

CUSHNY'S  
PHARMACOLOGY  
AND  
THERAPEUTICS

GROLLMAN  
AND  
SLAUGHTER

13<sup>TH</sup> EDITION

CHURCHILL

# PHARMACOLOGY AND THERAPEUTICS

*Originally Written by*

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UNIVERSITY OF EDINBURGH

THIRTEENTH EDITION, THOROUGHLY REVISED

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# CONTENTS

## INTRODUCTION

Method of Action of Drugs	15
Stimulation, Depression, Irritation	15
Distribution and Concentration	17
Elective Affinity of Drugs. Protoplasm Poisons	18
Local, General and Remote Actions	18
General Theories of Pharmacological Action	19
Chemical Constitution and Pharmacological Action	20
Pharmacological Syndromes	21
Chemotherapy	22
Conditions Modifying the Effects of Drugs	23
Methods of Administration	29
The Chemical Characters of Drugs	33
The Pharmacopœias and Pharmacopœial Preparations	35
Biological Assay	38
Preparations in the U.S.P. Requiring Biological Assay	39
Preparations in the B.P. Requiring Biological Assay	40

## PART I

### THE ACTION OF INORGANIC SUBSTANCES

I. Water and Salts	43
1. Water	48
2. Sodium Chloride	52
3. Saline Diuretics	53
II. Salts of the Alkalies	53
1. Potassium Salts	53
2. Lithium, Cæsium, Rubidium	55
3. Ammonium	56
III. Salts of the Alkaline Earths	59
1. Calcium	59
2. Barium	64
3. Strontium	64
4. Magnesium Salts	65
IV. Miscellaneous Anions	66
1. Phosphates	66
2. Oxalates	67
3. Fluorides	68
4. Sulfides	68
5. Iodides and Iodine	70
V. Alkalies	78
1. Hydrates and Carbonates of the Fixed Alkalies	78
2. Acetates, Lactates and Citrates	83
3. Ammonia and Carbonate of Ammonia	85
VI. Acids	86
VII. Oxygen	92

VIII. Carbon Dioxide . . . . .	96
IX. Carbon Monoxide . . . . .	99
X. Helium . . . . .	100
XI. Heavy Metals and Metalloids . . . . .	100
A. Metals . . . . .	100
I. Iron . . . . .	107
II. Copper . . . . .	115
III. Zinc . . . . .	118
IV. Aluminum . . . . .	121
V. Lead . . . . .	123
VI. Silver . . . . .	131
VII. Mercury . . . . .	135
VIII. Minor Metals . . . . .	147
B. Metalloids . . . . .	154
I. Bismuth . . . . .	154
II. Antimony . . . . .	160
III. Arsenic . . . . .	165
IV. Organic Arsenic Combinations . . . . .	177
V. Phosphorus . . . . .	187

## PART II

### SUBSTANCES WHICH ARE CHARACTERIZED CHIEFLY BY THEIR LOCAL ACTION

I. Skin and Mucous Membranous Protectives . . . . .	191
1. Demulcents . . . . .	191
2. Emollients and Protectives . . . . .	193
II. Skin Irritants and Counter-irritation . . . . .	197
1. The Turpentine Oil Group . . . . .	202
2. Mustard . . . . .	203
3. Cantharidin . . . . .	204
4. Toxic Skin Irritants . . . . .	205
III. Volatile Oil Series . . . . .	207
1. Camphor . . . . .	209
2. Malodorous Oils . . . . .	213
IV. Drugs Affecting Taste . . . . .	214
1. Sugar . . . . .	214
2. Flavoring Substances . . . . .	215
3. Volatile Oils Used as Flavoring Agents and Carminatives . . . . .	215
4. Simple Bitters . . . . .	218
5. Pepper Group . . . . .	220
V. Digestive Ferments . . . . .	220
1. Pepsin . . . . .	220
2. Pancreatic Ferments . . . . .	221
3. Vegetable Ferments . . . . .	221
4. Diastase . . . . .	222
5. Bile and Bile Salts . . . . .	222
VI. Vegetable Astringents—Tannic Acid Series . . . . .	224
1. Charcoal . . . . .	227
VII. Purgatives . . . . .	228
1. Mild Aperients, the Castor Oil Group . . . . .	231
2. The Anthracene Purgatives and Phenolphthalein . . . . .	233
3. The Jalap and Colocynth Group . . . . .	236
4. Saline Cathartics . . . . .	239

