

understand our relatedness to the natural world. He says, "What problems and characteristics are in fact uniquely human cannot be clear until we know more about what is not human..."

In the next two chapters Shepard builds understanding of the hunter-gatherer's complex philosophy of life. Chapter 5, "The Karma of Adolescence," argues that aspects of man's life cycle "are biological adaptations to conditions of life in the past and make sense only in the perspective of man's niche as hunter-gatherer."

Shepard's final chapter, "The Choice: Industrial Agriculture or Techno-Cynegetics," provides a blueprint for saving our ecosystems from the agricultural revolution. "Reordering our view of time, welcoming the dead as part of us, affirming a planetary ecology centered on food chains, extending the scope of history to the personal and to the cosmic—these are the essentials of the transformation."

This book is well worth the time spent in reading Shepard's castigation of agriculture, animal husbandry, pet-ownership, and other cherished human pursuits, in his development of the above transformations. An additional bonus is the wonderful pen-and-ink illustrations, by Fons van Woerkam.

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UNDER SIEGE: MAN, MEN, AND EARTH, by Kenneth A. Wagner, Paul C. Bailey, and Glenn H. Campbell. 1973. Intext Educational Publishers, New York. 386 p. \$10.00.

Now that environmental courses for the general student have come to be taught in one form or another in almost every college or university, it follows that there would also be many new texts written to support these courses. Although many texts in this area are written with a definite emotional bias in favor of cleaning up our environment and damning the polluters, this cannot be said of *Under Siege*. In fact, although the writing is of good quality, it risks boring the reader at times by its rather straightforward cataloging of environmental problems. In part this is due to the insertion of discussions of the physical and biologic backgrounds underlying, and necessary to, the student's understanding of environmental problems.

This text is divided into five parts. Part 1 deals with an overview of the ecologic-environmental crisis. Part 2 is a rather pedantic review of the biologic and physical knowledge necessary to understand the nature of air, water, soil, and radiation pollution. Part 3 discusses the ecologic and personal stresses now threatening the sanity and safety of our environment. Part 4 assesses the population problem. Part 5 briefly dis-

cusses the progress made towards cleaning up our environment and our emerging awareness of an environmental ethic.

Under Siege is different from many texts in the environmental field in that it discusses at length the role of diseases and drug abuse in creating personal environmental stresses. Although some may feel that such discussions have no place in the ecologic-environmental area, my own experience with college students is that they desperately need such information and understanding. This book also has one of the best up-to-date and extensive discussions of contraceptive technology this reviewer has encountered in a general text. I am only sorry that such knowledge comes too late. It should be old hat to a college student, but, alas, it is not.

If this book has any obvious weakness, it is that it fails to discuss adequately how political and economic forces constrain us from making rapid changes in our pollution- and population-control technology.

Under Siege is profusely, perhaps unnecessarily, illustrated. Many of the photographs supplement the text; but others, like a photograph of crates of sterilized screw worm flies being loaded on a small plane or a picture of *Psilotum*, could have been omitted. Graphs and tables are timely, well prepared, and easy to understand. This text should find wide acceptance in one-semester courses for the nonscience- and even science-oriented student.

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FOCUS ON ENVIRONMENTAL GEOLOGY, ed. by Ronald W. Tank. 1973. Oxford University Press, New York. 424 p. \$8.95 hardback, \$4.95 softback.

I am disturbed to see how often geology is excluded from serious consideration in books on environmental studies. For this reason I am especially pleased to review *Focus on Environmental Geology*.

W. D. Keller, in a recent issue of *Journal of Geological Education*, attributes to Will Durant the assertion that "Civilization exists by consent of geology." Part 1 of the present book emphasizes this in 21 readings on geologic hazards and hostile environments. Primary topics include vulcanism; earthquake activity; tectonic movements and sea-level changes; mass movement; and erosion, sedimentation, and floods. Part 2 contains 11 readings on mineral resources and the impact of their exploitation. Part 3, with 10 readings devoted to urban geology, focuses on city planning, water supplies, and waste disposal.

Ronald Tank has done an excellent job of selecting pertinent and (mainly) up-to-date articles from a variety of geology, engineering, and water-re-

source journals, government reports, and general-science magazines. In general, the quality of the papers is high, and the vocabulary used by their authors is not too technical (perhaps owing in part to Tank's editing). In addition, Tank has grouped the papers into units that sustain a reasonable continuity. Many of the articles make compelling reading, with their eye-witness accounts of natural catastrophes and their elucidation of causes and future risks. Readings on the geologic bases of many urban problems provide useful and fascinating perspectives. We see clearly that the earth is really in control in the long run and that man had better recognize this and learn to take natural geologic factors into account in his planning.

Tank introduces each of his major groups of readings with a useful summary to whet the reader's appetite. He also has selected appropriate short quotations and photographs to make attractive section-dividers.

References originally cited in each article have been retained. These lists, supplemented by longer lists of more general readings at the end of each of the three parts, provide the reader with routes to follow-up studies. There is a glossary of some of the more technical geologic terms that crop up in the readings.

Focus on Environmental Geology could be used as the basis for a highly contemporary beginning-geology course. It is an obvious "must" for any serious environmental-studies program, and it can be read with pleasure and profit by biologists as well as by other scientists. It is even a good bedside book.

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THE CHALLENGE OF ECOLOGY, by Clair L. Kucera. 1973. C. V. Mosby Co., Saint Louis. 240 p. \$5.95 (softback).

For those that get bogged down in histories and introductions, perhaps they will appreciate the author's moving man the gatherer, through the agricultural revolution, urbanization, industrialization, pollution of his environment and attrition of his natural resources in the course of a paragraph. At this point the author lays a strong foundation and develops an understanding of relationships between organisms and their environment.

Chapter 2 offers a refreshing and new look at biologic diversity. Chapters 3, 4, and 5 deal with energy relationships, turnover, cycling processes, and succession in a rather routine manner. Chapter 6 presents a thorough look at soil, its composition, structure, and ecologic relationships to organisms. Chapter 7 was written by John J. Rochow. This chapter is presented in a most scholarly manner and deals with