

XIII. REVIEWS
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*Burkill, I.H.: Chapters on the history of botany in India. 1965, xi + 245 pp., 4 portr., 2 maps. Manager of Publications, Government of India Press, Delhi 8. Sh.12/6, or \$ 1.98.

It was not necessary to mention that Burkill began compiling this book at the age of 81 to finish it at 93, for, although the last two chapters are miscellaneous in contents, it could as well have been written by a man thirty years younger. Everybody will regret that the book ends at the time Burkill's own contributions to Indian botany began, notably about 1900. As for the period covered, and that is from the earliest beginnings, the book is a rich store of information. It was published in chapters in the *Journal of the Bombay Natural History Society*^{*)}, and has now, after considerable revision by the author, been brought out by the Botanical Survey of India, preceded by an Introduction by Father H. Santapau, the Director, who therein put Burkill's considerable merits for Indian botany on record.

In an attempt to name all who were connected with his subject, Burkill sums up the efforts of 457 persons, who together made the botany of India up to the 20th century - a limited number! H.C.D.de Wit, in his *History of Malaysian Phytography*, mentions about 800 persons botanically connected with Malesia up to the present.

Burkill begins by sketching the cradle of botany on a map with the oldest botanical centres; his first period ends with the long leave of Nathaniel Wallich (1826-1832) in which the latter took great quantities of material to Europe which he distributed to 20 centres of botanical activity in 8 countries, where they activated considerable interest in the plant world of India. The second period, of intense exploration, ends at about 1850 with Wight and Griffith who then gave way to Hooker and Thomson; under the latter's hands, Kew began to guide the direction of Indian botany; this is the third period, in which the abortive "Flora Indica" was published. The fourth period began with the inception of the Flora of British India about 1870 and saw the establishment of the Forest Service. "India" here also includes Burma and Ceylon; "Botany" includes the study of cryptogams as well. Full measure is given to the circumstances of various description under which Indian Botany was made, and the author's wisdom shows itself in the attention he has given to the influence of teaching in botany on its development and

*) At the Rijksherbarium an Index was prepared to the names as they occur in these instalments. The Index has been mimeographed at the same format and is sent free on request.

in his sketch of the relations between taxonomy and economic botany, to their mutual benefit.

For a fine book like this, the use of good paper would have justified a higher price. -- M.J.

*Carlquist, S.: Island life. New York, 1965, viii + 451 pp., 6 colour plates, many illustr. US\$ 9.95.

With this book, I feel happier as a layman than as a botanist by profession. Since almost any biologist must be a layman in part of the subject it covers, namely plant and animal life on the world's islands, Carlquist's book will give happiness to all. It has been written with flair, attractively illustrated, and handsomely executed. And since the subject already fascinated Darwin and many biologists after him, it is time that a wider public is initiated into this peculiar world, where 1) isolation, 2) a certain ecological diversity, but 3) in a noticeably more even climate than has a similar area inland, makes islands at the same time the laboratories and the archives of evolution.

This word evolution pervades the book to such an extent that in it, the heads of animals are not flat but flattened, a tongue not long but lengthened, species not polymorphic but diversified. It seems insufficient to call *Brighamia* one of the world's most curious plants, no, the author adds: "the outcome of a peculiar evolutionary direction ..." which can hardly convey another meaning than that it is desirable to believe in evolution. If we do, it is not so necessary for an author to prove a case with carefully established facts. And as it is, primitivity, adaptation, migration, specialization, extinction, marine transgression are freely handed out. In the same atmosphere, some new concepts are introduced which a biologist might like to consider valid, like the "weediness" as a factor favouring long distance dispersal in plants, "disharmonic composition" of an island flora or fauna, and their "saturation level", but no clear definitions nor elaborations are presented.

