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BOOK REVIEWS

Prof. Dr. WALTER LARCHER: *Ökologie der Pflanzen – Plant ecology.* Verlag Eugen Ulmer Stuttgart, 1973. UNI-Taschenbücher Band 232 D.M. 19.80.

Among the many books and booklets dealing with ecology this paperback on Ecology of plants (Ökologie der Pflanzen) is a really important contribution in the field of experimental ecology. The descriptive parts of the various chapters are rather limited and serve only as introductions to the causal analysis of the phenomena, which, in fact, gives the experimental information on the background of responses of plants to the environment, growing apart or in communities.

The primary objective of the author to present basal mechanisms and functional relationships in the system plant-environment meets the needs that are felt in a broad circle of investigators. The author, an expert in this field, has succeeded very well in presenting the framework of an experimental approach to autecology by presenting a combination of laboratory and field research on carbohydrate balance, mineral balance and water balance. The presentation of these chapters is straightforward, clear, convincing and easily readable. The treatment gives both rather basal physiological information and a synthesis to ecological understanding. The latter ultimately has to result in useful models, of which examples and suggestions can be found in a number of cases.

The chapter dealing with temperature effects is less complete since it rather concentrates on extreme situations, which are intentionally omitted in other chapters and neglects a thorough treatment of the effects on growth, performance and development of plants in the intermediate range.

The balanced presentation of physiological and ecological information together with a convenient list of references make this paperback extremely useful for basic courses in ecophysiology for agronomists as well as for biologists.

R. BROUWER

C. ROUSSEAU: *Géographie floristique du Québec-Labrador. Distribution des principales espèces vasculaires.* Traveaux et Documents du Centre d'Etudes Nordiques 7. Les Presses de l'Université Laval, Québec, 1974. Price U.S. $ 30,– (cloth.) XIV + 799 pages, numerous maps.

Although surveys of the vascular flora of several parts of Canada have been published since 1941, a compilation of the plants of the Québec-Labrador region never appeared, notwithstanding the rather large amount of literature published on this rich flora. Based on a huge number of herbarium specimens and the many papers published before, the author gives a complete floristic and phytogeographical synthesis of this province.

In 4 short introductory chapters the geography, geology, climate and the methods and terminology are clearly explained. The main part of the book consists of an enumeration of the 1016 species of vascular plants with indications on the habitat and the distribution in the area concerned as well as a full account of the floristic literature of each species. Chapter 6 deals with a synthesis of the distribution of the plants and indicates the phytogeographical elements in the Québec-Labrador area, whereas in chapter 7 an extensive discussion of the literature on the origin of the different elements is presented. A full bibliography and 126 pages with distribution maps of all species mentioned, form the final chapters.

Printing is in off-set from type-script. The book is a very impressive and profound contribution to our knowledge of the North American vascular flora, and seems to be indispensable for those working on this flora.

P. A. FLORSCHÜTZ

O. JOHARI and I. CORVIN ed.: *Proceedings of the scanning electron microscopy/ 1974.* Part II: Scanning Electron Microscopy and the Plant Sciences, pag. 335–524. III Research Institute, Chicago Illinois 60626, U.S.A. Price Part I, II, III and IV US $ 26.50.

"Scanning Electron Microscopy (SEM) and Plant Sciences" was subject of a workshop, held as a part of the SEM meetings in april 1974. In Part II of the Proceedings of the SEM/1974, many authors with different topics present a lot of information about SEM as method with many possibilities for research in plant morphology and anatomy. Although the SEM is used for a long time the papers with discussion offer not only a good review about the most useful applications but also describe a lot of critical viewed technics and introduce some new methods. The content of the papers reveals a diversity of subjects: SEM of cultured cells, algal and fungal cells, plant organs, seeds, wood, viral, bacterial and fungal infection and paleobotany. In general a presentation of comparative studies of recent and some fossil plant cell wall surfaces is given, but also changes in these wall structures after viral, bacterial, fungal and pesticide attack of wood and leaves.

The scope of the presented subjects and methods make this part II of the Proceedings a useful informative book. The addition of the extensive bibliography of SEM and X-ray analysis in plant sciences with more than 1100 titles, completes the idea to give a complete scope of possibilities and information in the SEM in plants. An attractive work for botanists interested in SEM.

Part I, III and IV of the Proceedings present more the physical technics, biomedical applications and failure analysis in SEM. The whole Proceedings compile a lot of good information in the SEM today.

