

## XV. REVIEWS

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BEUSEKOM, C.F. VAN, *et al.* (Eds.). 1987. **TROPENBOS, wise utilization of tropical rain forest lands.** Tropenbos Scientific Series I, ISBN 90-5113-002-3, on request free from Tropenbos, Galvanistraat 9, 6716 AE Ede, The Netherlands.

This book contains the full proceedings of the Netherlands MAB-UNESCO Symposium 'Tropisch regenwoud – verantwoord gebruik?' ('Tropical rain forest – responsible utilization?') held from 10–12 December 1984 in Amsterdam, the Netherlands, and forms part of the Dutch contribution to the MAB program. It contains chapters on: The need for tropical forests and their products; Land use in tropical rain forest areas; Tropical forest: the ecosystems; Spatial variability of tropical rain forests and forest lands; Suitability of tropical forests for relevant use, with two appendices: 1) Checklist of major and minor determinants of land utilization types, and 2) Land qualities for forestry; Forestry and agriculture: an alliance for survival. Added are case studies on Rondonia (Brazil); Forest land use in Surinam; Development versus conservation: avoiding a conflict in the Taï region (Ivory Coast); and Planning for rational use of tropical forest lands – the case of the Kali Konto upper watershed, Java, Indonesia, with appendix 3: Description of land utilization types Kali Konto project.

The book has a total number of 20 authors, all of them specialized in their field, and it contains a lot of useful information on the subjects treated. It is nicely produced in paperback with many illustrations and graphics. The photographs are mostly of poor quality, except the beautiful color photo on the cover. — H.P. Nootboom.

GEORGE, A.S. (Ed.). 1987. **Flora of Australia. Vol. 45. Hydatellaceae to Liliaceae.** 521 pp., 20 + 1 col. pl., 125 fig., 477 maps. Australian Government Publishing Service, GPO Box 84, Canberra (A.C.T.) 22601, Australia. Austr.\$ 44.95 (soft cover), 54.95 (hard cover).

This volume contains the treatment by 25 authors (most of them cited in our Bibliography), 19 illustrators, and 3 photographers of the Hydatellaceae (non-Malesian), Sparganiaceae, Typhaceae (*Typha domingensis* and *T. orientalis* also in Malesia formerly as *T. angustifolia*), Bromeliaceae (escapees only), Musaceae, Zingiberaceae, Costaceae, Cannaceae (cultivated and escaping), Philydraceae, Pontederiaceae, Haemodoraceae, and Liliaceae. The latter family is taken in Cronquist's sense, i.e. including the Amaryllidaceae, the Alliaceae, and the many small families recently distinguished by Dahlgren *et al.* The format of the book should by now be familiar, with keys, short descriptions of the taxa, notes on distribution, nomenclature and synonymy. Again the full-page drawings please the eye. The series should be studied well by those that contemplate writing floras, for it is exemplary of how it should be done. The only complaint is that, as this is quite a thick volume, the back of the soft cover edition already started to break when I folded open the book for this review. From the user's point the Liliaceae, which take about two third of the issue, therefore better might have been published as a separate volume. — J.F. Veldkamp.

In the meanwhile also Volume 4 (1985) and 25 (1985) have been received in L. The first contains the Aizoaceae (A. PRESCOTT & J. VENNING), Cactaceae (I.R.H. TELFORD), Chenopodiaceae (P.G. WILSON), Nyctaginaceae (R.D. MEIKLE & H.J. HEWSON), and

Phytolaccaceae (H.J. HEWSON). Price unknown. The second has the Aceraceae, Akaniaceae, (H.J. HEWSON), Anacardiaceae (L.W. JESSUP), Burseraceae, Melianthaceae (H.J. HEWSON), Sapindaceae (S.T. REYNOLDS & J.G. WEST), and the Simaroubaceae (H.J. HEWSON). Price unknown.

**GIESEN, W. 1987. Danau Sentarum Wildlife Reserve, inventory, ecology and management guidelines.** A World Wildlife Fund Report, for the Directorate of Forest Protection and Nature Conservation (PHPA) Bogor, Indonesia. Mimeographed.