Remarkable is the author's omission of any of the studies published by the Rijksherbarium or the Flora Malesiana Foundation with regard to the phytogeographic subdivision of Malesia and of the Pacific, on phytogeographic disjunctions, on the origin of land floras, on land bridges, or on dispersal spectra. We trust that the next edition in this respect will be brought up to date. Now the author states (page 74) that in New Guinea there are no families endemic and very few genera - for which the author even ventures an explanation, notably that "for most of its history, New Guinea has been a series of small islands." The painful fact, however, is that there are 124 endemic phanerogam genera in New Guinea (Fl. Mal. I, 1, 1950, lxxi). So what about the explanation? Certainly it suggests that the author is able to explain any-

thing. He further declares that "many plants and animals present in Queensland, Australia, continue North into New Guinea, and the barrier is not a sharp one." Actually, Torres Straits forms one of the major phytogeographical disjunctions of the Pacific, a barrier respected by a total of 984 phanerogam genera. "Perhaps it is too poorly known", the author continues, well, anyway to him.

Some views brought forward in an attractive and convincing way are found to be superficial and one-sided. Long distance dispersal is taken for granted, while ideas to the contrary are developed in the course of studies in the Malesian Mountain Flora and extended to lowland formations not heard of: the surprising conformity of areas of plants with and without specialized diaspores, and Stapf's dispersal spectra of Kinalu species, to which Van Steenis has added later observations, all to the effect that plant distribution at least in a number of cases follows definite tracks, irrespective of the means of dispersal.

His treatment of "primitive" genera as families will not satisfy all taxonomists. If *Degeneria*, *Austrobaileya*, *Amborella* are really relict groups, should not their connection with present day taxa be sought and the circumscription of the latter accordingly modified, instead of stating that these plants are "probably" as many families of their own? "The latter procedure does emphasize the relict nature of these plants" (page 327), but what is the intrinsic merit of relict nature?, however "fabulously primitive" a family may be (*Winteraceae*, page 397). Indeed, in the case of *Didymeles* (page 400), Carlquist himself perceives that "this is the easiest way to treat a problem. The more difficult, but more rewarding solution would be to find relationships for the plant" (he suggests that these are with *Euphorbiaceae*, and with *Breynia* in particular).

All the same, it is a nice book. Although it tells not very much of geological age, structure, and physical conditions of islands, it tells very much about many other things, with some special reference to the Galapagos Islands and Madagascar.

A popular book is never good enough, because interested and sometimes powerful ignorants turn to it for their happiness already mentioned, but also for their opinions and prejudices, and these are never good enough. As far as this book forgoes the balance between conflicting views or assumes things too lightly, it is not good enough for the public. But certainly it is good for the critical knowledgeable reader. -- M.J.

*Corner, E.J.H.: The natural history of palms. London, 1966, 393 pp. incl. 133 drawings, 24 plates of black/white phot. Weidenfeld & Nicolson, 20 New Bond Street, London W 1. Price in U.K. Sh.105/-.

There are plenty of reasons to be thankful for this book and nobody should leave it unread. Plants should be studied in and from the viewpoint of the tropics, and plants should be studied while in action. Herbarium taxonomy knows only of action on the part of the man; throughout Mr. Corner's book the action is on both sides, man and plant, and there is a good deal of interaction at that. Dealing with one coherent natural group, this book may well give the thrust to a fresh way of approach which will have its impact on plant observation and description. Mr. Corner emphasizes the importance of this group, by sketching the extensive role that palms fulfill in nature's household, but also by pointing to their postulated place at the beginning of monocot evolution, with the implication that all monocotyledons are palm derivatives. Palm fossils are among the oldest angiosperm remains we have. What, in turn, their ancestors have been, nobody knows.

Since his intention to bring out, as a companion to The Wayside Trees of Malaya (1940), a book on the larger monocotyledons, Mr. Corner has displayed as little dormancy as the palm embryos now described by him. Palm fruits ripe slowly and so did this book; now it tells of a vast knowledge from personal observation in both the Old World and the New, and an equally impressive command of literature.

