

Book Reviews

Principles of Plant Pathology. E. C. Stakman and J. George Harrar. Ronald, New York, 1957. xi+581 pp. Illus. \$8.

To many persons, plant pathology is an art. To Stakman and Harrar, plant pathology is a science.

In America the *art* of plant pathology is flourishing. Plant diseases are serious matters to farmers and to all who grow plants for pleasure or profit, and they have emphasized the pragmatic programs of plant pathology. American plant pathologists have responded so well to these pressures and have built up the art so well that they are sometimes envied by their colleagues abroad.

As for the *science* of plant pathology in America, the case is very different. As the readers of this journal well know, such situations are evident in other sciences as well. Plant pathology is not alone.

It is high time that someone published a book on the science of plant pathology in America, and Stakman and Harrar have done so. Prior to this we have had books galore on such subjects as diseases of citrus or pathology in forest practice, and we have had books on practical control methods. Other books have been aimed somewhat more closely than these in the direction of scientific plant pathology. They have dealt with the microbial agents of disease. A typical chapter heading would be "Diseases caused by Ascomycetes." This approach to the subject attains scientific status by default: It is not immediately practical, therefore, it must be scientific. Actually, these books, like the others, simply give an encyclopedic treatment of individual diseases. They merely slice the subject at a different angle. Treatment of theory in either pattern is "purely coincidental."

Stakman and Harrar have cast all that aside. They are concerned with plant disease as a conceptual scheme, not as a series of diseases to be fought. Theirs is not a book on diagnosis or control, on mycology or virology or nematology. They have dared to consider theory their first order of business—to speculate on the nature of things. They have, for example, attempted to give some explanation of the reasons why spore-bearing structures in fungi are shaped as they

are; why fungi must penetrate tissues in the way that they do. They remark, characteristically, "A disease . . . is essentially a process—a stream of events that can be affected anywhere along its course by other streams of events." This is thoughtful writing about a dynamic subject.

I think they have weakened their case somewhat by dragging in a few pragmatic chapters, such as those on "Plant Diseases of International Importance" or "Diseases in Transit and Storage." Nevertheless, I am impressed with the depth of the thinking in the book. I think it is a milestone on the long, long road from the mystic notions of spontaneous generation to a deep understanding of the nature of disease in plants.

JAMES G. HORSFALL
*Connecticut Agricultural
Experiment Station, New Haven*

The Infectious Diseases of Domestic Animals. With special reference to etiology, diagnosis, and biologic therapy. William A. Hagan and Dorsey W. Bruner. Comstock Division, Cornell University Press, Ithaca, N.Y., ed. 3, 1957. xx+968 pp. Illus. \$10.50.

This is primarily a textbook of veterinary microbiology, in which considerable emphasis is placed on infectious diseases. The approach used by the authors has resulted in an outstanding compilation of current knowledge concerning infectious diseases and infectious disease agents, broader in scope than either a text of microbiology or infectious diseases although, of necessity, lacking the detail found in a book of infectious diseases per se. The excellent correlation of the subject matter and the style of writing make this a highly readable text.

As in the previous edition, the book is divided into seven parts which deal, respectively, with the immunological aspect of the host-parasite relationship; chemotherapeutic and antibiotic agents; the pathogenic bacteria; the spirochetes; the bartonella, the rickettsiae, and the pleuropneumonia organisms (these are discussed in part IV, entitled, "Bacterial-like Pathogenic Organisms of Uncertain Classification"); the pathogenic

fungi; the pathogenic protozoa; and the viruses.

The book has been brought up to date by the incorporation of much recent pertinent work and by the inclusion of several additional tables and illustrations and a greater number of references. The over-all length exceeds that of the previous edition by approximately 50 pages.

In my opinion the book is superior to any other of its kind currently available in the field. Fundamental information is stated clearly, impartial treatment is accorded controversial issues, and balance has been achieved by selective emphasis of the subject matter. Exotic diseases, which are an ever-present threat to the livestock industry of this country, receive considerable attention.

A few minor changes and critical suggestions might be considered for future revisions of the book. Additional pictorial material could have been used to advantage in dealing with the protozoa. A more careful selection of reference material might have contributed to greater completeness in the case of certain diseases discussed (for example, anaplasmosis) and to greater accuracy in certain statements (such as that enzootic abortion of ewes occurs in Australia and New Zealand). Inclusion of the initials of those whose names appear in the reference list would, it is felt, be an improvement.

Omissions are few, although several diseases of considerable importance (such as epididymitis of rams, ovine pneumonia, and virus pneumonia of pigs) are not mentioned. On the other hand, reference to bluetongue as a disease of cattle as well as of sheep is perhaps misleading.

I heartily endorse this book for use in the teaching of veterinary microbiology and infectious diseases and as a ready source of information on essentially all phases of work in the field of infectious disease.

D. G. MCKERCHER
*School of Veterinary Medicine,
University of California, Davis*

Handbuch der Physik. vol. 28, *Spectroscopy II*. S. Flügge, Ed. Springer, Berlin, 1957. vi+448 pp. Illus. DM. 98.

The first of the five articles contained in this volume deals with microwave spectroscopy (78 pages, in English) and is written by Walter Gordy, one of the leading men in this field. It gives a vivid and clear account of methods, instrumentation, and achievements in this latest branch of spectroscopy, which, despite its youth, has played an important role in atomic, molecular, and solid-state physics and even in astrophysics.