

XII. BOOK REVIEWS
(contd from p. 840)

Nature Conservation in Western Malaysia, 1961. Edited by J. Wyatt-Smith & P.R.Wycherley. An issue to mark the occasion of the 21st anniversary of the founding of the Malayan Nature Society 1940-1961. viii + 258 pp., 44 plates, maps.

There is all reason to congratulate the Malayan Nature Society with her coming of age. On account of this fact, she presented herself to the world with a book that we are exceedingly glad to review here. It consists of an introduction by Mr E.J.H.Cornier, F.R.S., and 46 chapters which cover surprisingly many aspects of Nature Conservation and Environment, National Parks, and Wild Life, these being three sections of the four into which the book has been subdivided; the fourth is General. The book has been copiously illustrated with fine photographs, and many charming vignettes of animals (by Mrs Ann Milton) at the end of the chapters. Purpose of the book is, to arouse interest in the conservation of nature by setting forth what has been done, what treasures have been safeguarded thanks to these actions, and what further should be done and why.

Nature conservation is closely connected with broad-mindedness, and with determination. The Malayan Nature Society has testified to these properties by not confining the book to Malaya, where gratifying results already have been obtained, but to the whole of western Malaysia, thus focussing attention to the extremely important rhino-reserve Ujung Kulon in SW.Java, the Bako National Park in Sarawak, and Mt Kinabalu

in North Borneo. The book in all its varied dealing with birds, plants, mammals, insects, fossils, turtles, coral reefs, fish, landscapes, education, legislation, history and prehistory, gives altogether a well-balanced picture, of interest to the layman and to the professional biologist equally.

We feel a strong temptation lavishly to quote from this book, since there is so much in it which needs to be known by responsible and irresponsible people, who have some or no idea how their welfare, their interest, and their recreation are to suffer in the future if they allow Nature's balance further to be disturbed. But better than quoting it is, to recommend this book with warmth to biologists and amateurs, but no less to businessmen, agriculturists, teachers, and local and regional authorities. Our recommendation goes the more wholeheartedly as the price of the book amounts to no more than Mal.\$ 7.50 or US\$ 2.50 or sh.17/6 for a bound copy, and for a cloth copy even Mal.\$ 5.00 or US\$ 1.70 or sh.12/6. Order the book at the Malayan Nature Society, P.O.Box 750, Kuala Lumpur, Federation of Malaya.--M.Jacobs.

Botanical papers in The Journal of the Society for the Bibliography of Natural History, vol.3 (7), 1960, and vol.4 (1), 1962.

This costly periodical (nearly 1 shilling for 3 pages!) which dates from 1936, contains short contributions of very varied sort, dealing with the history, biography, and bibliography of both zoology and botany.

In vol.3: 351-357, W.T.Stearn gives a sketch on Humboldt's *Essai sur la géographie des plantes*, set against the background of Humboldt's education and experiences, and of contemporary knowledge.

On p.357 a book by Cyril Barnard, *Biographical Citation* (London 1960) 20 pp., is announced and recommended.

In vol.3: 363-380 there is a paper by J.Ewan, Bernard M'Mahon (c. 1775-1816), Pioneer Philadelphia nurseryman, and his American gardener's calendar.

On p.382 there is an announcement that Professor Robert L. Kahn, Dept of Germanics, University of Washington, Seattle 5, Wash., U.S.A., who is co-editor of the writings of J.George A.Forster (the son), would be very glad to be informed of any letters, documents, manuscripts, and works in possession of institutes or private persons and relating to J.G.A.Forster (1754-1794) or to his father, J.R.Forster (1729-1798).

In vol.3: 383-404 there is a paper by J.A.Crabbe, A.H.G. Alston (1902-1958). This gives an account of the biogeographical papers that so far were published on him; a list of taxa named after him; some personal remarks; a bibliography which runs from 1925 to 1959 and comprises 135 numbers, plus

notes and reviews; and a list of new taxa and nomenclatural changes proposed by Alston, mainly in the ferns.

