ad nauseam..." While this is borne out via the references cited in the German language, an opportunity has been missed here to describe the expedition more fully to readers in the English language. Nonetheless, the synopsis presented hits the high points and gives a very cogent explanation of the scientific field methods employed by Humboldt and his companion and botanical collaborator, Aimé Bonpland, methods that are largely still followed today by botanists collecting plants in the field.

Then follow seven chapters dealing in some detail with the scientific publications that followed after the expedition, a chapter covering the later years of Humboldt and his botanical collaborators Bonpland and Carl Sigismund Kunth, a summary of the precise dates of publication for the various works mentioned in these chapters, and a postscript explaining the big picture of what the publications accomplished and musing on the roles of the various principles. While these might seem dry and uninteresting, the reality is that they make for fascinating reading. The complex personalities and big egos, political tides in Europe, and nationalistic tussling assured that the publication

of results was anything but simple and the scientific outcomes are still resonating in taxonomy today. Indeed, those who enjoy a good detective novel will find the story of the post-expedition publications intriguing.

For those more visually inclined, the next portion of the book will be the focus of interest: 82 magnificent plates reproduced from the botanical publications that came out of the collaborations and competitions. Some of these are black and white engravings, others are full-colour plates; all are superbly reproduced and are, no doubt, the principle reason for the cost of this book. Lovers of art and plants will find them fascinating; most are credited to the botanical artist Pierre Turpin, a few are the work of Humboldt himself (see plate 33, an orchid, for example)—he was trained as a technical draughtsman and illustrator among his many other accomplishments—and the remainder are the work of noteworthy botanical artists including Redouté, Delile, and others.

One error was detected: in the caption for plate 42 there is a transposition of letters in the name of the genus between the plate and the caption; *Aragoa* on the plate, which is correct, became *Aragao* in the caption. This lapse aside, the plates are beautifully reproduced and give a glimpse of the botanical riches the great expedition gathered and described.

The book concludes with a bibliography of selected works about Humboldt and a series of three indexes, to places, proper names, and botanical names for plants. My compliments to the author and the publisher: this book is a welcome and beautiful addition to the body of work about Alexander von Humboldt and his botanical contributions to science.

George Staples
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BOOK REVIEW. **Bamboos at TBGRI. *K.C. Koshy.*** 2010.
Thiruvananthapuram, Kerala, India: Tropical Botanic Garden and Research Institute. 27.5 cm × 19.8 cm, card cover. 104 p. Price Rs. 800 / US$ 30.

"All botanic gardens keep records of their living collections." Thus declares the opening sentence in the preface to this book by Dr. K.C. Koshy, the founder of the Bambusetum at the Tropical Botanic Garden and Research Institute (TBGRI) in Kerala, India. That exhortation does not detail how well those records should be kept, and Koshy proceeds to show how.

This account was well-conceived, at a time when the TBGRI bamboo collection has just entered its third decade with nearly 70 species (currently recognised as 15 genera) and more than ten putative hybrids making up a whopping 933 accessions, a very good stage at which to declare coming of age. The opening chapter sets the foundation of the Bambusetum in the context of TBGRI's history. Beginning with a mere 0.5 ha at inception, this Bambusetum has now grown to occupy nearly 6.6 ha (just more than 16 acres) in the sprawling green 121-ha campus of the TBGRI. Koshy gives a quick overview of Asian and Indian bambuseta, drawing attention to the humble beginnings of those collections that today continue to support scientific studies, such as at the East India Company (later Indian) Botanic Garden at Howrah, Calcutta from the time of Roxburgh in the early 19th century, as well as a good number of newer collections established around the 1980s. Notes are provided on the propagation methods used at TBGRI, the stage-by-stage development, and the geographical provenances covered that emphasised the Western Ghats region and North Western and North Eastern India. Koshy also documents how thirteen taxa were duplicated from the bambusetum of the Forest Research Institute at Dehra Dun, where specialist attention for bamboo taxonomy and genetics, biology and utilisation, have been and continue to be emphasised. This kind of duplication represents some insurance against loss at one location and also allows comparative studies in different environments. One or two anecdotes, such as the difficulties of transporting bulky plant offsets by passenger train, the Manipur collecting expedition through insurgency areas, or the monsoonal damage to Bambusetum plants in June 2003 that had to be dealt with, make the account come alive. Building a bambusetum is not just planting bamboo, it brings us into contact with much else, and often in 'heavyweight' fashion.

The main records are compiled as Chapter 2. Herbarium and spirit-preserved material help document the living accessions. The entries are organised by genus and species in alphabetical order. Each taxon entry provides the scientific name, relevant taxonomic references, a brief description of the species, a literature-based distribution statement, and a note on the number of hereditary lines represented by the TBGRI material. The accession numbers of the taxon are given with location statement and (presumably GPS) coordinates in the TBGRI Bambusetum; planting date; propagule type used; details of origin (typically state, district and precise location), collection date, and collector and collection number. Herbarium and spirit collections associated with the material (either collected from outside the Bambusetum, or within: this is carefully distinguished) are also given when available. But not only are there planted bamboo accessions in the Bambusetum, as two natural populations, *Bambusa bambos* and *Ochlandra travancorica*, have been carefully conserved on site.

This book is very nicely produced, replete with end-paper photographic spreads of *Pseudoxytenanthera bourdillonii* (Gamble) H.B.Naithani and a frontispiece with

an alluring teaser in the form of an unidentified gigantic *Dendrocalamus* sp. Nearly every page has full-colour photographs, and there are a good number of full-page photographic reproductions (a Roxburgh painting of *Melocanna baccifera* faces the Preface), including many of the Bambusetum accessions. A contour map of the TBGRI Bambusetum showing the locations of all accessions spans nearly two pages, which means a serious fold is found right across it, and the fine print used for accession numbers on this map can be a challenge to the reader. Apart from this, the book is a highly unusual, but extremely welcome, detailed (and pleasant-to-consult) record of a scientific collection of living bamboos. It is unprecedented.

The TBGRI is a young institution, set up in 1979, and its Bambusetum was established in 1987, so it could be surprising that, in effect, this book unveils to the modern world one of the finest, if not the best, scientific living collections of bamboo in all of India and the tropics. And K.C. Koshy, certainly, has set the standard for not only TBGRI, which looks towards an ever-increasing role in tropical plant research, but any institute that seriously wishes to build a scientific collection of bamboos. TBGRI has had the 'right recipe': forefathers with good breadth of vision, passionate researchers who are well-qualified and dedicated to the task, good networking, and the great Kerala setting for tropical plants. It had worked before in the tropics and works again.

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