In Chapter 1: The palm scene, the family is introduced and compared with other large monocotyledons. Chapter 2 gives the achievements of Palm pioneers up to the 20th century: Humboldt, Martius, Wallace, Spruce, Griffith, Beccari. Chapter 3 on The palm crown tells that in all the (few) cases investigated, the number of folded and unfolded leaves were almost exactly similar, and how thickness and growth rate go. The development of leaves is extensively described and illustrated, although admittedly the fan leaf is not yet properly understood. Chapter 4: Trunk, root and spines, describes ramification, stems, meristem, how to get drinking water from a live rattan, and the hairs that lubricate the emerging leaf. In Chapter 5: Inflorescence, various types, terminal and lateral, are discussed, with sex distribution, and evolutionary trends. Chapter 6: Flower, describes the many kinds, from apocarpous to syncarpous ovaries, and from many stamens to few. Chapter 7: Fruit, discusses the protective function of the persistent perianth, growth rate of the fruit, and interprets the scales of the lepidocaryoid fruits and modified primitive spines which confirm - as we might expect - the Durian theory. Chapter 8: Seed and seedling, deals with the slow massive growth and other peculiarities of the embryo, how it sucks the endosperm, the ruminant seeds of some groups,

and how the roots develop. Chapter 9: Rattans, contains data on their growth, structure, use, and evolution, regarding rattans as of ancient stock. A key to rattan genera is given. Chapter 10: Palm geography, gives figures and discussion of generic distribution in the present with ample speculation on the past, in continents and islands. No genus is pantropical, a few bicontinental, over 90% of the species are local endemics. Chapter 11: Evolution of palms, gives ideas on their development as a group, in the light of all the properties discussed. The possible derivation of the common pinnate and the Caryota leaf from dicot patterns are expounded, a pre-palm constructed (fig.118), and the relationship with the Cyclanthaceae discussed; the latter are looked upon as a family of specialized cousins. Chapters 12-14 give miscellaneous Generic notes, and Palm classification gives a few hearty remarks on the purpose of systematics, brief descriptions of the 9 subfamilies as currently accepted, however in need of a general overhaul, some keys, a List of genera (227 in number), a brief Glossary, 13 pages of References, and Index.

The contemporary plant world remains the matrix of Mr. Corner's thinking, and this has the primary advantage that the reader can learn how to look at palms. But the paragraph on fossils is remarkably meager, and pollen has hardly been mentioned at all. Unfortunately, the fossil findings that are discussed scarcely confirm the views derived from recent plants, however logical and sound these may seem. The doubly pinnate Caryota leaf should represent a primitive stage of evolution. But the first page of Mr. Corner's (and Nature's) book gives us a finding from the Triassic in Colorado, and that is ... a fan palm.

Mr. Corner demonstrates, and very convincingly at that, that *Nypa* is one of the most advanced palm genera. But at the same time it is one of the oldest; in Borneo it has existed from the Cretaceous in the same state as now, and no trace of an ancestor. And chapter by chapter the evolutionary conjecture outgrows the description and observation. Page 175. "In the first place there is the spininess of the palm in general for the primitive nature of which we have given the evidence (page 113)". On the indicated page we read that spines made an effective defense against the big voracious animals of long ago, but that poisonous or unpalatable tissues made spines less necessary so that many disappeared. "The armour of spines is the defense of a hundred million years ago." The greater is our surprise to read on page 265: "The fossil record is invaluable, its poverty deplorable. There were palm spines a thousand years ago, a million years ago, and, assuredly, a hundred million years ago for bits of palm trunks and leaves occur in Cretaceous beds, but not a palm spine seems to have been fossilized." Mr. Corner answers the difficulty on that same page as follows: "The negative objec-

tion has no force. The positive evidence of living plants must, however, be stated and faced." That is one must.

If there is (in Chapter 11), "abundant evidence that the primitive palm flower had many stamens and many free carpels. It must have been Magnoliaceous", what is then fact and what is wish? Certainly the wish is fact. "There must have been a pre-palm stage when Magnolia-like flowers gave rise to apocarpous durian-like fruits" (page 257). Must - must?

The "must's" are there, of course, to make the reader by all means believe in Mr. Corner's durian theory. One need not doubt its merits to notice nonetheless that not much room is left for the reader to form his own opinion. "The natural history of palms" has in common with several famous works where a new insight is announced, that it is unconventional in conception and presentation, and pointedly written in a powerful style, thoroughly shaking the facts for inspection from a new angle, and that is most refreshing and of great service to our discipline. Many facts are adduced by Mr. Corner to the support of his theory, but some facts are left unexplained, and alternative solutions are not offered for consideration.

