

Reviews

Ecology and Environmental Concerns

N.R.A. CONSERVATION YEAR-BOOK, ed. by Ruth Sievers. 1975. National Rifle Association of America (1600 Rhode Island Ave., Washington, D.C. 20036). 96 p. \$4.00 softback.

This publication should be of interest to everyone concerned with our natural wildlife and its conservation. It is a must for any college and high school library that has classes in conservation or ecology.

The yearbook contains very informative articles on the habitats and habits of the Alaskan caribou, the white-tail deer, the prairie chicken, the ring-necked pheasant, and others. Also included are extremely timely articles on strip mining, Mississippi floods, the Big Cypress Swamp fires, the future of the Badlands of the Dakotas, and the northern Great Plains. The illustrations are beautiful; many of the photographs are suitable for framing.

Without exception the authors of each report are well qualified in their fields. The bibliographies could be most helpful for further research. Perhaps most useful and of most educational value are the appendixes. They include lists of motion pictures dealing with conservation and natural resources, the U.S. and Canadian fish and game commissions, and the U.S. congressional committees and government agencies concerned with natural resources legislation.

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THE FUTURE: HUMAN ECOLOGY AND EDUCATION, by Edward A. Sullivan. 1975. ETC Publications (18512 Pierce Terrace, Homewood, Ill. 60430). 154 p. \$8.50 hardback.

This book's speculations on the educational applications of the findings of current mind-modifying research are "way, way out." Practicing extrasensory perception; developing alpha brain waves by biofeedback; and engaging in transcendental meditation may replace the three R's in the elementary school of the future, and from time to time, the pupils may take psychologically-induced "trips" without the aid of con-

sciousness-alerting drugs. If a student of the future happens to be a behavioral problem, his brain may be wired so the pleasure center can be electrically stimulated by remote control to pacify his fits of rage, or the pain area may be shocked as a method of negative reinforcement.

Unfortunately, I cannot give the author a passing grade on his discussion of genetic disease. Presentation of the technique of amniocentesis is vague and incomplete; lumping all genetic deformities caused by chromosomal defects as "mongolism" is misleading because several conditions distinct from Down's syndrome (mongolism) are caused by chromosomal aberrations; and the author's statement that "genes responsible for hemophilia are recessive and occur primarily in the male" is false.

I cannot find a justification for the inclusion of "human ecology" in the book's title, but the application of the word, ecology, has become so widespread and diffuse that it is apt to be used to denote many things today—in our town, the refuse collectors have become *ecology practitioners*.

The author of this little book seems to be trying to shock the readers in an Orwellian fashion but without the insight or inspiration of Orwell. The contents of the book should serve as good subject matter for conversation at cocktail parties.

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ENERGY AND THE FUTURE, by Milton A. Rothman. 1975. Franklin Watts, Inc. (730 Fifth Ave., New York 10019). 128 p. \$5.90 hardback.

The title is apt, for the author indeed defines and elucidates the concept of energy while exploring the future of our energy needs in an ecological context. The book is written for the concerned layman with little or no science background, but students (junior high or above) and biology teachers may find it interesting and profitable reading. As supplemental reading to acquire a better understanding of man's impact on the ecosystem by his ever increasing energy demands, it is excellent. The author describes with delightful clarity many things that biologists have gleaned only a hazy understanding of from their life sciences courses. He is thoroughly knowledgeable in the phys-

ical and chemical aspects of his subject and can be faulted biologically only for implying that the abiotic "burning" [sic] of carbohydrates is essentially the same process as occurs in organisms—namely the combination of oxygen with carbohydrate. However, considering the level for which the book was written, his oversimplification is probably more appropriate than an attempt to explain electron transfer and dehydrogenation oxidation.

The style is refreshing (for example, reference to the leafy tree branch as an antenna for reception of electromagnetic [visible light] energy, and his characterization of energy lost in transfers as "sidetracked").

Metrication enthusiasts may find his use of English units overly heavy although both metric (or SI) and English units are scattered throughout the book. The use of degrees Centigrade (rather than Celsius) and the positioning of mass number superscripts to the right rather than the left side of element symbols (as U^{238}) are trivial flaws usually noticed only by copy editors. One figure was labeled incorrectly, and minor improvements could have been made in several others. Since the author is a physicist, I was surprised that his discussion of energy conserving practices failed to mention either microwave cooking or the insulating of *already-built* homes.

Treatment of various energy sources is rather well balanced regarding their advantages and disadvantages; however, he makes no mention of the drawbacks that may be associated with hydroelectric dams.

All things considered, I regard the book as informative and pleasant to read, but a bit overpriced, probably because of its sturdy hardback binding.

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FIELDBOOK OF NATURAL HISTORY, by E. Laurence Palmer; revised by H. Seymour Fowler. 2nd ed. 1975. McGraw-Hill Book Co. (1221 Ave. of the Americas, New York 10020). 779 p. \$14.95.

This revision of Palmer's popular fieldbook has been a long time in coming, but the results are well worth the wait. Since the publication of the first edition in 1949, many changes have occurred within the disciplines treated in

this book. The major areas of coverage include astronomy (18 pages), earth science (24 pages), and the various phyla of plants and animals (about 700 pages).

