

this very well-written and informative book. The text is arranged so that the material may be presented formally as the basis of a course in herpetology, but a thorough index and good sectional arrangement also allows its use for reference. Many of the sections also make excellent reading on their own, and the emphasis on biological phenomena throughout is noteworthy.

Frank N. Young
*Department of Zoology
Indiana University*

THE LIFE STORY OF FISH, HIS MANNERS AND MORALS, Brian Curtis, 284 pp., \$1.50, Dover Publications, Inc., New York 14, 1961.

This edition represents a complete revision of the original book. In covering the life history of the fish, numerous factors are presented that are not readily available from a single reference. Of special interest are sections on the senses, with extensive discussions on sight, sound, and smell. Also included among the many interesting chapters are discussions on the air bladder, trout and salmon, fish and fisherman, to mention a few. Numerous line sketches are included as helpful illustrations. This book is highly recommended for the high school biology classroom and library, as well as valuable reading for the college biologist.

William M. Smith
*Howe High School
Indianapolis, Indiana*

REARING INSECTS IN SCHOOLS, R. E. Siverly, 113 pp., \$2.75, Wm. C. Brown Company Publishers, Dubuque, Iowa, 1962.

The scarcity of books in science for elementary teachers is rather well known. However, in this book the author attempts to give a book of substance for elementary science teachers in a subject which they can easily grasp and carry out in school demonstrations and project work. Because the book has substance, it is also quite a pertinent book for secondary school biology teachers. The author, as the title indicates, takes up chapter by chapter the directions and materials needed for rearing certain very common insects in an indoors environment. The directions are clearly stated, and the equipment needed is very modest. The insects include mosquitoes, crickets, grasshoppers, ants, cockroaches, houseflies, meal worms, and milkweed bugs. A final chapter takes up the instructions for rearing other miscellaneous insects which can easily be obtained by the elementary or secondary school science teacher.

Critically, one must note the poor quality of illustrations. While there are many of them, the contrast and detail is lacking in quite a few

of the photographs. Further, the diagrams do not give as much detail as needed. However, this book is a most useful one and highly recommended for purchase for elementary and secondary school teaching.

LABORATORY DIRECTIONS FOR INVERTEBRATE ZOOLOGY, Tyler A. Woolley, 140 pp., \$4.00, Burgess Publishing Company, Minneapolis, 15, Minnesota, 1963.

A very good laboratory guide with rather extensive coverage of invertebrate zoology. Many questions and demonstrations will be rewarding for the curious student. Most of the demonstrations are designed to instigate provocative thinking on taxonomy, anatomy, physiology, phylogeny, and development. The exercises are constructed so that the student has a wide latitude of activity. The demonstrations are designed to be stimulating to the student and are followed with thought provoking questions.

Highly recommended for college level work and would be a very good teacher reference for an advanced biology or zoology class on the secondary level.

William Murray
*Howe High School
Indianapolis, Indiana*

ICHTHYOLOGY, THE STUDY OF FISHES, F. F. Lagler, John E. Bardach, R. R. Miller, 545 pp., \$12.50, John Wiley and Sons, Inc., New York 16, 1962.

This is the kind of reference which all biology teachers will wish to have. It is complete, up-to-date, authoritative, well illustrated, and well written—the first of its kind in many years. The scope of the treatment is broad, with classification, anatomy, metabolism, reproduction, integration, genetics and evolution, and ecology. There are many references to recent monographs in this field, pointing out many interesting new theories and ideas. To the amateur ichthyologist it may come as a surprise to learn of the many metabolic studies which have been made of fish. In other words, there is more to this subject than fishing, identification, and natural history.

A superlative reference book for all general biologists.

MEDICAL ENTOMOLOGY LABORATORY GUIDE, Donald M. Allred, 71 pp., \$3.50, Burgess Publishing Company, Minneapolis 15, Minnesota, 1963.

