

CONTENTS

NUMBER 1, SEPTEMBER, 1931

I. The Action of Oestrin on the Oxygen Consumption of the Uteri of Mice. By J. Christodoss David.....	1
II. The Pharmacological Action of the Principles Isolated from Ch'an Su, the Dried Venom of the Chinese Toad. By K. K. Chen, H. Jensen and A. Ling Chen.....	13
III. The Relation of Acquired Morphine Tolerance to the Adrenal Cortex. By Eaton M. MacKay.....	51
IV. Studies in Cancer Chemotherapy. X. The Effect of Thorium, Cerium, Erbium, Yttrium, Didymium, Praseodymium, Manganese, and Lead upon Transplantable Rat Tumors. By L. C. Maxwell and Fritz Bischoff. With the technical assistance of Ella May Ottery.....	61
V. The Chemotherapy of Streptococcus Infections of Mice with Special Reference to Salicyl Compounds. By John A. Kolmer and George W. Raiziss. With the assistance of Anna M. Rule.....	71
VI. Absorption and Retention of Calcium Chloride and Calcium-Magnesium-inosite-hexaphosphoric Acid Calcium. By J. C. Forbes and Hazelwood Irving.....	79
VII. On the Anesthetic Action of Furan. By J. F. A. Johnston.....	85
VIII. Anesthetic Potency in the Cyclo Hydrocarbon Series. By V. E. Henderson and J. F. A. Johnston.....	89
IX. The Gonad-stimulating Substances of the Anterior Lobe of the Pituitary Body and of Pregnancy-urine. By Zonja Wallen-Lawrence and H. B. Van Dyke.....	93
X. Effect of Ultra-violet Rays on Epinephrine and Related Products. (Preliminary Report.) By Paul L. Ewing, Philip Blickensdorfer and Hugh A. McGuigan.....	125
XI. The Iodine Content of Commercial Desiccated Anterior Pituitary Preparations. By Karl Closs.....	131
XII. Studies on Calcium. V. Blood and Urine Levels of Calcium after Peroral and Deep Muscular Administration of Calcium Gluconate in Man. By Arnold L. Lieberman.....	139
XIII. Heat Regulation and Water Exchange. XII. The Underlying Mechanism of Fever as Illustrated by Cocaine Poisoned Rabbits. By Henry G. Barbour and Hubert T. Marshall.....	147
XIV. Modification of Nerve Response by Veratrine, Protoveratrine and Aconitine. By Helen Tredway Graham and Herbert S. Gasser.....	163
XV. Absorption and Utilization of the Carbohydrate of Aretium Lappa as Shown by a Protein-sparing Action on the Diet of Dogs. By John C. Krantz, Jr., and C. Jelleff Carr.....	187

XVI. Toxicological Studies of <i>Derris Elliptica</i> and Its Constituents. I. Rotenone. By H. B. Haag.....	193
XVII. The Action of Ephedrine in Avertin Anesthesia. By B. B. Raginsky and Wesley Bourne.....	209
XVIII. The Effect of Avertin upon the Circulation. By B. B. Raginsky, Wesley Bourne and Maurice Bruger.....	219
XIX. The Influence of Electrolytes on the Permeability of Tissues to Crystalline Insulin. By R. J. Hamburger.....	233

