

Book Reviews

• Readers' comments on reviews should be addressed to the Editor.

BOTANY

THE MYXOMYCETES, by George W. Martin and Constantine J. Alexopoulos. 1969. University of Iowa Press, Iowa City. 560 pp. \$30.00.

Both professional and amateur myxomycete collectors will look to this monograph for many years as the most authoritative reference available. The major portion of the book is taxonomic, but in addition to the concise formal description for each taxon the authors provide valuable informal comments reflecting many years of first-hand observation. The illustrations, representing most species, are in color, and they show gross as well as microscopic aspects of fruiting bodies. The simple dichotomous keys, along with the illustrations, allow for relatively easy identification of specimens. Very useful also is the extensive taxonomic bibliography.

Twenty-two pages of introduction give an overview of the morphology, life cycles, cultivation, ecology, and geographic distribution of the Myxomycetes, and there is an historical sketch of myxomycete taxonomy. References cited in the introduction constitute a good cross-section of the available literature.

With the publication of this volume, the authors have given us the benefit of their long years of devotion to the Myxomycetes. The result is a testimony to their expertise.

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HOW TO KNOW POLLENS AND SPORES, by Ronald O. Kapp. 1969. Wm. C. Brown Co., Dubuque, Iowa. 249 pp. \$3.25 (softback).

This book, in the "Pictured-Key" series, is designed primarily as a general key for the casual polynologist and for those involved in the diverse fields in which a limited knowledge of polynology (pollen and spore classification) would be of some value. Basic information on structure, preparation techniques, and sampling procedures takes up the first 19 pages. The remainder of the book is a comprehensive pictured key to major spore and pollen types.

Like other books in this series, this one would be useful in the field. In

most cases it would provide at least enough information to establish the generic classification of the specimen.

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PLANT AGRICULTURE: READINGS FROM SCIENTIFIC AMERICAN, ed. by Jules Janick, Robert W. Schery, Frank W. Woods, and Vernon W. Ruttan. 1970. W. H. Freeman & Co., San Francisco. 254 pp. \$10 hardback, \$4.95 softback.

For readers in today's urbanized society this collection of articles is particularly well chosen and comprehensive. As Frits Went says in his contribution: "In our elaborately industrialized country we tend to lose sight of the fact that modern man's life still depends fundamentally on agriculture. And it is difficult to appreciate how insecure this foundation is, from the standpoint of feeding a growing population."

The articles appeared in *Scientific American* between 1950 and 1969. They are organized into five general sections: agricultural beginnings, plant growth and development, plant environment, production technology, and food needs and potentials. The views of archaeologists, historians, food scientists, and cell biologists meld with those of agriculturists into something worthwhile. The reader sees the spectrum of time and technology in the development of plant agriculture, its contributions to society over the ages, and the projections of plant agriculture's future, as well as what society will demand from plant agriculture.

A most refreshing feature of the volume is that many of the authors speak from outside the agricultural establishment; that is, the U.S. Department of Agriculture and the land-grant colleges.

If there are scientific subjects that are slighted, they are the problems of managing insect-pest populations and the reduction of attacks on plants by diseases, nematodes, and other competing biological forms. Additionally, the human element might well have received more emphasis, to achieve balance. However, the book is a comprehensive reference work for teachers of biology and their students. An outstanding feature for the young man or woman is that it opens up vistas of scientific and technologic opportunity in fields related to plant agriculture. These opportunities should increase as time goes on, according to several of the authors.

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AN INTRODUCTION TO INDUSTRIAL MYCOLOGY, by George Smith. 6th ed., 1969. St. Martin's Press, New York. 390 pp. \$14.50.

This new edition is a posthumous work, completed by the author before

his death and seen through the press by the author's son and wife. It is intended to meet the needs of those who wish to study "moulds" rather than fungi in general, and its organization reflects this. To a general mycologist the chapter organization is somewhat puzzling; for example, yeasts are not discussed in the Ascomycetes chapter, and *Aspergillus* and *Penicillium* are not included in the chapter on Fungi Imperfecti.

The bibliographic entries at the end of each chapter are rather good and are current up to about 1966. However, citations of some rather important recent works that would be useful to teachers and students are missing. The chapter on laboratory equipment and techniques is extremely well written but is somewhat dated: there is no mention of the use of metal or plastic closure-caps for culture tubes or of autoclavable plastic plugs. The appendix dealing with microscopy, photomicrography, etc., is useful, especially since many "industrial mycology" applications necessitate innovations beyond the usual laboratory microscopy.

Teachers of biology will find the book useful in its sections on technique. It does not pretend to be a general text and will likely find greatest use by those teachers and students who are engaged in research problems with fungi.

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EDUCATION

FUNDAMENTALS OF LEARNING AND MOTIVATION, by Frank A. Logan. 1970. Wm. C. Brown Co., Dubuque, Iowa. 226 pp. \$3.95.

This is a beginning book dealing with learning and motivation. It is free of the formal vocabulary, the technical detail, and the completeness that would result from the inclusion of alternative theories and interpretations. The author has used examples from the common experiences of most readers—even though, as he points out, this may create the illusion that psychology is "simple, familiar common sense." Logan further cautions the reader (in the preface) that any general book can create misconceptions through omitting detail, exceptions, elaborations, and qualifications. He states his belief, however, that "the most useful introduction to a complex topic is a coherent oversimplification." Logan admits that the book is a heavily biased, selective presentation that paints a consistent and integrated picture of the fundamental principles of learning and motivation. The book is based predominantly on research involving simpler animals or man in very simple laboratory situations, and this may lessen its attractiveness for some.

Logan points out what some will insist is a glaring weakness of this book.