## PART III

SUBSTANCES CHARACTERIZED CHIEFLY BY THEIR ACTION  
AFTER ABSORPTION

A. Depressants of the Central Nervous System . . . . .	249
I. Narcotics of the Methane Series . . . . .	249
1. Alcohol-Chloroform Group . . . . .	249
II. General Anesthetics . . . . .	269
1. Ether and Chloroform . . . . .	269
2. Nitrous Oxide . . . . .	295
3. Ethylene . . . . .	300
4. Cyclopropane . . . . .	303
5. Tribromoethanol (Avertin) . . . . .	305
III. Sedatives and Hypnotics . . . . .	310
1. Chloral Group . . . . .	310
2. Barbituric Acid Group . . . . .	316
IV. Opium Series . . . . .	329
V. Other Analgesics . . . . .	358
VI. Cannabis . . . . .	361
VII. Apomorphine . . . . .	363
VIII. Bromides . . . . .	366
IX. Anticonvulsants . . . . .	373
B. Stimulants of the Central Nervous System . . . . .	379
I. Strychnine . . . . .	379
II. Picrotoxin . . . . .	389
III. Other Analeptics . . . . .	392
Metrazol and Nikethamide . . . . .	392
IV. The Xanthines . . . . .	393
Caffeine, Theobromine and Theophylline . . . . .	393
Coffee and Tea . . . . .	402
Minor Diuretics . . . . .	403
C. Local Anesthetics . . . . .	404
I. Cocaine . . . . .	404
II. Other Local Anesthetics . . . . .	411
D. Curare Group . . . . .	423
I. Curare . . . . .	423
II. Intocostrin . . . . .	426
III. Other Curarizing Drugs . . . . .	427
E. Substances Acting on the Autonomic Nervous System . . . . .	429
I. Nicotine Group . . . . .	429
Tobacco . . . . .	438
II. Substances Stimulating Parasympathetic Activity . . . . .	440
1. The Muscarine Group . . . . .	440
2. Choline, Acetyl-choline and Other Choline Esters . . . . .	444
3. Physostigmine and Neostigmine . . . . .	451
4. Pilocarpine . . . . .	459
III. Substances Depressing Parasympathetic Activity . . . . .	463
1. The Atropine Series . . . . .	463
2. Other Synthetic Substitutes for the Belladonna Alkaloids . . . . .	482
IV. Sympathomimetic Drugs . . . . .	485
1. Epinephrine (Adrenaline) . . . . .	485
2. Ephedrine . . . . .	497
3. Benzedrine . . . . .	500
4. Other Sympathomimetic Drugs . . . . .	502
F. Ergot and Its Alkaloids . . . . .	507
G. The Histamine Group and Anaphylaxis . . . . .	519



