

REVIEWS

R. HEGNAUER, *Chemotaxonomie der Pflanzen*. Eine Übersicht über die Verbreitung und die systematische Bedeutung der Pflanzenstoffe. Vol. II. Monocotyledonae — Birkhäuser Verlag, Basel und Stuttgart, 1963, 540 pp, 9 figures. Clothbound, Fr. 98.—.

The composition of the 2nd part of this work corresponds to that of the 1st, but, because it deals with only one class, the Monocotyledons, the whole could be more homogeneous. The Monocotyledons are systematically and anatomically less profoundly examined than the Conifers and the Dicotyledons, and for that reason it might be expected that phytochemistry could offer more often a solution in difficult taxonomical questions than in the above mentioned taxa. Unfortunately the phytochemical knowledge of the ca. 40 families of Monocotyledons has appeared to be so scant that it was impossible to base a comparison of the taxa on the chemical constituents. Only in a few cases there appeared to be clear chemical relations or differences, e.g. in the taxa of the *Liliaceae* - *Amaryllidaceae* complex.

As in the first part of this book the author followed the view of Von Wettstein regarding the circumscription of the families, except for instances where chemistry favoured the splitting into smaller ones, as one can find so often in Hutchinson's "Families of Flowering Plants". For this reason Von Wettstein's large families in the *Helobiales* have been accepted against the smaller concepts in this group by Hutchinson; reversely, Hutchinson has partly been followed in that the *Liliaceae-Dracaenoideae* together with the *Amaryllidaceae-Agavoideae*, occur combined as *Agavaceae*. Subfam. *Amaryllidoideae* (*Allioideae* excepted) has been considered as a separate family *Amaryllidaceae*, because of the occurrence of alkaloids in this group and the total absence of this constituent in the other taxa of the former *Amaryllidaceae s.l.*

As to most of the *Liliaceae* the author does not agree with Hutchinson's splitting, because the chemical constituents of *Ruscaceae*, *Trilliaceae* etc. do not essentially differ from those of the *Liliaceae* in the restricted sense of Hutchinson.

Up till now no constituents are found that are characteristic for the whole of the Monocotyledons, but it is admitted that many families have not or not sufficiently been examined phytochemically.

This book is well indexed, the treatment thorough and systematic, printing and binding excellent. The author is warmly congratulated with this excellent piece of work.

H. P. NOOTEBOOM

C. E. B. BONNER, *Index Hepaticarum. Pars III: Barbilophozia to Ceranthus*. — J. Cramer Ed., Weinheim, 1963, p. 321—636.

Until recently no one has ever dared to compile an index for liverworts, though such an index was badly needed for many years. Dr Bonner deserves the highest praise for his effort to accomplish such a colossal task. At present the parts constituting his Index Hepaticarum are appearing in rapid succession.

An exposition of the procedure accepted may be found in pars I and pars IV. The data presented below are mainly directly adopted from this exposition.

Bonner states that "the Index is neutral and factual. It does not claim to express any particular systematic concept. It does not list synonyms. It will list the same epithet in as many binomial combinations as have been published, without indicating a preference for any one of them."

Names of genera, species, and infraspecific taxa are dealt with in alphabetical sequence; it is regrettable that names of infrageneric taxa are omitted. With every name the author and date of publication are given. Herbarium names are also included, particularly those which have been cited in literature as a synonym of an established name. Where pertinent, the bibliographical citation is followed by an indication such as "*nomen nudum*", "*comb. illeg.*", etc. Volume and page in Stephani's Species Hepaticarum are consistently cited. Details of type species and specimens, when known, are given. Generic lectotypes are clearly indicated as such, the name of the author who made the choice is given (though these names are omitted under *Blepharidophyllum* and *Blepharostoma*). But on the specific level, unfortunately, lectotype as well as holotype specimens are both referred to as "type", and in this case the name of the author who made the choice of a lectotype specimen has not been mentioned. Bonner wishes to stress that no lectotypes are chosen by himself, but he also states that "for species described by Stephani it has been possible in many cases to indicate with precision the data of the specimens he used for his descriptions and Icons". Though Stephani's information is often highly incomplete, Bonner has traced such specimens and considers them as holotypes.

Although he does not want to express his opinion upon taxonomic matters, he clearly does so here, as Jones (Trans. Brit. Bryol. Soc. 4, 1963, 466) already remarked in his review of pars I (*Plagiochila*). An indication of the herbaria where types are known to be conserved, is added. This mainly consists of indications whether type specimens are known to be in G or are mentioned in Hattori and Noguchi's "Index Speciminum Typicorum in Herbariis Japonensibus, Pars Bryophyta". A rough indication of the geographical distribution is given. Orthographic variants of generic names are listed, but I looked in vain for *Bazzanius* S. F. Gray, though Bonner was aware of the existence of this name, since he mentions it under *Bazzania* S. F. Gray *corr.* Carrington. Orthographic variants of specific epithets are omitted from the index. I was unable to find a taxon the rank of which has not been clearly indicated by its author. Do such taxa not exist among liverworts or has Bonner made some choice?

