

CONTENTS

NUMBER 1, AUGUST, 1922

- I. On the Influence of Colloids on the Action of Non-colloidal Drugs. V. A Further Analysis of the Augmentor Effect of Lecithin on the Action of Pilocarpine. By W. Storm van Leeuwen and A. v. Szent Györgyi 1
- II. On Rhododendron Poisoning. By S. W. Hardikar 17
- III. The Relation of Histamine to Intestinal Intoxication. II. The Absorption of Histamine from the Intestine. By Jonathan Meakins and Charles Robert Harington 45
- IV. Evaluation of the Hormone of the Infundibulum of the Pituitary gland in Terms of Histamine, with Experiments on the Action of Repeated Injections of the Hormone on the Blood Pressure. By John J. Abel and Charles A. Rouiller 65

NUMBER 2, SEPTEMBER, 1922

- V. Quantitative Studies in Chemotherapy. VI. Rate of excretion of Arsenicals, a Factor Governing Toxicity and Parasitocidal Action. By Carl Voegtlin and J. W. Thompson 85
- VI. The Mechanism of the Straub Biologic Test for Morphine. By W. J. R. Heinekamp 107
- VII. Ipecac in the Treatment of Blackhead in Turkeys. By H. W. Graybill. 115
- VIII. Effect of Adrenalin and Extracts of Pancreas and Liver on Flood Dextrose. By Ellison L. Ross and Lloyd H. Davis 121
- IX. Quantitative Studies in Chemotherapy. VII. Effect of Ligation of the Ureters or Bile Duct upon the Toxicity and Trypanocidal Action of Arsenicals. By Carl Voegtlin, Helen A. Dyer, and Dorothy Wright Miller 129
- X. Influence of Arsphenamine and Neoarsphenamine on the Epinephrine Content of the Adrenal Glands. By Baldwin Lucke, John A. Kolmer and Grayson P. McCouch 153

NUMBER 3, OCTOBER, 1922

- XI. A Study of the Colloidal Properties of Arsphenamine and Allied Products. By George W. Raiziss and Joseph L. Gavron 163
- XII. The So-called Habituation to "Arsenic": Variation in the Toxicity of Arsenious Oxide. By Erich W. Schwartz 181
- XIII. A Chemical Method of Assaying the Active Principles of Digitalis. By Arthur Knudson and Melvin Dresbach 205
- XIV. The Oedema of Para-phenylenediamine, By O. S. Gibbs 221

NUMBER 4, NOVEMBER, 1922

- XV. Cumulative Action of Cobra Venom. By Arthur R. Cushny..... 233
 XVI. Studies on the Action of Barium. By William Salant and Nathaniel
 Kleitman..... 247
 XVII. The Comparative Concentrations of Alcohol in Human Blood and
 Urine at Intervals after Ingestion. By Walter R. Miles..... 265

NUMBER 5, DECEMBER, 1922

- XVIII. The Effect of Epinephrine on Excised Strips of Frogs' Digestive
 Tracts. By Charles M. Gruber..... 321
 XIX. The Action of Morphine on the Vomiting Center in the Dog. By
 Chauncey D. Leake..... 359
 XX. Naturally Nephropathic Animals. The Ability of an Alkaline Solution
 to Influence the Amount of Stainable Lipoid Material that Appears in the
 Kidney following the Use of a General Anesthetic. By Wm. deB. Mac-
 Nider..... 365
 XXI. Picrotoxin Hyperglycemia. By Arthur L. Tatum..... 385
 XXII. The Action of Quinine on Sugar Mobilization with its Bearing on the
 Question of Glycogenolysis. By A. L. Tatum and R. A. Cutting..... 393

NUMBER 6, JANUARY, 1923

- XXIII. The Importance of the Adrenal Glands in the Action of Pilocarpine,
 Physostigmine and Strychnine. By Charles W. Edmunds..... 405
 XXIV. An Investigation into the Chemotherapy of the Acridine Dyes in
 Experimental Tuberculosis. By Maurice I. Smith..... 419
 XXV. Toxicity and Actions of the Normal Butylamins. By P. J. Hanzlik. 435
 XXVI. The Pharmacological Properties of Some Iso-urea Derivatives. By
 Steward Basterfield..... 451
 XXVII. The Comparative Stimulant Efficiency of Some Local and Systemic
 Agents on Normal and Depressed Respiration, and Irritant Efficiency of
 Some Agents. By P. J. Hanzlik..... 463
 XXVIII. Studies on the Pharmacology of Sodium Citrate. I. The Influence
 of Sodium Citrate on Respiration and Circulation. By William Salant
 and Nathaniel Kleitman..... 481

