

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.

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use in courses in European and American history and in the history of biology. It will not be easy reading for those lacking a background in history or biology, but it admirably synthesizes material for those who are knowledgeably drawn to the subject.

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Laboratory Manual

INVESTIGATIONS INTO BIOLOGY, by Robert W. Korn and Ellen J. Korn. 2nd ed., 1971. John Wiley & Sons, Inc., New York. 512 p. \$5.95 (softback).

Preparing a laboratory manual that addresses both the knowledge and the process of biology is a difficult task. The authors have attempted it, and by stated intention the manual is weighted toward the process side ("experimental in nature"); but in fact the manual is little different from other manuals of prescribed directions for accumulating the knowledge of biology in the laboratory.

"To comply with suggestions that the first edition contained too much demonstration, we have incorporated more student work," the authors say. These changes are clearly evident in the second edition, but the decrease in demonstration is simply replaced by more fill-in-the-blank exercises. At no place in the manual does the student actually prepare data for presentation, nor does he ever really design his own experiment; rather, he places data in inadequately prepared tables and figures and follows directions for each step in the experiment. This is followed in every instance by several questions, and all too frequently each succeeding question reveals the answer to the previous one. Communication of experimental work receives scant treatment except in the appendix, with no reference to any style manual or basic format used by any journal. Some basic knowledge of statistics is presented in part I, but its use is extremely limited in the rest of the manual.

The information of biology has good basic coverage (chemical energy and biologic systems, the cell, growth and cellular differentiation, evolution, ecology, phylogeny, and the mammal as a product of evolution). But a great deal of this information probably could be presented better elsewhere (text, lecture, programs, etc.) and prior to the student's involvement in the experimental part of the manual. The manual needs more emphasis on the real problems in biology today rather than only on the ones we have already solved.

The authors have attempted to solve a difficult problem in their manual: what is the purpose of the laboratory

in undergraduate instruction? This manual is a sort of answer, but it falls short of involving the student responsibly and creatively in the spirit of investigation.

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Physiology

LABORATORY EXPERIMENTS IN PHYSIOLOGY, by B. H. Levedahl, A. A. Barber, and A. Grinnell. 8th ed., 1971. C. V. Mosby Co., St. Louis. 183 p. \$5.25 (hardback).

A more apt title would be "Exercises in Vertebrate Physiology": with the exception of the use of the insect eye, all of the material is vertebrate. Contemporary techniques in nerve, muscle, and endocrine studies are included among the 31 exercises. With the exception of using the frog skin to demonstrate transmembrane cation transport, the rest of the exercises—in digestion, physicochemical studies, circulation, and respiration and metabolism—have been standard for many years.

The book is easily read and is well illustrated. Clear directions for the preparation of animals and reagents and for the use of all the required equipment allow both the student and teacher to rely almost entirely on this manual for laboratory instruction. Either electrical transducers or kymographs can be used to perform the exercises devoted to muscle. An oscilloscope and an electronic stimulator are required for most of the nerve demonstrations. Human subjects are used frequently.

The book is aimed at college undergraduates but could be used in advanced-biology courses in secondary schools.

The book contains no hypotheses to be tested; that is, it is a collection of exercises rather than experiments. Perhaps the next edition will include a section on experimental design in relation to the investigative process—thus justifying its being called a collection of experiments.

Donald L. Wise
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ELEMENTARY HUMAN PHYSIOLOGY, by A. B. Taylor, John S. Willis, and Mary F. Ruh. 4th ed., 1971. Burgess Publishing Co., Minneapolis. 125 p. \$4.25 (softback).

The authors claim that this laboratory manual will give the beginning student in human physiology an idea of the scientific method, an insight into experimental physiology, and an opportunity to observe firsthand some of the important functional concepts in a

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