

## CONTENTS OF VOLUME 177

No. 1, APRIL 1971

|  |     |
|--|-----|
| Pharmacological Estimation of Drug-Receptor Dissociation Constants. Statistical Evaluation. I. Agonists. R. B. PARKER AND D. R. WAUD.....  | 1   |
| Pharmacological Estimation of Drug-Receptor Dissociation Constants. Statistical Evaluation. II. Competitive Antagonists. D. R. WAUD AND R. B. PARKER.....  | 13  |
| The Active Form of Pentobarbital in Squid Giant Axons. TOSHIO NARAHASHI, DONALD T. FRAZIER, TAKEHIKO DEGUCHI, CARL A. CLEAVES AND MILDRED C. ERNAU.....  | 25  |
| Interference with Excitation by 5-Benzoyloxy-2-Iminohexahydropyrimidine Hydrochloride. M. Y. SPIEGELSTEIN AND C. Y. KAO.....   | 34  |
| Negative Chronotropic Effects of McN A-343 and Nicotine in Isolated Guinea-Pig Atria: Insensitivity to Blockade by Tetrodotoxin. ACHILLES J. PAPPANO AND ROBERT A. REMBISH.....                      | 40  |
| Ganglionic Stimulation: Mechanism of the Positive Inotropic and Chronotropic Effects of Angiotensin. WILLIAM C. FARR AND GUNTER GRUPP.....   | 48  |
| The Relative Effect of the Renal Pressor and Sympathetic Nervous Systems on Vascular Capacity during Hypotension. D. W. DUCHARME AND L. BECK.....  | 56  |
| Direct and Systemic Effects of Guanethidine on Renal Function. RONALD L. WILLIAMS, JOHN E. MAINES III AND JAMES E. PEARSON.....  | 69  |
| Dissociation of Cardiac Inotropic and Transmembrane Action Potential Effects of Ouabain. PETER J. DEMPSEY, ZENA T. MCCALLUM, KENNETH M. KENT AND THEODORE COOPER.....                                | 78  |
| Propranolol-Insensitive Effects of Epinephrine on Action Potential Repolarization in Electrically Driven Atria of the Guinea Pig. ACHILLES J. PAPPANO.....   | 85  |
| Catecholamine Stores of the Isolated Rat Heart Perfused with Substrate-Free Medium. NARANJAN S. DHALLA, BUDH D. BHAGAT, PRAKASH V. SULAKHE AND ROBERT E. OLSON.....                                  | 96  |
| A Possible Role of Microtubules in Catecholamine Release from the Adrenal Medulla: Effect of Colchicine, Vinca Alkaloids and Deuterium Oxide. ALAN M. POISNER AND JOSEPH BERNSTEIN.....              | 102 |
| Acetaldehyde-Induced Catecholamine Secretion from the Cow Adrenal Medulla. F. H. SCHNEIDER.....  | 109 |
| Norepinephrine in Blood Vessels: Concentration, Binding, Uptake and Depletion. BARRY A. BERKOWITZ, JAMES H. TARVER AND SYDNEY SPECTOR.....   | 119 |
| Analysis of Reserpine-Induced Supersensitivity in Aortic Strips of Rabbits. JOHN TAYLOR AND RICHARD D. GREEN.....  | 127 |
| The Effects of Cocaine, Norepinephrine and Ionic Stimulants on the Isolated, Superfused Rat Vas Deferens: Antagonism by "Adrenergic Neuron Blockers" and Reserpine. S. GREENBERG AND J. P. LONG..... | 136 |
| Inhibition of Norepinephrine Biosynthesis by Chlorpromazine in the Guinea-Pig Vas Deferens. DAVID G. JOHNSON, NGUYEN B. THOA AND IRWIN J. KOPIN.....   | 146 |
| Subcellular Distribution and Aggregation of Bovine Adrenal Tyrosine Hydroxylase. ROBERT J. WURZBURGER AND JOSÉ M. MUSACCHIO.....   | 155 |
| The Disposition and Metabolism of Tryptamine and the <i>in Vivo</i> Formation of 6-Hydroxytryptamine in the Rabbit. LOUIS LEMBERGER, JULIUS AXELROD AND IRWIN J. KOPIN.....                          | 169 |
| Effect of Decaborane on Histamine Formation in Mice. RICHARD W. SCHAYER AND MARGARET A. REILLY.....  | 177 |
| Some Effects of Germine-3-Monoacetate (GMA) on Isolated Rat and Guinea-Pig Ileum. W. J. GOLDMAN AND A. SCHARBINE.....  | 181 |
| The Effects of $\alpha$ -Methyltyrosine on Sleep and Brain Norepinephrine in Cats. CARL D. KING AND ROBERT E. JEWETT.....  | 188 |
| Effects of Some Psychotropic Drugs on Dopamine Synthesis in the Rat Striatum. M. J. BESSON, A. CHERAMY AND J. GLOWINSKI.....   | 196 |