The Danau Sentarum Wildlife Reserve lies on the island of Borneo and is roughly 80,000 hectare. It lies in the upper Kapuas River Basin, some 700-odd kilometers upstream from Pontianak. The average altitude of the basin is only 35–50 meters above sea level. Large sections of the basin are flooded annually, often for months on end. The reserve is part of this floodplain and consists of a series of interconnected shallow lakes an inundated forests.

It has previously been explored as early as 1867 by Beccari, and later by Hallier f. (1893/4), and Ms. Polak (1949). A remarkable and thorough piece of work with a wealth of information on the abiotic (geomorphology, soils, chemical composition of waters, climate) as well as the biotic factors in the area, with maps and illustrations (photographs and drawings from the author, for instance drawings of fishing equipment and of many species of fish, giving their scientific and local names). There are chapters on botany (flora, list of 282 species, vouchers for 150 collections in BO, L) and uses for 207 species and comparison with other areas, vegetation with forest profiles of the different types and a vegetation map; zoology, with a list of fish species incl. their taxonomy and a comparison of the composition with other continents; on feeding habits; on vulnerable species; a list of birds is also provided, one of mammals, and one of other animals. Recommendations are given for conservation of species or groups of species.

Further chapters are on human geography (population and distribution, history, occupation, logging, shifting cultivation, fisheries with production and marketing); the floodplain ecosystem incl. the nutrient flow; reserve management (present status and conservation value, the human factor, a new proposal, zoning).

Generally the chapters contain graphs and other illustrations excellently illustrating the contents. Rarely a report on such an interesting area was so well written with so many facts from different fields. Hopefully World Wildlife Fund will publish a printed version. — H.P. Nooteboom.

**GRIERSON, A.J.C. & D.G. LONG. 1987. Flora of Bhutan, including a record of plants from Sikkim. I, 3: 465-834, 134 fig.** Botanic Garden, Edinburgh. ISBN 0-950-4270-6-3. £ 14.00.

In this issue a treatment is given of the Hamamelidaceae to Daphniphyllaceae, incl. Saxifragaceae and allies, Rosaceae, Leguminosae, Geraniales, Linales, Euphorbiaceae.

The criticism given previously (Fl. Males. Bull. 9: 64, 218) still stands. Is it really so difficult to prepare a key so that all species of a genus can easily be identified? See e.g. *Ribes* (p. 523), *Deutzia* (p. 526), *Spiraea* (p. 534), etc., etc.

Additional literature has been given again.

*Oxalis corymbosa* is *O. debilis* var. *corymbosa* (Lourteig, Ann. Missouri Bot. Gard. 67, 1980, 840). — J.F. Veldkamp.

MABBERLEY, D.J. 1987. **The plant-book - A portable dictionary of the higher plants.** xii + 706 pp. Cambridge University Press, Cambridge, U.K., ISBN 0-521-34060-8. Cloth. £ 20.00, US\$ 34.50.

For many botanists one of the last two editions of J.C. Willis' famous Dictionary of flowering plants and ferns is a desk companion, close at hand as a most useful nomenclator. However, only older users still know that this work was set up in a very different way and originally included a goldmine of information on the usage of plants aimed at amateurs and professionals, horticulturists, ecologists, ethnobotanists, etc., which made it one of the most remarkable botanical works of reference ever written ... 'true vade-mecums for every botanist's pocket' (P.W. Richards).

After the 6th edition (1931) the format was drastically changed by the late Dr. H.K. Airy Shaw in which a good deal of the general information had to be deleted in order to make it the catalogue as we presently know it. The omitted data were gathered again and updated by F.N. Howes of Kew, to be published posthumously (1974) through Dr. Maberley's efforts. Some years ago the latter took the manuscript in hand again and the present book is the result. Just leafing through it is a joy to note all the tidbits and gems that have made botany the 'scientia amabilis'.

Maberley has included all the accepted and most common synonymous names of the genera and families of flowering plants and ferns as well as a great number of English plant names. In this it is a very British book. The family system used for the flowering plants follows in a conservative way that of Cronquist (1981), for the ferns that of Crabbe et al. (1975). In its text the succinct style of Airy Shaw has been used, but still the message usually is clear. Obviously an enormous effort has been put in to assemble the information. The entries have been taken from a vast amount of modern literature, particularly that published after 1970: 'as comprehensive a scan of the pertinent botanical literature ... as could be made by one man has been attempted.'

