

**MICROBIOLOGY**, by Philip L. Carpenter. 3rd ed., 1972. W. B. Saunders Co., Philadelphia. 512 p. \$9.50.

This book has five sections: on microorganisms in general, lower protists, higher protists, the ecology of infectious disease, and environmental and applied microbiology—a satisfactory sequence. Historical information in the early chapters relates past accomplishments in microbiology to present methods and viewpoints. Most of the topics are classical, but the suggested readings encourage the pursuit of specific interests in more depth than the text itself provides.

Information on infectious diseases and bacterial genetics has been updated in this edition. The author's style is relatively easy, and the material is presented clearly and concisely. Photographs, charts, and tables are numerous and well chosen. The type is rather small.

This is an excellent book: comprehensive, yet easy to read. It is recommended as a textbook for an introductory-microbiology course in college and as a worthwhile resource for secondary-school teachers and students.

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**MICROBIOLOGY AND PATHOLOGY**, by Alice Lorraine Smith. 10th ed., 1972. C. V. Mosby Co., St. Louis. 680 p. \$12.25.

This sensible book is, the author says, "for the health professions." It is much more than that. The title names its two parts—"sister subjects." In her treatment of microbiology Smith is up-to-date on such topics as enzyme detergents, antibiotics, staphylococcal infections in hospitals, and immunization programs (good and bad aspects). She flavors the text with apt stories; for example, she notes a case of anthrax acquired by using a cheap shaving-brush. The descriptive sections on microorganisms deal with all the familiar forms and with such recent arrivals as the *Bedsoniae*. Part 1 concludes with details of the relationships of microbes and man.

Part 2, on pathology, is highly clinical. Smith observes the pathologist at autopsy, and she even tells doctors how to explain surgical procedures in the gentlest way to the frightened families of the sick. Her descriptions of the nature and cause of disease—from achondroplasia to the zoonoses—are sprinkled with the adjectives and nouns of the medical profession. Her discussions of birth defects, metabolic disturbances, deficiency states, and injuries from nonliving agents are followed by an especially good chapter on the neoplasms (histology and gross morphology). Part 2 concludes with overviews of diseases of the organ sys-

tems; here a great deal of physiology is conveyed.

The book is loaded with helpful ready-reference tables and charts, and there are hundreds of fine, though often grisly, pictures. The glossary and the index are extensive. The format and the editing are first-rate.

I can't think of a better, richer survey of "micro" in the fascinating context of human ailments. As its long publishing history indicates—the first edition appeared in 1936—this book has wide appeal. The new edition will be specially welcome in premedical and paramedical classrooms, but biology teachers will have recourse to it for answers to many practical questions. Indeed, anyone interested in biologic processes in sickness and in health should partake of the lucidity, earthiness, and plain common sense that are Alice Lorraine Smith's outstanding qualities.

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### Microscopy

**LIGHT AND ELECTRON MICROSCOPY OF CELLS AND TISSUES: AN ATLAS FOR STUDENTS IN BIOLOGY AND MEDICINE**, by Edmund B. Sandborn. 1972. Academic Press, New York. 215 p. \$10.00 (hardback).

Sandborn's concise atlas provides basic knowledge of animal cells and tissues. Almost all the micrographs are of tissues prepared from perfused laboratory rats, and the most commonly encountered tissues get the most attention. The 14 chapters cover cells in general, as well as the major mammalian organ-systems. Each chapter has an extensive list of references, and the book is completely indexed.

Nearly all of the electron micrographs are excellent; however, in a few the resolution is offset by knifemarks. There are minor errors of labeling. Despite these slight faults the book should be useful to students interested in cell structure and function.

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**BASIC ELECTRON MICROSCOPY TECHNIQUES**, by M. A. Hayat. 1972. Van Nostrand Reinhold Co., New York. 131 p. \$9.95 (hardback).

It is hard to believe that so much information could be packed into this small book. Its strongest point is that it is thoroughly up-to-date but does not exclude time-tested methods. All aspects of preparation, from tissues to viruses, are covered. A chapter on vascular perfusion, not found in most textbooks, is included. Other chapters discuss fixation, preparation of buffers, embedding, negative staining, staining

of thick and ultrathin sections, and sectioning specimens with the ultramicrotome. Sources of chemicals and equipment are listed, and there are references to the original literature for the techniques discussed.

This book could be used in a course in electron microscopy. It would also be helpful to the worker in electron microscopy, particularly if he has been away from the field for a time.

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### Molecular Biology

**MODERN BIOLOGY**, ed by Rolande Hoste. 1971. Penguin Books, Inc., Baltimore. 359 p. \$2.95.

The title does not reveal that this is an anthology of 29 articles on biologic control systems. Most of the authors are British, and all but three of the articles appeared in British science journals (primarily *New Scientist* and *Science Journal*) during the past 20 years. Half of them were published before 1967.

The book has three parts. Part 1, "Cellular Production Lines," discusses theories of the origins of life and photosynthesis, genetic control, and energy production. The articles by A. L. Lehninger on energy transfer (1965) and by P. Echlin on the origins of photosynthesis (1966) are excellent. Part 2, "Processes and Their Control in the Organism," dealing mainly with physiologic homeostasis, includes articles on oxygen uptake in fishes and on biologic clocks. Part 3, "Structures, Processes and Control in Populations," includes subjects as diverse as genetic engineering, pheromones, and ocean fish-farming.

The selections are quite readable and well edited. However, the book will be of limited value to most undergraduate students of biology, because many of the important advances of the last six years, particularly in molecular biology, are not mentioned. I recommend the book primarily to those advanced students and biology teachers who are interested in general, rather historical treatments of some of the major biologic ideas that have been developed since 1950.

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### Zoology

**INVERTEBRATE ZOOLOGY**, by Paul A. Meglitsch. 2nd ed., 1972. Oxford University Press, New York. 834 p. \$12.50.

For those unfamiliar with this standard textbook in its earlier edition