

AND THEN THERE WERE NONE: AMERICA'S VANISHING WILDLIFE, by Nina Leen with commentary by Joseph A. Davis. 1973. Holt, Rinehart & Winston, New York. 128 p. \$8.95 (hardback).

This is a picture essay with a difference: no coffee-table, four-color, "gee whiz" volume; rather, a reasoned, compassionate look at endangered and extinct species in surprising black-and-white—a medium that calls for participation instead of mere spectatorship. Each picture is a study in understatement; each combines reality with subtlety, allowing the reader to understand and appreciate what the loss of a species can mean. The photographs of the horned owl, desert bighorn, spotted bat, kit fox, and Kodiak bear are brilliant; each links action with intrinsic beauty.

The text, too, is a study in understatement. Facts are concisely stated. Reasons for extinction are clearly defined from what seems an accurate base in biologic research and historical evidence. Emotionalism has been avoided in favor of simple but powerful information. The reader's conclusions—and feelings—can then be his own. My own conclusion is that the book can be highly recommended for all ages.

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CHEMICAL VILLAINS: A BIOLOGY OF POLLUTION, by James W. Berry, David W. Osgood, and Philip A. St. John. 1974. C. V. Mosby Co., St. Louis. 196 p. \$5.75 (softback).

This book is intended to be a source book. With some limitations it should serve its purpose well. The authors state that the book is intended as a supplement to introductory courses in biology and ecology, as well as a source of information for presentations to general audiences outside the classroom. Although they state that it is about environmental contaminants and how they act in plants and animals, the book has a definite human emphasis.

The book has two sections: an introduction, designed to serve as a background, and a section discussing specific classes of environmental pollutants. The introductory section provides an overview of ecosystems and biogeochemical cycles, cell physiology, and functions of tissues and organs in animals. That formidable task is completed in 65 pages.

Chapters in the second section deal with metals, inorganic and simple organic compounds, industrial and municipal organics, pesticides, and miscellaneous pollutants. The last chapter includes a section on radioactivity. For most of the specific pollutants discussed, a topical outline is followed. The topics are as follows: description, natural oc-

currence, and uses; occurrence in the environment; mode of entry and accumulation in the body; symptoms of poisoning; mode of action; and perspective. The book also has a short appendix of units of measurement and a glossary of radiation, which defines only five terms.

The sections on energy reactions in the cell, the electron transport system, and protein synthesis are notably weak. The potential user should have at least a minimal background in cell physiology to compensate for the book's weaknesses. The chapter on metal pollutants is especially complete. Several references are listed at the end of each chapter, directing the user to further information. The book is well indexed, is attractively printed, and has excellent illustrations.

It should prove to be of wide use to teachers of high-school and undergraduate biology and ecology classes. Its primary usefulness is information for lectures, talks, and discussions.

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## Education

STUDENTS! DO NOT PUSH YOUR TEACHER DOWN THE STAIRS ON FRIDAY, by Alan Jones. 1973. Penguin Books Inc., Baltimore. 182 p. \$1.25 (softback).

This book is a chronicle of the author's experiences teaching black students in the Du Sable Upper Grade Center, in a ghetto section of Chicago.

The purpose of the book is not clearly discernible. Humor may be an objective. However, to classify it as humorous one would have to appreciate statements such as "kicking black asses," descriptions of a black coach keeping order with a baseball bat, and students and teachers developing emphasis by reference to sexual intercourse.

If the purpose of the book is to provide enlightenment about the educational process in a ghetto school, one is left somewhat confused. Most of the book is devoted to describing a chaotic educational situation due to inadequate administrative procedures, lack of student preparation, a fear-laden environment, and lack of teaching equipment. However, the author, in sketchy references to his own teaching, indicates that by planning and structuring class work he was able to generate interest in learning and achievement among the black students in his room. The author might well have given more attention to expanding descriptions of his teaching and less consideration to the exploits of the black coach with the baseball bat.

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## Evolution

THE ORIGINS OF LIFE ON THE EARTH, by Stanley L. Miller and Leslie E. Orgel. 1974. Prentice-Hall, Inc., Englewood Cliffs, N.J. 239 p. \$5.95 softback, \$10.95 hardback.

The vast majority of modern biologists feel satisfied that the diversity of living organisms on earth has resulted from processes of evolution. Far less consensus exists concerning the question of how life came to be on the earth in the first place. An upsurge of scientific inquiry into this problem followed publication of the pioneering writings of Oparin, Haldane, Urey, and others two to four decades ago. Among the most active experimentalists in this fascinating area are the authors of *The Origins of Life on the Earth*. Thus, it is not surprising to find here an impressive assembly of data and hypotheses, including ideas about the formation of the solar system; the composition of the atmosphere and the energy sources of the prebiotic world; and processes that could give rise to life—prebiotic formation of organic molecules, their assembly into macromolecules and multimolecular systems, and the evolutionary changes leading to living organisms. The book ends with a discussion of the possibility that life exists elsewhere in the universe, and a listing of outstanding problems.

Understanding of this area requires a broad sweep of data, and the authors marshal evidence from such diverse fields as astronomy, geophysics, paleontology, biochemistry, molecular biology, thermodynamics, and space exploration. A wide range of data is given in the form of tables and graphs, leaving the reader some opportunity for independent conclusions. This is welcome, for the origin of life is a highly controversial field. Throughout, the authors are conscientious in identifying their own opinions or prejudices, as well as in citing conflicting ideas and evidence.

Because the origin of life on our planet is of intense interest to students, teachers, and research workers alike, the book should have a wide readership. It will be difficult reading for people who have only a modest background in the physical sciences. The authors themselves recommend the book to college science students, and they suggest that readers whose background is not sufficient for some of the more technical chapters merely scan these and go on to the more general chapters. This advice seems sound. It is impressive to see this compilation of relevant data and to view the vast dimensions of areas of uncertainty and controversy, which, by default, they reveal in sharp detail.

There should be more monographs of this sort, written with the skill and dedication to reveal the real complex-