

symposium conducted by the Zoological Society of London. This is the first comprehensive review of the biology of sponges since Libbie Hyman's work of 1940. Particularly interesting are Claude Levi's comparisons of the constant cell transformations of sponge cell ultra-structure with differentiation in animal cells. The capacity of sponge cells to differentiate and "undifferentiate" repeatedly suggests that they are indeed a unique form of life. What emerges from this text is a picture of sponges as populations of cells that interact in morphogenesis and homeostasis much as do mixed populations of organisms. William Fry uses this concept to develop new taxonomic procedures, which may be of great value in this taxonomically very difficult group. Indeed, a number of the contributors to this symposium have been very successful in describing sponge morphogenesis and homeostasis in the terminology that ecologists use to describe the dynamics of mixed populations of organisms.

There are also exceedingly interesting contributions on the fossil history, distribution, autecology, and synecology of sponges. All French and German papers have English summaries, and the work is very well indexed. Anyone interested in cytology, developmental biology, ecology, paleontology, or systematics will find something of value in this collection. I would recommend this text for every secondary and college library: it is an invaluable reference to anyone seeking current information about sponges.

*Jon R. Fortman*

Mississippi State College for Women  
Columbus

**THE WASPS**, by Howard E. Evans and Mary Jane West Eberhard. 1970. University of Michigan Press, Ann Arbor. 271 pp. \$3.45 softback, \$7.95 hardback.

*The Wasps* is a valuable contribution to the field of behavioral taxonomy, an area of biology that until recently has been largely neglected. The authors begin with descriptions of behavior of the more primitive, solitary wasps. Evolutionary behavior, such as prey carriage, adult feeding and maintenance behavior, and nesting behavior, and the preadaptations necessary for sociality, are discussed at length. The point is emphasized throughout the book that species of wasps that have similar behavior patterns are closely related taxonomically.

The *Polistes* wasps are used to exemplify the behavior of typical social wasps. The means of queen determination, method of building nests, behavior of adult females, and other aspects of *Polistes* behavior are thoroughly treated. The behavior of other social wasps is discussed in less detail.

A recent wide-ranging independent survey of what teachers most desired in classroom microscopes pointed up three factors as being especially important: ruggedly student-proof construction; scientifically professional parts and components; and realistically based price. The Swift Series M2240 has all three, in full measure.

But the Swift Series M2240 also provides many other features that will help you bring out the best in the emerging young scientist. These include: sturdy, well-balanced stand; inclined eyetube of constant height; highest quality prisms, (not mirrors) in optical path; focusing stage, constantly horizontal; rapid focus by rack and pinion; built-in clutch to prevent gear damage; lever type fine focus; special tension control (accessible only with correct tool); locked-on stage clips; large stage (4½" x 4¾"); built-in condenser, N.A. 0.65; all objectives of high numerical aperture for maximum resolution; 40x objective in retractable mount to prevent slide damage; widefield eyepiece 10x, with built-in pointer; choice of built-in illumination or plano-concave mirror; approved 3-wire grounded electrical system.

The vastly superior Swift Series M2240 is in modern Swift brown finish, of epoxy-ester resin, acid and reagent resistant. Write or call today for literature and name of your nearest Swift dealer for a demonstration.

## Swift Series M2240 has your 3 most-wanted features – PLUS!



SWIFT INSTRUMENTS, INC.  
Technical Instrument Division  
SAN JOSE, CALIFORNIA 95106 • 408/293-2380

SWIFT AGENCIES throughout the U.S. and in South Africa, Australia, Belgium, Canada, Denmark, England, Finland, Holland, Ireland, Korea, Italy, Lebanon, Malaya, Mexico, Nepal, Norway, East Pakistan, West Pakistan, Sweden, Thailand.

The final chapter is devoted to the biotic relationships of wasps. Many types of parasitism displayed by wasps are discussed, as well as the organisms that prey upon or parasitize wasps. Various types of mimicry are treated in detail.

Because it is written on a fairly technical level, this book would not be appropriate for a reader who does not possess a fundamental knowledge of the Hymenoptera. The chapter on biotic relationships, however, could be used effectively in a high school biology class to supplement a unit on general biotic relationships. Except for this section, the plethora of generic names and the adult vocabulary make this fine book

difficult reading for all but the most advanced high school student.

*Alan von Ahlefeldt*  
Wasson High School  
Colorado Springs

**BIONICS: MAN COPIES NATURE'S MACHINES**, by Alvin and Virginia Silverstein. 1970. McCall Publishing Co., New York.. 74 pp. \$4.50 (hardback).