H. Drugs of Internal Secretion . . . . .	526
I. Pituitary Anterior Lobe . . . . .	527
II. Pituitary Posterior Lobe . . . . .	531
III. Thyroid Gland . . . . .	540
Thiouracil . . . . .	548
IV. Parathyroid . . . . .	549
Dihydratichysterol . . . . .	552
V. Adrenal Cortex . . . . .	553
Desoxycorticosterone . . . . .	554
VI. Insulin . . . . .	558
Alloxan . . . . .	563
II. The Sex Hormones . . . . .	563
1. The Gonadotropins . . . . .	564
2. The Female Sex Hormones . . . . .	564
The Estrogens . . . . .	564
Progesterone . . . . .	570
3. The Male Sex Hormones . . . . .	571
I. Hematics . . . . .	573
1. Liver and Liver Preparations . . . . .	573
2. Stomach Preparations . . . . .	578
3. Pentnucleotide . . . . .	579
4. Anticoagulants . . . . .	580
5. Coagulants . . . . .	582
J. Vitamins, or Accessory Food Substances . . . . .	583
K. The Digitalis Series . . . . .	612
L. The Nitrites . . . . .	642
M. Minor Drugs and Poisons . . . . .	650
I. Miscellaneous Drugs . . . . .	650
1. Chaulmoogra Oil . . . . .	652
2. Aconite . . . . .	652
3. Veratrine . . . . .	654
4. Saponin, Sapotoxin and Solanine . . . . .	656
5. Hydrastine and Hydrastinine . . . . .	657
6. Aspidosperma or Quebracho . . . . .	659
7. Phlorhizin . . . . .	659
II. Poisons Which Increase Metabolism . . . . .	660
1. Dinitrophenol . . . . .	660
2. Tetrahydronaphthylamine . . . . .	661
III. Poisons Which Act on the Blood . . . . .	661
1. Nitrobenzol Compounds . . . . .	661
2. Toluyldiamine . . . . .	662
3. Benzol . . . . .	662
IV. Hydrocyanic or Prussic Acid . . . . .	663
N. Colchicum . . . . .	666
O. Cinchophen and Its Derivatives . . . . .	669
P. The Antipyretics. (Acetanilide and Antipyrine Series) . . . . .	673
Agranulocytosis . . . . .	676
Q. Salicylates . . . . .	687
Benzoic Acid and Benzoates . . . . .	696
R. Quinine and Other Antimalarials . . . . .	697
I. Quinine . . . . .	697
II. Quinidine . . . . .	708
III. Quinacrine (Atabrin) . . . . .	711
IV. Pamaquine . . . . .	714
V. Other Antimalarial Drugs . . . . .	716
S. Emetine and Other Antiamebic Drugs . . . . .	717
I. Emetine (Ipecacuanha) . . . . .	717
II. Carbarsone . . . . .	722
III. Hydroxyquinoline Derivatives . . . . .	723
1. Chiniofon . . . . .	724
2. Vioform . . . . .	724
3. Diodoquin . . . . .	724

T. Sulfanilamide and Its Derivatives . . . . .	725
U. Penicillin and Other Antibiotics . . . . .	743
I. Penicillin . . . . .	743
II. Streptomycin . . . . .	751
III. Tyrothricin and Other Bacterial Antibiotics . . . . .	753
IV. Other Antibiotics . . . . .	753

## PART IV

## ANTHELMINTICS

Anthelmintics . . . . .	757
I. Male Fern ( <i>Aspidium, Filix-mas</i> ) . . . . .	758
II. Pelletierine . . . . .	759
III. Thymol . . . . .	760
IV. Chenopodium . . . . .	760
V. Santonin . . . . .	761
VI. Carbon Tetrachloride . . . . .	764
VII. Tetrachlorethylene . . . . .	766
VIII. Hexylresorcinol . . . . .	766
IX. Gentian Violet . . . . .	767
X. Phenothiazine . . . . .	767
XI. Leche de Higuera (Ficin) . . . . .	767

## PART V

## ANTISEPTICS AND DISINFECTANTS

Antiseptics and Disinfectants . . . . .	771
I. Surgical Antiseptics and Disinfectants . . . . .	777
1. Soaps and Other Detergents . . . . .	777
2. Alcohols . . . . .	778
3. Carbolic Acid (Phenol) . . . . .	778
4. Substituted Phenols . . . . .	782
5. Other Aromatic Surgical Disinfectants . . . . .	785
6. Mercuric Chloride and Other Inorganic Mercury Compounds . . . . .	785
7. Organic Mercurials . . . . .	787
8. Silver and Other Metallic Disinfectants . . . . .	788
9. Oxidizing Disinfectants . . . . .	790
10. Boracic Acid and Borax . . . . .	792
11. Potassium Chlorate . . . . .	794
12. Iodine . . . . .	796
13. Iodoform . . . . .	797
14. Chlorine Preparations . . . . .	799
15. The Antiseptic Dyes . . . . .	800
II. Antiseptics Used Chiefly in Skin Diseases . . . . .	802
1. Pyrogallol . . . . .	802
2. Chrysarobin . . . . .	803
3. Naphthol . . . . .	804
4. Resorcin . . . . .	805
5. Tar . . . . .	805
6. Sulfur and Sulfur-containing Compounds . . . . .	806
7. Balsams . . . . .	807
III. Genito-urinary Antiseptics . . . . .	807
1. Hexamethylenetetramine, Methenamine, Hexamine . . . . .	808
2. Mandelic Acid . . . . .	809