When comparing a small number of cross-references and other entries with the literature cited I found a rather uncomfortable number of omissions and errors. Where combinations are not listed or later dates of publications are given, this may be due to the chaotic state of affairs created by Stephani, which made Bonner's task an almost impracticable one. But there are other slips, of which I cannot help thinking that they are caused by hasty work, resulting in contradictory cross-references, misprints, and omissions, some of which are already mentioned above. Under *Blyttia* as well as under *Blyttia* the type species is misspelled "*B. lyellii*", though in both cases in the list of species "*lyellii*" is given. On page 445 Stephani is mentioned as the author of *Brachiolejeunea plagiochiloides*, but on page 458 the same combination is attributed to Stephani & Spruce. *Calobryum gibbsiae* is indicated as "*nomen herbariorum*?", though a diagnosis has been published by Stephani in Spec. Hep. 6 (1917) 76. On page 437 Moerck has been misspelled as Moerch. The date of publication of *Bazzania fallax* (Lac.) Schiffn. is given as 1989 instead of 1898, etc. As accuracy in citation forms a principal condition for the usefulness of any index, I sincerely hope, that the forthcoming parts will not show relatively easily avoidable shortcomings like those mentioned above, disfiguring this otherwise outstanding index, for which we shall always stay greatly indebted to Dr Bonner.

A. TOUW

C. C. HEYN, *The annual species of Medicago*. Scripta Hierosolymitana 12, 1963. — Magnes Press. London: Oxford University Press, 154 pp., 38 figures and 5 plates. Clothbound, sh. 36.

After Urban's monograph on the genus *Medicago*, published in 1873, only regional surveys have appeared, as for instance that of the native and adventitious species found in the Netherlands and Belgium by Van Oostroom and the present reviewer. It is self-evident that these surveys could only cover a part of the genus. The book of Miss Heyn deals with all annual species of *Medicago*. It is a very thorough piece of work, in which particular attention has been paid to the morphological variability of each species.

There are chapters on taxonomic history, breeding systems and hybridization, cytology, geographical distribution, evolutionary trends, delimitation of the genus, and on the sections of the genus *Medicago*. In the last named chapter the most striking feature is, that 6 sections of Urban (*Intertextae*, *Scutellatae*, *Rotatae*, *Pachyspirae*, *Euspirocarpae*, and *Leptospirae*) are united into one section, *Spirocarpos* Ser. The species dealt with in this book belong all to this section, with the exception of *M. orbicularis* which belongs to the section *Orbicularae*.

The treatment of each species consists of a very up to date nomenclature and synonymy, a list of selected illustrations, an accurate description of the species, a key to the varieties when necessary and a very thorough treatment of the infraspecific taxa, the indication of the types, the habitat, a detailed account of the distribution, a list of selected specimens, and often some notes on nomenclature, variability, and other interesting data. Of nearly all species good drawings are given, showing the habit of the plant and details of the pod.

In total 28 species are given. The species-concept is nearly the same as that accepted by Van Oostroom and the present reviewer with two exceptions: *M. ciliaris* and *M. aschersoniana* are reduced to varieties of *M. intertextata* and *M. laciniata* respectively; especially the latter reduction is justified in my opinion.

Generally *M. sativa* is accepted as the type species of the genus. Why Miss Heyn, in deviation of the common opinion, indicates *M. radiata* as the type species is not clear to me. She writes that *M. radiata* is often regarded as belonging to *Trigonella* or *Pocockia*, and that the exclusion of *M. radiata* from *Medicago* would involve a change of the generic name of all species of the genus, which only could be avoided by conservation. Therefore it seems very important to know whether her opinion is right.

It is not surprising that in view of the very intricate nomenclature, particularly as to the infraspecific taxa, some slight errors have crept in, as for instance on page 119, where Miss Heyn gives *M. turbinata* var. *aculeata* as a new combination, which combination we already made in 1958.

We must be grateful to the author for this work, that undoubtedly is of great value for the student of this difficult genus.

TH. J. REICHGELT

F. WHITE, assisted by A. ANGUS, Forest Flora of Northern Rhodesia — Oxford University Press, 1962, 8°, xxiv + 454 pp., 72 figures, 1 plate, 1 geographical map. Clothbound, Sh. 63/- (in U.K.).

A well illustrated concise Flora executed more or less along the lines of Hutchinson and Dalziel's Flora of West Tropical Africa; though the author says "those who use this book should be constantly aware of its imperfections" the impression is that he and his helpers made a great achievement and did all they could to make it as good as circumstances permit. The volume, the first comprehensive account of its kind, is well-printed on excellent paper, and very cheap, with which the author and all concerned should be congratulated. It contains a treatment of 1525 species, including all woody plants over 2 m high (metric system is adopted!), but also suffrutices, and in certain families which are predominantly woody (*Leguminosae*, *Euphorbiaceae*, *Rubiaceae*) a concise account of herbaceous genera. Besides indigenous plants, both established plants and widely grown ornamentals are included. Keys are provided for almost all genera with more than 10 species, but sometimes also for smaller genera. Specific names and synonyms are not included in the general index; one finds them at the head of each genus. Personally I cannot regard this as an advantage, but the author will have had good reasons for this method. No basionyms and literature references are given, but under certain generic names a reference is made to former important revisions on African species; this is certainly done for the sake of brevity. For the same purpose a very large number of abbreviations are used, for example alt. for altitude and alternate, h. and ht. for height, fls. for flowers, frt. for fruit, nr. for near, lfts. for leaflets, lvs. for leaves, v. for very, etc. This makes reading less fluent than desirable. The 'h.' for height is of course superfluous; "small tree up to 15 m" seems sufficient to indicate height. For curiosity's sake I have scanned 10 random pages to see in how far a full writing would have led to extra space, taking into account that in the metric system no dot need to be placed after m, km, mm, etc. (as internationally adopted) and maintaining only fl. for flower(ing, or -s), fr. for fruit(s, or -ing), and sp. for species; furthermore in omitting to say: "infl. a panicle" etc. but instead simply "panicle so and so", "frt. a one-coccous capsule, without wings" transferring into "capsule 1-coccous, wingless". The interesting outcome is that not a single line extra space would have been needed.

C. G. G. J. VAN STEENIS.