

tivities, references, and subject matter of benefit to both the beginning and experienced teacher. Some of the photographs could be more modern but the line drawings relating to activities and experimental "set ups" are clear and numerous. Topics discussed in this section include the universe, earth, climate, travel, planets, animals, the human body, matter-energy relationship, machines, fuels, light, sound, magnetism, and electricity. Nuclear energy and radioactivity are included in the information. The whole book and especially the basic science information areas are indexed. The appendix includes only pictures of common laboratory equipment but could have been expanded to include other often used data. Nice use is made of the inside cover pages in both the front and rear of the book where metric and English equivalents are printed.

In general, this book, traditional in nature with modern entries, is more than adequate as a textbook for training elementary science teachers and should serve readily as a desk reference for experienced teachers.

Gerald C. Llewellyn  
Virginia Commonwealth University  
Richmond

## Evolution

**STRUCTURE AND EVOLUTION OF VERTEBRATES: A LABORATORY TEXT FOR COMPARATIVE VERTEBRATE ANATOMY**, by Alan Feduccia. 1975. W. W. Norton (500 Fifth Ave., New York 10036). 176 p. \$6.95.

This manual provides an excellent alternative to the classical comparative anatomy laboratory: a presentation of the major features of the morphological evolution of the vertebrates without reams of minute detail. Through the laboratory work the students are able to follow the development of general trends of evolution as displayed in anatomical characteristics; they are allowed an overall picture of vertebrate evolution unclouded by a maze of trivial memorization. Feduccia's intent is to present a general picture, and he does this quite well.

There are numerous other points in the book's favor. Important terms are in bold type and are defined upon their first appearance. Illustrations throughout the book are uncluttered and clearly labeled. There is an appendix of terms used in dissection and an excellent diagram illustrating anatomical planes and directions. A second appendix contains a brief classification of the vertebrates. The book also has a good list of references and a comprehensive index.

I found two shortcomings in this lab manual. First, the dissection instructions are too brief. Feduccia says this is

to allow students the freedom to develop their own methodology. This is fine, but students need some general suggestion as to where to cut and what to remove—more procedural guidance than the book gives. Second, the descriptive text and accompanying illustrations are frequently on different pages. This requires a lot of disruptive page flipping while trying to do the dissection.

Feduccia does present a viable alternative to the classical comparative anatomy lab, one that would be most useful for presenting a course on the general trends of vertebrate anatomical evolution.

Nancy A. Andersen  
NUS Corporation  
Pittsburgh

**BIOLOGY: EVOLUTION AND ADAPTATION TO THE ENVIRONMENT**, by Mahlon G. Kelly and J. C. McGrath. 1975. Houghton Mifflin Co. (110 Tremont St., Boston 02107). 567 p. \$12.95 hardback.

This is a well written, clearly illustrated general biology book suitable for use with introductory college nonmajor biology classes and with upper level high school biology students. Because of the clear coverage of population growth, competition, and community energetics, this book would also be a useful resource for most high school libraries.

The book is a very creative attempt to introduce students to evolution as an explanatory tool in biological thought. The book first covers the mechanisms of evolution, then briefly examines aquatic, terrestrial, and physiological adaptations. This takes the place of the phylogenetic survey and organ system overview of the more traditional biology textbook. Next, genetics, population genetics, and speciation are covered, followed by a brief introduction to cellular chemistry, energy, photosynthesis, and respiration. This material is used as the transition into ecosystems, biogeochemical cycles, and nutrient flows. Well illustrated chapters on population growth, population interactions, and populations in communities and biomes follow. The book concludes with chapters on the evolution and ecological roles of man.

The authors have used special inputs of supplementary ideas in most chapters through the use of spotlight pages and many interesting illustrations. Each chapter has a selected readings list that includes both paperback editions and *Scientific American* offprints.

Possible shortcomings include the lack of chapter reviews and thought questions about the chapters. Some of the chapters tend to be somewhat longer than many students will be used to. Hopefully, the authors will also design a laboratory manual to accom-

# SOCIAL IMPLICATIONS OF BIOLOGICAL EDUCATION

Edited by  
Arnold B. Grobman

Teachers and students of life sciences are forced to consider the social implications of biology. The important issues can not be avoided and deserve a full and balanced discussion.

Recognizing this need, the National Association of Biology Teachers invited distinguished biologists to address themselves to a variety of social issues. The result has been a volume ideally suited as a resource for class discussion and as a reference for the teacher of either life sciences or humanities.

The volume includes chapters on the social implications of . . .

## Medicine

by Michael and Lois DeBakey

## Behavior

by James V. McConnell

## Genetics

by Bruce Wallace

## Population

by Garrett Hardin

## Evolution

by Claude A. Welch

Additional statements are given by Vincent Dethier, Martin Schein, Haven Kolb, David Denker, Lawrence Mann and others. This book is available now from the National Association of Biology Teachers for only \$1.95.

## NABT

11250 Roger Bacon Drive  
Reston, Va. 22090

NABT, 11250 Roger Bacon Dr., Reston, Va. 22090.

Please mail \_\_\_\_\_ copies of Social Implications of Biological Education at \$1.95 per copy.

Payment Enclosed  Bill Me

Name \_\_\_\_\_

Address \_\_\_\_\_

City \_\_\_\_\_ State \_\_\_\_\_

Zip \_\_\_\_\_