

## CONTENTS

## NUMBER 1, JANUARY, 1916

- I. A Quantitative Study of the Analgesia Produced by Opium Alkaloids, Individually and in Combination with Each Other in Normal Man. By David I. Macht, N. B. Herman and Charles S. Levy..... 1
- II. Some Observations on the Elimination of Hexamethylenetetramine (Urotropin). By K. George Falk and Kanematsu Sugiura..... 39
- III. The Comparative Pharmacologic Action of Ethylhydrocuprein (Optochin) and Quinine. By Maurice I. Smith and Bernard Fantus..... 53
- IV. Does the Pituitary Gland Contain Epinephrin or a Compound Similar to It? By Walter K. Watanabe and Albert C. Crawford..... 75

## NUMBER 2, FEBRUARY, 1916

- V. On the Vaso-Constrictive Action of Serum on the Coronary Vessels of the Mammalian Heart. By H. Yanagawa..... 89
- VI. Quinine and Atrophan in Inflammation of Frog's Mesentery. By Yasuo Ikeda..... 101
- VII. Scientific Proceedings of the American Society for Pharmacology and Experimental Therapeutics. Seventh Annual Session, 1915..... 109

## NUMBER 3, MARCH, 1916

- VIII. The Effect of Drugs on Inflammation of the Frog's Mesentery. By Yasuo Ikeda..... 137
- IX. The Segmental Action of Strychnine. By Hugh McGuigan, R. W. Keeton and L. H. Sloan..... 143
- X. On the Pharmacology of the Ureter: I. Action of Epinephrin, Ergotoxin and of Nicotin. By David I. Macht..... 155
- XI. The Rôle of the Liver in Acute Polycythaemia: II. The Effect of Epinephrin and Emotional Stimuli on the Red Corpuscle Content of the Blood in Rabbits. By Paul D. Lamson..... 167

## NUMBER 4, APRIL, 1916

- XII. The Peripheral Point of Attack of Strychnine. By Frederick S. Hammett..... 175
- XIII. Artificial Cerebral Circulation after Circulatory Isolation of the Mammalian Brain. By E. D. Brown..... 185
- XIV. Observations on the Effect of Epinephrine on the Medullary Centers. By E. D. Brown..... 195

## NUMBER 5, MAY, 1916

- XV. The Liberation of Epinephrin from the Adrenal Glands by Stimulation of the Splanchnic Nerves and by Massage. Studied by Means of the Denervated Eye Reaction. By G. N. Stewart, J. M. Rogoff, and F. S. Gibson..... 205

- XVI. The Rôle of the Liver in Acute Polycythaemia: III. The Relation of Plasma Volume to the Number of Erythrocytes per Unit Volume of Blood. By Paul D. Lamson and Norman M. Keith..... 247
- XVII. The Action of Certain Volatile Oils on Isolated Intestinal Segments. By A. L. Muirhead and H. F. Gerald..... 253
- XVIII. On the Pharmacology of the Ureter: II. Action of Drugs Affecting the Sacral Autonomics. By David I. Macht..... 261

## NUMBER 6, JUNE 1916

- XIX. The Influence of Salicylate on Metabolism in Man. By W. Denis and J. H. Means..... 273
- XX. An Explanation of the Laxative Action of White Mustard Seed. By E. C. van Leersum..... 285
- XXI. Some Reactions of Blood Vessels to Certain Chemicals. By I. Adler..... 297
- XXII. On the Action of Atropine Sulphate on the Isolated Stomach and Bowel of the Dog. By Edgard Zunz and Jacques Tysebaert..... 325

## NUMBER 7, JULY, 1916

- XXIII. On the Increase of "Tone" Associated with the Action of Strophanthus on the Heart. By John Tait and Harold Pringle..... 339
- XXIV. Pharmacological Chemical Studies on "Senso" the Dried Venom of the Chinese Toad. By Shigematsu Shimizu..... 347
- XXV. A Contribution to the Pharmacology of Novocain. By Robert A. Hatcher and Cary Egelston..... 385
- XXVI. The Influence of Atropine and Pilocarpine on the Glycogenic Function. By Hugh McGuigan..... 407

