

CONTENTS

NUMBER 1, SEPTEMBER, 1933

I. The Physiological Action of the Principles Isolated from the Secretion of <i>Bufo Arenarum</i> . By K. K. Chen, H. Jensen, and A. L. Chen.....	1
II. The Physiological Action of the Principles Isolated from the Secretion of the European Green Toad (<i>Bufo Viridis Viridis</i>). By K. K. Chen, H. Jensen, and A. L. Chen.....	14
III. The Physiological Action of the Principles Isolated from the Secretion of the Japanese Toad (<i>Bufo Formosus</i>). By K. K. Chen, H. Jensen, and A. L. Chen.....	26
IV. The Tranquilizing and Respiratory Depressant Effects of Tribrom-ethanol (Avertin), Amylene Hydrate, Isoamylethylbarbituric Acid (Amytal) and Ethyl (<i>l</i> -Methyl-butyl) Barbiturate (Pentobarbital) Alone and in Combination with Morphine on the Rat. By O. W. Barlow and Joseph D. Gledhill.....	36
V. The Influence of Morphine on the Premedication Value of Tribrom-ethanol (Avertin) and Tribrom-ethanol Fluid (Avertin Fluid) in Relation to Nitrous Oxide Anesthesia in the Rat. By O. W. Barlow and James T. Duncan.....	50
VI. The Influence of Morphine on the Premedication Values of Ethyl (<i>l</i> -Methyl-butyl) Barbiturate (Pentobarbital) and Isoamylethylbarbituric Acid (Amytal). By O. W. Barlow and James T. Duncan.....	60
VII. Observations on the Effect of Calcium on the Action of Cocaine. By William Salant and William M. Parkins.....	67
VIII. The Pharmacologic Action of the Phosphorous Acid Esters of the Phenols. By Maurice I. Smith, R. D. Lillie, E. Evolve and E. F. Stohlman.....	78
IX. The Acute Degenerative Changes and the Changes of Recuperation Occurring in the Liver from the Use of Ethyl Alcohol. A Functional and Pathological Study. By Wm. deB. MacNider.	100
X. The Action of Sodium Oxalate in Normal and Thyroparathyroidectomized Cats. By William Salant and William M. Parkins.....	117

NUMBER 2, OCTOBER, 1933

XI. A Comparative Study of the Antidotal Action of Picrotoxin, Strychnine and Cocaine in Acute Intoxication by the Barbiturates. By A. H. Maloney.....	133
XII. The Estrin Content of Sow Ovaries. By Fred E. D'Amour, Marie C. D'Amour, and R. G. Gustavson.....	141

XIII. Effects of Estrin and Other Hormones upon Pregnancy. By F. E. D'Amour, Marie C. D'Amour and R. G. Gustavson.	146
XIV. On the Excretion of Uric Acid and Urates by the Bird. By E. Gordon Young and Nicholas B. Dreyer.	162
XV. An Artificial Heart for Dogs. By O. S. Gibbs.	181
XVI. Miscellaneous Actions of Dinitrophenol. Repeated Administrations, Antidotes, Fatal Doses, Antiseptic Tests and Actions of Some Isomers. By M. L. Tainter and W. C. Cutting.	187
XVII. The Action of Cocaine on the Intestine. By Frederick Bernheim.	209
XVIII. The Seat of the Emetic Action of Pilocarpine. By Nathaniel T. Kwit and Robert A. Hatcher.	215
XIX. Some Effects of Posterior-lobe Pituitary Extract upon the Serum and Urine of Normal Dogs. By A. R. McIntyre and R. F. Sievers.	229
XX. The Site of the Antidiuretic Action of Pituitary Extract. By W. W. Burgess, A. M. Harvey and E. K. Marshall, Jr.	237
XXI. Further Studies Concerning the Action of Diuretics upon the Aglomerular Kidney. By Raymond N. Bieter.	250

