

It is chapter 17 on energy flow and nutrient cycling that really fulfills the primary purpose of this textbook and sets it apart from and above most others in the field.

The expanded table of contents is good for rapid reference, as is the index. The graphic aids are revealing and well placed in the text, but chapter summaries are missing and needed. The literature cited section is current and extensive.

This thought-provoking informative textbook is a fairly ambitious presentation of present-day ecology. The author has successfully met his goal of presenting quantitative ecology to the non-math student.

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MAN, NATURE AND ECOLOGY, by Keith Reid, J. A. Lauwerys, Joyce Joffe, and Anthony Tucker. 1974. Doubleday and Co., Inc., Garden City, N.Y. 426 p. \$14.95 (hardback).

It is refreshing to find a book about man and his environment that is different. The subject is introduced with striking pictorial essays of the most pressing environmental problems: population, food supplies, resources, pollution, endangered species, and urban failure. The text begins by describing natural ecosystems and how they function, presenting basic ecological principles in very understandable terms. The emphasis is on energy relationships and efficiencies, biogeochemical cycles, and adaptations of organisms to the varieties of geographical and climatic conditions which they encounter.

Man's impact on his world ecosystem is discussed in relation to the stages of his civilization, from hunter-gatherer to herdsman, agriculturalist, and machine-age manipulator. Each of the stages is described in ecological terms, with its accompanying use and misuse of resources at hand. Thus these chapters point out how man's manipulation of his environment has gradually produced the problems we encounter today. The impact of man's interference with his environment has increased in direct proportion to man's population size, so that it is the present scale of his manipulations that is so truly frightening.

The book concludes with examination of possible patterns of action and reaction that can take place in the future, concentrating on the areas of population, natural resources, capital investment in industry and agriculture, and pollution. A summary of these actions is presented in a blueprint for a new kind of civilization by 2075, which proposes necessary steps toward self-sufficiency and self-regulation. Another

blueprint provides specific actions that each individual can take toward achieving these goals.

This volume would be valuable to any library, be it school, classroom, or home. It is a thoughtful and constructive examination of the why and wherefore of today's massive environmental problems, and as such would also be a stimulating ecology textbook.

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COMMON MARSH, UNDERWATER AND FLOATING-LEAVED PLANTS OF THE UNITED STATES AND CANADA, by Neil Hotchkiss. 1972. Dover Publications, Inc., New York. 228 p. \$3.00 softback.

This book is a combination of two previous publications of the Bureau of Sport Fisheries and Wildlife, U.S. Department of the Interior, authored by Neil Hotchkiss: *Common Marsh Plants of the United States and Canada*, 1970, and *Underwater and Floating-Leaved Plants of the United States and Canada*, 1967. Its organization is based on the two prior publications, comprising two separate sections, each with its own title, contents, introduction, page numbering, and index. This procedure has its slight disadvantage to the user by the necessity of locating the separate subsections for the contents of the book and page references of included species. A convenience of the subsection organization for reference purposes, however, is that each species is associated with others of similar appearance into subgroups within the titled subsection, thereby reducing the number of subgroups the user must survey. The subsection organization is also advantageous in limiting the introductory content to specifics about each major group of plants, reducing the total volume the reader must peruse to familiarize himself with each particular reference group. All the plant species included in this book are indexed according to both their scientific and common names. The author cites three taxonomic references within the introduction of both subsections. These references are more technical and each encompasses a specific region of the geographic area incorporated within this book and, thus, may supplement its use.

The validity of this book is questionable only if the user is a dedicated taxonomic "lumper" or "splitter" because Hotchkiss may be classified as both, depending upon the cross-reference source. However, the author notes discrepant species names by the cited authorities for those used in this book, both in the introductions and the main text but his practice is not consistent with any one reference. This book is most useable to the beginning taxonomist because its content of specific characters is inadequate for definitive

classification of most of its inclusive species. Although the book includes a few pteridophytes, bryophytes, and algae, it is predominantly a taxonomic reference of flowering plants. There are over 750 illustrations but all are drawings, some rather crude and somewhat deviant from similar illustrations in more technical references. For general use, however, the deviations may not be severely limiting and may primarily be variations in visual interpretation of the particular characters. To further illustrate the general nature of this book, the author repeatedly uses the term "seed" for fruit and "pod" for a variety of fruit forms. Since there is no definition of terms, one can only assume the reference is written in general terminology for the novice. The author also departs from standard taxonomic procedure by failing to capitalize species names taken from proper nouns.

This book is an adequate reference for use by students at the beginning taxonomic level, either high school or college, and for general ecological use within the specified habitats. It is relatively inexpensively priced and, although softback, is very durably constructed, adequate for field or classroom use. The paper quality is good, the print and illustrations are outstandingly clear and legible, the pages fold flat, and there is adequate space for field notes on each page.

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THE BIOLOGY OF THE OCEANIC PACIFIC, ed. by Charles Miller. 1974. Oregon State University Press, Corvallis. 157 p. \$6.00 (hardback).

This small book is a collection of seven papers presented at the thirty-third annual biology colloquium held at Oregon State University. The papers were designed to survey advances in knowledge of the oceanic Pacific since the *Challenger* expedition.

The lead paper by McGowan on oceanic ecosystems provides an update on plankton distribution and ecosystem characteristics. It is informative and will be of interest to advanced high school and college level ecology students. McGowan acknowledges areas of inadequate information and problems of collecting and interpreting data.

Papers by Parsons and de Lange Boom dealing with physical, chemical, and biological factors controlling ecosystem processes in the sea; Frost writing on "Feeding Processes at Lower Trophic Levels in Pelagic Communities"; Rothschild concentrating on fishery production from catches and food chain dynamics; and Hochachka on enzymatic adaptations by marine organisms to oxygen, temperature, and pressure are more specific, somewhat mathematical, and directed at the specialist in the field. An excellent paper