CONTENTS

NUMBER 1, JANUARY, 1933

I. The Anesthetic Action of Divinyl Oxide on Humans. By Samuel Gelfan and Irving R. Bell.......................... 1

II. The Anesthetic Action of Divinyl Oxide in Animals. By C. D. Leake, P. K. Knoefel and A. E. Guedel................. 5

III. The Administration of Drugs into the Cerebral Ventricles of Monkeys: Pituitrin, Certain Pituitary Fractions, Pitressin, Pitocin, Histamine, Acetyl Choline, and Pilocarpine. By Richard U. Light and Stanley M. Ryeshe.......................... 17

IV. The Response of the Rabbit to Pilocarpine Administered into the Cerebrospinal Fluid. Richard U. Light, Courtney C. Bishop and Lee G. Kendall........................................ 37

V. Tribromethanol (Avertin) Narcosis in the Treatment of Lung Edema Induced by Chemical Irritation. By Amos R. Koontz and Carl H. Moulton........................................ 47

VI. Carbazol Derivatives. I. Local Anesthetics of Urethane Type. By P. K. Knoefel........................................ 69

VII. The Pressor Action of Yohimbine and Quebrachine. By S. J. Weinberg........................................ 79

VIII. The Influence of Anesthesia on the Cerebrospinal Fluid Pressure Response to Histamine and Epinephrine. By S. J. Weinberg........................................ 95

IX. The Effect of Sodium Isoamylethylbarbiturate (Sodium Amytal) upon the Depressor Action of Brain Extract. By Ralph H. Major, C. J. Weber and J. B. Nanninga.............. 107

X. A Comparison of the Bronchodilating Action of Several Anti-asthmatic Agents after Anaphylactic and Histamine Shock in the Guinea Pig. By O. W. Barlow and Argyl J. Beams............. 111

XI. The Chemistry of the Blood and the Cerebrospinal Fluid, with Special Reference to Calcium, in the Cataleptoid State Induced by Bulbocapnine. The Combined Effect of Bulbocapnine and Some Other Drugs. By S. Katzenelbogen and M. C. Meehan.............. 131

NUMBER 2, FEBRUARY, 1933

XII. Effect on Kidney Function of Ether, Ethylene, Ethylene and Sodium Isoamyl-ethyl Barbiturate (Amytal), and Ethylene and Tribromethyl Alcohol (Avertin). By Robert P. Walton........ 141

XIII. Observations on Experimental Spinal Anesthesia. By E. Falkner Hill and A. D. Macdonald.......................... 151

CONTENTS

XV. Studies on Calcium. VI. Some Inter-relationships of the Cardiac Activities of Calcium Gluconate and Scillaren-B. By Arnold L. Lieberman...................................................... 183

XVI. On the Mechanism of Salivary Secretion. By V. E. Henderson and M. H. Roepke.................................................. 193

XVII. Optically Active Hydantoins as Hypnotics. By Harry Sobotka, S. M. Peck and Jos. Kahn........................................ 209

XVIII. A Contribution to the Pharmacology of Adonis Vernalis. By Robert A. Hatcher and Harvey B. Haag.................. 217

XIX. Effect of Therapeutic Doses of Sodium Bicarbonate on the Kidneys. By Lynne A. Hoag, Carl E. Weigele, Haskell Talamo, Eleanor Marples and Katharine Woodward......................... 233

XX. Distribution of Thoracic Sympathetic Motor Fibers in the Divisions of the Heart Determined by the Action of Adrenalin on Isolated Strips from the Turtle’s Heart. By Charles W. Greene and Karl E. Maneval.................................................. 237

XXI. The Site of the Pressor Action of Dimethylguanidin Sulphate. By Harry Goldblatt and Howard T. Karaner.................. 247

XXII. Piperidinopropanediol Di-phenylurethane Hydrochloride, a New Local Anesthetic. By T. H. Rider.......................... 255

NUMBER 3, MARCH, 1933

XXIII. The Inhibition of Oestrus by Extracts of the Anterior Lobe of the Pituitary Body. By Marie C. d’Amour and H. B. van Dyke........ 269

XXIV. Notes on the Poisonous Secretions of Twelve Species of Toads. By K. K. Chen and A. Ling Chen................................. 281

XXV. Relative Susceptibility of the Nebulous Toad (Bufo valliceps) and the Leopard Frog (Rana pipiens) to Different Substances. By K. K. Chen and A. Ling Chen........................................ 295

XXVI. The Physiological Action of the Principles Isolated from the Secretion of the Common European Toad (Bufo bufo bufo). By K. K. Chen, H. Jensen and A. Ling Chen................................. 307

XXVII. Effect of Quinine on the Parasympathetic and Sympathetic Innervation of the Salivary Glands. By George W. Stavraky........ 321

XXVIII. The Comparative Physiological Actions of dl-β-Phenylisopropylamines. I. Pressor Effect and Toxicity. By Gordon A. Alles........ 339

XXIX. The Action of Pituitary Extract upon the Blood Pressure of the Normal Unanesthetized Animal and the Effects of Ephedrine or Adrenaline Thereupon. By K. I. Melville.................................................. 355

