

and Lorch, Allen). The question as to how to get useful water from the sea has been solved by marine birds by the use of nasal salt-secreting glands. These random samples are given to indicate that the book is a mine of information and is up to date.

Comparative Physiology is not recommended as light reading nor is it enlivened by anecdotes, puns, innuendos, double-entendres, nor colored pictures. As claimed by the publisher's flier it is "information-crammed." On the shelf of a high school library it is to be regarded as an invaluable reference book for the biology teacher and the gifted student.

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THE MERCK VETERINARY MANUAL, 2nd Ed., O. H. Siegmund, Ed., ix + 1624 p., \$9.75, Merck and Co., Rahway, New York, 1961.

Here is a book that belongs in every laboratory that maintains an animal colony. It also has potential users outside of veterinary medicine in fields such as parasitology, physiology, nutrition, and wildlife management.

The first three-quarters of the book, devoted to the diseases of large and small animals, is divided into sixteen sections each dealing, for example, with subjects such as allergy, digestive system, endocrine system, neoplasms, nutrition, parasitic diseases, etc. The second part deals with the toxicology of pesticides and other natural and artificial poisons. Other major divisions deal with poultry; fur, laboratory, and zoo animals; therapeutic procedures and laboratory examinations; and prescriptions. The book is thumb-indexed by sections, and there is a good comprehensive index.

John M. Hamilton
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ECOLOGY AND DISTRIBUTION OF RECENT FORAMINIFERA, Fred B. Phleger, viii + 297 p., \$7.50, John Hopkins Press, Baltimore, 1960.

The Foraminifera are an important group of Protozoa that occur, for the most part, in marine or brackish environments. A few are found in fresh water. All have shells or skeletons of some sort. These shells have been preserved as fossils in geologic formations since Cambrian time. Because of their importance to the petroleum industry in locating oil deposits, fossil Foraminifera have been widely studied.

Phleger has brought together in this book the existing information concerning the ecology and distribution of the Foraminifera in the hope that present knowledge and future discoveries will make it possible to determine

the climatic and other conditions at the time the fossil deposits were laid down. There is a discussion of benthonic and planktonic populations under a wide variety of conditions. Many tables and charts show the distribution of species in these environments.

This book is certain to be useful to oceanographers and petroleum geologists. Teachers in schools in coastal areas and in regions where petroleum production is an important industry should have it as a reference for their students.

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HOW TO COLLECT SHELLS (A SYMPOSIUM), 2nd Ed., iv + 92 p., \$2.00, American Malacological Union, Route 2, Box 318, Marinette, Wisconsin, 1961.

This paper bound booklet brings together a large number of short articles by many authors. Many were written for the first edition in 1941, and others are reprints of articles from a variety of sources. They are grouped in this book in three sections: "Collecting Marine Shells," "Collecting Nonmarine Shells," and "Arrangement and Study of Shell Collections." The articles vary in length and quality, and this reviewer feels that the book needed a hard-boiled editor who would have given the text more uniformity and who would have directed it more to the needs of the beginner. There is a lot of information here about molluscs, for one cannot discuss collecting shells without considering the natural history of the animals that make them. The articles are interesting, and undoubtedly a beginner or an advanced collector will learn something about shell collecting from this book.

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SEX RATIOS AND AGE RATIOS IN NORTH AMERICAN DUCKS, Frank C. Bellrose, Thomas G. Scott, Arthur S. Hawkins, and Jessop B. Low, Illinois Natural History Survey Bulletin, Vol. 27, Article 6, pp. 391-474, \$1.00, Illinois Natural History Survey, Urbana, Illinois, 1961.

This study is an evaluation of sex and age ratios in North American duck populations. It also presents a discussion of waterfowl management and the way these ratios can be used to measure productivity. This monographic work is the result of over twenty years of research in the field and is extensively documented and illustrated. A large amount of information is included on waterfowl production and hunting, environmental relationships, breeding, and fly-

ways. It is an essential publication for all biologists interested in waterfowl.

Clarence J. Goodnight
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AN INTRODUCTION TO THE STUDY OF PROTOZOA,
Doris L. Mackinnon and R. S. J. Hawes,
\$12.50. xix + 506 p. Oxford University Press,
London, 1961.

This textbook of protozoology was begun by the late Doris L. Mackinnon of King's College, London, and was completed by Dr. Hawes after her death. The Protozoa are discussed by taxonomic groups. Each class and order has a section introducing the reader to the group as a whole, and each also has at least one, and frequently several, species described in detail. Over a hundred kinds of protozoa are described, usually with line drawings. Since most free-living protozoa are cosmopolitan in their distribution, the descriptions include many of the forms seen in any part of the world. Most of the individual species are treated in one or two pages, but *Paramecium* is allotted 22 pages. *Plasmodium* is omitted because the authors felt that it could be handled more accurately and completely in books of medical protozoology.

There are two special features not usually found in books on protozoa. One is the 62 page chapter on "Methods of Protozoology" that discusses the use of the microscope, culture methods, and permanent preparations. The other is in the index where there is a "host-list of parasitic Protozoa described" and a "host-list of parasitic Protozoa mentioned." With these lists one can determine the parasitic protozoa he might encounter when examining a given host.

This is a valuable reference book as it stands and the bibliography of almost a thousand references at the end of the book makes it a starting point for further study.

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SHEARWATERS, R. M. Lockley, 256 pp., \$1.25,
Doubleday and Company, Inc., Garden City,
New York, 1961.

This book is a pocket sized manuscript written of the Manx Shearwater. The story, the day and night experiences of the author living with the shearwaters, is told with simplicity and clarity. From this study has come an intimate knowledge of these most interesting sea birds. As a reader you encounter such details as courtship, incubation and rearing of the chick, abandonment of the chick, its survival trek to the sea during the dark of the night, migration, and many other interesting aspects. All this

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told with fascinating truth and touches of drama. Shearwaters offers an evening of enjoyable reading and would be a usable library addition in ornithology and natural history.

L. L. Hearson
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A PICTORIAL VADE-MECUM FOR GENERAL ZOOLOGY, Francis M. White, 137 pp., \$4.25, Burgess Publishing Co., Minneapolis, Minnesota, 1960.

Here is the author's deliberate attempt to provide a lab manual where the student must supply all the labels and most of the drawings as opposed to the manuals where much of this is furnished. Thus, there are many blank pages, but there are photograph inserts to help the student orient his study of the specimen. A wide variety of animals are used in the year's course outlined in this manual.

DWELLERS IN DARKNESS, S. H. Skaife, 180 pp., \$.95, Doubleday and Company, Inc., Garden City, New York, 1961.

A brand new book by a noted South African biologist on the termite. This inexpensive paperback illustrates quite well that there are still exciting frontiers of biological research in what used to be called nature study. The tremendous