

BOOK REVIEWS

Graeme P. BERLYN and Jerome P. MIKSCH: *Botanical Microtechnique and Cytochemistry*. New Edition, 1976. 326 pp. ill., cloth. ISBN 0-8138-0220-2 \$13.50. Iowa State University Press.

"Botanical Microtechnique and Cytochemistry" is a revision of the book of John Sass, entitled: "Botanical Microtechnique" and therefore based on a good foundation. It has been totally renewed and well adapted to modern methods on microtechnics and cytochemistry.

The contents present the basic aspect and principles of the different types of microscopy, collecting, fixation, storage, embedding, sectioning, staining, photomicrography and cytochemistry.

The authors set out to give a theoretical background to the preparation of plant material, the correct use of the microscope and methods for recording the results. On these subjects the authors present a good introduction for critical elaboration of results and for the use of a good combination of different methods.

The aim of the book is to serve as a training manual and in this it is successful. However, hardly enough attention is given to the chemical basis of the cytochemical methods mentioned.

The layout and the content of the book offer a good and up to date training manual for botanists and it is perhaps suitable as a laboratory manual as well.

M. T. M. WILLEMSE

Strasburger's Textbook of Botany.

Rewritten by D. VON DENFFER, W. SCHUMACHER, K. MÄGDEFRAU, F. EHRENDORFER. New English Edition, translated by P. R. BELL and D. E. COOMBE. XVIII/877 p., 759 figs. Fischer, Stuttgart 1976. Price DM 64,-.

The book I am looking at is an excellent translation of the thirtieth German edition of the famous botany textbook, named for one of the first authors, who contributed the general concept and the morphology chapter between 1894 and 1911. Since that time the "Strasburger" remained without doubt the most balanced textbook of plant science, which was brought up-to-date by many generations of skillful authors. This last edition of 1971 is now accessible also for the English market. The translated version is unfortunately only slightly revised to the present stage. But the general policy of the authors, i.e. they include in the text only hard facts and not hypotheses and theories, makes this edition still a modern textbook. The translators did in my eyes an excellent job. Furthermore they eliminated some minor errors and updated the references, with recent works in English.

The successful synoptic view on plant science for a "four man book" in a single volume makes this new Strasburger edition a real performance!

Although two new authors have joined the team, the comprehensive, integrated character was maintained. An entirely new section on the general principles of systematics and evolution was added. Only some critical remarks could be made about the quality of the illustrations: some drawings (e.g. 59 A, 125 A B, 136, 363, 401, 504, 505, 600, 660 A, 665 A, 671 F) have lost their brilliance and information value by switching to the offset procedure. The English edition does not differentiate by letter size between essential and additional readings but it has a broad margin for making notes during lectures. Strasburger's textbook has been successfully used for many years for the candidate curriculum. As long as botany forms (like zoology) a genuine integrated part of the science of life, this textbook will be one of the best introductions to plant science, bringing all aspects in a clear and didactically distinguished way to the reader. The book is therefore not only recommended as a basic text for the pre-candidate program, but also as a reference book for research workers, who want to remain in touch with general aspects of botany, as well as for checking definitions of fundamental terms by using the subject index.

H. F. LINSKENS

H. WALTER, E. HARNICKELL & D. MUELLER-DOMBOIS. *Climate-diagram maps of the individual continents and the ecological climatic regions of the earth*; Supplement to the vegetation monographs. 9 maps and text with 14 figures. VI + 36 p., in case. Springer-Verlag, Berlin-Heidelberg-New York. 1975. US \$ 29.60.

This is an important supplementary publication to the 'Klimadiagramm-Weltatlas' by H. Walter & H. Lieth (Jena 1960–1967), the maps being based mainly on the c. 8000 climate diagrams from the latter. Included are 9 maps of North-America, South-America, Africa, Australia and New Guinea, South-Asia, North-, Central- and East-Asia, Europe, Oceania, respectively, and of the ecological climate areas of the Earth. Contrary to the usual climate maps the climate areas are not indicated and limited by sharp boundaries, but a graphical presentation of many localities, a 'climate diagram', is pictured. The authors realized that sharp boundaries often show a misleading abstraction, while the diagrams show climate figures which are essential for vegetation.

In an accompanying text the construction of the diagrams is explained, the possibilities of interpolation and interpretation are indicated, and the maps are reviewed subsequently, with more details on soil factors. In the diagrams are set up the mean yearly and mean monthly temperature and precipitation, the mean daily minimum temperature of every month and the absolute monthly minima, and, in addition, for many of the tropical observation stations the daily maxima of the warmest month, the absolute maxima and the mean daily temperature fluctuation.

The map scale is 1:7–8 million, with details on a larger scale, the scale of the world map is 1:30 million. On this map 9 world climatic areas are distinguished, slightly different from the vegetation zones generally used in plant geography (e.g. by Brockmann-Jerosch). There is an equatorial zone, a zone of tropical summer rains, a subtropical zone, a transitional zone of winter rains, a warm temperated zone, a typical temperated zone, a dry zone, a boreal zone, and an arctic zone. These zones have been subdivided in subzones. Mountainous areas are not classified while the map scale is not appropriate for the differences in altitude.

S. SEGAL

D. HESS: *Pflanzenphysiologie: molekulare und biochemisch-physiologische Grundlagen von Stoffwechsel und Entwicklung*. Vierte, neu bearbeitete Auflage, 1976 (Uni-Taschenbücher 15: Biologie). 379 p., 270 Figs. DM 19.80. Ulmer, Stuttgart.

Reference to my review in Acta Bot. Neerl. 20(3) June 1971 of the first edition of this book (1970) permits me to limit the comment upon the 4th edition to the changes that have been introduced. The growth of the book is only 6 pages but its development has been considerable since the number of figures increased from 248 to 270 with concomitant adaptations in the text. The Chapters dealing with the molecular aspects of plant processes have kept up with the rapid advances in this domain. The C-dicarboxylic acid cycle and the diurnal acid cycle of the succulent plants have been treated in combination with each other, with special attention to the compartmentation in each of these processes. A section on photo-respiration has been added. Without any doubt, the favourable reception of this book is in part ascribable to the adequate treatment of the secondary plant compounds, since many biologists as well as all pharmacologists (by virtue of their profession) are interested in the biogenesis of these substances and in their significance.

L. Anker