Included is a short biography of Willis, a survey of Cronquist's system, and of the vast amount of literature scanned. Very useful also is a list of abbreviations of author's names based on the Kew draft index.

This is a most handsome book true to the style of the original versions and therefore highly recommended. It is well executed of a curious shape by which it will fit the pocket of a well-sized coat (for those that still wear these garments) or suitable handbag. However, one needs good glasses to read the fine print, but a botanist should always have a handlens available, anyway. — J.F. Veldkamp.

MAXWELL, J.F., et al. 1987. **Weeds of plantations crops in Southern Thailand.** v + 215 pp., 1 map, 105 fig. Dept. Pl. Sc., Fac. Nat. Res., Prince of Songkla University, Hatyai, Thailand 90110. ISBN 974-605-292-6.

Although this booklet was written for Southern Thailand, the plants discussed being weeds have a much more wide distribution, whereby its use has a much wider target group. From the 371 species collected in secondary vegetations, the 105 which seemed to be potentially noxious, have here been selected. Hopefully the remainder will be treated in a forthcoming 'Weeds of Southern Thailand', although this seems unlikely, as the main collaborator, Maxwell, has moved to a different, non-taxonomic, position in Northern Thailand.

The species have been divided into three groups: ferns, monocots, and dicots. The species are then arranged alphabetically within families and genera. Each is illustrated by a fine

line drawing, giving habit and analytical details. It is unfortunate that at least in my copy some have been too faintly printed, whereby much is obscured. All species are provided with a scientific description, which will probably appeal more to the scientist than to the layman, as they are too specialistic. Distribution, frequency, flowering and fruiting periods are given, as well as local Thai names (by Ms. Dr. P. Sirirugsa).

Although there are some drawbacks many Malesian areas will be envious to have a similar guide, and as it was completed within a few years only, it is an example to be followed. — J.F. Veldkamp.

**Proceedings of the Conference on 'Forest Resources Crisis in the Third World', 6–8 September 1986.** Published by Sahabat Alam Malaysia (SAM), 37 Lorong Birch, 10250 Penang, Malaysia. No price mentioned.

The book deals with 8 sections: I. Forest resources crisis – an overview. II. Forest resources and timber exploitation. III. Ecological effects of forest destruction. IV. Forest destruction and its impact on tribals and people. V. The role of TNCs (Transnational Corporations) and First World Governments in forest destruction. VI. The role of development agencies, financial institutions and U.N. agencies in forest destruction. VII. NGO forest network and action in the first world. VIII. NGO forest network and action in the third world.

At the end there is a declaration of the conference wherein the seriousness of the situation is stressed and points of action made clear. Many conferences are convened on the subject of deforestation in the tropics, most of them in the First World. This one has been one of the best and, moreover, convened by a Third World NGO. Among the speakers were not only well-known western activists on the subject of deforestation of the tropics, but the majority of the speakers was from the involved countries and gave first-hand accounts of the disastrous way deforestation has taken. Due attention is given to the bleak fate of tribal people living from the forest. With a great number of case stories and a wealth of data the book should be read by all who are concerned with the subject, and especially by politicians and officials who are involved in timber trade and the ITTO. Here follow some facts and figures from the book.

Logging is the primary cause of degradation and indirectly of deforestation in insular Southeast Asia. There are some 200 million people or more all over the world who depend directly on the forest for a home, economic activity, community life, and cultural identity. Their lives are being disrupted. The cause of deforestation often is thought to be population growth, but it becomes more and more clear that much of the deforestation has been tied to the growing demands of the world market, principally of the rich countries, not only for wood but also for products of the deforested lands like palm oil, etc. Most of the benefits of the market is for the rich countries, only a small proportion for the producers.

After 4 decades of logging only 13.7% of the primary forest is left in Peninsular Malaysia, and even that is under constant threat. In Sarawak about 76% is still forested, but only 33% of that is primary forest. In Sabah more than 50% is primary forest, but the rate of forest destruction here is 590 km<sup>2</sup> per annum, as compared with 410 km<sup>2</sup> per annum in Sarawak. The recent clearance of 810 km<sup>2</sup> per annum in Peninsular Malaysia has plunged that part of the country into a crisis already, but no lessons are learned and the timber industry in East Malaysia is being stepped up. This continuing destruction of the tropical rain forest has resulted in severe adverse impacts not only on the natural environment, but also on socio-economic and political development of the people, especially the indigenous population of East Malaysia.

