

in high school. Although no previous knowledge of biology, chemistry, or physics is necessary, this book may be too difficult for nonmajors in college biology courses and for ninth- and 10th-grade biology students.

Lawrence R. Radtke  
Evergreen Park (Ill.)  
Community High School

INTRODUCTORY BOTANY, by Arthur Cronquist. 2nd ed., 1971. Harper & Row, New York. 894 p. \$14.95.

Although the general format of this botany textbook is traditional, for the most part, its volume (894 pages) gives a clue to the wealth of material it contains. Therein lies its great value. It is obviously intended for a full year's general-botany course; but it can, and should, serve as an excellent reference book for a high school biology teacher. And certainly a college graduate student in botany preparing for his prelims could spend his time most profitably with this book as a primary source of fundamental knowledge. Practically all aspects of botany are covered—most of them more deeply than one expects of an introductory textbook. Lest the reader of this review be apprehensive that Cronquist's book might be nothing more than an encyclopedia of information, let me hasten to add that it is extremely well written and that photographs and drawings are plentiful, pertinent, and of excellent quality without exception.

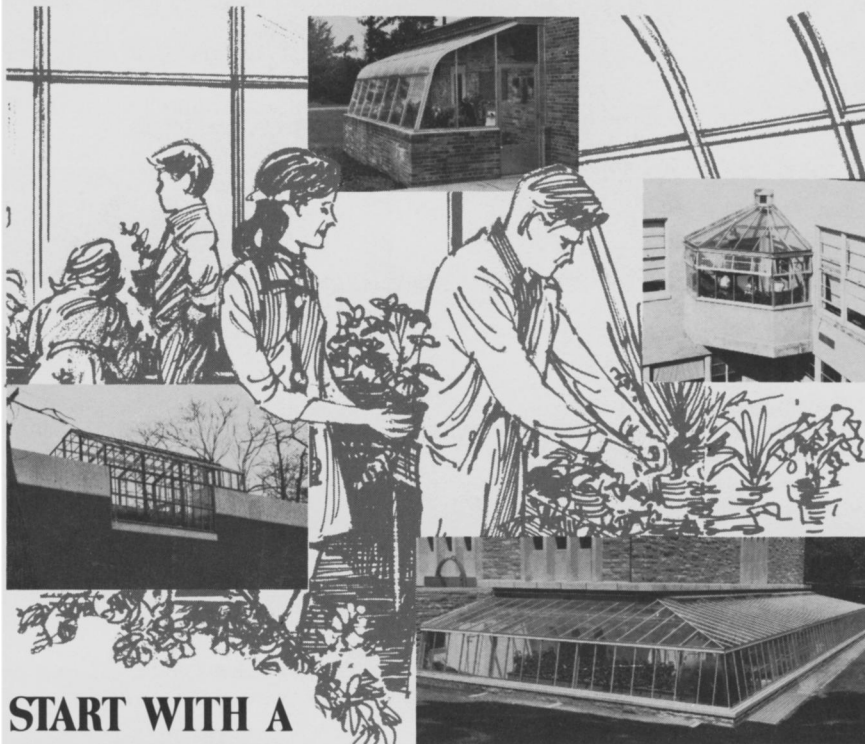
The book opens with several introductory chapters to set the stage for an extensive survey of the plant kingdom. These chapters cover the basic physical and chemical aspects of biology; cell structure, function, and division; and sexual reproduction. They also present an introduction to taxonomy, including the author's new classification of the plant kingdom. (A student with only an elementary knowledge of chemistry will find the chemistry chapter more than a little taxing.)

Beginning with the bacteria and viruses, a highly detailed survey of the plant division ensues; it culminates with the angiosperms (Magnoliophyta, in Cronquist's scheme). Among the many favorable comments that could be made on these chapters are these: each begins with a brief summary of the important characteristics of the plant group involved—a feature that should be most helpful to the student in reviewing for a test; and the fossil record of each division is covered in a most adequate, up-to-date manner.