NUMBER 2, OCTOBER, 1931

XX. The Influence of Lactic Acid on Hemolysis. By J. Sládek, I. A. Parfentjev and B. Sokoloff.....	245
XXI. Ergotoxine Miosis. By F. F. Yonkman.....	251
XXII. The Response of the Submaxillary and Parotid Glands of the Dog to Histamine. By George Stavrazy.....	265
XXIII. The Influence of Sodium Barbitol upon the Reactions of Normal Rabbits to Successive Doses of Insulin. By Eugene L. Jackson.....	277
XXIV. The Hypoglycemic Action of the Hypophysectomized Dog's Blood. By R. J. Cowley.....	287
XXV. The Mechanism of the Hypoglycemia Produced by Guanidine and Carbon Tetrachloride Poisoning and Its Relief by Calcium Medication. By A. S. Minot.....	295
XXVI. Pharmacological Effect of Impurities in Ether. By Walter L. Mendenhall and Ruth Connolly.....	315
XXVII. Quantitative Studies on the Absorption and Excretion of Hexylresorcinol and Heptylresorcinol under Different Conditions. By B. H. Robbins.....	325
XXVIII. A Method for the Quantitative Determination of Hexylresorcinol in Tissues, Blood and Excreta. By B. H. Robbins and L. G. Wesson.....	335
XXIX. Continued Drinking of Alcohol in Low Concentrations: Some Experimental Results. By P. J. Hanzlik.....	339
XXX. Studies on the Metabolism of Tartrates. I. A Colorimetric Method for the Determination of Tartaric Acid. By Frank P. Underhill, F. I. Peterman and A. G. Krause. With the coöperation of C. S. Leonard and T. C. Jaleski.....	351
XXXI. Studies on the Metabolism of Tartrates. II. The Behavior of Tartrate in the Organism of the Rabbit, Dog, Rat and Guinea Pig. By Frank P. Underhill, C. S. Leonard, E. G. Gross and T. C. Jaleski.....	359
XXXII. Studies on the Metabolism of Tartrates. III. The Behavior of Tartrates in the Human Body. By Frank P. Underhill, F. I. Peterman, T. C. Jaleski and C. S. Leonard.....	381

NUMBER 3, NOVEMBER, 1931

XXXIII. The Action of Some Diuretics upon the Aglomerular Kidney. By Raymond N. Bieter.....	399
XXXIV. Albuminuria in Glomerular and Aglomerular Fish. By Raymond N. Bieter.....	407

XXXV. The Pharmacological Action of Some Analogues of Physostigmine. By John A. Aeschlimann and Marc Reinert.....	413
XXXVI. The Effect of Carbon Dioxide on Ether, Ethylene and Nitrous Oxide Anesthesia. By George B. Kleindorfer.....	445
XXXVII. A Study of the Relative Efficiency as "Basal Anesthetics" of Avertin, Amytal, Chloral, Dial, and Iso Propyl Allyl Barbituric Acid. By George B. Kleindorfer and J. T. Halsey.....	449
XXXVIII. Caffeine Effect on the Crest Uniformity of Muscular Fatigue Curves. By Ralph H. Cheney.....	457
XXXIX. The Pharmacologic Properties of an Insulin-free Extract of Pancreas and the Circulatory Hormone of Frey. By Albert H. Elliot and Franklin R. Nuzum.....	463
XL. Effect of Ephedrine on Contractions of the Alimentary Canal in Unanesthetized Dogs. By J. H. Kinnaman and O. H. Plant.....	477
XLI. Behavior of Papain in the Peritoneal Cavity. By Robert P. Walton.....	487
XLII. Effect of Amytal on the Autonomic Nervous System as Indicated by the Salivary Glands. By George W. Stavraký.....	499
XLIII. Interaction of Pilocarpine and Histamin on the Intestine. By Frederick Bernheim.....	509
XLIV. A Note on Tin Compounds in the Chemotherapy of Experimental Staphylococcus Infections. By John A. Kolmer, Herman Brown and Malcolm J. Harkins.....	515
XLV. The Degree of Infection in Relation to the Parasiticial Activity of Chemotherapeutic Compounds. By John A. Kolmer. With the assistance of Anna M. Rule.....	521
XLVI. A Method of Comparing the Absorption of Calcium Preparations. By Frank Wokes.....	531
XLVII. The Action of Papaverine on the Muscular Activity of the Alimentary Canal. By Erwin G. Gross and Donald H. Slaughter.....	551
XLVIII. The Action of Blister Fluid on the Isolated Rat's Uterus. By G. H. Percival and C. M. Scott.....	563
XLIX. Pharmacology and Toxicology of Monohydroxy-mercuri-di-iodoresorcin-sulphonphthalein. By David I. Macht and Helen M. Cook.....	571

