William A. Hagan (1893–1963), M.S., D.V.M., Honorary Doctor of Veterinary Science (Kansas State University, 1938), and Honorary Doctor of Letters (University of Toronto, 1962), was Professor of Veterinary Bacteriology and Dean of the College and Chairman, Department of Pathology and Bacteriology, New York State College of Veterinary Medicine at Cornell University. An excellent teacher, he taught courses in pathogenic microbiology and in infectious diseases of domestic animals to veterinary students for many years. This textbook was an outgrowth of his courses, and he served as senior author of the first four editions. He was also an eminent bacteriologist, whose research contributed fundamental knowledge about tuberculosis of animals and humans, Johne’s disease of cattle, and other mycobacterial diseases of animals.

Dr. Hagan excelled as a teacher, scholar, scientist, administrator, and academician. He received many awards and honors for his distinguished contributions to the veterinary profession and society, including in 1960 the International Veterinary Congress Award of the American Veterinary Medical Association.

Dorsey W. Bruner (1906– ), B.S., D.V.M., Ph.D., is Emeritus Professor of Veterinary Microbiology and former Chairman, Department of Veterinary Microbiology, New York State College of Veterinary Medicine at Cornell University. A student of Dr. Hagan, he joined him as a colleague in 1949 after conducting research at the University of Kentucky and serving in the United States Army during World War II. At Cornell Dr. Bruner assumed responsibility for the course in pathogenic microbiology. He was co-author of the second, third, and fourth editions of this textbook and became senior author of the next two editions. He was also editor of and reviewer for the Cornell Veterinarian for twenty years.

A world-renowned expert on the enteric bacteria of animals and humans, particularly the salmonellae, Dr. Bruner has been awarded many honors, including the prestigious International Veterinary Congress Award in 1972. He will long be known as an outstanding teacher, research scientist, editor, scholar, administrator, and humanitarian.
Hagan and Bruner's Microbiology and Infectious Diseases of Domestic Animals

WITH REFERENCE TO ETIOLOGY, EPIZOOTIOLOGY, PATHOGENESIS, IMMUNITY, DIAGNOSIS, AND ANTIMICROBIAL SUSCEPTIBILITY

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EIGHTH EDITION

CBS PUBLISHERS & DISTRIBUTORS
NEW DELHI • BANGALORE • PUNE (INDIA)
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eISBN: 978-81-239-xxxx-x
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First eBook Edition: 2017

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Published by Satish Kumar Jain and produced by Varun Jain for
CBS Publishers & Distributors Pvt. Ltd.

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Preface to the Eighth Edition

Our primary goal in preparing this revision remains the same as that for previous editions: to produce an up-to-date resource for veterinary students enrolled in courses in infectious diseases, bacteriology, mycology, virology, pathogenic microbiology, clinical microbiology, and preventive medicine. The detailed treatment of topics and the extensive reference lists should also make the book uniquely valuable to clinicians, research scientists, laboratory diagnosticians, public health officials, and all who seek information on the microbiology and infectious diseases of domestic animals.

The 1980s have signaled what promises to be the most exciting and productive era in the history of infectious disease microbiology since the late 1800s, when Louis Pasteur, Robert Koch, and the other great microbiologists of the time conducted their pioneering research. Powerful new techniques have at last provided the means to define microbial virulence in molecular terms, resulting in an understanding of infectious diseases never before possible. As we prepared this edition, we were excited and inspired by the reports of the first applications of these new methodologies to the study of infectious diseases in animals. Clearly, individuals trained in the biology of both host and pathogen have almost boundless opportunities for fruitful application of these approaches, and we sincerely hope that some of the students who read this text will choose careers in which they can share in the opportunities of this unique time.

Almost all the chapters on the pathogenic bacteria have been completely reorganized and updated to reflect current thinking on taxonomy; for example, three species long thought to belong to the genus Corynebacterium are described in this edition under the new names Rhodococcus equi, Actinomyces pyogenes, and Eubacterium suis. For taxa whose revision has not yet been firmly established, the species are discussed under their familiar designations, with a statement that reclassification is imminent. Many of the virology chapters have also been extensively rewritten and reorganized to conform with the latest taxonomic thinking. Throughout, recently recognized infectious agents are described and many new illustrations appear. These additions have inevitably increased the length of the book, a consequence that we hope will not be too discouraging for the already burdened student.

Work on this edition was begun in 1985, and its completion nearly three years later has required the competent and generous efforts of many fine people. Joanne Lee, Mina Lee, Mary Neilans, Kim Newberry, Jennifer Schroeder, Raymond Scott, and Cynthia Wojcicki all helped with literature searches. Kathryn Freese, Doris June, Gwendolyn Frost, and Daisy Wallace were responsible for reducing many thousands of pages of rough manuscript to more than 3,000 pages of typed, legible text.

Colleagues at Cornell University and elsewhere reviewed most of the chapters and made valuable and much-appreciated suggestions for improvement. Dr. George Baer critiqued the chapter on the Rhabdoviridae, Dr. Howard Bachrach assisted James Gillespie in writing the section on foot-and-mouth disease, and Dr. Natasha Neef proofread many of the bacteriology and mycology chap-
Hagan and Bruner's Microbiology and Infectious Diseases of Domestic Animals

Publisher: CBS Publications  
ISBN: 9788123917047  
Author: J F Timoney And J H Gillespie

Type the URL: http://www.kopykitab.com/product/10628

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