## NUMBER 8, AUGUST, 1916

- XXVII. Cross Tolerance. Altered Susceptibility to Codein, Heroin, Cannabis-Indica and Chloral-Hydrate in Dogs having an Acquired Tolerance for Morphine. By B. H. Myers..... 417
- XXVIII. The Absorption of Potassium Iodid by the Thyroid Gland in Vivo, Following its Intravenous Injection in Constant Amounts. By David Marine and J. M. Rogoff..... 439
- XXIX. Some New Time Recording Apparatus. By Worth Hale..... 445
- XXX. On the Peripheral Action of the Opium Alkaloids. Effect on the Sensory Nerve Terminals. By David I. Macht, S. L. Johnson, and H. J. Bollinger..... 451
- XXXI. The Lethal Dose of Arsenic for Splenectomized Mice. By Caroline Towles..... 465

## NUMBER 9, SEPTEMBER, 1916

- XXXII. The Central Action of Curare. By Hugh McGuigan..... 471
- XXXIII. The Spontaneous Liberation of Epinephrin from the Adrenals. By G. N. Stewart and J. M. Rogoff..... 479
- XXXIV. The Influence of the Adrenals on the Kidneys. By E. K. Marshall, Jr. and David M. Davis..... 525
- XXXV. The Pharmacology of the Vas Deferens. By J. A. Waddell..... 551

## ILLUSTRATIONS

Curve of mutual inductance (Fig. 1).....	4
Magnification of lower portion of curve of Fig. 1. (Fig. 2).....	5
Pyridin-phenanthrene group (Fig. 3).....	34
Benzyl-isoquinoline group (Fig. 4).....	34
Myogram of frog's gastrocnemius (Fig. 1).....	59
— of frog's gastrocnemius (Fig. 2).....	60
— of frog's gastrocnemius (Fig. 3).....	61
— of frog's gastrocnemius (Fig. 4).....	62
Perfusion of frog's heart (Fig. 5).....	63
— of frog's heart (Fig. 6).....	63
Myocardiogram and blood pressure tracing (Fig. 7).....	64
Blood pressure, dog (Fig. 8).....	65
—, dog (Fig. 9).....	65
—, dog (Fig. 10).....	66
Decapitated cat (Fig. 1).....	84
Ring of pig's ureter six hours after death (Fig. 1).....	157
— of pig's ureter twenty-four hours after excision (Fig. 2).....	158
Human ureter; one ring; four hours after nephrectomy for hydronephrosis on December 15, 1915 (Fig. 3).....	159
Experiment December 21, 1915, Ring of pig's ureter three hours after death Fig. 4).....	159
Quiescent ureteral ring, from pig stimulated to powerful contractions by a minute dose of epinephrin (Fig. 5).....	161
Pig's ureteral ring, twenty-two hours after excision (Fig. 6).....	161
Longitudinal strip of pig's ureter (Fig. 7).....	162
Experiment January 12, 1916, Pig's ureter (Fig. 8).....	163
— January 26, 1916, Ring of pig's ureter (Fig. 9).....	164
Curarized muscle; Strychninized curarized muscle (Plate 1).....	178
Strychninized muscle. Normal muscle. Stimulation through nerve (Plate II).....	180
— muscle. Normal muscle. Direct muscle stimulation (Plate III).....	181
Top tracing: Normal. Bottom tracing. Strychninized. Direct muscle stimulation (Plate IV).....	181
Perspective view of perfusion apparatus (Plate I).....	189
Shows slowing of the heart due to vagus stimulation produced by perfusing epinephrine through the cerebral vessels (Fig. 1).....	198
Showing the rise in blood pressure produced by perfusing epinephrine through the cerebral vessels, etc. (Fig. 2).....	200
— that the weaker solution of epinephrine produces a rise in blood pressure while the stronger one produces a fall (Fig. 3).....	201
One drop epinephrine injected into the femoral vein (Fig. 4).....	202