NUMBER 4, DECEMBER, 1931

L. Magnesium Absorption in Dogs and Its Effect upon the Metabolism of Calcium. By Henry G. Barbour and James E. Winter.....	607
LI. Some Factors Influencing the Stability of the Fluid Extract of Ergot. By Maurice I. Smith and E. F. Stohlman.....	621
LII. Avertin Anesthesia in Experimental Nephritis. By J. Ross Veal, J. R. Phillips and Clyde Brooks.....	637
LIII. The Importance of a Standard of Reference in Toxicity Determinations of Mercurochrome. By J. H. Burn and G. D. Greville.....	645
LIV. The Responses of the Excised Batrachian Alimentary Canal to Autonomic Drugs. I. <i>Xenopus Laevis</i> (The South African Clawed Toad)—Pilocarpine, Physostigmine, Adrenaline. By David Epstein.....	653

LV. Bulbocapnine Catalepsy and the Grasp Reflex. By Curt P. Richter and Arthur S. Paterson.....	677
LVI. A Comparison of the Rat and Mouse Units in the Assay of the Female Sex Hormone. By T. J. Becker, C. H. Mellish, F. E. D'Amour and R. G. Gustavson.....	693
LVII. The Tolerance of the Toad towards Strophanthin. By David Epstein.....	697
LVIII. Index.....	709

ILLUSTRATIONS

Oxygen consumption of uteri of mice (Fig. 1).....	6
— consumption of uteri of immature mice during induced oestrus (Fig. 2).....	8
Average oxygen consumptions of uteri (Fig. 3).....	9
Bioassay of the pressor activity of epinephrine isolated from Ch'an Su (Fig. 1).....	18
Action of cinobufagin on the mammalian heart (Fig. 2).....	25
Electrocardiographic changes caused by cinobufagin (Fig. 3).....	27
Action of cinobufotenine on the frog's heart (Fig. 4).....	41
— of cinobufotenine on the mammalian heart (Fig. 5).....	42
Comparison of the pressor action of cinobufotenine with that of epinephrine (Fig. 6).....	44
The relation of acquired morphine tolerance to the adrenal cortex (Fig. 1)....	55
— relation of acquired morphine tolerance to the adrenal cortex (Fig. 2)....	57
— relation of acquired morphine tolerance to the adrenal cortex (Fig. 3)....	59
— effects of extracts on the ovaries of immature rat (twenty-six days old). × 13.5 (Fig. 1).....	118
— effect of pituitary hebin (sheep) on the ovaries and uterus of the hypo- physectomized rat. Ovaries, × 15; uteri, × 31 (Fig. 2).....	119
Effect of ultra-violet rays on epinephrine and related products (Fig. 1).....	126
— of ultra-violet rays on epinephrine and related products (Fig. 2).....	127
— of ultra-violet rays on epinephrine and related products (Fig. 3).....	128
Studies on calcium. V. Blood and urine levels of calcium after peroral and deep muscular administration of calcium gluconate in man (Fig. 1)....	140
— on calcium. V. Blood urine and levels of calcium after peroral and deep muscular administration of calcium gluconate in man (Fig. 2).....	141
— on calcium. V. Blood and urine levels of calcium after peroral and deep muscular administration of calcium gluconate in man (Fig. 3).....	142
— on calcium. V. Blood and urine levels of calcium after peroral and deep muscular administration of calcium gluconate in man (Fig. 4).....	143
— on calcium. V. Blood and urine levels of calcium after peroral and deep muscular administration of calcium gluconate in man (Fig. 5).....	144
Two simultaneous experiments showing the effect of cocaine-HCl (40 mgm. per kilogram injected at arrows) on the rectal temperature (small dots) and blood specific gravity (large dots) (Fig. 1).....	151
Effects of cocaine-HCl (40 mgm. per kilogram) on total solids of liver in series 5 (Fig. 2).....	155
Effect of veratrine on the after-potential (Fig. 1).....	165
— of rapid stimulation on the after-potential (Fig. 2).....	169
— of asphyxia on the veratrine after-potential (Fig. 3).....	173