It is apparent that Mr. Corner has adopted a way of thinking in which presence and function are closely connected. For instance like here on page 181/182: "But the restriction of the palm ovary to one ovule in each compartment and the tendency to develop only one compartment into the fruit, rendered this indehiscent; and as the aril became functionless, so it disappeared." But has such an, almost Lamarckian, intangibility of presence and function always been proved? Without a theoretical presupposition, it seems not at all necessary that there should have been an aril where at present there is none. It may seem simpler then to drop both the presupposition and the aril.

On the other hand, the book is founded on a solid basis of common sense with regard to the question what tropical botany should be and can be. Like here: "General botany, dealing with the whole domain of plants, cannot be bothered with minutiae; it needs fewer, major ideas and prefers lumping. The reason why a knowledge of world taxonomy is dropping out of botany is simply because the specialists have over-elaborated it." (page 344). We may say that it could even do with fewer ideas than Mr. Corner has put into his book. Palms stand out as an example of the many tropical groups that call for study and this book on them is attractive enough. It wets the reader's appetite for facts, plain facts, proven facts, and that is the best quality a botanical book can have. -- M.J.

*Holmes, A.: Principles of physical geology. New ed., Nelson, 1965, xv + 728 pp., 880 fig. Price in U.K. Sh.84/-.

Physical geology studies the processes going on in the

earth, paleontology and geochemistry being the other major fields. This book - which feels a bit like a landslide itself, since it weighs 2.6 kilograms - covers the subject in the broadest possible way, from ionization to paleomagnetism, and because its style is so lucid it is apt to arrest the attention of the general reader, particularly if it is the latter's business to reflect on the past movements of the earth and thereby of the communities of organisms he has undertaken to classify.

In 31 chapters first a solid foundation of general knowledge is laid; then such processes as volcanism are discussed, intrusion, tectonics, coal and oil formation, erosion, the work of rivers and of the sea, glaciation and ice ages, the ocean floor, earthquakes and the movements connected, heat flow, orogenesis, and continental drift, with concisely worked out and well illustrated examples from all over the globe, selected historical remarks, an occasional grain of humour, and a master's wisdom all the way.

The reader comes gradually to perceive the consistency of the book while learning many interesting facts and views: the earth is not contracting but expanding and thus generates its own heat; ice ages are the result of a cumulation of factors which reinforce each other now one way, then the other; the floor of the Pacific is young and moves outwards under the bordering continents, while the whole thing is in an anti-clock-wise motion; the Indian subcontinent has partly moved underneath Tibet which thus was lifted up to its extreme elevation; the earth's major mountain belts can be envisaged as the borderlands of the two ancient continents Laurasia and Gondwanaland, with the Tethys between and the Pacific besides; convection currents in the earth's mantle may account for the movements of continents, and for structures like the Mid-Atlantic ridge and the East Pacific Rise, while the sinking of geosynclines and the uplift of geanticlines may be connected with relative heat and cold in such convection currents.

In a well-balanced way the writer exposes not only a great number of hypotheses but also the suppositions underlying them and the validity of their consequences as compared with the available facts. As a result, a good many of time-honoured concepts are quietly abandoned, being "as fruitless as the 'billiard ball' atoms of Victorian times. New ideas of atomic structure at one end of the scale of dimensions and the expanding universe at the other, necessarily demand new ideas about the earth herself." Well, the reading took most of my spare time during a month, and I felt a greater eagerness to continue every time and richly rewarded at the end. -- M.J.

*Hueck, K.: Die Wälder Südamerikas. Fischer, Stuttgart, 1966, xviii + 422 pp., 253 illustr. Price DM 72.- (about \$ 17.-).