Fowler suggests that there is a gulf of misunderstanding between (i) scientists and technologists and (ii) these professionals and the laymen who depend upon their wares. He hopes that this book will help all to better understand themselves and the environment in which we live, without requiring the nonscientist to learn a vast new vocabulary of technical terms. The index includes both scientific and common names of organisms as well as entries from the nonliving universe. This book could serve as a valuable reference and also a stimulus to more careful observation of the world around us. I recommend it for high school and college libraries as well as science teachers and the public in general.

One criticism of the book is that most of the print is so small (6 point) that many students will probably not put forth the extra effort required to read it for pleasure. However, the drawings of organisms are quite good and should be very helpful in identifying the plants and animals. The black-and-white photographs of various rocks and minerals are of limited value for identification purposes, but the textual descriptions should be helpful.

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MAN KIND? OUR INCREDIBLE
WAR ON WILDLIFE, by Cleveland
Amory. Harper and Row, (10 East
53rd St., New York, 10022). 372 p.
\$9.95 hardback.

I do not recommend this book.

Amory writes well and has great love and compassion for wild animals. He deplores hunting for sport. He condemns cruelty to animals. He is against the use of the furs of wild animals for fashion clothing. He supports humane treatment of animals. I am in full agreement with all of those positions.

The reason I cannot recommend his book is not because it is an emotional book, which it is, but rather because it is an uncritical book. In pursuing his major goals, to which I fully subscribe, Amory throws his net far too broadly. Most importantly for readers of this journal, he appears to reject the use of animals for educational purposes. Thus he quotes, with apparent approbation, a statement condemning "the taking of specimens for zoos ... and large scale research" (p. 228).

It seems to me that in man's relationships to animals there are a series of continua. For example, many persons in the Middle East would find an appropriate place for themselves on a continuum involving man's relation to animals as sources of food. That con-

tinuum might include diets of (i) vegetable matter only, (ii) vegetable matter and fish, (iii) vegetable matter, fish, and/or eggs, (iv) vegetable matter plus fish, eggs, and poultry, (v) vegetable matter plus animals other than cattle, or (vi) no restrictions.

In an analogous way, another continuum reflecting man's relationships to the use of wild animals could be recognized. One such continuum might be (i) all wild animals should be left undisturbed; (ii) wild animals may be taken for educational purposes such as displays in zoological gardens and museums and for study purposes in museums and schools; (iii) wild animals may be killed so that their flesh and pelts can be used for food and clothing; and (iv) wild animals may be hunted and trapped for sport and pleasure. The problem with the book under review is that it leaves the impression that Amory is not willing to move one inch from the first position on that continuum. I think it appropriate and reasonable to occupy a more intermediate position.

I have found that the attitudes of biology teachers towards wild animals are humane and thoughtful and, further, biology teachers have a better understanding of, and concern for, conservation and the proper role of mankind in the living world than do most other groups of people.

All of these considerations lead me to believe that this book would be of little value to biology teachers or their students.

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Education and Professional Concerns

MEASUREMENT FOR EDUCATIONAL EVALUATION, by Clinton I. Chase. 1974. Addison-Wesley Publishing Co. (Reading, Mass. 01867). 312 p. Price not given.

This is a textbook designed for a course in educational measurement and evaluation. The author's purpose is to provide a discussion of basic concepts needed by teachers to use and interpret standardized tests and to prepare better tests of their own. The book presents a good, simplified overview of most traditional issues in educational measurement as well as some discussion of differences between norm referenced and criterion referenced evaluation.

As with most books on educational measurement, this one fails to present adequately how evaluation can influence what students will learn and how knowledge can be organized for an understanding of concepts in a discipline. This shortcoming derives in large part from the lack of foundation in learning

theory, which Chase acknowledges, a deficiency that is likely to be remedied in the future as the learning theory of David Ausubel becomes better known. For biology teachers, I would recommend Nedelsky's *Science Teaching and Testing*, although Chase's book would be a useful supplementary reference.

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TEACHER EDUCATION: THE SEVENTY-FOURTH YEARBOOK OF THE NATIONAL SOCIETY FOR THE STUDY OF EDUCATION, PART II, by The Yearbook Committee and Associated Contributors, ed. by Kevin Ryan. 1975. The National Society for the Study of Education, distributed by the University of Chicago Press (Chicago, Ill. 60637). 352 p. \$10.00 hardback.

Many science educators are familiar with the National Society for the Study of Education's renowned *Forty-Sixth Yearbook 1974, Part I—Science Education in American Schools* and *The Fifty-Ninth Yearbook, 1960, Part I—Rethinking Science Education*. In a similar vein *The Seventy-Fourth Yearbook, Part II* should be referred to for many years to come. While it is not concerned with science education, per se, it is concerned with the training of teachers on the primary and secondary levels.

The yearbook begins with the history of teacher education; then it examines such topics as why people become teachers, what various teacher training institutions are like, and how they reflect society. Research in the area of teaching education is reviewed as well as some contemporary concerns such as performance-based teacher education, unionism, certification, and inservice training. The yearbook concludes with various views of the future.

As the chapters are authored by different writers, so the style tends to vary. There is some overlapping and some omissions of problems, but this does not detract from the valuable information forthrightly presented. The book is highly recommended.

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READINGS IN SCIENCE EDUCATION FOR THE ELEMENTARY SCHOOL, ed. by Edward Victor and Marjorie S. Lerner. 3rd ed., 1975. Macmillan Publishing Co. (866 Third Ave., New York 10022). 475 p. \$6.95.

This book, intended to be a resource book for both preservice and inservice elementary teachers, is a revision of an