Rate of action of veratrine on after-potential, irritability, conduction rate and spike height (Fig. 4).....	175
Effect of veratrinization on the relatively refractory period (Fig. 5).....	178
After-potential increased by protoveratrine, reversibly decreased by cold or stimulation (Fig. 6).....	180
Showing the effect of 0.05 mgm. rotenone per kilogram by way of the femoral vein, and 0.5 mgm. by way of one of the mesenteric veins (Fig. 1).....	204
— the effect of 0.05 mgm. rotenone per kilogram by way of the femoral vein (Fig. 2).....	206
The action of ephedrine in avertin anesthesia (Fig. 1).....	213
— action of ephedrine in avertin anesthesia (Fig. 2).....	214
— action of ephedrine in avertin anesthesia (Fig. 3).....	215
— action of ephedrine in avertin anesthesia (Fig. 4).....	216
— effect of avertin upon the circulation (Fig. 1).....	227
— effect of avertin upon the circulation (Fig. 2).....	227
— effect of avertin upon the circulation (Fig. 3).....	229
Ergotoxine miosis (Fig. 1).....	254
— miosis (Fig. 2).....	255
— miosis (Fig. 3).....	257
— miosis (Fig. 4).....	260
Effect of large doses of histamine on the submaxillary gland of a dog (Fig. 1)...	267
Parallel registration of histamine action on the submaxillary and parotid glands of a dog (Fig. 2).....	272
The influence of sodium barbital upon the reactions of normal rabbits to successive doses of insulin (Fig. 1).....	279
— influence of sodium barbital upon the reactions of normal rabbits to successive doses of insulin (Fig. 2).....	282
Effect of blood of hypophysectomized dogs on blood sugar of rabbits (Fig. 1).....	290
— of blood of normal dogs on blood sugar of rabbits (Fig. 2).....	291
Composite results of experiments with blood of hypophysectomized and normal dogs injected into rabbits (Fig. 3).....	291
Quantitative studies on the absorption and excretion of hexylresorcinol and heptylresorcinol under different conditions (Fig. 1).....	331
Individual changes as the result of continued drinking of alcohol in pigeons of group I (Fig. 1).....	341
— changes as the result of continued drinking of alcohol in pigeons of group II (Fig. 2).....	342
Per cent changes in body weight and daily absolute alcohol and food consumption of pigeons (groups I and II) drinking alcohol (Fig. 3).....	346
The action of some diuretics upon the aglomerular kidney (Fig. 1).....	402
— action of some diuretics upon the aglomerular kidney (Fig. 2).....	404
Action on surviving rabbit ileum (Fig. 1).....	438
Atropine antagonism (Fig. 2).....	438
Action on small intestine in situ (Fig. 3).....	439
— on isolated Esculenta heart (Fig. 4).....	440
— on blood pressure (Fig. 5).....	440
— on blood pressure (Fig. 6).....	441