On p.405 a brief reference is made to the Tenth International Congress of the History of Science, to be held at Ithaca and Philadelphia, U.S.A., from Aug.26 to Sept.2, 1962. Secretary of the Congress is Professor C.D.Hellman, Cornell University, Ithaca, N.Y.

In vol.4: 1-19 there is the Catalogue of papers concerning the dates of publication of natural history books, fourth supplement, by G.H.Goodwin c.s., wherein about 360 references to published dates of publication are given, not a few of them works dealing with Malaysia.

In vol.4: 57-62 there is a paper by E.W.Groves, Notes on the botanical specimens collected by Banks and Solander on Cook's first voyage, together with an itinerary of landing localities. The title is (like all titles in the journal) self-explanatory. The paper contains some interesting remarks on Banks's and Solander's collaborators and work; the itinerary has been specified with dates and geographic coordinates.

In vol.4: 63-65 there is a paper by H.P.Fuchs, The correct date of Medikus's article Ueber den Gynandrischen Situs der Staubfäden und Pistille einiger Pflanzen.

In vol.4: 66-67 there is a paper by J.W.Greene, The publication date of William Withering's A systematic arrangement of British plants (ed.4), London 1801.

In vol.4: 68-69 W.T.Stearn gives the publication data of Weihe & Nees's *Rubi germanici*, with an introductory note.

In vol.4: 70-73 there is a paper by H.G.Baker, Annotations in volumes of De Candolle's Prodrromus which accompanied Sir Joseph Dalton Hooker to Antarctica. Hooker's copy is now in Ghana; the actual notes are reproduced in a table.--M.Jacobs.

Cape Comorin, International Map of the Vegetation and of Environmental Conditions. Published by the Indian Council of Agricultural Research, 1961, prepared and distributed by the Institut Français, P.O.Box 33, Pondichéry, India.

This splendid piece of work consists of a map and an explanatory 106-page booklet by H. G a u s s e n, P.Legris, and M.Viart. Both the map and the booklet are bilingual, in French and English.

The map is on paper, scale 1:1,000,000, in colour, covers the southern part of the Deccan peninsula South of the 12th parallel. It gives the actual vegetation, whether natural or anthropogeneous, and the topographical outline, in great detail. The natural vegetations have been classified mainly according to their physiognomy; 32 kinds are distinguished. The map also presents a detailed account of the various crops, of land use, and of irrigation.

Of particular value are the 6 marginal "inset" maps, on a scale 1:5,000,000; these give the Administrative divisions (with specified areas of all districts), the Geology and lithology, the Soils, the Bioclimates, the Vegetation types (as they would have developed within a century provided man and livestock disappear from now, a so-called 'plesioclimax'), and Agriculture.

The booklet begins with the welcomed word that this map is the first of a series that will progressively cover the whole of India; we estimate the whole number of sheets at 20. It explains the aim and use of the maps, and gives a concise explanation with additional information to each of the inset maps. It gives population figures, full climatic data with graphs and xerothermic indexes, the most important plant species in each sort of vegetation (this always remains a precarious thing to do), physiognomical diagrams of each vegetation type, and agricultural figures. The bibliography seems not adequate to the standard of this much-promising and well-executed work.--M.Jacobs.

Map of Bioclimates of India and Ceylon, prepared by P.Legris & M.Viart. Published and distributed by the Institut Français, P.O.Box 33, Pondichéry, India, 1961.

This map, too, is accompanied by a booklet, which appeared as Trav.Sect.Sci.et Techn.Inst.Fr.Pondich. 3 (1961) 135-178, and is also bilingual in French and English. It contains an introduction by L.Bégué, *La végétation tropicale*, or The tropical vegetation. Legris & Viart, in their essay 'Bioclimates of India and Ceylon', explain the application of Gaussen's method to express the essential factors of a monsoon climate into one formula. These factors: annual rainfall, duration of the dry season, and temperature, form in India a mosaic of ever different combinations, classified on the map into 34 types.

The map is on paper, in colour, on a scale 1:2,534,400, giving the bioclimates for the Deccan peninsula South of the 16th parallel and Ceylon. On 3 inset maps it also gives the Administrative divisions, the Annual precipitation, and the Number of dry days and dry months. For a number of places, the rainfall and temperature have been visualized in a graph.