ILLUSTRATIONS

| | |
|---|----|
| Augmentor action of kephaline on pilocarpine action (Fig. 1)..... | 5 |
| Pure lecithin on pilocarpine action (Fig. 2)..... | 6 |
| Concentration-action curve of pilocarpine (Fig. 3)..... | 10 |
| — curve of histamine (Fig. 4)..... | 11 |
| — curve of choline (Fig. 5)..... | 11 |
| Action of various doses of pilocarpine on isolated gut (Fig. 6)..... | 12 |
| — of various doses of choline on the isolated gut (Fig. 7)..... | 12 |
| Augmentor influence of lecithin on histamine action (Fig. 8)..... | 13 |
| Stimulating action of kephaline (Fig. 9)..... | 14 |
| Cat, 2000 grams; paraldehyde anesthesia; tracheotomy (Fig. 1)..... | 26 |
| Perfusion of the lungs of rabbit with 1:1,000,000 andromedotoxin in gum- Ringer (Fig. 2)..... | 28 |
| Tracing of frog heart in situ (Fig. 3)..... | 32 |
| Perfusion of isolated rabbit's heart (Fig. 4)..... | 33 |
| — of frog heart in situ (Fig. 5)..... | 33 |
| Tracings of uterus, respiration and blood pressure (Fig. 1)..... | 48 |
| — of respiration and blood pressure (Fig. 2)..... | 49 |
| — of uterus; respiration and blood pressure (Fig. 3)..... | 50 |
| — of respiration and blood pressure (Fig. 4)..... | 51 |
| — of respiration and blood pressure (Fig. 5)..... | 52 |
| — of respiration and blood pressure (Fig. 6)..... | 57 |
| — of uterus, respiration and blood pressure (Fig. 7)..... | 58 |
| — of uterus, respiration and blood pressure (Fig. 8)..... | 58 |
| — of blood pressure (Fig. 9)..... | 61 |
| — of blood pressure (Fig. 10)..... | 61 |
| — of blood pressure (Fig. 11)..... | 61 |
| — of blood pressure (Fig. 12)..... | 62 |
| Comparative action on the guinea pig's uterus, suspended in 40 cc. Locke solution, of the solution (0.000354 mgm. organic matter per cc.) obtained by decomposing the mercuric chloride cake (experiment III) and of histamine phosphate (0.01 mgm. per cc.) (Fig. 1)..... | 68 |
| Effect on the blood pressure of a dog of an intravenous injection of a small portion (about $\frac{1}{10}$) of the entire filtrate, after removal of the mercury, from the proteid-mercuric chloride cake from 100 grams fresh glands (Fig. 2)..... | 72 |
| Shows the powerful action of the pituitary picrate as compared with the dipicrate of histamine on the uterus of the virgin guinea pig (Fig. 3).... | 74 |
| One-half horn of the uterus of the virgin guinea pig in Tyrode's solution (Fig. 4)..... | 75 |
| Effect of repeated injections of a solution of the pressor-oxytocic principle made from the proteid-mercuric chloride cake (Fig. 5)..... | 77 |

