

PENICILLIN THERAPY

Including

STREPTOMYCIN, TYROTHRIN AND OTHER ANTIBIOTIC THERAPY

BY

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SECOND EDITION



D. APPLETON-CENTURY COMPANY

INCORPORATED

NEW YORK

LONDON

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PRINTED IN THE UNITED STATES OF AMERICA

PENICILLIN THERAPY

Including

STREPTOMYCIN, TYROTHRIN AND

OTHER ANTIBIOTIC THERAPY

DEDICATED TO
SIR ALEXANDER FLEMING
WHO DISCOVERED PENICILLIN
AND
SIR HOWARD W. FLOREY
WHO DID SO MUCH IN
DEVELOPING PENICILLIN THERAPY

PREFACE

I am very grateful for the generous reception accorded the first edition of this book and hope that this, the second, will prove even more helpful to physicians, surgeons, dentists, clinical pathologists, medical and dental students, and medical technologists.

This edition has been heavily revised, largely rewritten, and considerably enlarged by the inclusion of a great deal of new material and additional illustrations. New chapters have been included on the properties, administration and clinical applications of streptomycin, tyrothricin, streptothricin and other antibiotic agents.

In the previous edition the clinical applications of penicillin and other antibiotic agents in the treatment of various diseases were discussed from the standpoint of their etiological classifications. This is still the most logical procedure but in this edition I have discussed the clinical applications of penicillin, streptomycin, and other kinds of antibiotic therapy under disease entities since so many diseases are caused by more than one pathogenic organism. Needless to state I am very much hoping that this arrangement will render the book of maximum value to clinicians.

Much is yet to be learned about penicillin and streptomycin, especially the latter, in the prevention and treatment of infectious diseases, particularly in relation to their dosage and administration, but so much has been learned during the past year that, generally, I have been able to be more definite and concise than heretofore in advising methods and plans of treatment. In view of the important clinical aspects of penicillin therapy by oral administration and intramuscular injections of the compound suspended in peanut oil and beeswax, as well as of water-in-oil emulsions, special consideration has been given those methods of administration.

This book has been written largely from the clinical standpoint. Therefore, only the principles involved in the production of penicillin, streptomycin and other antibiotic agents have been discussed. But since clinical laboratories are required to conduct assays of the serum, urine, spinal fluid and other materials as well as susceptibility tests of organisms to penicillin and streptomycin, I have attempted to describe such practical laboratory procedures with considerable detail in view of their clinical value in relation to the treatment of disease.

A new chapter on antibiotic therapy in relation to veterinary medicine has been included which I hope will be of interest and value to veterinarians in the treatment of many diseases of the lower animals. In the treatment of human beings with penicillin, streptomycin and other antibiotic agents, so much has been learned by their trial in the treatment of experimental infections of the lower animals that it is only right and proper that domestic animals should also benefit from the knowledge thus obtained aside from the economic factors involved.

In conclusion, I wish once again to express my deep appreciation to the publishers,

D. Appleton-Century Company, for permission to rewrite and enlarge this book in order to bring its contents strictly up to date, and for their unvarying courtesy and efficiency. I am also deeply grateful to my secretary, Edna M. Kershaw, for valuable assistance in editing the manuscript.

JOHN A. KOLMER

PREFACE TO FIRST EDITION

Four years have now elapsed since Florey and his colleagues first succeeded in isolating penicillin in relatively pure form and discovered its remarkable effects in the treatment of various experimental bacterial infections of mice. During that period American manufacturers have had striking success in its large scale production and purification for treatment purposes. Great credit is due Dr. A. N. Richards, chairman of the Committee on Medical Research, and the Office of Scientific Research and Development for sponsoring the production of penicillin and its clinical trial in the United States. Under this direction the Division of Medical Sciences of the National Research Council worked through the Committee on Chemotherapeutic and Other Agents under two able chairmen, Dr. Perrin Long until July, 1942, and thereafter Dr. Chester S. Keefer, as the official body responsible for supervising and directing both the production and clinical study of the compound. In that short period of time penicillin therapy has become firmly established as one of the most unique epochs in the history of medicine and chemotherapy. Its development and careful clinical trials will long exemplify the highest traditions in medical research and, incidentally, the rich rewards of sound international cooperation during a war of unparalleled magnitude.

A very large literature has already accumulated on the methods of production, properties, standardization, methods of administration, dosage and therapeutic effectiveness of penicillin in the prevention and treatment of numerous diseases due to various pathogenic bacteria and spirochetes, although its full possibilities have not yet been explored nor the ultimate fruits of its discovery foreseen. Under the circumstances and since more and more penicillin is becoming available for clinical use, I have thought it both timely and advisable to prepare this monograph with the hope that it will prove useful to both the medical and dental professions. The properties, methods of administration and possible therapeutic applications of tyrothricin and certain other chemotherapeutic polypeptides have also been included. I have attempted to review and concisely summarize the important literature although the inclusion of all published articles would enlarge my book too greatly and lead me too far afield.

Much is yet to be learned about penicillin in the prevention and treatment of infectious diseases, and especially in relation to its dosage and administration, but whenever possible I have attempted to be as definite and concise as compatible with present data and experience. A number of illustrations have been included, with special reference to methods for assaying and administering penicillin, which I hope will be helpful and instructive.

In conclusion, I am deeply grateful to my secretary, Edna M. Kershaw, for valuable assistance in editing the manuscript. I also wish to express deep appreciation of the unvarying efficiency and courtesy of the publishers.

JOHN A. KOLMER

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