XXX. The Action on Cardiac Musculature and the Vagomimetic Behavior of Adenosine. By Alfred M. Wedd and Wallace O. Fenn. 365

NUMBER 4, APRIL, 1933

XXXI. Comparative Pharmacology of some Condensation Products of Phenols with Aliphatic Aldehydes. An Inquiry into Chemo-pharmacodynamic Relationships. By David I. Macht and Wilton C. Harden................................. 377
CONTENTS

XXXII. The Excretion of Morphine by Normal and Tolerant Dogs. By William A. Wolff, Cecilia Riegel and Edith G. Fry .......................... 391
XXXIII. The Action of Morphine on the Mammalian Circulation. By Carl F. Schmidt and A. E. Livingston ................................. 411
XXXIV. The Relation of Dosage to the Development of Tolerance to Morphine in Dogs. By Carl F. Schmidt and A. E. Livingston ...... 443
XXXV. A Note Concerning the Actions of Pseudomorphine. By Carl F. Schmidt and A. E. Livingston ................................. 473
ILLUSTRATIONS

Minimal anesthetic range of divinyl oxide and ether by inhalation in mice (Fig. 1) .......................................................... 9
Time required to anesthetize mice by inhalation of the minimal certain anesthetic concentrations of divinyl oxide and ether respectively (Fig. 2). 10
Induction of, and recovery from divinyl oxide anesthesia in a dog. Administration by Waters carbon dioxide absorption technique with Guedel-Waters endotracheal cannula and oxygen flow of 200 cc. per minute through divinyl oxide (Fig. 3) .................................................. 11
— of ether anesthesia in same dog as in figure 3. Administration by Waters carbon dioxide absorption technique with closed endotracheal cannula and oxygen flow of 200 cc. per minute through ether (Fig. 4). 12
— of divinyl oxide anesthesia in same dog as figures 3 and 4. Administration by carbon dioxide absorption technique with closed endotracheal cannula and oxygen flow of 50 cc. per minute through divinyl oxide (Fig. 5) .......................................................... 13
Microphotographs of lungs of rabbits killed four and one-half hours after gassing (Fig. 1) .................................................. 54
— of lungs of dogs killed five hours after gassing (Fig. 2) .................. 59
— of lungs of dogs following gassing (Fig. 3) .................................. 59
— of sections from each lobe of the lungs of 2 dogs killed forty-eight hours after gassing (Fig. 4) ................................................. 60, 61
Relation of time of onset of anesthesia of sensory fibers of frog sciatic to concentration of anesthetic (Fig. 1) ................. 72
— of time of onset of anesthesia of sensory fibers of frog sciatic to concentration of anesthetic (Fig. 2) .................. 73
Dog. Ether anesthesia. Injection in femoral vein (Fig. 3) ............. 76
Pressor action of yohimbine and quebrachine (Fig. 1) ................. 82
— action of yohimbine and quebrachine (Fig. 2) .................. 83
— action of yohimbine and quebrachine (Fig. 3) .................. 86
— action of yohimbine and quebrachine (Fig. 4) .................. 87
— action of yohimbine and quebrachine (Fig. 5) .................. 90
Cerebrospinal fluid pressure (Fig. 1) ........................................ 99
Transient depression in blood pressure produced by a single intravenous injection of brain extract (Fig. 1) .................. 108
Perfused (sensitized) rabbit lungs (Fig. 1) .................................. 128
Effect of anesthetics on kidney function (Fig. 1) .................. 146
— of anesthetics on kidney function (Fig. 2) .................. 147
— of anesthetics on kidney function (Fig. 3) .................. 148
— of anesthetics on kidney function (Fig. 4) .................. 149
Experimental spinal anesthesia (Fig. 1) .................................. 154
— spinal anesthesia (Fig. 2) ........................................ 155
vii
ILLUSTRATIONS