| | |
|---|-----|
| Shows the effect of repeated injections of the same solution of the pressor- oxytocic principle used in the injections in figure 5 (Fig. 6)..... | 78 |
| — effect of first, second and third injections of a pressor phosphate (Fig. 7). | 79 |
| Quantitative studies in chemotherapy (Chart 1)..... | 93 |
| — studies in chemotherapy (Chart 2)..... | 94 |
| — studies in chemotherapy (Chart 3)..... | 95 |
| — studies in chemotherapy (Chart 4)..... | 96 |
| — studies in chemotherapy (Chart 5)..... | 102 |
| Epinephrine assay of extract of right adrenal of rabbit XIII and preliminary assay of extract of right adrenal of rabbit XIX (Fig. 1)..... | 155 |
| — assays of extracts of right adrenal glands of rabbits 16, 17, 23 and of one control rabbit (C) (Fig. 2)..... | 156 |
| Arrangement for dialyzing in an atmosphere of nitrogen..... | 167 |
| Photograph from a tracheotomized cat poisoned with para-phenylenediamine (Fig. 1)..... | 223 |
| Lower jaw of a poisoned cat from the right side (Fig. 2)..... | 225 |
| Left side of the same cat as figure 2 (Fig. 3)..... | 225 |
| Photograph showing the results of aortic perfusion with Ringer at 37°C. for one and one-half hours (Fig. 4)..... | 228 |
| Lower jaw of the same cat as figure 4 dissected to show the tongue swelling (Fig. 5)..... | 228 |
| Graph of calculated content of venom in tissues of rabbit 50 (Fig. 1)..... | 240 |
| Fresh untreated frog hearts perfused with Ringer's solution alone, then with Ringer's solution containing barium chloride (Fig. 1)..... | 249 |
| — untreated turtle hearts perfused with Ringer's solution alone, then with Ringer's solution containing barium chloride (Fig. 2)..... | 251 |
| Turtle heart (Fig. 3)..... | 254 |
| — heart previously perfused with aconitine (not shown in figure) (Fig. 4)..... | 257 |
| Segments of small intestine of cats in aerated Locke's solution (Fig. 5)..... | 261 |
| Errors in the analysis of 86 control samples made up with known alcohol content (Fig. 1)..... | 272 |
| Comparative alcohol content of blood and urine during physical work (Fig. 2)..... | 279 |
| Alcohol content of blood and urine with the subject quiet (Fig. 3)..... | 280 |
| Comparative results for urine, blood, and plasma with the subject in the post-absorptive condition, and quilt (Fig. 4)..... | 281 |
| The alcohol concentration in blood and urine produced by a more concen- trated beverage (Fig. 5)..... | 282 |
| — alcohol in blood and urine of an "abstinent" produced by a 2.75 per cent beverage (Fig. 6)..... | 284 |
| — alcohol in the blood and urine of an "abstinent" produced by 27.5 per cent beverage (Fig. 7)..... | 285 |
| Concentration of alcohol in the blood and urine of an irregular drinker, 2.75 per cent dose (Fig. 8)..... | 286 |
| — of alcohol in the blood and urine of an irregular drinker, 27.5 per cent dose (Fig. 9)..... | 287 |
| Comparative alcohol concentration in blood and urine of a moderate drinker, 2.75 per cent beverage (Fig. 10)..... | 287 |