A Malesian botanist is at the same time a tropical botanist which means that outstanding books of general scope which deal with the botany of other tropical countries are also of his concern. In our opinion the present book is among these. However badly the neotropical flora is known, for a botanist who feels inclined to study it, two recent general books are now available to give him an overall impression of geography and vegetation. The first is Preston James: Latin America, revised edition (1950), an excellent introduction which contains the detailed vegetation maps that we somewhat miss in the second, Hueck's, which, in turn, gives more vegetation photographs, climate diagrams, and an occasional distribution map. The author had personal acquaintance of most forest types, but having utilized many sources of literature - as the 16-page bibliography may tell - he has achieved a balanced composition, giving all of the 40 forest types their due.

A morphological characterization of the vegetations is scarcely given; the forests derive their name from their site and their main constituents, but full attention is paid to seres after the destruction of forests. The forests are briefly discussed region by region, in relation to the ecological conditions in each area. The work has been written with a view on rational utilization of a treasure which - as far as it has escaped mass destruction - as yet hardly has been exploited. It has been the author's sound intention to demonstrate the value of these forests to mankind, a value great enough to take good care of these woodlands. Under each forest type the most profitable timber species have been listed with technical properties in concise terms, but other forest products as well. Experiences with South American tree species in cultivation, for reafforestation and other purposes, have been recorded, too. When the author died, while his book was in the press, he left a vegetation map of the South-American forest ready for the printer. It is strongly hoped that this vegetation map will be printed in the near future, particularly if the execution could be made as splendid as that of the book itself. -- M.J.

*Ohwi, J.: Flora of Japan. Edited by F.G. Meyer & E.H. Walker. Smithsonian Institution, Washington, D.C. (20560), Sept. 1965, 1067 pp. (double column), 16 pl., 17 fig., 1 geogr. (with prefectures indicated). Frontispiece, 4^o, US\$ 25.-.

This is an emended, English translation of the author's Flora of Japan of 1963. The Introduction contains a very brief phytogeographical and historical survey; then follows a general key to the families and the systematical treatment (Pteridophytes, Gymnosperms, Angiosperms) with generic and

specific descriptions and keys to genera and species, a reference list to author names, an index to Japanese plant names, and finally an index to Latin plant names.

This excellently executed work is certainly a most valuable asset to East Asian botany. The text is interspersed with some (too few) beautiful photographs of Japanese plants or vegetation. Under the genera their distribution is concisely indicated and under the species the districts and provinces. Though the location of districts cannot be found on the map, these data are most pleasant for plant geographers, who wish for example to extract how far northward the tropical element extends. The author and editors should be warmly congratulated with this major achievement.

In the past a great difficulty in evaluating Japanese species has been the local nature of species distinction which has led to an over-evaluation of species and infraspecific taxa, though it is clear that the Japanese flora should be carefully integrated with both that of the Asian mainland and the southern regions. This naturally involves semi-monographic work which is very time-consuming, but the reward is great as it leads to a better understanding of the species concept and must be the basis for a sound plant geography. Professor Hara has in the past years done and stimulated admirable work towards this aim in biosystematical effort, and so has Professor Kitamura. Much work has to be done yet to this end. In the present Flora the specific concept is still a fairly small one and the lack of critical notes under the species is to be regretted. Specially in those many cases where another name replaces an old name "sensu auct. japon.". One would wish for example to know how *Sambucus sinensis* can be distinguished from *S. javanica*, *Monotropastrum globosum* from *M. uniflora*, *Protolirion* from *Petrosavia*, etc. Recently a second emended Japanese version has been issued of this important work. -- C.G.G.J. van Steenis.

*St. John, H.: Monograph of Cyrtandra (Gesneriaceae) on Oahu, Hawaiian Islands. Bishop Mus. Bull. no 229, 1966, 465 pp., 195 fig. Bishop Museum Press, Honolulu 96819. US\$ 12.-.

Introduction of 36 pages; with discussion of history, subdivisions, characters, distribution, chromosome numbers, native names, and other aspects. Fully elaborated monograph with keys, descriptions, types, range, specimens, notes, distribution map, number list, index. Clarke's subdivision into sections has been abandoned, Hillebrand's accepted, but not integrated with knowledge from other parts of the world. We regret that the author has not included the other Hawaiian islands, which would have made an addition of only 26 species to the present 133 and a far greater proportion of usefulness.