Experimental spinal anesthesia (Fig. 3) .................................................. 156
 — spinal anesthesia (Fig. 4) ................................................................. 157
Gonad-stimulating principle of pituitary body (Fig. 1) .............................. 175
Modification of Trendelenburg's apparatus (as used in Professor Van Dyke's
 laboratory) (Fig. 1) ........................................................................ 184
Foster's apparatus for maintaining an even rate of injection (as used in
 Professor Van Dyke's laboratory) (Fig. 2) ........................................... 185
Record of a rapid injection in an 8-kgm. dog of calcium gluconate (Fig. 3) ... 188
 — of rapid injection of Scillaren-B in a 7-kgm. dog (Fig. 4) ..................... 189
On the mechanism of salivary secretion (Fig. 1) ...................................... 201
 — the mechanism of salivary secretion (Fig. 2) ....................................... 201
 — the mechanism of salivary secretion (Fig. 3) ....................................... 203
 — the mechanism of salivary secretion (Fig. 4) ....................................... 203
 — the mechanism of salivary secretion (Fig. 5) ....................................... 203
 — the mechanism of salivary secretion (Fig. 6) ....................................... 204
Sino-auricular strip and left auricular apex strip in Ringer's solution (Fig. 1). 240
Recording from above down the sinus, the left auricular tip, and the right
 auricular tip (Fig. 2) ........................................................................... 242
Illustrating the decrease of limb volume which accompanied the rise of blood
 pressure that followed a rapid intravenous injection of a large dose of
dimethylguanidin sulphate. Limb nerves intact (Fig. 1) .............................. 250
Great increase of blood pressure and decrease of limb volume following the
 rapid injection of 0.4 gram dimethylguanidin sulphate (Fig. 2) ............... 251
Same dog as in figure 2. Smaller rise of blood pressure, and practically no
decrease of limb volume following the injection of 0.4 gram dimethyl-
guanidin which was preceded by an intravenous injection of 12 mgm. of
 ergotoxin (Fig. 3) .............................................................................. 251
Great increase of blood pressure and decrease of limb volume following the
 rapid injection of 0.5 gram of dimethylguanidin sulphate in a dog with
 limb nerves and vagi sectioned (Fig. 4) ................................................. 252
Map of world showing cities from which our toads and Ch' an Su were shipped
 (Fig. 1) ................................................................................................ 282
Action of fowlero-bufotenine on frog's and toad's hearts (Fig. 1) .............. 300
Absorption bands of ergosterol (Fig. 1) .................................................... 309
Electrocardiographic changes caused by vulgaro-bufotoxin (Fig. 2) ........... 313
Pressor action of vulgaro-bufotenine and its comparison with other bufo-
tenines (Fig. 3) .................................................................................. 318
Effect of intravenous injection of 0.2 gram of quinine hydrochloride on
 systemic blood pressure, on blood flow through submaxillary gland and
 on secretion of saliva in that gland (Fig. 1) ........................................... 322
Separation into two parts of secretion activated by chorda tympani stimu-
lation under influence of repeated doses of quinine (Fig. 2) ..................... 324
Second stage of quinine poisoning (Fig. 3) .............................................. 326
Effect of stimulation of chorda tympani in fresh place after first stimulation
 ceased to activate a secretion (Fig. 4) .................................................. 327
Very small first phase of chorda tympani secretion and accordingly slight
 vasodilatation during stimulation (Fig. 5) .............................................. 330
Submaxillary gland poisoned with quinine (Fig. 6) ................................... 331
ILLUSTRATIONS

Action of epinephrine, phenylethylamine and phenylisopropylamine (Fig. 1) 344
— of epinephrine, hydroxyphenylethylamine and hydroxyphenylpropylamine (Fig. 2) 346
— of epinephrine, dihydroxyphenylethylamine and dihydroxyphenylpropylamine (Fig. 3) 347
Blood pressure tracings (Fig. 1) 356
— pressure tracings (Figs. 2 and 3) 358
— pressure tracings (Fig. 4) 359
— pressure tracings (Fig. 5) 361
Illustrating action of adenosine on turtle auricle (Fig. 1) 367
Effect of adenosine on strips of dog auricle (Fig. 2) 367
Comparison of oxygen consumption by cardiac and skeletal muscle of frog in presence of adenosine (Fig. 3) 370
Illustrating depressant effect of adenylic acid on rabbit auricle (Fig. 4) 371
Action of adenosine on rabbit auricle before and after atropine (Fig. 5) 373
Dilator action of adenosine on vessels constricted by acetyl choline in perfused heart of rabbit (Fig. 6) 374
Rate of excretion: Morphine in blood and urine following a subcutaneous injection of hydrochloride (Fig. 1) 404
Depressor effect of morphine in unanesthetized dog (Fig. 1) 416
Absence of depressor effect from intravenous injection of morphine in rodents (Fig. 2) 417
Depressor effect of morphine in pithed animals (Fig. 3) 419
“Vasomotor perfusion” of kidney: effect of morphine upon vasomotor center (Fig. 4) 423
Effect of morphine upon heart in situ (Fig. 5) 425
— of morphine on splanchnic and limb vessels (Fig. 6) 426
— of intra-arterial injection of morphine upon splanchnic and limb vessels (Fig. 7) 427
Absence of depressor and vasodilator effect from morphine in tolerant dog (Fig. 8) 430
Effect of repeated intravenous injections of morphine in normal dog (Fig. 9) 433
“Acute tolerance” to dilator effects of morphine (Fig. 10) 434
— tolerance” to depressor effect of morphine in spinal dog (Fig. 11) 435
— tolerance” to depressor, vasomotor and respiratory effects of morphine (Fig. 12) 438
Absence of circulatory tolerance forty-eight hours after last injection (Fig. 1) 458
— of circulatory tolerance in chronically morphinized dog twelve days after last injection (Fig. 2) 459
Loss of circulatory tolerance within twenty-four hours after daily injection (Fig. 3) 460
Vasodilator effect of pseudomorphine (Fig. 1) 476
Effect of pseudomorphine on isolated mammalian heart (Fig. 2) 477
“Acute tolerance” to pseudomorphine in pithed animal (Fig. 3) 478