CUSHNY'S PHARMACOLOGY AND THERAPEUTICS

GROLLMAN AND SLAUGHTER

13TH EDITION

CHURCHILL

PHARMACOLOGY

AND

THERAPEUTICS

Originally Written by

ARTHUR R. CUSHNY, M.A., M.D., LL.D., F.R.S.

LATE PROFESSOR OF MATERIA MEDICA AND PHARMACOLOGY IN THE UNIVERSITY OF EDINBURGH

THIRTEENTH EDITION, THOROUGHLY REVISED

BY

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PROFESSOR OF MEDICINE AND CHAIRMAN OF THE DEPARTMENT OF EXPERIMENTAL MEDICINE, AND PROFESSOR OF PHARMACOLOGY AND CHAIRMAN OF THE DEPARTMENT OF PHYSIOLOGY AND PHARMACOLOGY, THE SOUTHWESTERN MEDICAL COLLEGE; ATTENDING PHYSICIAN, THE PARKLAND HOSPITAL, AND CONSULTANT IN INTERNAL MEDICINE, THE BAYLOR UNIVERSITY HOSPITAL, DALLAS, TEXAS

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PREFACE TO THE THIRTEENTH EDITION

When the first edition of this book appeared, in 1899, it was recognized as being "the first severely critical, rigorously scientific, general text-book to be written in English by an experimental pharmacologist." For a quarter of a century successive editions from Cushny's master hand played an important part in sifting and promulgating the advances in knowledge of the subject with which it deals. In the preface to the eighth edition (1924) he quoted prophetically from "the Schoole of Salerne" (1607) the farewell verse:

> And here I cease to write, but will not cease
> To wish you live in health, and die in peace;
> And ye our Physicke rules that friendly read,
> God grant that Physicke you may never need.

When Cushny himself "ceased to write," Professor C. W. Edmunds of the University of Michigan and Professor J. A. Gunn of the University of Oxford were entrusted with the task of preparing the ninth, tenth, eleventh and twelfth editions. These eminent pharmacologists maintained, not merely the critical spirit of the book, but the text as far as was possible. Their success is evidenced by the way in which the book has maintained its popularity with teachers and students.

Since the appearance of the last edition in 1940 Professor Edmunds has died and Professor Gunn has resigned, which necessited the appointment of the present editors to prepare the present revision. We have attempted to bring the subject matter up-to-date with as little violence as possible to the original spirit of the text.

Pharmacology during recent years has undergone notable advances particularly in the fields of chemotherapy, endocrinology, and the vitamins. We have incorporated into the present edition these changes while retaining those features which characterized the original "Cushny." It has been our purpose to prepare a text-book for the student and practitioner of medicine rather than a compendium of pharmacological knowledge. Some of the older material on the effect of drugs on isolated organs or the anesthetized animal, which formed the mainstay of classical pharmacology, has been deleted in favor of the more practical therapeutics of modern medicine. We feel that it is only by emphasis on the scientific basis of therapeutics that modern pharmacology can assume the important rôle in the medical curriculum which it merits.

The present edition incorporates changes introduced by the publication of the twelfth decennial revision of the Pharmacopeia of the United States (1942), the British Pharmacopeia of 1932, and their respective supplements.

No strictly scientific or completely logical arrangement of the heterogeneous group of substances used as drugs is yet possible. Drugs grouped together by reason of possessing a common pharmacological action may differ from one another in respect of other pharmacological actions; drugs used for a specific therapeutic purpose may have little otherwise in common either chemically or pharmacologically. In spite of this, the subject can be made more intelligible and repetition can be avoided by such arrangement as is possible. In this book drugs are grouped together sometimes because they act at a common point, *e. g.*, hypnotics; sometimes because they have a common therapeutic use, *e. g.*, anthelmintics; and sometimes because of a chemical similarity, *e. g.*, heavy metals. When in doubt, we have decided the arrangement with a view to convenience in teaching the subject and ease of learning it.

In compiling the references at the end of each section we have contented ourselves, as was Cushny's practice, with giving such references as either indicate pioneer researches on a particular subject or as contain in themselves a good bibliography.

A. G.
D. S.

DALLAS, TEXAS.

ARTHUR ROBERTSON CUSHNY

(1866–1926)

DR. ARTHUR R. CUSHNY was born at Fochabers, Scotland, on March 6, 1866. He was educated at the local school and subsequently at the University of Aberdeen, where he graduated M.A. in 1886 and M.B.C.M. (with highest honors) in 1889. Under tenure of a fellowship awarded by his University, he worked for a year at Berne under the celebrated physiologist, Hugo Kronecker, and later at Strassburg under Oswald Schmiedeberg, then the most distinguished pharmacologist in Europe. After acting for two years as assistant to Schmiedeberg, he was invited to succeed J. J. Abel in the chair of Pharmacology at Ann Arbor. Here he remained until 1905, when he returned to England to become the first occupant of the chair of Pharmacology at University College, London, and in 1918 succeeded Sir Thomas Fraser at Edinburgh, where he remained until his sudden death in 1926.

One of his most important contributions to medical science was his research upon the pathological physiology of the mammalian heart, and especially his study of the cardiac arrhythmias. These studies led him to conclude that auricular fibrillation was probably a cause of certain forms of cardiac irregularities which were seen in the human subject. As is well known, this theory was later shown to be correct by studies carried out upon patients by workers in various parts of the world.

Other outstanding contributions were his study of the action of the digitalis glucosides, culminating in his monograph, "The Action and Uses in Medicine of Digitalis and Its Allies," 1925; his investigations of the function of the kidney and the action of diuretics, leading up to the critical summary, "The Secretion of Urine," published in 1917. His quantitative study of the action of the optical isomers was made the subject of the Dohme Lectures, delivered at Johns Hopkins University in 1925, under the general title, "Biological Relations of Optically Isomeric Substances." Apart from these major interests, he made a large number of important researches covering a wide field of pharmacological inquiry, as shown by the bibliography which appeared in the *Journal of Pharmacology and Experimental Therapeutics* (**27**, 265, 1926).

Dr. Cushny possessed to an unusual degree a constructive and original mind with balanced and critical judgment. These qualities added to his unswerving love and pursuit of truth, the breadth and accuracy of his knowledge, and his power of gaining the affections of his fellow workers all over the world, made him one of the most influential figures in the great advances of pharmacology in the first quarter of the twentieth century.

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