|   |     |
|---|-----|
| The Relation between Monoamines in Brain and the Anticonvulsant Action of Inhibitors of Carbonic Anhydrase. WILLIAM D. GRAY AND CHARLES E. RAUH...  | 206 |
| The Structure-Activity Relationship of Tricyclic Amines. ERNST W. BAUR.....   | 219 |
| Stress-Mediated Decrease in Liver Hexobarbital Metabolism: The Role of Corticosterone and Somatotropin. EDDIE WEI AND JOHN T. WILSON.....   | 227 |
| The Metabolism of Hexobarbital in Mice and Methodology for Isolation and Quantitation of Its Metabolites <i>in Vivo</i> and <i>in Vitro</i> . NICHOLAS GERBER, ROBERT LYNN, ROBERT HOLCOMB, WILLIAM L. WELLER AND MILTON T. BUSH..... | 234 |
| The Effect of Hepatic Blood Flow on the Hepatic Removal Rate of Oxyphenbutazone in the Dog. T. L. WHITSETT, P. G. DAYTON AND J. L. MCNAY.....   | 246 |
| Effect of Phenobarbital and SKF 525A on Placental Transfer of Cyclophosphamide in Mice. JAMES E. GIBSON AND BERNARD A. BECKER.....  | 256 |
| On the Mechanisms of <sup>14</sup> C-Salicylic Acid Distribution in Rat Submaxillary Gland <i>in Vitro</i> . JAMES W. PUTNEY, JR. AND JOSEPH F. BORZELLECA.....   | 263 |
| Metabolic Effects of Phenformin at Simulated High Altitude. SOUHEIR EL DEFRAWY AND JOSEPH P. BUCKLEY.....   | 276 |
| Mechanism of Antilipolytic Effects of Cardiac Glycosides. DAI HYON YU, SHARON TRIESTER AND M. I. GLUCKMAN.....  | 284 |
| Characterization of a Dipeptide Hydrolase (Kininase II: Angiotensin I Converting Enzyme). H. Y. T. YANG, E. G. ERDÖS AND Y. LEVIN.....  | 291 |
| Action of 4,4'-Diformamidodiphenylsulfone (DFD) and Related Compounds on <i>Plasmodium berghei</i> . BETTY P. VOGH AND LARRY N. GLEASON.....  | 301 |
| The Effect of <i>p</i> -Chlorophenylalanine on Opiate-Induced Running, Analgesia, Tolerance and Physical Dependence in Mice. D. L. CHENEY AND AVRAM GOLDSTEIN..   | 309 |