In the Philippines from the original more than 10 million hectares of virgin lowland dipterocarp forest only small isolated patches are left. The logging industry, because of 'creaming', has also removed the best stands. The figures on deforestation vary with the source. Of the total amount of forests, in 1934 being nearly 17 million hectares, in 1983 about 8 million hectares was left. The deforestation being estimated at 200,000 hectare per year, by now only 7 million is left.

Interesting are the chapters on climate. Circumstantial evidence of lasting and profound changes being initiated by forest clearing is provided by long term observations. Substantial changes in rain fall patterns have been observed after deforestation, resulting in an increase in rain fall during some periods of the year as well as an increase in rainless days. The extension of dry periods may have a profound effect on the vegetation and on the ability of the rain forest to regenerate. In one of the chapters the earth itself including the biota is seen as a regulator of climate. Living organisms in their totality form a component part of climate by affecting hydrology, surface reflectivity, and wind turbulence. The sun thus provides the energy and living organisms have created complex interacting systems by which that energy can be controlled and its potential as life-destroying force contained. Man's activities in the tropics are having a significant effect on atmospheric chemistry, which may be detrimental to life on earth in the foreseeable future. — H.P. Nooteboom.

ROSENGARTEN Jr., F. 1984. **The book of edible nuts.** xxv + 384 pp, illus. Walker & Co., 720 Fifth Ave., New York, NY 10019, U.S.A. US\$ 35.00. ISBN 0-8027-0769-9.

The term 'nuts' in the broad popular sense covers a whole range of fruits or seeds, and even tubers, with a more or less hard outer cover usually with something edible inside. In former times they were a more important part of the food of our forebears than at present time because of their durability and storability. Remnants of a number of species have been found in ancient sites all over the world.

Rosengarten has selected the twelve most important species for a thorough inspection and discussion, ranging from origin, history, poetry, cosmetics, mythology, religion, to philately, introduction in various places (especially the U.S., for this is after all an American book), pollination, propagation, various races, pests, methods of harvesting, medicinal properties, etc., etc, and last but not least, a number of delicious recipes. As a condiment he has added brief notes on another 30 kinds of nuts as well.

Each treatment is well-illustrated with drawings, photographs, copies of ancient pictures, and so on. This, of course, is not a taxonomic book at all, but even the dourest tropical botanist will have occasionally partaken a handful of peanuts, cashew nuts, macadamias, b Buchananian seeds, Jack nuts, had a delicious soybean meal, or has quenched his thirst with coconut milk, and in the pursuit of his scientific interest might like to know more about what he has ingested. This information can well be used at social meetings and dinners to impress people with your earnestness and one track minded attitude, as you continue even there with your scientific studies and observations. — J.F. Veldkamp.

SIMONS, H. 1987. **Gunung Niut Nature Reserve, proposed management plan.** A WWF report for the Indonesian Directorate of Forest Protection and Nature Conservation (PHPA), Bogor, Indonesia. Mimeographed. 1987.

The Gunung Niut Reserve is located in the Northwestern part of West Kalimantan, a province in the Indonesian part of the island of Borneo. The reserve covers about 110,000

hectare. The total area of cultivated land within the reserve is about 20,000 hectare, the annual population growth is about two percent.

The author admits that due to limited time most of the objectives were studied in a superficial way. Nevertheless he succeeds in giving a good overview of the area with a few maps, some photographs, and chapters on: the physical environment (amongst others geology, soils, vegetation); vegetation; fauna; human activities (incl. encroachment by transmigrants and local Dyaks); evaluation and general conclusions; management recommendations. — H.P. Nooteboom.

SOERJANI, M., et al. (Eds.) 1986. *Weeds of rice in Indonesia*. xvi + 716 pp, 327 fig, 1 map. Balai Pustaka, POB 29, Jakarta Pusat. ISBN 979-407-004-1. Rp. 46,000.00, US\$ 39.00.