From the introduction we infer, that also this map will be followed by more. We hope that the series soon will be complete, since, together with the Vegetation Map, they make an excellent contribution, which makes us wish that such maps already existed for Malaysia.--M.Jacobs.

International Code of Botanical Nomenclature, adopted by the Ninth International Botanical Congress, Montreal, August 1959 (Utrecht 1961) 372 pp.

The proposals concerning the question of possible nomina specifica conservanda c.q. rejicienda did, at the Congress, not result in any legislative action but were followed by an attempt to assess first the real scope of the problem before changing rules.

The results of the deliberations at Montreal are set out in the report on the proceedings of the Nomenclature Section, presented by the Bureau of Nomenclature at the Congress and are printed in vol.3 of the Proceedings of the Ninth International Botanical Congress, and reprinted as volume 20 of *Regnum Vegetabile*. The decisions of the Congress were published in *Taxon* 8 (1959) 245 & 247-254.

We note here the main points where the Code has been changed.

Article 3 has been augmented with nomenclatural particulars about fossil plants, and the terms organ-genus (assignable to a family) vs. form-genus (unassignable to a family) have been introduced. The section on typification (articles 7-10) has somewhat been changed, and now deals in more detail with fossil plants. In Article 17 a few points on the names of order and suborder have been settled. In Article 20 (greatly extended) is new that generic names older than 1912 may not coincide with a technical term if not originally provided with a specific epithet. Generic names may consist of two words if these are hyphenated. Necker's *Elementa Botanica* (1790) has been placed on the Black List since his genera are regarded as 'species naturales'. To Article 23 (on the names of species), a note has been added about words that cannot be regarded as specific epithets. Article 27 has been replaced by a new one, to state that an infraspecific epithet may repeat that of the next higher taxon only when it has the same nomenclatural type. Articles 32-45 (on valid publication) have partly been reshuffled and extended. Article 46 (on citation of authors' names) has been provided with a host of new recommendations. Article 48 has been replaced by a new one, on the creation of later homonyms. Article 59 has practically remained unaltered; the title implies now that it also relates to fossils, although this word is not found in the text of the article itself. Article 65 has been replaced by a new one which deals with homonymy as a result of transfer from one Kingdom to another. The Articles 62-72 (dealing with rejection) have been reshuffled and extended. The number of articles is still 75.

The former Appendix II (Special provisions concerning fossil plants) is no more found in this Code. It was decided

to incorporate these where necessary in the main body of the Code.

The present Appendix II is a new one: *Nomina familiarum conservanda*, for the present only for the Angiospermae. Appendix III (*Nomina generica conservanda et rejicienda*) shows important editorial differences as compared with the Paris version.

The former Appendix IV and V had a status different from that of the other ones. This is expressed in this edition of the Code by calling them "Guides", one for the determination of types and one for the citation of botanical literature.

We refrain from such things as criticism on this Code of Law, but will make one small remark. In this Code a new term has been introduced, namely "protologue", which means everything associated with a name at its first publication, i.e. diagnosis, description, illustrations, synonymy, references, geographical data, citation of specimens, discussion, and comments. A reference to the new term is, however, not found in the index. Here we have given the complete original explanation of the term, but all the same wish to inform the reader that in the new Code it is found on page 64.--R.C.Bakhuizen van den Brink & M.Jacobs.

H.B.Humphrey, *Makers of North American Botany*. Ronald Press Co. New York 10, N.Y. 1961. 265 pp. US\$ 6.00.

Two- to three-page biographies of 122 prominent American deceased botanists, each provided with c. 1-5 biographical sources, from which the data were taken. Though such books are naturally welcome, the author has apparently not always been deeply absorbed in his subjects. In the biography of E.D.Merrill, for instance, there is a major lack of perception of Merrill's scientific objectives. That "the major results of this phase of his life (i.e. his 22 years work at Manila) were assembled and published in 1945 under the title 'Plant life of the Pacific world'" is proof that the author had no notion about this work and about this booklet which was only written, as Merrill himself told me, as an 'intelligence' contribution to the war effort. That "family ties and other considerations finally overcame a strong attachment for the Philippines" is hardly true; the main thing was the Philippinization, as he told me personally. That the "writings of Rafinesque, insofar as they relate to the origin of species, make better sense now than they did a century ago" is a most curious distortion, probably due to the fact that the author was unaware of the data contained in Merrill's *Index Rafinesquianus* (1949), which he has unfortunately omitted as a source. If the other biographies are of the same quality, the book is of mediocre standing in biography.--Van Steenis.