M. T. M. WILLEMSE

G. FELLENBERG: *Chromosomale Proteine.* 1974, Verslag E. Ulmer, Stuttgart. 160 p., 24 fig., 15 tab.

In this book the author has attempted to review all the literature available on the subjects chromosomal proteins, protamines, histones and acidic chromosomal proteins, present in the nuclei of eukaryotic tissues. From these three classes of proteins most attention is paid to the histones, and secondly to the group of acidic chromosomal proteins.

The name nonhistone instead of acidic proteins is in general more accepted today. The nonhistone proteins contain some neutral and even slightly basic proteins. Unfortunately, the author did not pay any attention to this fact.

The chapters dealing with isolation, separation and characterization of chromosomal proteins are incomplete with regard to isolation techniques. Phenol and QAE-Sephadex procedures are lacking, whereas the isoelectric focussing techniques whether or not in combination with SDS-urea electrophoretic systems, is hardly mentioned. The electrophoretic separation of histones according to the method of Panyim and Chalkley has also been omitted.

The rapid development in especially the nonhistone protein field, makes the chromosome models presented by the author already obsolete and have surpassed by different newer models.

The description of the functional aspects of the chromosomal proteins is rather concise. A more extensive view with regard to these aspects by including the results of the reconstitution experiments with different chromosomal compounds followed by hybridization experiments with RNA species transcribed from native and reconstituted chromatin should have been considered by the author.

On the other hand the author has collected and described a lot of elementary data, including a number of hints, which provides for the essential background knowledge for students and for people not yet working in this field, to familiarize themselves in a relatively easy way with the many interesting things concerning the chromosomal proteins.

P. J. HELMSING

WILSON POPENOE: *Manual of tropical and subtropical fruits (excluding the banana coconut, pineapple, citrus fruits, olive and fig).* A facsimile of the 1920 edition. 474 + xix pages, 62 fig and XXIV plates, Hafner press, a division of Macmillan Publ. Co. New York, London, 1974. Price £ 7.50.

A short search in literature shows that Wilson Popenoe's first publication may have been from 1917 (The pollination of the mango) and his last from 1968 (Deciduous fruit varieties for tropical America). In between there have been very many and one of the early ones became such a classic that a reprint was deemed necessary in 1974. In 1920, when the book was written, Popenoe already "drew upon ten years' experience in various parts of the world".

Of course there have been other, more modern works; the most notable probably being W. H. CHANDLER's Evergreen Orchards (1950 and 1964). But they do not make Popenoe's book obsolete. It still is a pleasure to read about "the snowy segments of the mangosteen, lifted from their cup of royal purple", or that the Indians of Guatemala say: "four or five tortillas, an avocado, and a cup of coffee, –this is a good meal".

The facsimile edition has more than just historical significance. Tropical pomology has made great advances in the last half century, but these were mostly related to the "big" crops: citrus, banana and pineapple. Who desires to know how to cultivate or propagate say the pitanga, litchi or sapodilla will still find much to his taste in this book. The price, considering the circumstances, is moderate.

J. A. SAMSON

R. A. MAAS GEESTERANUS *Die terrestrischen Stachelpilze Europas. (The terrestrial hydnums of Europe):* Verhandelingen der Koninklijke Nederlandse Akademie van Wetenschappen, afd. Natuurkunde, 2e reeks, deel 65, 1975, 127 pp., 40 coloured plates, 58 figures, Hfl. 85,—. (available at North-Holland Publishing Company, P.O. Box 211, Amsterdam, The Netherlands).

This book comprises a floristic study of a relatively small group of Basidiomycetes, the terrestrial hydnums of Europe, characterized by a toothed hymenophore. The accepted genera are classified in 5 families; in the Hydnaceae s.str. only the genus *Hydnum* being retained with 2 species. All together 42 species are characterized and discussed, 5 being new to science. Most of the species are classified in the family Thelephoraceae, of which the terrestrial species with a toothed hymenophore are distribited in the genera *Hydnellum* and *Sarcodon.* The largest part of the publication is written in German (p. 1–80) with keys, lists of synonymy, detailed descriptions and discussions. The keys and diagnoses are repeated in English (p. 81–114). On 40 coloured plates nearly all species are pictured in aquarelles partly by the author himself, partly by Mr. J. H. van Os. These aquarelles are of fine, good colour and are not only instructive, but also have artistic value.

Maas Geesteranus's newest work is a welcome publication for professional as well as amateur mycologists. It is a pity that this fine study comprises only the terrestrial hydnums and that wood inhabiting genera such as *Hericium* and *Dryodon* are omitted.

J. A. VON ARX