## No. 2, MAY 1971

|  |     |
|--|-----|
| Pharmacologic Analysis of the Hypothermic Responses of the Morphine-Dependent Rhesus Monkey. STEPHEN G. HOLTZMAN AND JULIAN E. VILLARREAL.....   | 317 |
| Effect of Dactinomycin on the Acute Toxicity and Brain Uptake of Morphine. HORACE H. LOH, FU-HSIUNG SHEN AND E. LEONG WAY.....   | 326 |
| The Biologic Disposition of Pentazocine in the Rat. AZIZA M. EL-MAZATI AND E. LEONG WAY.....   | 332 |
| Subcellular Distribution of 4- <sup>14</sup> C-Diphenylhydantoin in Rat Brain. JOHN W. KEMP AND DIXON M. WOODBURY.....   | 342 |
| Spinal Excitatory and Depressant Effects of Sodium Diphenylthiohydantoinate. ARTHUR RAINES, YUNG J. SOHN AND BARRIE LEVITT.....  | 350 |
| Procaine, Pentobarbital and Halothane: Effects on the Mammalian Myoneural Junction. ANIBAL GALINDO.....  | 360 |
| Studies on the Nonspecific Blocking Action of Benzyltrimethylammonium Bromide (BTM). KENNETH DRETCHEN, F. P. J. DIECKE AND J. P. LONG.....   | 369 |
| Nicotine-Induced Depolarization and Stimulation of Potassium Efflux in Striated Muscle. EDWARD G. HENDERSON AND JOHN C. HANCOCK.....   | 377 |
| Further Evidence for a Sodium-Dependent, Optically Specific and Reserpine-Sensitive Amine Carrier Mechanism at the Adrenergic Neuron. M. F. SUGRUE AND P. A. SHORE.....                        | 389 |
| The Effects of Ouabain, Calcium and Potassium on the Transport and Incorporation of Some Amino Acids into Rabbit Atrial Tissue <i>in Vitro</i> . J. KYPSON AND G. HAIT.....                    | 398 |
| The Effect of L-Dopa on Chronotropic Responses to Cardioaccelerator Nerve Stimulation in Dogs. E. WHITNACK, A. LEFF, S. MOHAMMED AND T. E. GAFFNEY..   | 409 |
| Effects of Lanthanum on <sup>45</sup> Ca Movements and on Contractions Induced by Norepinephrine, Histamine and Potassium in Vascular Smooth Muscle. FRANK R. GOODMAN AND GEORGE B. WEISS..... | 415 |
| Hemodynamic Effects of Nitroglycerin and Amyl Nitrite in the Conscious Dog. ROBERT A. O'ROURKE, VERNON S. BISHOP, PETER A. KOT AND JOHN P. FERNANDEZ.....                                      | 426 |

|  |     |
|--|-----|
| The Pathophysiology of Barium: Hypokalemic and Cardiovascular Effects. OTTO ROZA AND LEONARD B. BERMAN .....   | 433 |
| Some Aspects of the Reactions between Hydroxylamine and Hemoglobin Derivatives. RUSSELL D. CRANSTON AND ROGER P. SMITH .....                             | 440 |
| Uptake of Nonutilizable Sugars by Guinea-Pig Seminal Vesicles <i>in Vitro</i> . M. G. MAWHINNEY AND J. A. THOMAS .....                                   | 447 |
| The Influence of Cinanserin and Selected Pharmacologic Agents on Experimental Allergic Encephalomyelitis (EAE). R. G. BABINGTON AND P. W. WEDEKING ..... | 454 |
| Effect of Mescaline and Lysergic Acid Diethylamide on Flicker Discrimination in the Rat. MARTIN D. SCHECHTER AND J. C. WINTER .....                      | 461 |
| The Metabolism of Ethynodiol Diacetate by Rat and Human Liver. R. I. FREUDENTHAL, C. E. COOK, J. FORTH, R. ROSENFELD AND MONROE E. WALL .....            | 468 |