Joseph Hutchinson, The history and relationships of the world's cottons. Endeavour 21 (I.1952) 5-15, 4 maps.

J.H.Saunders, The wild species of Gossypium. Oxford Univ. Press 1961, viii + 62 pp., 19 plates.

The botany of cotton has recently been summarized in the two above publications. There are 23 recognized species in all. These can be united to groups on account of their genome. Remarkably, these genomes are strictly correlated with geographic distribution. In Asia and S.Africa occur *G. herbaceum* race *africanum* and *arboreum* (genome A), and *G. stocksii*, *somalense*, *areysianum*, *incanum*, and *longicalyx* (genome E), in Africa also *G.anomalum* and *triphyllum* (genome B), in America *G.thurberi*, *armourianum*, *harknessii*, *klotzschianum*, *aridum*, *raimondii*, *gossypioides*, *lobatum* (genome D), and in Australia *G.sturtii*, *robinsonii*, *australe* (genome C). Then we have the tetraploid *G.hirsutum* and *barbadense* (genome AD) in America, and the also tetraploid *G.tomentosum* in Hawaii. The wild species are all tetraploid ($n=13$), except *G. tomentosum* which is tetraploid ($n=26$).

It was already known that all cultivated cottons belong to no more than 4 species: *G. herbaceum*, originally occurring in Africa and the Middle East, *G. arboreum* originally occurring in India and SE.Asia, *G. hirsutum* from Central America, and *G. barbadense* from South America. These four species only have seeds which bear lint-hairs that can be spun; the other species bear short and scanty hairs that are unfit for spinning.

The wild species of *Gossypium* are rare perennial shrubs of the semi-arid and arid regions of the tropics. The cultivated cottons are annuals, which have been developed out of the wild perennials. Finds in Pakistan prove the existence of a mature cotton craft there as early as 3000 B.C., in Peru, such a craft existed at about 2400 B.C. The cotton that was probably worked in the same way as it is today in primitive industry, namely, in small-scale house manufacturing, is likely to have been picked from wild plants. It has been held that such "wild" cotton would be not truly wild but escaped from earlier cultivation and was only able to exist in association with man, but this has been proved not to be true for certain areas, where indeed workable cotton does occur wild.

Before the war it was already shown that the genome of the tetraploid American species *G. hirsutum* and *barbadense*, which are both economic, consists of an A-component (Old world) and a D-component (New world), and this is apparently so definitely an established fact that several theories have been set up to explain it. These are discussed by Hutchinson, without arriving at a definite conclusion. For Saunders, the matter seems to be easier. He believes *Gossypium* to be primarily of African origin, and states that "the present occurrence of species in the continents of America and Austra-

lia would find an acceptable explanation in terms of Wegener's theory of Continental Drift That it is not uniformly accepted and is indeed opposed by many geologists seems to stem much more from our incomplete knowledge of the world's history than any proof that it cannot have happened". Such a way of reasoning has the advantage that one can never be wrong, since the lack of knowledge lies with the sceptical party, but to me, there seems to be no other - advantage. And how does Saunders mean by this theory to explain the occurrence of the wild AD-tetraploid *G. tomentosum* on Hawaii? The same question disquiets Hutchinson, who terms it, however, at the end of his paper "a separate and probably unimportant problem". This smells fishy. We do not blame the cotton botanists for being not yet that far as to have solved this problem, but hope to learn sometime from them how the tetraploid could have arrived in the midst of the Pacific.

In Hutchinson's paper a profound survey is given of the present state of our knowledge with regard to the botany of cotton. The main merit of Saunders's book is that it gives reasonable drawings of each wild species accompanied by a (too?) short botanical description and a brief genetical discussion. The taxa and binomials presented by him as new are unfortunately invalid, because they have not been provided with a diagnosis in Latin, nor by a reference to their basionym, respectively.--M. Jacobs.