This sumptuous manual is based on many years of study and field work by many scientists of Biotrop, Bogor, and NUFFIC, the Netherlands. In several rather brief chapters the ecology of ricefields and their weeds is outlined. The most important and impressive part is formed by the extensive descriptions of the 266 species, last but not least because of the excellent, page-sized analytical drawings of the skilled artist A. Satiri. Notes are given on vernacular names, origin, distribution, ecology, propagation and dispersal, agricultural importance, control, and additional notes. Where necessary keys have been given to the genera and species (266 spp.), but not to families. Exceptional is the inclusion of keys to and descriptions of 227 seedlings.

Nevertheless it is to be feared that because of its size, slightly larger than A4, and for Indonesia still too high a price, the work will not be widely used locally. It is of course unsuitable in the field. Yet, I would like to recommend the beautiful and well-executed book highly, something one must have, if not for its scientific value, then as a topic of interest and discussion on the coffee table. — J.F. Veldkamp.

STEENIS, C.G.G.J. VAN. 1987. *Checklist of generic names in Malesian botany. (Spermatophytes)*. 162 pp. Flora Malesiana Foundation, c/o Rijksherbarium, POB. 9514, 2300 RA Leiden, The Netherlands. Dfl. 35.00.

To those who were lucky enough to have obtained a copy of Van Steenis' 'Nominum generum malesianorum' (1972), a mimeographed list of all the Malesian genera of flowering plants and their synonyms, this has been an indispensable manual. We are therefore glad to announce that a new edition of it has been published that will be distributed on a larger scale. The index was started as a personal reference work for the compilation of data for the Flora Malesiana, and was intended to be the frame for Volume 3 on the floristic and historical plant geography of the area, a work that will probably never appear.

In the Introduction the guiding lines for the compilation are given. Only valid names have been included, while the correct ones have been underlined. Orthographic variants have been excluded when obvious typos. Many genera are only known in cultivation; a selected number has been taken up and these have been marked 'C'. When both native and introduced species are present, the mark is 'CW', which is a bit confusing for the mark 'W' does not stand for 'wild', but for 'introduced (weeds)!' In this context it may be remarked that *Averrhoa* is sometimes cited as originating from the New World, an unfortunate remark apparently first made by Trimen (Fl. Ceyl. 1, 1893, 200), and, more unfortunately, attributing it to me, repeated by Airy Shaw in Willis' Dictionary (ed. 8, 1973, 112). Although the origin of the two species of *Averrhoa* will probably never be certain, it

has several features ancestral to those found in *Dapania* and *Sarcotheca*, whose species are nearly all W. Malesian (one *Dapania* in Madagascar). It therefore seems most logical to assume that *Averrhoa* originated in W. Malesia as well.

Some genera have erroneously been reported for the area; these have been marked 'O'

It is clear that Van Steenis was conservative in familial delimitations. 'Pff, just inflation', he would snort, if one tentatively suggested that recognition here or there might, just perhaps, have some merit.

The manuscript was nearly finished when he so suddenly died. His long-time collaborator, Dr. R. C. Bakhuizen van den Brink f., died nearly a year later after a long illness. We are therefore very lucky that Van Steenis' able and energetic wife, Mrs. M. J. van Steenis-Kruseman, had the strength to add the last touches, usually the most tiresome and time consuming ones! She was aided very much by Ms. E. E. van Nieuwkoop, who, meticulous as usual, also did the final editing and lay-out.

In a special chapter some surveys are given, from which it becomes evident that the Malesian area has 216 families with 2382 genera. Of these only 1 family is endemic (Scyphostegiaceae), of the genera 218 (9.5%) are endemic to a single island, or island group; c. 160 of these are monotypic. A checklist per family is given with the number of species presently known.

An analysis is also given of the Australasian element in the Malesian flora. The number of genera estimated in 1950 (94) has more than doubled to not less than 208 (p. 24) or 209 (p. 16) (8.9%)! This is mainly due to the collections made since then in Papua New Guinea, where not less than 200 of them occur and of these 82 only there! Of these 42 are restricted to New Guinea and Australia. At least one more element may be added here, for the indigenous species of *Danthonia* (Gramineae) most certainly have an Australian origin, and are by some distinguished as *Ryuidosperma* (formerly *Nothodanthonia*). A list by family is given with a rough outline of their distribution.

A similar list is also provided for the Pacific element. Here the number has decreased from 32 to 15 genera, as some southern subantarctic ranges have been deleted. The floristic affinities of the Pacific is obviously much more dominated by the Malesian element than vice versa.

