Book Reviews

Microbial Processes and Disease: A Textbook

Microbiology. BERNARD D. DAVIS, RENATO DULBECCO, H. N. EISEN, HAROLD S. GINSBERG, and W. BARRY WOOD, JR. Hoeber (Harper and Row), New York, 1967. xii + 1464 pp., illus. $23.50.

This is a big book—1464 pages, $23.50, and six pounds big. It makes one wonder just how large and how expensive the combined demands of professors, students, and publishers are going to make the microbiology text of the future. This volume, by five eminent microbiologists, all of whom are M.D.'s, is the first completely new textbook designed specifically for medical school microbiology courses to appear in this country for a long time, and its publication has been awaited with more than ordinary interest. It is described on its title page as "a text emphasizing molecular and genetic aspects of microbiology and immunology, and the relations of bacteria, fungi, and viruses to human disease." To quote again, this time from the preface, the authors "have tried to identify the 'truly vital roots' of classical bacteriology, immunology, and virology, and to engraft them upon the recent molecular advances."

This objective is reflected in the amounts of space devoted to the topics usually covered in medical microbiology texts. Approximately equal portions of the book are concerned with bacterial physiology and genetics, immunology, bacterial and mycotic agents of disease, and viruses. This distribution represents a much heavier emphasis on basic microbiology and immunology than has been traditional. It is also unusual in that more pages are devoted to viruses than to bacteria and fungi.

The sections on bacterial physiology (broadly defined to include structure, metabolism, genetics, and chemotherapeutic agents) and immunology present highly readable accounts of these subjects in terms of modern biological concepts. They should be of value not only to medical students but also to graduate students in microbiology and other biological disciplines. Professors of microbiology might also learn something from these chapters.

The sections on bacterial and mycotic infections and virology are less successful in escaping the conventional mold of the medical microbiology text, but this is not really the authors' fault. The main trouble is that there is still no molecular biology of infection. Although molecular biology had its origin in Avery's search for an explanation for the pathogenicity of the pneumococcus, the lack of interest in infectious diseases on the part of molecular biologists has been matched only by the lack of interest in molecular biology on the part of medical microbiologists. However, the authors are to be commended for attempting to bring modern biological concepts to bear on host-parasite relationships and mechanisms of microbial pathogenicity, for this is the only way in which our understanding of infectious processes will be materially increased. In teaching microbiology to medical students, I have been somewhat surprised to find that it is easier to interest them in basic microbiology and immunology than in specific infectious agents and infectious diseases. The former, they say, represent coherent bodies of information, the latter "only facts." How to give coherence to these facts remains, even in this excellent text, a problem without a wholly satisfactory solution.

This is a handsome book, if a little unwieldy. The typography is good, and the illustrations are excellent and very numerous (1302 to be exact). There are 10 to 30 "selected references" at the end of each of the 57 chapters. A mild complaint might be that the references in some areas are a little too selected for a student with a broad range of interests. In some places, the enthusiasms and prejudices of the authors show through the printed page to a degree more appropriate to a critical review than to a textbook, but in general the treatment of controversial topics is fair and dispassionate. As is inevitable with a book of this length, there are errors, both factual and typographical. But anyone who has ever had any part in writing a textbook will be reluctant to cast the first stone of reproach.

In our department, we teach a two-quarter course in microbiology to medical students, graduate students, and undergraduate seniors that covers roughly the same topics presented in this text. A few copies were available for use in these courses last year. All these groups of students liked this text; the good students depended on it more heavily than the poor ones. I predict that Davis, Dulbecco, Eisen, Ginsberg, and Wood's *Microbiology* will be widely used in microbiology courses both within medical schools and without.

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Since the writing of this review Harper and Row has published a condensed version of *Microbiology*, under the title *Principles of Microbiology and Immunology* (863 pp., $14.95), for use as a textbook for general microbiology courses.—ED.

Botanical Center in Russia

The Komarov Botanical Institute. 250 Years of Russian Research. STANWYN G. SHETLER. Smithsonian Institution Press, Washington, D.C., 1967 (distributed by Random House, New York). xiv + 240 pp., illus. $5.95.

Stanwyn G. Shetler, an associate curator at the Smithsonian's Natural History Museum, visited the Komarov Botanical Institute in 1964, the year it celebrated its 250th anniversary, and apparently caught an infectious though fortunately mild and quite benevolent germ, for as an outcome of this visit, after a half-dozen years of gestation and extensive additional research, he has written this attractive account of the institute and its activities. This reviewer happened to visit the institute in 1963. He cannot claim to have made further studies on its history, but on the basis of what he did learn during his own visit he can testify to the author's great care and objectivity.

There are a few mistakes. The author, when speaking about the organization of the Russian Botanical Society in the year 1916, translates the term *tovarishch predsedatelya* as "comrade president."