The last portion of the book deals with the anatomy, morphology, physiology, classification, and economic importance of the flowering plants and closes with chapters on genetics, evolution, ecology,

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and plant geography. As elsewhere, the treatment of these topics is extensive, accurate, and current.

As a general-botany textbook, Cronquist's must surely rate at or near the top.

*Gilbert A. Leisman*  
Kansas State Teachers College  
Emporia

### Zoology

**ANIMAL VARIETY**, by Lawrence S. Dillon. 2nd. ed., 1970. William C. Brown Co., Dubuque, Iowa. 171 p. \$2.75 (soft-back).

This is a concise treatment of the animal diversification, by taxa. Unlike many of the contributions in this field, it is not simply a phylogenetic compilation limited primarily to morphologic considerations; rather, it makes distinctions among the phyla by using behavioral, functional, and developmental as well as morphologic traits. Purely descriptive material is kept to a minimum.

To provide background for his treatment of the diversity of animals, Dillon reviews both the early and the present-day schemes of classification. The two-kingdom system is classical, but others have been proposed; among these are single-kingdom, three-kingdom, and multiple-kingdom schemes. The author does not support any of these points of view; instead, he chooses a group-to-group treatment of those organisms that are considered to have animal-like traits. Much of the treatment is of the nine or 10 major phyla recognized in most beginning textbooks. The thread of evolution enables the author to correlate the various diversifications ex-

hibited by the animals and to make the transition from one group to another while at the same time showing inter-relationships among the groups.

This book could well be used as either the textbook on the subject or as a supplementary resource in an introductory course in biology, particularly in secondary schools. Obviously, its conciseness precludes the detailed study of any of the organisms Dillon mentions; to do so would necessitate the use of more particular works.

*Paul L. Brown*  
Norfolk (Va.) State College

**HOOFED MAMMALS OF THE WORLD**, by Ugo Mochi and T. Donald Carter. 2nd ed., 1971. Charles Scribner's Sons, New York. 288 p. \$9.95.

Seeing this volume in print once again is most gratifying. Both authoritative and artistic, it first appeared in 1953 in a different size and format than the current edition, which is somewhat reduced from that of the original although the illustrations are the same size as before. The first edition was allowed to go out of print and became a collector's item. This new edition, although not as lavishly produced as the first, is a worthy addition to any biologist's or artist's library. Its unusual combination of authorship—an artist and a scientist—has resulted in a book whose illustrations, each originally cut out of a single piece of paper with a knife, lend such aesthetic appeal that many may consider it just another "coffee-table book"; however, it also happens to be the only one-volume review of the world's hoofed animals. It depicts more than 290: all the known species and many of the races. As more

than 90 of these are now considered either rare or endangered, future volumes concerning hoofed animals of the world may be much slimmer. Civilization owes much to the hoofed mammal; the artistry of Mochi and the scientific expertise of Carter combine to preserve this heritage in a beautiful, authoritative fashion.

*William V. Mayer*  
University of Colorado  
Boulder

**THE STORY OF RODENTS**, by Dorothy E. Shuttlesworth. 1971. Doubleday & Co., Garden City, N. Y. 96 p. \$4.50.

Ten-year-olds lunching on chocolate-covered doughnuts eagerly appraised the book for me: "Hey, neat!" and—inevitably—"I had a gerbil once . . ."

Rodents, from Mickey Mouse to the squirrels in the attic, interest everyone. They have been around for a long, long time. How and why they are so successful is told in this delightful book, which is intended for young readers but was also enjoyed in my household by teenagers and a middle-aged grandmother. The animals—chipmunks, lemmings, beavers, capybaras, and all—are described knowledgeably but not anthropomorphically, and scientific names are fitted naturally into the text. (Rabbits, though rodent-like, are lagomorphs and so are excluded.) Shuttlesworth tells just enough to make the reader want to investigate his special interest further. Lydia Rosier, in her fine pictures, manages to give the little creatures those bright, slightly mad eyes that may contain the secret of their success.

*Mary B. Gadd*  
Colorado College  
Colorado Springs