IV. Disinfectants for Rooms, Furniture, etc. . . . .	810
1. Formaldehyde . . . . .	810
2. Sulfur Dioxide . . . . .	811
3. Chlorine and Bromine . . . . .	812
4. Other Disinfectants . . . . .	813
5. Insecticides . . . . .	814

---

## PART VI

### VACCINES, SERA AND MISCELLANEOUS BIOLOGICALS

1. Vaccines, Toxins and Toxoids . . . . .	815
2. Antitoxic Sera, Immune Sera, and Antitoxins . . . . .	818
3. Normal Human Blood Derivatives . . . . .	820
4. Protein Hydrolysates . . . . .	821
5. Diagnostic Agents . . . . .	821
6. Vegetable Toxalbumins: Ricin . . . . .	822

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CLASSIFICATION OF DRUGS ACCORDING TO THEIR THERA- PEUTIC USES . . . . .	824
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INDEX . . . . .	830
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## PREFACE TO THE THIRTEENTH EDITION

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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 necessitated 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.



# CONTENTS

## INTRODUCTION

Method of Action of Drugs . . . . .	15
Stimulation, Depression, Irritation . . . . .	15
Distribution and Concentration . . . . .	17
Elective Affinity of Drugs. Protoplasm Poisons . . . . .	18
Local, General and Remote Actions . . . . .	18
General Theories of Pharmacological Action . . . . .	19
Chemical Constitution and Pharmacological Action . . . . .	20
Pharmacological Syndromes . . . . .	21
Chemotherapy . . . . .	22
Conditions Modifying the Effects of Drugs . . . . .	23
Methods of Administration . . . . .	29
The Chemical Characters of Drugs . . . . .	33
The Pharmacopœias and Pharmacopœial Preparations . . . . .	35
Biological Assay . . . . .	38
Preparations in the U.S.P. Requiring Biological Assay . . . . .	39
Preparations in the B.P. Requiring Biological Assay . . . . .	40

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I. Water and Salts . . . . .	43
1. Water . . . . .	48
2. Sodium Chloride . . . . .	52
3. Saline Diuretics . . . . .	53
II. Salts of the Alkalies . . . . .	53
1. Potassium Salts . . . . .	53
2. Lithium, Cæsium, Rubidium . . . . .	55
3. Ammonium . . . . .	56
III. Salts of the Alkaline Earths . . . . .	59
1. Calcium . . . . .	59
2. Barium . . . . .	64
3. Strontium . . . . .	64
4. Magnesium Salts . . . . .	65
IV. Miscellaneous Anions . . . . .	66
1. Phosphates . . . . .	66
2. Oxalates . . . . .	67
3. Fluorides . . . . .	68
4. Sulfides . . . . .	68
5. Iodides and Iodine . . . . .	70
V. Alkalies . . . . .	78
1. Hydrates and Carbonates of the Fixed Alkalies . . . . .	78
2. Acetates, Lactates and Citrates . . . . .	83
3. Ammonia and Carbonate of Ammonia . . . . .	85
VI. Acids . . . . .	86
VII. Oxygen . . . . .	92



VIII. Carbon Dioxide . . . . .	96
IX. Carbon Monoxide . . . . .	99
X. Helium . . . . .	100
XI. Heavy Metals and Metalloids . . . . .	100
A. Metals . . . . .	100
I. Iron . . . . .	107
II. Copper . . . . .	115
III. Zinc . . . . .	118
IV. Aluminum . . . . .	121
V. Lead . . . . .	123
VI. Silver . . . . .	131
VII. Mercury . . . . .	135
VIII. Minor Metals . . . . .	147
B. Metalloids . . . . .	154
I. Bismuth . . . . .	154
II. Antimony . . . . .	160
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IV. Organic Arsenic Combinations . . . . .	177
V. Phosphorus . . . . .	187