Dog's intestine in Ringer-Locke solution (Fig. 8).....	257
Cat's intestine in Ringer's solution (Fig. 11).....	257
Rabbit's intestine in Ringer-Locke solution (Fig. 12).....	258
Dog's intestine in Ringer-Locke solution (Fig. 19).....	258
Rabbit's intestine in Ringer's solution (Fig. 29).....	259
Dog's intestine, used in a previous experiment, after being placed in fresh Ringer's solution (Fig. 31).....	259
— intestine in Ringer's solution (Fig. 35).....	260
Action of pilocarpin (Fig. 1).....	262
— of physostygmim and atropin (Fig. 2).....	263
Pig's ureter (Fig. 3).....	263
Ring of pig's ureter twelve hours after death of animal (Fig. 4).....	265
— of pig's ureter twenty-four hours after death of animal (Fig. 5).....	265
— of pig's ureter twenty-four hours after excision (Fig. 6).....	266
— of pig's ureter eighteen hours after excision (Fig. 7).....	266
— of pig's ureter twenty-four hours after excision (Fig. 8).....	267
— of pig's ureter twenty-four hours old (Fig. 9).....	267
— of pig's ureter twelve hours old (Fig. 10).....	268
Isolated loop of intestine of guinea-pig in Tyrode's solution (Fig. 1).....	294
A group of vessels at the root of mesentery (Fig. 1).....	302
Shows extreme contraction of artery and in less degree of vein (Fig. 2).....	304
Small artery and vein both showing considerable constriction (Fig. 3).....	308
Shows the prompt and vigorous contraction after KOH in concentration of pH <sup>7.3</sup> , etc. (Fig. 4).....	313
— the gradual constricting effect of HCl $\frac{\text{mol}}{200}$ (Fig. 5).....	314
— the prompt and vigorous contracting effect of sodium carbonate, etc. (Fig. 6).....	315
Normal intestinal loop (Fig. 1).....	327
— intestinal loop (Fig. 2).....	328
— loop (Fig. 3).....	328
Intestinal loop (Fig. 4).....	329
— loop (Fig. 5).....	330
— loop (Fig. 6).....	331
— loop (Fig. 7).....	332
Normal loop (Fig. 8).....	333
To show absence of refractory state during the stage of slow (or tonus) contraction of the strophanthinised ventricle (Fig. 1).....	340
— a peculiar irregularity in the beat of the deeply strophanthinised ventricle (Fig. 2).....	340
— the effect of clamping and then suddenly releasing the inlet perfusion-tube of the strophanthinised ventricle (Fig. 3).....	342
Showing the experiment of fig. 3 at different pressures, etc. (Fig. 4).....	343
Before the injection, etc.....	359
— the perfusion, etc.....	361, 363
Showing rise of blood pressure to about 220 min. of mercury, etc. (Tracing 1).....	397

Showing fall of blood pressure immediately following the intravenous injection of 5.0 mg. of novocain per kilogram (Tracing 2).....	398
Signal magnet (Fig. 1).....	448
Tracing of time record (Fig. 2).....	448
Cat 81 (Fig. 1).....	485
— 81. Animal prepared by excision of right adrenal and section of nerves of left (Fig. 2).....	486
— 116 (Fig. 3).....	487
— 116. Pocket experiment with stimulation of right splanchnic in abdomen after section of both splanchnics (Fig. 4).....	488
— 57. Pocket experiment with epinephrin rise after release (Fig. 5).....	494
— 57. Pocket (Fig. 6).....	494
— 137 (Fig. 7).....	497
— 117 (Fig. 8).....	498
— 57 (Fig. 9).....	498
— 37 (Fig. 10).....	505
— 37 (Fig. 11).....	506
— 37 (Fig. 12).....	507
— 81 (Fig. 13).....	508
— 116 (Fig. 14).....	516
— 95 (Fig. 15).....	519
— 95 (Fig. 16).....	519
— 95 (Fig. 17).....	520
— 95 (Fig. 18).....	521
Vas deferens of rabbit, suspended in Ringer's solution (Tracing 1).....	553
— of rat, suspended in Tyrode's solution (Tracing 2).....	553
— of rat, suspended in Tyrode's solution (Tracing 3).....	554
— of dog, suspended in Tyrode's solution (Tracing 4).....	554
— of sheep suspended in Tyrode's solution (Tracing 5).....	555
— of guinea pig, suspended in Tyrode's solution (Tracing 6).....	555
— of dog, suspended in Tyrode's solution (Tracing 7).....	555
— of sheep, suspended in Tyrode's solution (Tracing 8).....	556
— of dog, suspended in Tyrode's solution (Tracing 9).....	556
— of rat, suspended in Tyrode's solution (Tracing 10).....	557
— of rabbit, suspended in Tyrode's solution (Tracing 11).....	558
— of rat, suspended in Tyrode's solution (Tracing 12).....	558