The actual account of the generic names is divided into two parts. One by family (prepared by Ms. E. Prillwitz), and one alphabetical (prepared by Ms. Van Nieuwkoop) serving as index to the first. Hence the different typesetting, which is unfortunate. In a monumental work like this some errors are bound to have crept in, e.g. *Dichrotrichum* = *Agalomya*, not *Aeschynanthus* (Gesneriaceae), *Barclaya* has been conserved over *Hydrostemma* (Nymphaeaceae), to name a few. Information on others will be welcomed.

All people working in the Malesian area and along its boundaries should find this manual very welcome. — J. F. Veldkamp.

**UHL, N. W. & J. DRANSFIELD. Genera palmarum. A classification of palms based on the work of Harold E. Moore Jr. xxi + 610 pp., 200 + 24 fig., 81 pl. (30 col.). Allen Press, Lawrence, Kansas 66044, U.S.A. ISBN 0-935868-30-5. DM 148.00.**

Palms are among the most spectacular trees and lianas of the tropics. Every visitor has been struck by the rows of coconuts along the beaches, so much, that presently they symbolize dreamy, Pacific fairy islands to most people. To the local people palms are of great economic importance for their timber for building, the wood of the rattans for binding, weaving, and pleating, the leaves for thatching and writing, the young shoots, fruits,

endosperm, and seeds for nourishment, the various fluids for beverages, resin, oil, etc., etc. The graceful shapes of the erect ones are of great horticultural importance.

Many people for many years have studied the palms from all sides, but a recent world-wide survey on a generic basis was sorely lacking. Based on the work of the famous Dr. H.E. Moore (1917–1980) the co-authors Nathalie Uhl of the Cornell University and John Dransfield of the Kew Gardens with the financial assistance of many grants of Foundations and private resources have here produced a sumptuous and monumental treatise on the many genera.

The morphology, anatomy, development and cytology, ecology, fossil history, geography, evolution and relationships, and the taxonomic history are extensively outlined in several chapters in the first part, after which the second part is dedicated to keys and descriptions of the infra-familial taxa and the 200 accepted genera with their synonyms and types. Page sized illustrations have been excellently drawn by Marion Sheenan, while many photographs, some in colour, grace the pages.

Palms are the tallest and longest monocots, conspicuous for being woody, which in this predominantly herbaceous group is odd. Also they must be very ancient, at least present in the Upper Cretaceous (80 My b.p.) e.g. *Nypa*, but perhaps existing already in the Lower Cretaceous (100 My b.p.), if the palynological record is to be believed. This would then be at the same time that it is thought that the Monocots appeared as herbaceous semi-aquatics. If so, it is another indication that the Monocots may be paraphyletic. Although various families, Araceae, Cyclanthaceae, Pandanaceae, and even the Gramineae, have been suggested as related, present opinion regards them as quite isolated, and palms appear to have retained characters of a very early monocotyledonous stock (p. 69).

The origin seems to have been in Western Gondwanaland, that what is now South America. The present distribution of living palms supports the hypothesis of this very early origin and reflects past geography and continental drift. The diversification of the subfamilies and tribes often differ from each other significantly and suggest very different histories. Even so, many problems remain and are pointed out.

As a reviewer must have some criticism to avoid to appear biased, here goes:

Although the economic importance of the palms is so great, not even a surveying chapter is dedicated to it, only a brief paragraph (p. xvii: 'The uses of palms are legion'). The uses are only briefly noted in the introduction and under the genera, e.g. for the coconut only the succinct remark 'One of the most important tropical crops with a multiplicity of uses both local and commercial' and for the date palm 'is a major economic plant'. No mention at all is made of the cultural, religious, and artistic importance of the family. From the introduction to the taxonomic history one would believe that palms entered western science with Rumphius, Rheede, and Kaempfer, but Theophrastes (c. 300 B.C.) already extensively described the date (and a species only recently rediscovered in Cyprus). Compared to the extensive technical descriptions in fine print often a column long, surely the authors could have done better than that! The book would have been much thicker and more expensive, but of more general interest.

Nevertheless, at least for palm taxonomists this will be the 'Green Bible' for many years to come, and an example for a consistent treatment of such a large group to all others. Although expensive, it is certainly worth it. — J.F. Veldkamp.