This is a concise, but not comprehensive, manual which should be useful in an introductory course in medical entomology. The illustrated keys will be helpful in orienting the

student, but they should be supplemented by references to more technical papers. Most high school students ought to be able to use the keys. The difficulty in most courses in entomology is to associate the bare names of insects with biological concepts.

Frank N. Young
*Department of Zoology
 Indiana University*

CATALOGUE OF MAIN MARINE FOULING ORGANISMS, VOLUME 1: BARNACLES, A. J. Southward and D. J. Crisp, 46 pp., \$3.50, Organisation for Economic Co-operation and Development, Sales Agent, U.S.: McGraw-Hill Book Company, New York, 1963.

This excellent manual represents the first in a series of catalogs of the marine fouling organisms by the Committee for Scientific Research of the international *Organisation for Economic Co-operation and Development* (OECD). Fouling of ships and maritime facilities by marine organisms has long been a major economic problem. For example, inlets, pipes, screens, and valves are easily clogged by the growth of marine life, and organisms growing on the hulls of ships significantly decrease the speed of the vessels.

Barnacles are among the most common of fouling organisms, and a good deal of time and money is spent each year in clearing infested areas. Research is presently being conducted on a world-wide basis in search of adequate means of inhibiting the settlement and growth of fouling barnacles, and some methods, such as special toxic paints, show promise.

The recognition of the complexity of the fouling problem is reflected in the recent trend away from hit-or-miss, trial and error methods, and towards a more sound scientific approach. This new approach involves the attainment of a better understanding of the overall biology of the organisms, as it has become apparent that methods which prove successful with one species may have no, or even opposite effects on another. Chemists, engineers, and industrialists are turning to specialists in the various groups of fouling organisms to provide means of recognizing the species and information on physiology, behavior, and ecology.

Southward and Crisp's catalog is a valuable contribution to this new approach, and covers the sessile and stalked fouling barnacles of European waters and some of the more common exotic species. Concise keys to the species together with a section outlining the morphology and terminology are provided in the first half. A minor criticism might be made of the somewhat confusing system of numbering used in

the key. Although dichotomous, each qualifying statement is provided with a separate number, instead of the more conventional method of applying the same number to each member of a couplet. Also, authors are not cited for the various species. But these are relatively minor points.

The second and major part is devoted to detailed descriptions and illustrations of eighteen of the more important species, and some remarks on ecology, distribution, and variation. The illustrations are in color and for the most part reproduction is excellent. Color photographs are seldom used in systematic works primarily because of prohibitive costs, but their value is well exemplified in this manual. Southward and Crisp employ a new character, that of the difference in color and color pattern of the fleshy lining of the opercular valves (tergoscuteal flaps) in closely related species. The color illustrations portray these differences at a glance, and with much more accuracy than the best written description or conventional black and white photograph. Other characters such as shell color patterns, and even the overall aspect of the shell and enclosed animal, are also easily envisioned in color.

This manual is not only valuable to the non-specialist, but to specialist as well, in that it provides one of the few compilations of the European barnacle fauna since the publication of Charles Darwin's monographs of the 19th century. If the remainder of this series meets the same standards presented in the first volume, a major step will have been taken towards the solution of marine fouling problems.

Victor A. Zullo
*Marine Biological Laboratory
 Woods Hole, Massachusetts*

Human Biology

THE HUMAN BODY, ITS STRUCTURE AND OPERATION Isaac Asimov, 340 pp., \$5.95, Houghton Mifflin Company, Boston, Massachusetts, 1963.

This well written book is concerned primarily with the structure of the human body with some discussion of the functions of the various parts. The author first puts man in his place, i.e., presents the phylogenetic tree and man's place as a chordate-vertebrate upon that tree. This is followed by chapters devoted to discussions of the various areas of the human body such as the head and torso, muscles, lungs, skin, genitalia, etc. References to the endocrine and nervous coordinating systems are made throughout the text, but a detailed study of these systems is to be the subject of a companion volume by the same author.