C.R. Metcalfe, The anatomical approach to systematics. Recent Advances in Botany, University of Toronto Press 1961, 146-150.

The monocots, unlike the dicots, possess no secondary xylem, so that in the monocots this group of characters is not available for comparison, but the epidermal cells next to the guard cells of the stomata is a good taxonomic guide instead. Silica is also more important than in the dicots, and serve to distinguish the Cyperaceae from the grasses by their silica-deposits which are quite different in appearance.

A few preliminary conclusions are noted here.

For a relationship of the Alismataceae with the Ranunculaceae, although repeatedly suggested by taxonomists, there is a lack of anatomical evidence. The stomata are different, the conducting elements are perforated vessels in the R., but tracheids in the A., which is at a lower phylogenetical level. Raphids occur sporadically in the A., never in the R.

Relationships are suggested between the Gramineae and the Flagellariaceae (notably Flagellaria and Joinvillea, not Hanguana which has leaves quite different and pointing to an affinity with Lomandra in the Xanthorrhoeaceae). Also in the Restionaceae resemblances with the Gramineae have been found.

Coleochloa is typically cyperaceous, rather than graminous.

The Haemodoraceae in Hutchinson's sense do not form a homogeneous group.

The Scitamineae have a distinct type of vascular bundle, with 1 large metaxylem element, in common with some Palmae. There is also a resemblance between the Palmae and the Pandanaceae, in epidermis and crystal formations.

Sparganiaceae and Typhaceae are markedly related.

In Xyridaceae, the leaf structure of Abolboda differs essentially from that of Xyris.

For the Iridaceae the occurrence of styloids is particularly characteristic.

There is not necessarily any direct phylogenetic connection between the families of the monocots as we know them today. It seems probable that, if the monocots are in fact monophyletic, many of the present families must have been evolving along quite separate lines for a very long time.

J. Vidal, La Végétation du Laos. Premier partie: Le Milieu. Trav. Lab. For. Toulouse t. 5 sect. 1 vol. 1 art. 3 (1956) 1-120, many phot. Deuxième partie: Groupements végétaux et flore. Ibidem (1960) 121-582, many phot., 19 maps. Extrait in Bull. Soc. Bot. France 105 (1958) 3-41.

This study is the outcome of the author's stay in Indo-China between 1939 and 1952, largely in the spare time which his work as a teacher left him. During that time, the author travelled, explored, collected and photographed. La végétation du Laos has been composed in a very rigid frame, with both the advantages and the disadvantages of such a method. It contains a large amount of information and the author, who covers his subject very widely, has gone through very much literature.

In volume one, after a brief botanico-historical introduction, he discusses the geography, the mineralogy and geology, the soil, the climate and its impact on the vegetation, resulting in a calculation of pluviothermic and xerothermic indices according to various systems, and a coloured map of the ecological conditions. The author is able to cook down every ecological condition to a formula like, for instance T4/5 Rs XO, which in this case represents a coastal climate; in the formula T4/5 R2 XO L2 V3 O the complete set of coastal conditions are embodied.

Volume two deals with the vegetations, classified into climatic and edaphic groups, and discussed for various altitudinal and edaphic regions. A (too brief) chapter is given on the impact of man on vegetation. A plant-geographical analysis is given, a series of conclusions, an extensive bibliography, and indexes. Two more parts are in preparation: the useful plants of Laos, and the vernacular names of plants in Laos.

