

Book Review: Paul Kessler (Ed) 2000. **Secondary Forest Trees of Kalimantan, Indonesia. A Manual to 300 Selected Species.** 404 pp. MOFEC Tropenbos, PO Box 319, Balikpapan, Indonesia. ISBN 90-5113-044-9. Paperback. Price US\$35, available from The National Herbarium Netherlands, University of Leiden Branch, PO Box 9514, 2300 RA, Leiden, The Netherlands.

This book is a welcome addition to the slowly growing botanical literature on Borneo. The work now being undertaken on the Tree Flora of Sabah and Sarawak (the Malaysian part of Borneo) has shown that the floristic congruence between Indonesian Borneo (Kalimantan) and Malaysian Borneo (Sabah and Sarawak) is over 80%. Any book on the flora of Kalimantan is useful to Sabah and Sarawak and *vice versa*.

About half of the book (p 23–198) is taken up by descriptions of the trees, in alphabetical order by family and species. Each description is followed by concise notes on habitat and ecology, distribution and uses. For each family, there is an identification key to the genera treated, and under each genus, there is an identification key to the species. The other half of the book (p 204–403) is taken up by line drawings, one page per species, illustrating about two-thirds of the 300 species.

There is no overall key to families or to the whole secondary forest flora. Instead, the book offers a comprehensive list of spot characters under which genera are listed where applicable. For example, under spot character 4: armed plants, are listed *Cratogeomys*, *Flacourtia*, *Gmelina*, *Leea*, *Oxyceros* and *Ziziphus*. Under spot character 7: white sap, are listed *Alstonia*, *Artocarpus*, *Cerbera*, *Dyera*, *Ficus*, *Homalanthus*, *Parartocarpus*, *Prainea* and *Tabernaemontana*. Altogether 58 spot characters are compiled. I find spot characters very useful, in fact, more useful than the keys. The keys work only for the selection of species recognised in this manual, whereas spot characters, working at the genus level, tend to cover all species of the listed genera. One can query the list at any point instead of proceeding along the pre-set path of a key. With slight changes, this spot character list can be used anywhere in SE Asia.

The descriptions and illustrations are of a high professional standard. Floral dissections, tertiary venation and indumentum details have been omitted by the artists, but the form and habit of each plant are effectively depicted. From my own experience, I know that getting the drawings done for a flora can be a real hassle. This approach sacrifices the fine details, but saves a lot of time. Otherwise, it would have been very difficult to get such a high proportion of the species illustrated.

The plant identified as *Phyllanthus emblica* is actually *Phyllanthus*

pectinatus, as indicated by the position of the fruits towards the ends of the leafy twigs. In *P. emblica*, the fruits would be close to the base. *P. emblica* ranges across mainland Asia from India to South China but stops at Perlis in north Peninsular Malaysia. *P. pectinatus* replaces it in Sumatra and Peninsular Malaysia south of Perlis (Ng, F.S.P. 2000. *Malaysian Naturalist* 53(3): 32—35). All Bornean plants previously identified as *P. emblica* are likely to be *P. pectinatus*.

I expected a discussion of the nature and origin of secondary forests in Kalimantan, but the authors, P.J.A. Kessler, P.B. Pelser, C.E. Risdale and K. Sediya have carefully avoided this topic. Instead, they offer this cryptic introduction: "After the completion of our manual 'Trees of the Balikpapan – Samarinda area, East Kalimantan, Indonesia' the production of a manual to selected tree species of the secondary forest was considered an urgent necessity. Deforestation in Kalimantan was proceeding at an alarming rate and had led to millions of hectares of more or less severely degraded forest. The recent immense forest fires (1997-1998) added to the loss and made a publication even more urgent." In this way, the authors try to convey a sense of urgency, but do not explain how deforestation and burning impact upon forests, primary and secondary, in Kalimantan. A discussion might have been politically difficult in a book sponsored by the Indonesian Ministry of Forestry and Estate Crops.

I think that what is happening in Kalimantan is too important to ignore. When I went to South Kalimantan recently, I found that the forests there had been replaced by *Imperata* grassland. The sheer scale of grasslands, in the absence of a cattle industry, took me by surprise. In the humid tropics, it needs work to convert woody vegetation to grassland. Logging alone does not result in grasslands. In 1994, I was in West Kalimantan and was shocked to see that for hundreds of kilometres, fires were burning all over the countryside. These were individually small fires that did not obstruct road traffic, but the smoke and haze filled the skies. It was obvious that these fires were the work of the people of the countryside. Their little houses were spaced out so that each could lay claim to many hectares of land – far more land than the settlers could farm manually. To maintain their claims, the settlers had to keep their lands cleared of natural vegetation. Annual burning during the dry season was the only way to do this. Eventually, the woody vegetation would give way to grassland. Why do the settlers clear more land than they can cultivate? They were hoping that plantation companies would eventually acquire the land for oil palm, pulpwood or other industrial crops, and pay compensation. The loggers had indeed opened the way into the forests, but the settlers did the rest. In this scheme of things, secondary forests in Kalimantan are

not forests gradually recovering from logging, but a brief transient phase between forest and *Imperata* grassland. West Kalimantan will soon look like South Kalimantan and the rest of Kalimantan is not far behind.

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