I am fully aware that such a work can only be judged by long testing, for which I have neither the knowledge nor the

opportunity. I can only mention that in the key *Cyrtandra* 62. *rockii* occurs in fork 48 under subgenus *Cyrtandra*, and again in fork 154 under subgenus *Brachycyathus*. In fork 48 we find: 15-19 mm for the calyx lobes, in the description we find for the upper calyx lobes 11-15 mm, for the lower calyx lobes 20-24 mm length.

The number of species seems remarkably high, but the author declares that "the species of *Cyrtandra* as described here are believed to be conservatively defined, the "Linnean species." Under that same *C.rockii* we read that "it is a very distinct species, not closely similar to any of the others", but it appears that it is merely a very distinct specimen, as only the holotype is known, and the fruits not. The Linnean concept implies polymorphism.

The drawings, as the whole execution, are of high standard but it seems of little use to print a photograph of the same specimen next to such a fine drawing, as sometimes has been done. --- M.J.

*Stearn, W.T.: Botanical Latin. Th. Nelson & Sons, 1966, xiv + 566 pp., incl. 41 fig. Price in U.K. Sh.105/-.

The only fault I can find with this book is one of modesty, since no mention was made in it of the rare distinction of an honorary Doctor's degree conferred upon the author by the University of Leyden in 1960. Dr. Stearn himself characterizes his product as "a do-it-yourself Latin kit". If we are not mistaken this kit, the like of which did not exist before, will prove indispensable for the upkeep of the building of botanical science. Cultural values need to be handled, thought about, examined, extended, refined, in order to remain values; such a value is the Latin language in botany. If it were given up, the results of efforts in this field before 1900 would become largely inaccessible, and our common (although nobody's own) medium for international understanding would have been lost, whereby botany would be deprived of its unity in time and space. Unfortunately, the compulsory use of Latin in systematic zoology has been abandoned; since that time, systematic botany is the only field outside the Roman Church where, of necessity, texts in Latin are still newly created.

This botanical Latin is a language in its own right, quite different from the classical language from which it was derived, sometimes even in spelling (*acris*, *laevis*, *annulus*, *bacca*, *sylva*, versus *acerr*, *levis*, *anulus*, *baca*, *silva* respectively). It is largely an artificial language, originally a creation of Linnaeus, who was otherwise not noted for linguistic abilities as these are commonly understood. His practical formative power, however, introduced many new terms as well as a new style of plant description, whereby descriptions became mutually comparable and hence closer integrated

into botanical science. Linnaeus omitted verbs from the description, and Stearn makes the interesting observation that this was in accordance with the new style of studying plants, no longer from living material only, but mainly from preserved, that is inactive specimens. What Linnaeus had initiated was perfected, amplified, and established by his successors, chiefly A.P. de Candolle (*Théorie élémentaire*, 1813, 1819, 1844) and J. Lindley (*Introduction* 1832, 1848, and *Elements* 1849); partly on their works Jackson based his excellent Glossary (1900, 1928).

The Vocabulary, which occupies a third of the text of "Botanical Latin" differs from Jackson's in contents, containing all kinds of words (verbs like *deest*, pronouns like *quisque*), and in being purely a word-list for English-Latin and Latin-English, indicating kind, gender, and declension of the Latin words but not giving their meaning outside an occasional context, although, for instance, we may learn that following classical usage *aut* generally indicates a more important or real difference than *vel*, 'an absolute or essential opposition', 'an alternative inconsistent with another alternative'. Another main part of the book consists of a Latin grammar and syntax, starting at the level of ignorance, providing sufficient materials for the consultation of botanical literature and for the making of descriptions oneself. The examples used are all taken from botanical language, simplified and presented in perfect order, obviously as the result of a thorough analysis of the matter. Thus there are 21 variants of the Third declension according to the ending of the word, each example complete with all cases in singular and plural, and with words declined in a similar way (for instance: *stamen* as an example, to which are added *flumen*, *gramen*, *legumen*, *nomen*, *pollen*, *semen*, *specimen*, *Cyclamen*, all of which change the *e* to *i* when declined, whereas *lichen* keeps the *e* throughout). The grammar and syntax are completed by examples of quoted Latin descriptions together with English translation, of *Cyanophyta*, *Chrysophyta*, *Chlorophyta*, *Charophyta*, *Phaeophyta*, *Ascomycetes*, *Basidiomycetes*, *Myxomycetes*, *Fungi imperfecti* (the item here perfected by a description of cultural reactions), *Lichenes*, *Hepaticae*, *Musci*, *Pteridophyta*, *Gymnospermae*, *Dicotyledones*, *Monocotyledones*, 53 species in all, some illustrated.