Graphs indicating the difference in the depth of the anesthesia as shown by the difference in the strength of the adequate stimulus, measured by the difference in the distance of the secondary from the primary coil of the inductorium before anesthesia and at the time of its greatest intensity (Figs. 1, 2 and 3).....	447
Effect of Na amytal (20 per cent M.L.D.) on depth of anesthesia (Fig. 1)....	451
Graphs 10 to 12, effect of 10 per cent; graphs 13 to 15, effect of 15 per cent of M.L.D. of dial on depth of anesthesia (Fig. 2).....	452
— 16 to 18, effect of 17 per cent; graphs 19 to 21, effect of 22 per cent of M.L.D. of iso propyl allyl barbituric acid on depth of anesthesia (Fig. 3).....	453
Effect of 16 per cent of M.L.D. of avertin on depth of anesthesia (Fig. 4)....	453
— of 20 per cent of M.L.D. of chloral on depth of anesthesia (Fig. 5).....	454
Additive anesthetic effects on anesthesia with ethylene and oxygen (Fig. 6).....	455
Apparatus controlling strength and rate of stimulation (Fig. 1).....	458
Crest wave uniformity in the fatigue curves of normal and caffeinized gastrocnemic muscles of the same frog (Fig. 2).....	459
— wave uniformity in the fatigue curves of normal and caffeinized gastrocnemic muscles of the same frog (Fig. 3).....	460
Action of the "hypotensive unit" (Fig. 1).....	467
The prolonged hypotension following repeated small doses of pancreatic extract (Fig. 2).....	468
Perfusion of hind leg of rabbit with pancreatic extract, dilution 1:2800 (Fig. 3).....	468
Electrocardiographic tracing made on a patient with hypertension during and following the intravenous injection of pancreatic extract. Lead 2 only (Fig. 4).....	468
Effect of pancreatic extract in a dilution of 1:2800 on the coronary flow (Fig. 5).....	469
The effect of theophyllin-ethylene-diamine in a dilution of 1:23,000 (Fig. 6)...	469
— effect of histamine in a dilution of 1:10,000 (Fig. 7).....	469
— effect of acetylcholine in a dilution of 1:55,000 (Fig. 8).....	470
— effect of "circulatory hormone" in a dilution of 1:2800 (Fig. 9).....	470
— effect of "circulatory hormone" (first arrow) and untreated urine (third arrow, in dilutions of 1:2800 and 1:50 respectively (Fig. 10).....	470
— height of the column represents in each instance the average of 5 to 10 determinations made on fresh hearts (Fig. 11).....	471
Abolition of pressor response to adrenalin by pancreatic extract (Fig. 12).....	472
Effect of ephedrine on the stomach (Fig. 1).....	479
— of ephedrine on the small intestine (Fig. 2).....	481
— of small doses of ephedrine on the small intestine (Fig. 3).....	482
— of ephedrine on contractions of the alimentary canal in unanesthetized dogs (Fig. 4).....	483
— of ephedrine on the colon (Fig. 5).....	483
Behavior of papain in the peritoneal cavity (Fig. 1).....	489
— of papain in the peritoneal cavity (Fig. 2).....	490
— of papain in the peritoneal cavity (Fig. 3).....	491