Bionics is the study of the mechanisms of living creatures, with the findings applied toward the improvement of man-made systems. The authors bring us up to date in this new science. They present the full range of animal endowments, including sight, sound,

# 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

1420 N Street, N.W.  
Washington, D. C. 20005

NABT 1420 N Street, N.W., Wash-  
ington, D. C. 20005.

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

Payment Enclosed  Bill Me

Name \_\_\_\_\_

Address \_\_\_\_\_

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

Zip \_\_\_\_\_

navigation, circadian rhythms, memory, learning, bioluminescence, and bio-electricity. Interestingly written, accurately researched, and illustrated with line drawings, this book should be made available to secondary and college students. It prods the imagination as to the possibilities of tomorrow.

*Robert D. Littlefield*  
Oxford Hills High School  
South Paris, Maine

**THE YEAR OF THE SEAL**, by Victor B. Scheffer. 1970. Charles Scribner's Sons, New York. 216 pp. \$7.95.

Birth and death, perils of the sea, the forces of nature, and man himself are endless challenges in the life of the seal. The author, writing in the present tense, provides a delightful and often poignant account of the Alaskan fur seal in the Pribilof Islands and along the migratory route southward. Each episode unfolds vividly.

The principal character is Golden Seal, a female of peculiar coloration, who survives the harsh environment of land and sea while others of her species are not so fortunate. The story provides an accurate insight into the biologic adaptations of the seals, past and present research with marine mammals, and efforts to preserve these animals.

The beautiful illustrations and fast-moving narrative will give enjoyment to any animal-lover.

*Elizabeth J. Davison*  
Swarthmore (Pa.) High School

#### For Young Readers

**ANIMALS NEAR AND FAR**, by Helen Hoover. 1970. Parents' Magazine Press, New York. 64 pp. \$4.50 (hardback).

The premise of this story, written for ages 4 to 8, is an imaginary vacation trip around the United States with stops along the way to study wild animals. Animals studied include the ring-necked pheasant, Baltimore oriole, wild turkey, manatee, whooping crane, wood rat, prairie dog, black-footed ferret, bison, mule deer, Hawaiian goose, Kodiak bear, and polar bear.

The story seems very contrived and uneven. Not enough information is given on any of the animals, and several statements are quite misleading; for example, manatees are described as being like huge, gray scaleless fish with no fins. This fish-image is not corrected throughout the section on manatees. Anthropomorphism—for example, prairie dogs sleep in their "bedrooms" for the night and young Baltimore orioles answer their mother's "where? where?" with "here-we-are-mama"—is characteristic of several of the stories.

The author does emphasize the need to preserve and protect animal life. The

sections on the whooping crane and the bison provide examples of how man nearly eradicated these animals and then made very serious efforts to save them. Children are cautioned that prairie dogs, the black-footed ferret, and polar bears are in danger of becoming extinct, so must be protected.

*Jack E. Sherman*  
University of Colorado  
Colorado Springs

**WHAT WE FIND WHEN WE LOOK AT MOLDS**, by William D. Gray. 1970. McGraw-Hill Book Co., New York. 40 pp. \$4.72 (hardback).

This brief book is designed to introduce primary-school children to a relatively unspectacular though ubiquitous division of the plant world. After describing the essential environment for growing molds, the author points out many common kinds and some of their uses. Children will be interested to learn of the molds found in and on foods, of the molds that sometimes live on our bodies (ringworm, athlete's foot), and of those that are helpful in curing disease (penicillin). There are no photographs, but the line drawings, by Howard Berelson, are strikingly authentic.

Several experiments are suggested, so that children may discover for themselves how molds grow. The experiment in which molds in a glass jar eventually convert leaves, fruit peelings, and other organic detritus into soil should awaken children's appreciation of molds as an invaluable agent for disposing of many of the waste products in this world.

Gray's style is appropriately simple. He achieves his purpose of providing material that beginning readers can understand—material that is interesting enough to whet their appetite for further investigation.

*Ruth S. von Ahlefeldt*  
Hyde Park Elementary School  
Pueblo, Colo.

**LIQUIDS**, by William Lumsden. 1970. John Day Co., New York. 48 pp. \$2.97.

It is not an easy task to explain the laws of physics simply and clearly enough that they can be understood by young children. Lumsden has undertaken to examine the properties of many different kinds of liquids and their actions under various conditions. His examples are common, everyday substances and experiences that are so taken for granted that they may have gone unobserved by the young reader until his attention is focused on a particular occurrence and the reasons for an action or reaction are analyzed. Temperatures at which various substances change from liquid to solid or to gas are tabulated, and methods of transporting and storing liquids from early times to the present are examined,