The theoretical section takes up about one third of the book. This includes modern concepts of complete ionization, acid-base relationships, etc., which are made an integral part of the later discussions in the experimental sections. Especially noteworthy are the up-to-date sections on hydrolysis and amphoterism, the author's treatment of "ammonium hydroxide" as ammonia, and the inclusion of a separate chapter dealing with the concept of activity. To this reviewer, the entire theoretical section, although admirable in its scope, was somewhat lacking in general clarity and readability. There might be mentioned, as contributing to this, rather poor arrangement of the topics discussed and occasional misplaced emphasis. Thus more space is devoted to the nomenclature of Werner compounds than is given to an explanation of their structure.

In the experimental section which follows, 100 pages are devoted to the 24 common cations. General discussion of the chemistry of the several metals and preliminary experiments on the reactions of their ions precede the actual group analysis. The latter follows customary procedure, employing sodium hydrogen sulfide to separate the copper and tin subgroups, and making use of only the most essential organic reagents. A good discussion of the analysis of each cation group follows the description of the procedure. It is unfortunate that a complete summary of the several cation groups is to be found nowhere in the section on cations, but only in the Introduction, and that here the sulfides of Group II are described as "sparingly soluble in water," while those of Group III are said to be "almost insoluble in water."

To the analysis of 24 anions the author devotes 72 pages. The selection is somewhat arbitrary, including for example chlorate, bromate, iodate and perchlorate, but excluding silicate, arsenite, acetate and oxalate. The procedure followed is that of Sneed and Duschak[1] adapted for semimicro use by the author and A. Lerner. It has the advantage of dividing the anions into five mutually exclusive groups, which are separated in order by means of successive precipitations of the calcium, barium, cadmium and silver salts under proper conditions. Without first-hand experience of the method, this reviewer can not form an adequate opinion of its merits.

The Appendix of 21 pages contains several valuable features, including a good review of mathematical operations used in qualitative analysis, and an exhaustive but uncritical list of reference books in qualitative analysis and inorganic chemistry.

This first edition of Professor Heisig's book is marred by numerous small errors and omissions. Misspellings, especially of proper names, are frequent; it is to be hoped that these will be corrected subsequently.

WENDELL H. TAYLOR

DISEASES OF DOMESTIC ANIMALS

The Infectious Diseases of Domestic Animals. By WILLIAM ARTHUR HAGAN, D.V.M., D.Sc., professor of bacteriology and dean of the faculty, New York State Veterinary College, Cornell University. 665 pp. 145 ill. Ithaca, N. Y.: Comstock Publishing Co., 1943. Price, $6.00.

THIS is a well-integrated and entirely adequate account of the host of infectious diseases to which domesticated mammals and birds are subject, of the specific microorganisms involved and of available methods of diagnosis and control. The introductory section of the book is a consideration of the general aspects of infection and disease production by microorganisms, and of the nature and development of the immune response, with a brief review of allergic conditions and of iso-antibodies. Discussion of groups of microorganisms is arranged under the following section headings: Pathogenic Bacteria, Bacteria-like Pathogenic Organisms of Uncertain Classification, *i.e.*, Spirochetes, Rickettsiae and Pleuropneumonia Group, Pathogenic Fungi, Pathogenic Protozoa and Viruses. For each of these groups or, where justified, for individual organisms, consideration follows the general pattern: morphology, reactions in culture, natural habitat, pathogenicity and types of disease in susceptible hosts, diagnostic and control methods, immune response, and, where appropriate, relation to disease of man. These divisions of the subject matter are clearly marked by subtitles in bold face type, giving ready access to any part of the material. To each chapter and to many chapter subdivisions short lists of well-chosen references are appended. This is not a textbook of bacteriology in the usual sense. Instead, its purpose is much broader, and it presents a well-balanced treatment of the important aspects of infectious diseases of lower animals.

HERBERT L. RATCLIFFE

SPECIAL ARTICLES

OBSERVATIONS CONCERNING THE ETIOLOGY OF PRIMARY ATYPICAL PNEUMONIA

THE clinical syndrome currently known as primary atypical pneumonia may be caused occasionally by viruses of the psittacosis group[1,2,3,4,5] or by Rick-

[1] *Jour. Chem. Ed.*, 8: 1177–86 and 1386–95, 1931.

[1] M. D. Eaton, M. D. Beck and H. E. Pearson, *Jour. Exper. Med.*, 73: 641, 1941.