Besides these two substantial parts, there are chapters on punctuation, habitats, geographical names, colour terms, Greek words, formation of names and epithets, prefixes and suffixes, chemical reactions and tests, symbols and abbreviations, and a list with index of 505 Latin terms for description. At the end, the contents are listed in "*gallica, hispanica, lusitana, germanica, suecica, et rossica*". Moreover, there are a number of alphabetical lists of Latin words, notably: adverbs in botanical Latin, words to denote units of length (hexapo-

dium is a fathom), geographical terms (pagus is a district), suffixes to latinize modern geographical names (-groed becomes -gardia), Latin geographical names both ways (Muschovia is European Russia, the region of Madras becomes Maderaspata), English-Latin colour terms (hoary is canus or incanus, a greyish whiteness, caused by hairs overlying a green surface), Greek word elements (lecythos: oil-flask), Latin and Greek prefixes, substantial and adverbial suffixes, and chemical terms (moistened becomes madefactus). And, of course, there is the historical introduction, immensely interesting and therefore too brief to the taste of many: a mere forty pages where such things as the development of flower description are sketched.

The book is a masterpiece in the art of selection, arrangement, and balance. To realize this, one should look up a good book like C.F.Werner's "Wortelemente Lateinisch-Griechischer Fachausdrücke" to see how cumbersome and dogmatic that seems in comparison with Stearn's clear, concise, and humorous presentation, which is worth of a good deal of study for its own sake. No digressions into etymology, classical Latin, or plant morphology, not the slightest personal idiosyncrasy. Nothing would have been easier, at this level of learning, than to swamp the pages with as much footnotes as text; as it is, the author did a far more difficult job with far greater elegance: he made and polished a tool that will be useful in the hands of many persons with very different ranges of education. This book is worth of being learnt by heart, a nice challenge to all undergraduates with an interest in taxonomy. Those with a weaker memory do not need to be ashamed of reading it every year, this being what L.C.Richard did with Linnaeus's "Fundamenta Botanica". To non-British readers, it has a double value, presenting an equal measure of botanical English and Latin at the same time. The execution is very handsome. Printing errors are negligible. -- M.J.

*UNESCO: Symposium on ecological research in humid tropics vegetation, Kuching, Sarawak, July 1963. SEASCO, 1965, x + 376 pp.

The printed record, finely executed, contains a foreword by Mr. L.Mattsson, Director of SEASCO, the Governor of Sarawak, a list of the 39 participants, a programme of the sessions: "Recent results of ecological studies of the humid tropics vegetation", consisting of 21 papers, mostly descriptive, "Quantitative methods in the study of humid tropics vegetation", consisting of 6 papers, with the discussions in both sessions recorded, "Reports on field trips", 4 in number, Resolutions and a Vote of thanks.

The area covered ranges from India and northern Thailand to SE.Queensland and the Solomons. All papers have been listed in the Bibliography at the end of this Bulletin, hence

I will name only a few: Kostermans's on the little-known vegetation of western Sumbawa; Anderson's on the limestone in Sarawak, giving a preliminary report on a long-term project of great importance; and Brunig's on the kerangas, containing in English the conclusions of a long study in a concise form. A certain amount of references and a short biographical note on the author have been added to each paper.