## No. 3, JUNE 1971

|  |     |
|--|-----|
| Effect of Psychotropic Drugs on Tryptophan Concentration in the Rat Brain. ALESSANDRO TAGLIAMONTE, PAOLA TAGLIAMONTE, JORGE PEREZ-CRUET, STEPHEN STERN AND GIAN L. GESSA .....                               | 475 |
| Effects of $\alpha$ -Methyl- <i>meta</i> -Tyrosine on Spontaneous and Caudate-Induced Electroencephalogram Activity and Regional Catecholamines in the Cat Brain. M. KENT SHELLENBERGER .....                | 481 |
| Decline in the Mean Integrated Electroencephalogram Voltage during Morphine Abstinence in the Rat. NAIM KHAZAN AND BRENDA COLASANTI .....  | 491 |
| Analgesic Activity and Central Nervous System Distribution of the Optical Isomers of Pentazocine in the Rat. BARRY A. BERKOWITZ AND E. LEONG WAY .....   | 500 |
| Morphine-Induced Hyperalgesia in Rats Tested on the Hot Plate. SABIH KAYAN, L. A. WOODS AND C. L. MITCHELL .....   | 509 |
| The Effect of Some Sedating Agents on Calorigenesis and Its Responses to 2,4-Dinitrophenol and L-Thyroxine in Rats. FRANCES P. PETRITIS AND FREDERIC L. HOCH .....   | 514 |
| Continued Studies in the Toxicology of Dimethyl Sulfoxide (DMSO). DON C. WOOD, FRANK S. WEBER AND MICHELE A. PALMQUIST .....   | 520 |
| Mechanism Considerations of Dimethyl Sulfoxide (DMSO)-Lenticular Changes in Rabbits. DON C. WOOD, NORMAN V. WIRTH, FRANK S. WEBER AND MICHELE A. PALMQUIST .....   | 528 |
| Carbohydrate Metabolism in Normal and Hyperglycemic Animals Treated with 1-Methyl-4-(3-Methyl-5-Isoxazolyl)Pyridinium Chloride and Phenformin. D. A. BLICKENS AND S. J. RIGGI .....                          | 536 |
| Biotransformation of Diphenoxylate in Rat and Dog. A. KARIM, G. GARDEN AND W. TRAGER .....   | 546 |
| A Comparison of the Effects of Halothane and CCl <sub>4</sub> on the Hepatic Drug Metabolizing System. DONALD C. DAVIS, DAVID H. SCHROEDER, THEODORE E. GRAM, REGINALD L. REAGAN AND JAMES R. GILLETTE ..... | 556 |
| Daunorubicin Metabolism by Rat Tissue Preparations. NICHOLAS R. BACHUR AND MALCOLM GEE .....   | 567 |
| Daunorubicinol, a Major Metabolite of Daunorubicin: Isolation from Human Urine and Enzymatic Reactions. NICHOLAS R. BACHUR .....   | 573 |
| Nonmast-Cell Histamine Kinetics. IV. Interrelationships between Synthesis, Binding and Catabolism of <sup>3</sup> H-Histamine <i>in Vivo</i> . HOWARD L. JOHNSON .....                                       | 579 |
| Renal Effects of Uricosuric Agents in the Chimpanzee. G. M. FANELLI, JR., D. L. BOHN AND S. S. REILLY .....  | 591 |
| The Metabolism of Circulating Norepinephrine by Human Subjects. JAMES W. MAAS AND D. HAROLD LANDIS .....   | 600 |
| Entry of <sup>3</sup> H-Norepinephrine into the Arterial Wall. JOZEF TÖRÖK AND JOHN A. BEVAN .....   | 613 |
| Adrenergic Innervation and Cocaine-Induced Potentiation of Adrenergic Responses of Aortic Strips from Young and Old Rabbits. SHOJI SHIBATA, K. HATTORI, I. SAKURAI, J. MORI AND M. FUJIWARA .....            | 621 |

|   |     |
|---|-----|
| Interaction between Angiotensin and Bloodborne Exogenous Norepinephrine on the Cat Nictitating Membrane <i>in Vivo</i> . PETER CERVONI AND ERNEST REIT . . . . .  | 633 |
| Differential Effects of Prostaglandins $E_1$ , $E_2$ , $F_{1\alpha}$ and $F_{2\alpha}$ on Adrenergic Vasoconstriction in the Dog Hindpaw. PHILIP J. KADOWITZ, CHARLES S. SWEET AND MICHAEL J. BRODY . . . . . | 641 |
| Carotid Sinus Reflex Changes Produced by Digitalis. JOHN A. QUEST AND RICHARD A. GILLIS . . . . .   | 650 |
| Index, Volume 177, April-June 1971 . . . . .  | 663 |