| | |
|---|-----|
| Relative alcohol concentration in blood and urine of an occasional user of wine, 2.75 per cent beverage (Fig. 11)..... | 289 |
| — alcohol content of blood and urine following the ingestion of 27.5 per cent alcohol (Fig. 12)..... | 289 |
| Comparative alcohol content of blood and urine of an occasional drinker in post absorptive condition, 2.75 per cent beverage (Fig. 13)..... | 290 |
| — alcohol content of blood and urine in an occasional drinker following the ingestion of 27.5 per cent beverage (Fig. 14)..... | 291 |
| Alcohol content of the blood and urine of a moderate drinker in the post-absorptive condition, 2.75 per cent beverage (Fig. 15)..... | 292 |
| — content of the blood and urine in a moderate drinker in the post-absorptive condition, 27.5 per cent beverage (Fig. 16)..... | 292 |
| — in the blood and urine of a subject who, on the day previous, had engaged in a great amount of physical exercise with the result that he was deficient in water, 2.75 per cent dose (Fig. 17)..... | 293 |
| — in the blood and urine when the body is in a more normal condition of water balance, 2.75 per cent dose (Fig. 18)..... | 294 |
| — in the blood and urine following 27.5 per cent beverage (Fig. 19)..... | 295 |
| Typical results on abstinent and moderate drinkers for the comparative concentration of alcohol in urine, blood, and plasma following the ingestion of a liter of 2.75 per cent by weight alcohol beverage, taken without food (Fig. 20)..... | 295 |
| — results on abstinent and moderate drinkers for the comparative alcohol concentration in urine, blood, and plasma following the ingestion of 100 cc. of 27.5 per cent by weight alcohol, taken without food (Fig. 21)..... | 296 |
| Alcohol in the blood and urine of an habitual drinker after taking 1 liter of 2.75 per cent beverage (Fig. 22)..... | 298 |
| — in the blood and urine of an habitual drinker after taking 27.5 per cent beverage (Fig. 23)..... | 299 |
| Amount of alcohol in the blood and urine of an "excessive occasional user" after taking 2.75 per cent beverage (Fig. 24)..... | 301 |
| — of alcohol in the blood and urine of an "excessive occasional user" after taking 27.5 per cent beverage (Fig. 25)..... | 301 |
| The alcohol concentration in the urine as influenced by the retention of urine and frequent partial emptying of the bladder (Fig. 26)..... | 304 |
| <i>Rana pipiens</i> (Fig. 1)..... | 327 |
| — <i>pipiens</i> (Fig. 2)..... | 328 |
| — <i>pipiens</i> (Fig. 3)..... | 329 |
| — <i>catesbiana</i> (Fig. 4)..... | 330 |
| — <i>pipiens</i> (Fig. 5)..... | 331 |
| — <i>pipiens</i> (Fig. 6)..... | 332 |
| — <i>catesbiana</i> (Fig. 7)..... | 335 |
| — <i>catesbiana</i> (Fig. 8)..... | 335 |
| — <i>catesbiana</i> (Fig. 9)..... | 336 |
| — <i>catesbiana</i> (Fig. 10)..... | 337 |
| — <i>catesbiana</i> (Fig. 11)..... | 340 |
| — <i>catesbiana</i> (Fig. 12)..... | 341 |
| — <i>pipiens</i> (Fig. 13)..... | 353 |

| | |
|---|-----|
| Rana pipiens (Fig. 14)..... | 354 |
| Cat. Blood pressure and uterus tracings (Fig. 1)..... | 410 |
| — same as figure 1, except that the adrenal glands have been removed (Fig. 2)..... | 410 |
| — with adrenals intact (Fig. 3)..... | 413 |
| Death-rate of guinea-pigs inoculated with Bacillus tuberculosis (Chart 1)... | 429 |
| Average weight curve of control and treated animals (Chart 2)..... | 431 |
| Effects of normal butylamins on the circulation in dogs (Fig. 1)..... | 441 |
| — of monobutylamin (1:75,000, end concentration) on longitudinal strip of nicotinized rabbit's intestine (Fig. 2)..... | 444 |
| — of dibutylamin (1:7500, end concentration of base) on longitudinal strip of rabbit's intestine in 150 cc. Tyrode's solution at 38°C..... | 445 |
| — of tributylamin (1:15,000, end concentration) hydrochloride on strip of nicotinized rabbit's pregnant uterus (Fig. 4)..... | 445 |
| — of dibutylamin (1:2500 base) on perfused vessels of frog's extremities (Fig. 5)..... | 446 |
| — of hypnotics on body temperature of rabbit (Fig. 1)..... | 457 |
| — of hypnotics on body temperature of rabbit (Fig. 2)..... | 457 |
| — of water at 15°C. (subcutaneously) on respiration of normal rabbit (1.7 kgm.) (Fig. 1)..... | 468 |
| — of 20 per cent camphor oil (subcutaneously) on respiration of normal rabbit (1.7 kgm.) (Fig. 2)..... | 468 |
| Respiratory stimulant efficiency of water at different temperatures injected hypodermically in rabbits (Fig. 3)..... | 470 |
| Effects of 20 per cent camphor oil (subcutaneously) on morphinized rabbit (1.5 kgm.) (Fig. 4)..... | 473 |
| — of citrate on respiration and blood pressure in dog (Fig. 1)..... | 483 |
| — of citrate on respiration and blood pressure in cat (Fig. 2)..... | 485 |
| — of citrate on heart and blood pressure in dog (Fig. 3)..... | 492 |
| Isolated turtle heart perfused with M 1200 sodium citrate (Fig. 4)..... | 494 |