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1. The Turpentine Oil Group . . . . .	202
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3. Cantharidin . . . . .	204
4. Toxic Skin Irritants . . . . .	205
III. Volatile Oil Series . . . . .	207
1. Camphor . . . . .	209
2. Malodorous Oils . . . . .	213
IV. Drugs Affecting Taste . . . . .	214
1. Sugar . . . . .	214
2. Flavoring Substances . . . . .	215
3. Volatile Oils Used as Flavoring Agents and Carminatives . . . . .	215
4. Simple Bitters . . . . .	218
5. Pepper Group . . . . .	220
V. Digestive Ferments . . . . .	220
1. Pepsin . . . . .	220
2. Pancreatic Ferments . . . . .	221
3. Vegetable Ferments . . . . .	221
4. Diastase . . . . .	222
5. Bile and Bile Salts . . . . .	222
VI. Vegetable Astringents—Tannic Acid Series . . . . .	224
1. Charcoal . . . . .	227
VII. Purgatives . . . . .	228
1. Mild Aperients, the Castor Oil Group . . . . .	231
2. The Anthracene Purgatives and Phenolphthalein . . . . .	233
3. The Jalap and Colocynth Group . . . . .	236
4. Saline Cathartics . . . . .	239

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I. Narcotics of the Methane Series . . . . .	249
1. Alcohol-Chloroform Group . . . . .	249
II. General Anesthetics . . . . .	269
1. Ether and Chloroform . . . . .	269
2. Nitrous Oxide . . . . .	295
3. Ethylene . . . . .	300
4. Cyclopropane . . . . .	303
5. Tribromoethanol (Avertin) . . . . .	305
III. Sedatives and Hypnotics . . . . .	310
1. Chloral Group . . . . .	310
2. Barbituric Acid Group . . . . .	316
IV. Opium Series . . . . .	329
V. Other Analgesics . . . . .	358
VI. Cannabis . . . . .	361
VII. Apomorphine . . . . .	363
VIII. Bromides . . . . .	366
IX. Anticonvulsants . . . . .	373
B. Stimulants of the Central Nervous System . . . . .	379
I. Strychnine . . . . .	379
II. Picrotoxin . . . . .	389
III. Other Analeptics . . . . .	392
Metrazol and Nikethamide . . . . .	392
IV. The Xanthines . . . . .	393
Caffeine, Theobromine and Theophylline . . . . .	393
Coffee and Tea . . . . .	402
Minor Diuretics . . . . .	403
C. Local Anesthetics . . . . .	404
I. Cocaine . . . . .	404
II. Other Local Anesthetics . . . . .	411
D. Curare Group . . . . .	423
I. Curare . . . . .	423
II. Intocostrin . . . . .	426
III. Other Curarizing Drugs . . . . .	427
E. Substances Acting on the Autonomic Nervous System . . . . .	429
I. Nicotine Group . . . . .	429
Tobacco . . . . .	438
II. Substances Stimulating Parasympathetic Activity . . . . .	440
1. The Muscarine Group . . . . .	440
2. Choline, Acetyl-choline and Other Choline Esters . . . . .	444
3. Physostigmine and Neostigmine . . . . .	451
4. Pilocarpine . . . . .	459
III. Substances Depressing Parasympathetic Activity . . . . .	463
1. The Atropine Series . . . . .	463
2. Other Synthetic Substitutes for the Belladonna Alkaloids . . . . .	482
IV. Sympathomimetic Drugs . . . . .	485
1. Epinephrine (Adrenaline) . . . . .	485
2. Ephedrine . . . . .	497
3. Benzedrine . . . . .	500
4. Other Sympathomimetic Drugs . . . . .	502
F. Ergot and Its Alkaloids . . . . .	507
G. The Histamine Group and Anaphylaxis . . . . .	519