

rules as completely as the author does on page 44. Nor does everyone agree that creosote bushes produce a harmful chemical (p. 59-61). Finally, I believe the following sentence (p. 52) is an oversimplification: "To fight the natural influx of such pests, the farmer must arm himself with pesticides, constantly fertilize the depleted ground, and be on the lookout for new crop varieties that possess special resistances to the invading armies of diseases and pests." At this point I believe students should be encouraged to see if there are other alternatives, to both monocultures and the avoidance of pest problems.

But these are minor reservations. I highly recommend the book.

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POLLUTION ECOLOGY OF FRESHWATER INVERTEBRATES, ed. by C. W. Hart, Jr. and Samuel L. H. Fuller. Academic Press (111 Fifth Ave., New York 10003). 389 p. \$24.50 hardback.

This treatment of freshwater pollution ecology approaches man's concern about his environment by way of selected invertebrate animal groups. The original goal was to condense and correlate ecological knowledge so that one or more "indicator species" from each group would serve as guides to quick and easy pollution detection and analysis in lakes and streams. Such conveniently cooperative species being thus far nonexistent (or at least undiscovered), the book does the next best thing: it provides a useful base from which future searches for that elusive goal may be launched.

The contents of this volume make it a valuable reference for beginning students of freshwater ecology, invertebrate zoology, and pollution biology. It is an excellent starting point for the "review of literature" preliminary to new ecological impact studies at various graduate and professional levels. Extensive bibliographies, recent systematics, and concise coverage of what has and *has not* been learned about the ecology of each group will prove most valuable. This volume presents in condensed form a vast amount of information; it is thus rather slow reading for the beginning or casual biologist but is made to order for investigators with directed interests.

Insufficient knowledge of systematics is stressed throughout this book. It thus provides taxonomists with timely ammunition for the ceaseless and all too often losing battle for adequate support of classification studies *per se*. The lack of precise invertebrate identification is a limiting factor in most environmental impact studies at present; the short-sighted negative view of past (and many present) administrators is largely responsible.

A possible shortcoming of the information presented in this volume lies in the tables of water characteristics, as related to various animal species. If these are taken literally, future problems may arise because of differences in techniques, equipment, and personnel. Reference to these tables should send the serious reader to the literature for a look at the original materials and methods.

This book compares most favorably with others of its nature.

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COMMUNITIES AND ECOSYSTEMS, by Robert H. Whittaker. 2nd ed., 1975. Macmillan Publishing Co. (866 Third Ave., New York 10022). 385 p. \$6.95 softback.

Originally written for an introductory one-quarter college course in ecology, this second edition has been expanded for use as a working textbook for a one-semester course. The first edition was intended to be a companion volume to *The Ecology of Populations*, by Arthur S. Boughay, in the Macmillan series "Current Concepts in Biology." A complete chapter on population has been added to this edition so that the book now can be used with or without a companion text in population ecology. New sections on community classification and soils have been added. Reference lists have been expanded and placed appropriately at the end of major divisions rather than in one large grouping at the end of the book. Asterisks are used to indicate references thought to be most significant for class use. Mathematics is still an integral part of the new edition but has been segregated into tables that can be used as supporting material for the reader to whom it is of most interest.

The text is well written, clear, and concise. There is a particularly succinct discussion of the principles of ecological succession. Thirty-two distinct land and water biome types are defined and discussed. Other topics given good coverage include community structure and composition, community production, and nutrient circulation and pollution.

The use of color for plates and in the tables and line drawings would enhance this work which presently contains 27 black-and-white photographs, 87 helpful figures, and 26 tables.

In addition to its use as an introductory college textbook, this book should be useful to the advanced secondary student. Teachers of BSCS "Green Version" high school biology particularly should find this book a valuable resource.

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NATURAL RESOURCE CONSERVATION, by Oliver Owen. 2nd ed., 1975. Macmillan Publishing Co. (866 Third Ave., New York 10022). 700 p. \$13.95, hardback.

There are two common approaches to the study of conservation in the United States: an ecological approach which is the thrust of this work, and the crisis approach of many other textbooks dealing with conservation. The book is written as a "cultural enrichment course for students of other disciplines," that is, disciplines other than biology. It "approaches the subject from the historical growth of the conservation movement and proposes ways to manage and control our resources in such a way as to halt abuse and deterioration of the environment." Eight new chapters have been added, including those on water, noise, solid waste, poisonous substances, the energy crisis, and the future of planet Earth.

The author has evidently covered every item in depth that he and the critics of the first edition could envision. In fact, this is my main objection to the second edition—an increase of approximately 200 pages. The coverage of freshwater fisheries and the marine ecosystem could be reduced considerably as could certain other areas—particularly the chapters on the separate types of pollution. Not that these should be neglected but there is too much detail and even extraneous material. At times, repetition of facts occurs. Readers who are well acquainted with specific biomes may identify occasional factual errors, for example, considering creosote bush as an indicator of overgrazing (p. 196) or typographical mistakes such as the misspellings under figure 7-4. Errors, however, are not abundant and comparatively speaking, the book is remarkably free from mistakes.

Despite these shortcomings, this is a good textbook. It is well written, the illustrations are consistently good, and the text is easy to read. If the student does not get bogged down in the maze of facts, he will have the necessary background to make judgements concerning many of the environmental problems facing mankind.

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Education and Professional Concerns

SCHOOL/TEACHER: A SOCIOLOGICAL STUDY, by Dan C. Lortie. 1975. University of Chicago Press (5801 Ellis Ave., Chicago 60637). 284 p. \$9.95 hardback.

Through this work Lortie attempts to shed more light on the role the teacher