

though probably more closely allied to certain of the non-colonial genera than to one another. The addenda include an amended diagnosis of the genus *Roya* and a redistribution of some of the species of *Penium* considered in Vol. 1, necessitated by Lütkenmüller's work on the structure of the Desmid-membrane.

Those interested in the study of Desmids will particularly welcome the excellent index to the five volumes with which the present volume concludes, and which, in view of the involved synonymy, will greatly enhance the usefulness of the whole work.

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Our Bookshelf.

Die natürlichen Pflanzenfamilien: nebst ihren Gattungen und wichtigeren Arten insbesondere den Nutzpflanzen. Begründet von A. Engler und K. Prantl. Zweite stark vermehrte und verbesserte Auflage herausgegeben von A. Engler. Band 10: Musci (Laubmoose). Hälfte 1. Pp. iv+478. (Leipzig: Wilhelm Engelmann, 1924.) 30 gold marks.

ONLY those bryologists who worked in the 'seventies and 'eighties of the last century can realise the great difficulties which then existed in determining mosses which came from outside Europe. Karl Mueller's "Synopsis Muscorum Frondosorum," published in 1849, had become obsolete so far as its classification was concerned, and Jaeger's "Adumbratio," although putting forward a more natural classification, was entirely destitute of descriptions, which the student had to search for in a widely scattered literature. In 1898 this state of affairs was altered when the Musci were reached in Engler and Prantl's "Die natürlichen Pflanzenfamilien," the bulk of which, after special sections by K. Mueller, W. Ruhland, and C. Warnstorff, was from the pen of Dr. V. F. Brotherus, the publication of whose task was completed in 1909. The appearance of this last-named work rendered the task of bryologists easier, and caused such an accession to their ranks as to necessitate the production of a second edition, the first part of which has just been issued. It consists of a compact volume, which, like its predecessor, is copiously illustrated. A general account of the mosses (including Sphagnales and Andreaeales) is given by W. Ruhland, and a special account of the Sphagnales by H. Paul. These occupy 142 pages. The remainder of the groups from Fissidentaceæ to Timmiaceæ has been worked out by the veteran Dr. V. F. Brotherus, who has the opportunity of examining types additional to those used in the preparation of the first edition.

The general plan of the work follows that of the earlier edition, and so renders its use easy to those already accustomed to this plan. Each group contains a key to the genera, and also in very many cases short diagnostic characters of the species, which greatly facilitate the identification of specimens. This is especially noteworthy in the case of the genus *Bryum*, which occupies 38 pages and contains a large proportion of the 800 species which are widely scattered over the earth and the determination of which has hitherto been a matter of great difficulty. References are made to

publications up to 1922 in which new genera have been described. The book should prove a great stimulus to the study of bryology, and we trust that ere long Dr. Brotherus may be able to issue another instalment of this work, which his long experience renders him so competent to perform.

Permeability. By Prof. Walter Stiles. (*New Phytologist* Reprint, No. 13.) Pp. v+296. (London: Wheldon and Wesley, Ltd., 1924.) 12s. 6d. net.

THERE is no doubt that Prof. Stiles has rendered a very considerable service to physiologists by collecting and arranging the large amount of material dealing with the plasma membrane and permeability. As he remarks, "Any one who takes the trouble to read the literature of the subject can scarcely fail to be impressed by the isolation of thought of the majority of workers in this field." A monograph of this nature removes any excuse for such a state of affairs.

The work is of general interest to physiologists, although it naturally refers chiefly to plant tissues. The various chapters deal thoroughly with the experimental evidence on which our knowledge of cell and protoplasmic structure is based. The physical and chemical behaviour of such systems is considered, and finally the movement of water and other substances into living plant cells. The last chapter is devoted to the statement of the various theories of cell permeability. A bald outline of these subjects cannot do justice to the thoroughness with which they are treated. Two main features mark the treatment. The antithesis between Haberlandt's view that "every protoplast is surrounded by a special dermal layer," and Fischer's statement, "There are no membranes about cells," is considered in a critical presentation of the evidence on which these views must be based. The second feature of Prof. Stiles's treatment may be expressed in his own words, "While the propounding of theories will continue to satisfy the minds of some, yet it cannot be too strongly emphasised that what are wanted to lay the foundations of a proper understanding of the phenomena of permeability in plants are facts, and particularly quantitative data." This point of view has been kept in mind throughout. The result is a work of reference of great value, comprehensive, impartial, and, it may be added, non-committal. We may perhaps hope for a further contribution from Prof. Stiles, in which he puts forward, however briefly, his own views on these vital subjects.

The Leucocyte in Health and Disease: Being an Enquiry into certain Phases of Leucocytic Activity. By C. J. Bond. Pp. viii+84+24 plates. (London: H. K. Lewis and Co., Ltd., 1924.) 12s. 6d. net.

THE sub-title of the volume under notice gives the more accurate idea of its contents, for it deals almost entirely with the author's own researches during the last seven or eight years. Since Metchnikoff's views on phagocytosis aroused such wide interest, much study has been devoted to the functions of the white blood corpuscles and the part they play in resisting disease. Most of such experiments are naturally done outside the body, and it is difficult to know how far the observed facts are valid under more natural conditions.

The author is well aware of this difficulty and has