

Book Reviews

• Readers' comments on reviews should be addressed to the Editor.

Botany

WORLD VEGETATION TYPES, ed. by S. R. Eyre. 1971. Columbia University Press, New York. 264 p. \$12.50.

At best, most biologists become familiar with only a few of the major vegetational types of the world; yet we are often required to teach about places of which we have had no first-hand experience. On such occasions we must turn to descriptions published by other workers. Herein lies the value of this collection of essays. It presents a selection of critical papers on the structure of the major vegetational types of the world, and it includes papers that discuss the dynamics of vegetational development. Of special value is the selection of a number of papers dealing with the effects of human activities on wild vegetation.

North American biologists will find this book particularly interesting in that many of the papers deal with the natural and disturbed vegetation of other parts of the world. One cannot help but be impressed with the physiognomic similarity of the chaparral of California, the Cape sclerophyll of South Africa, the mallee of Australia, and the sclerophyllous trees and shrubs of Mediterranean Europe—all, according to the editor, "illustrating a major instance of *convergent evolution*." The papers selected on the grassland-forest ecotone are also most appropriate for gaining a broad understanding of a perplexing phenomenon.

I must admit that my first impression of this book was: oh no, not another anthology! However, after reading it and reflecting upon its contents, I recognize that this book is more than just another selection of papers. It is a compilation of some of the finer papers dealing with the development of vegetation types. This book will make a fine addition to one's personal library, even though the cost is a little steep.

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PLANT GROWTH, by Michael Black and Jack Edelman. 1970. Harvard University Press, Cambridge, Mass. 183 p. \$4.25.

As a botanist I was immediately won over by the authors' statement, in the preface, that plant growth is a subject that usually receives only cursory

treatment in the teaching of biology. But although I am in agreement with this premise, I fear that this is not the book that will bring about a change in the situation.

Plant Growth is intended to be used by advanced high school students in Britain and by students at technical and teachers' training colleges there. It concludes by claiming to have introduced the reader to "the various quantitative and qualitative changes that occur in the life of the plant, i.e., its growth and development." The expressed purposes are not, in fact, accomplished. The book is dull, repetitive, and necessarily too superficial to be of much use at all.

Documentation is a particular problem. Although a book dealing with general principles can be expected to lack great detail, one that attempts to reach the audience this claims to be interested in should make ample reference to the works that are the basis for the text. Figures are frequently labeled as being "after" the authors of standard introductory-botany textbooks. Only those familiar with these books would know where to go for more information.

Cross-referencing can be helpful, but if it is carried to the extreme, as it is in this book, it is annoying. In just two pages (85, 86) there are six references to material that was covered elsewhere in the book.

The book has more than the average number of errors that might be expected in a first edition. One of the plates (7) is supposed to show the effect of a retardant on plant growth, according to the text; instead, it shows the effect of gibberellic acid on the growth of lettuce and dwarf peas. The authors claim that "auxin does not appear to have any major effect on the permeability of the cell to water," but 31 lines later they claim that "auxin induces wall loosening which leads to a lowering of the turgor pressure, hence more water enters the cell."

The book is strongest in its coverage of the external control of plant growth and the control of plant development. The plates are beautiful. Reading these sections, I kept thinking how nice it would have been if the authors had written a little book dealing with these topics alone and had documented each a little more carefully. These little books then would be comparable to the "Biology Studies" series produced by Holt, Rinehart, & Winston, Inc., and might be worth buying.

Given the current cost of books, I

suppose that the price of this one would represent no great loss to the reader. By the same token, it would represent no great gain. The same material is covered more comprehensively and completely as a section in *Plant Physiology*, by F. Salisbury and C. Ross (1969: Wadsworth Publishing Co., Belmont, Calif.).

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Cell Biology

ACETABULARIA AND CELL BIOLOGY, by S. Puiseux-Dao. 1971. Springer-Verlag, New York. 162 p. \$9.80.

At first glance the cost of this small volume might seem excessive, but close examination will show its value to the advanced undergraduate and the professional biologist. The French original has been translated into smooth English, for the most part. There are 44 drawings, and the 13 halftone plates include a number of previously unpublished and particularly good electromicrographs from Puiseux-Dao's laboratory. An annoying feature is the index; for example, there are 75 unspecified page-references under "nucleus." The bibliography contains more than 275 titles, up to the year 1970.

In the preface, Jean Brachet delightfully describes some of his early experiences with the peculiar alga *Acetabularia*. He also raises some very interesting questions; one of them—is *Acetabularia* a cell or an organism?—is not answered by Puiseux-Dao. The text considers such matters as the ultrastructure and biochemistry of *Acetabularia*; merotomy; and grafting experiments. Although the culturing conditions are examined in some detail, no mention is made of the ecology and natural environment of *Acetabularia*; this is unfortunate. Physiology dominates the book.

Anyone interested in cells and cell-differentiation will find something of interest here. Puiseux-Dao has succeeded in producing a small volume loaded with current data about a most intriguing research subject.

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AN EXPERIENCE WITH CELLS, by Darrel L. Murray and H. W. Buhse. 1971. Addison-Wesley Publishing Co., Reading, Mass. 201 p. \$3.25 (softback).

This introductory laboratory manual for college use gives attention in depth to cell function and cell structure. The result is a manual having some flexibility and sufficient material for a one-quarter or even a one-semester course. The authors want students to have a thoughtful, "hands on" experience. In