It seems unnecessary to put the discussions on record for posterity; it costs print and brings confusion. To me, the purpose of a discussion seems to enable an author to improve the final text of his paper. Reports on field trips by first time visitors are entirely superfluous. It is another matter, of course, when a knowledgeable local botanist has prepared an excursion guide. The one on Kinabalu, however, is too detailed on one hand (e.g. in citing specimens and author's names, thereby giving taxonomic data where nobody would look for them, and in giving a key to a single genus viz. *Rhododendron*), and not detailed enough on the other hand (in leaving out literature references, and giving only a casual treatment of geology, geomorphology, vegetation physiognomy).

From the Recommendations we quote that secondary plant communities should be studied, quantitative methods worked out, soil investigations started, limestone hills protected and further explored, palynologists and herbaria cooperate, autecology of tree species studied, and *Agathis* subjected to intense research. -- M.J.

*Whitmore, T.C.: Guide to the forests of the British Solomon Islands. Oxford University Press, 16 June 1966, xi + 208 pp., 17 fig. (one a map), 2 maps (inside covers), 8°. Price in U.K. Sh.40/-.

After Walker's "Forests of the British Solomon Islands Protectorate" (1948, repr. 1962) only scattered data were published on the flora of these islands. Dr. Whitmore's large-scale exploration has brought new life in this section which was recently crowned by the Royal Society Expedition led by Prof. Corner. Unfortunately the results of this expedition are not digested in the book. Whitmore's book offers in a handy form a more or less similar digest as Walker's in part 3, "The common big trees" (p. 29-117), wherein of alphabetically arranged families species are treated to habitats, leaves and economic uses; this is preceded by a forest key mostly on field characters (slash). Part I contains the introduction and part II a sketch of a description of a tree, both with miscellaneous information for practical use (p. 1-28). The book concludes with 2 alphabetical check lists of all plants (not only trees or big trees) known from the Solomon Islands, the first by the Kwara-ae vernacular names, the second by the Latin names to which are sometimes added literature references and as far as possible cited collectors numbers.

Though there is no doubt that the book is a great asset, it was obviously conceived in great haste and this is a flaw to its merit. For example in the list of distinctive family characters on p. 26 Rutaceae are said to have opposite leaves but Fagara and Micromelum listed have not; for Annonaceae it is omitted to mention the 3-merous flowers, for Pandanaceae the linear leaves.

The list of families on p. 21 known from the Solomons contains 8 families which are not recorded from the Solomons elsewhere in the book, viz. Aquifoliaceae, Balsaminaceae, Campanulaceae, Juncaceae, Potamogetonaceae, Portulacaceae, Theaceae and Triuridaceae. On the other hand the check list of Solomon Islands plants contains names of the following families which are not entered: Asclepiadaceae, Bombacaceae, Ceratophyllaceae, Cruciferae, Daphniphyllaceae, Labiatae, Santalaceae, and Scrophulariaceae. Further, several genera named under "easily recognized families" do not occur in the kwara'ae list of vernacular names and the correlation between these lists shows discrepancies. The check list is the first overall account of the Solomon Islands flora, but it could have been more critical. It is inconvenient that the list of Latin names is arranged alphabetically by genera and not by families. Though Dr. Bakhuizen and Dr. van Steenis have done some polishing, the time allotted for its composition was too short to develop this in a major effort. The author is well aware of this and accordingly warns the reader on p. 164 that "such a list must accordingly be used with great caution by those who would base plant geographical studies on it." It is most remarkable that we cannot find cited in the whole book, even not in the concise bibliography at the end, the worthy predecessor of this book, Walker's work, though mentioned on the flap. -- M.M.J. van Balgooy & C.G.G.J. van Steenis.

VARIA

Request

Seed of Cucurbitaceae, for chemotaxonomic research. Prof. L. F o w d e n, Botany Department, University College, Gower Street, London WCI, England, is studying amino acids in seed of Cucurbitaceae. The distribution of certain unusual amino acids provides a useful index in classification, particularly in relation to the placing of certain genera within tribes and subtribes of the family. Prof. Fowden is anxious to extend these studies to further examples of species in this family. Identifications are verified by Mr. C. Jeffrey, Kew, a fortunate circumstance.

A sufficient sample must be 1-2 grams of seed.