Experiment 18. Showing three stimulations under amytal anesthesia (Fig. 1).....	501
— 25. Depression of the effect of parasympathetic and sympathetic stimulation on the salivary secretion (Fig. 2).....	502
— 16. Fall of blood pressure and inhibition of the blood flow through the submaxillary gland after intravenous injection of amytal (Fig. 3A)....	505
— 16 (continued). Showing two phases in the secretion and blood flow after chorda stimulation (Fig. 3B).....	505
Relaxation of the jejunum due to pilocarpine after contraction by histamine; pilocarpine added at arrow (Fig. 1A).....	511
Spontaneous relaxation of the jejunum after contraction by pilocarpine. Addition of histamin after relaxation has no effect (Fig. 1B).....	511
Contraction of the jejunum by histamin, relaxation by pilocarpine (Figs. 2A and 2B).....	513
Variation in susceptibility of mice towards narcotic and toxic effects of magnesium sulphate (Fig. 1).....	535
Absorption of calcium salts in different doses, as measured by neutralization of the narcotic effect of magnesium (Fig. 2).....	541
— of calcium salts at different times after their administration (Fig. 3).....	543
Effect of papaverine on the stomach (Fig. 1).....	554
— of papaverine on the intestine (Fig. 2).....	555
— of papaverine and morphine on the intestine (Fig. 3).....	557
— of papaverine on the colon (Fig. 4).....	559
The action of blister fluid on the isolated rat's uterus (Fig. 1).....	565
— action of blister fluid on the isolated rat's uterus (Fig. 2).....	567
— action of blister fluid on the isolated rat's uterus (Fig. 3).....	567
Intestinal loop of cat—very slowly moving drum (Fig. 1).....	585
Turtle heart (Fig. 2).....	588
Perfusion of blood vessels of frog, <i>Rana clamata</i> (Fig. 3).....	589
Blood pressure and respiration curve of cat under ether anesthesia (Fig. 4)....	590
Dog, 5.46 kgm. Ether anesthesia. Showing effect of no. 7 (merodicein) and mercuric iodide on blood pressure and circulation (Fig. 5).....	591
—, 7.9 kgm. Effect of 300 mgm. of no. 7 (merodicein) on blood pressure and respiration (Fig. 6).....	592
Strip of jejunum of cat suspended in 50 cc. of Locke solution (Fig. 7).....	594
Horn of virgin guinea pig's uterus suspended in 50 cc. of oxygenated Locke solution at 38°C. (Fig. 8).....	595
Uterus strip of pregnant cat in 50 cc. of Locke solution (Fig. 9).....	596
Cat's bladder. Muscle strip from fundus suspended in 50 cc. of oxygenated Locke solution at 38°C. (Fig. 10).....	597
Experiment on vas deferens of <i>Didelphys virginiana</i> (opossum) (Fig. 11).....	598
— on vas deferens of rat (Fig. 12).....	599
— 370 (Fig. 1).....	627
— 379 (Fig. 2).....	627
— 398 (Fig. 3).....	628
— 409 (Fig. 4).....	628
— 415 (Fig. 5).....	629
— 418 (Fig. 6).....	629

Experiment 460 (Fig. 7).....	632
— 473 (Fig. 8).....	632
— 455 (Fig. 9).....	633
— 468 (Fig. 10).....	633
Effects of graded doses of avertin on rates of respiration in normal and nephritic rabbits (Fig. 1).....	641
Comparison of the hypnotic, anesthetic and lethal doses of avertin in normal and nephritic rabbits (Fig. 2).....	642
Isolated esophagus of <i>Xenopus</i> (Fig. 1).....	659
— stomach of <i>Xenopus</i> (Fig. 2).....	659
— stomach (Fig. 3).....	660
— ileum (upper tracing) and duodenum (lower tracing) of <i>Xenopus</i> (Fig. 4).....	661
— ileum of <i>Xenopus</i> (Fig. 5).....	662
— rectum of <i>Xenopus</i> (Fig. 6).....	663
— ileum of <i>Xenopus</i> (Fig. 7).....	665
— duodenum of <i>Xenopus</i> (Fig. 8).....	666
— small intestine (intermediate between ileum and jejunum) of <i>Xenopus</i> (Fig. 9).....	667
Photographs showing an adult and a baby monkey hanging under the influence of bulbocapnine (Fig. 1).....	680
Graphs of the hanging response of the right and left hands of an adult monkey under the influence of bulbocapnine (25 mgm.) (Fig. 2A).....	682
— for the same monkey, but with a larger dose of bulbocapnine (a total of 78 mgm.) (Fig. 2B).....	682
— for the same monkey, but with a still larger dose (100 mgm.) (Fig. 2C)....	682
— of the hanging response obtained for a monkey hanging by the right and left hands alternately, and by both hands together (Fig. 3).....	687
Perfusion of the heart of <i>Xenopus</i> , showing systolic standstill of the ventricle produced by strophanthin (1:100,000) in fifteen minutes (Fig. 1).....	700
— of the heart of <i>Bufo</i> , showing systolic standstill of the ventricle produced by strophanthin (1:300) after perfusing for six minutes (Fig. 2)..	702
— of <i>Bufo</i> heart (Fig. 3).....	702