The author has gone very systematically through his field. He has done much work, perhaps here and there too much, since the result is so many intricate, not to say incomprehensible, ecological formulas. He has applied many more or less established ideas developed by his predecessors, without, however, in general displaying much criticism as to the intrinsic value of those ideas themselves. For example, he took much trouble to explain the various adaptations of Indo-Chinese plants (following and recognizing the value of the work in this field by Ridley and by Guppy) to dispersal by wind, or by water, or by animals, or by sea currents, or by man. There is nothing against that, but would it be impertinent to ask about the plants which have no perceivable adaptation at all? It then appears that such plants often succeed as well as the ones with the finest adaptations. Many plants in the summit area of Mount Kinabalu, for instance, have just small round seeds without any adaptation to dispersal. In the mangrove, *Sonneratia* with its unattractive fruits and plain, small seeds does no worse than the *Rhizophoraceae* with their marvelously specialized large ones. Matters cannot enough be put in a way like this. Or, without going as far as that, an acuter awareness of the fact that some scientific works are good and that others are bad, could perhaps have induced the author to leave out some references to mediocre or questionable work, in order to make the light of the good shine brighter.--M.Jacobs.

H.Walter, Die Vegetation der Erde, in ökologischer Betrachtung. Band I: Die tropischen und subtropischen Zonen. Gustav Fischer, Jena, 1962, xv + 538 pp., 393 figs, 106 tables, 9 coloured plates. DM 68.10.

A.F.W.Schimper's classic *Pflanzengeographie auf physiologischer Grundlage* appeared for the last time in 1935, after it was revised by F.C.von Faber. The present book is to be regarded as a more or less newly written sequel. Many of Von Faber's splendid photographs have been retained, but Schimper's strict and logical scheme which developed from the 'physiological basis' of that book, has largely been abandoned. In the preface, the author states to have done this intentionally, as it is (transl.) "not his plan to publish a comprehensive handbook, but rather an attempt to summarize the essence of our present knowledge in the most concise form, to point in this way to still existing gaps."

Of course, it is a tremendous task, on so complex a subject to write a book which is all over satisfactory. For this reason an author should think twice before giving up the conception so well-elaborated by the man whose heir he is. In the light of his intention to stick to the essence, the author of the present book could then probably have left out

a number of graphs and plant names. In the light of his intention to deal with our present knowledge, he could have made use of such new and important contributions as Miss Ruinen's paper on epiphytosis (Ann.Bogor. 1: 101-157. 1953), or Dr. Van Steenis's chapter on the mangrove (Fl.Mal. I, 5: 429-447. 1958) not to speak of his Maleische Vegetatieschetsen. He certainly should have paid more attention to anthropogeneous factors in general, and in their relation to the origin and existence of savannahs in particular, to secondary forest types and to the part played in them by bamboo, and to the role of fire in tropical vegetations. It is remarkable that the author seems hardly to be acquainted with the many and excellent publications in English on ecological phenomena in South East Asia, besides Richards's Tropical Rain Forest.

But probably the author has a greater knowledge of vegetations in arid regions, since more than half of his book deals with that subject, discussing all sorts of deserts and semi-deserts in America, Africa, and Australia. Also the deserts of the Near East, although lying outside the tropics, are extensively discussed; it is strange, then, to find that practically nothing has been said about the dry areas of Iran, Afghanistan, and West Pakistan; these countries, however, extend still further to the North, and may therefore be discussed in volume II, which is to deal with the temperate zones. No doubt that volume will be executed as handsomely as the present one.--M.Jacobs.

H.wild, Harmful aquatic plants. Kirkia 2 (1961) 1-66, 19 pl. Three categories are given: I) Plants of major importance (already known in Africa or Madagascar), 14 spp.; II) Plants presenting a potential danger, 32 spp.; III) Plants dangerous in other parts of the world (not known in Africa and Madagascar so far), 5 spp. For each species is given: name and author; family; short botanical description; distribution and importance, extensively; means of control; a nice and elegant pen drawing. A glossary of botanical terms (the paper is also for non-scientific use), a list of herbicides, and a short selected bibliography have been added. Although focussed on Africa, this paper, which evidently has been very carefully prepared, is of interest to every tropical botanist. It forms one of the first contributions to the solution of a problem which is several decades old but has recently become of fast-increasing importance; a symposium on Eichhornia crassipes was held in 1957 at Leopoldville, where by that time 150 tons per hour of Eichhornia were passing on the Congo river.

By the way, at the end of the same volume of Kirkia, a vegetation map of the Federation of Rhodesia and Nyasaland has been added, on a scale of 1:2,500,000, giving 26 different vegetation types; it looks very fine.--M.Jacobs.