NUMBER 3, NOVEMBER, 1933

XXII. Sodium Iodobismuthite (Iodobismitol): Muscular Absorption of Bismuth. By P. J. Hanzlik and J. B. Spaulding.	257
XXIII. Studies in Cancer Chemotherapy. XI. The Effect of CO, HCN, and Pituitrin upon Tumor Growth. By I. C. Maxwell and Fritz Bischoff. With the Technical Assistance of Henry Ullmann, Jr.	270
XXIV. Further Studies on the Pharmacology of Acetyl- β -methylcholine and the Ethyl Ether of β -Methylcholine. By J. H. Comroe, Jr. and Isaac Starr, Jr.	283
XXV. Irritation and Toxicity of Sodium Iodobismuthite (Iodobismitol) Prepared with Propylene Glycol and Diethylene Glycol. By P. J. Hanzlik, H. G. Mehrtens and J. B. Spaulding.	300
XXVI. Myocarditis Produced Experimentally in Rabbits by Drugs. By Charles M. Gruber, Isaac Y. Olch and Brian Blades.	306
XXVII. Studies of Morphine, Codeine and Their Derivatives. III. Morphine Methochloride and Codeine Methochloride. By Nathan B. Eddy.	319
XXVIII. A Brief Study of the Anesthetic Action of a Series of Naphthalene Derivatives. By Merl E. Fisk and Frank P. Underhill.	329
XXIX. Some Responses of the Cat's Uterus, In Situ, to Adrenaline, Quinine, Morphine and Pituitary Extract. By N. B. Dreyer and R. A. Moreash.	337
XXX. Studies on Coronary Circulation. II. The Effect of Ephedrine on the Coronary Circulation. By O. O. Stoland and A. M. Ginsberg.	345
XXXI. Standardisation of Dosage of Sodium Ethyl (<i>l</i> -Methyl-butyl) Barbiturate (Nembutal) for Anaesthesia in Cats and Dogs. By H. C. Bazett and W. H. Erb.	352

CONTENTS

V

- XXXII. The Influence of Ephedrine Sulphate on the Reflexes of Spinal Monkeys. By C. F. Jacobsen and Margaret A. Kennard. 362
- XXXIII. The Secretion of the Posterior Lobe of the Hypophysis after the Administration of Drugs. By Alexander Simon. 375

NUMBER 4, DECEMBER, 1933

- XXXIV. The Reaction of the Oviduct of the Skate to Certain Autonomic Poisons. By George B. Roth. 387
- XXXV. The Question of Elimination of Barbituric Acid Derivatives in the Urine with Special Reference to Iso-amyl Ethyl Barbituric Acid (Sodium Amytal) and *l*-Methyl-butyl Ethyl Barbituric Acid (Pentobarbital Sodium). By H. A. Shonle, A. K. Kelch, G. F. Kempf and E. E. Swanson. 393
- XXXVI. Studies of the Effect of Ultraviolet Rays on Nicotine. By V. A. Gant. 408
- XXXVII. The Bradycardia Caused by Sympathomimetic Drugs. By Lawrence Terry and Howard C. Peters. 428
- XXXVIII. Studies of Chronic Morphine Poisoning in Dogs. V. Recovery of Morphine from the Tissues of Tolerant and Non-tolerant Animals. By O. H. Plant and I. H. Pierce. 432
- XXXIX. On the Absorption of Insulin from the Intestinal Tract. By David Campbell and Thomas N. Morgan. 450
- XL. On the Hyperglycaemic Action of Certain Drugs. By David Campbell and Thomas N. Morgan. 456
- XLI. The Influence of Caffeine on the Effects of Acetanilid. By J. A. Higgins and H. A. McGuigan. 466
- XLII. Studies on Calcium. IX. Further Observations on Acute Thrombo-phlebitic Edema. By Arnold L. Lieberman and N. R. Cooperman. 479
- XLIII. An Experimental Investigation on the Treatment of Toxaemia. Part II. By G. Norman Myers. 483
- XLIV. The Physiological Action of the Principles Isolated from the Secretion of the South African Toad (*Bufo Regularis*). By K. K. Chen and A. Ling Chen. 503
- XLV. The Physiological Action of the Principles Isolated from the Secretion of the Jamaican Toad (*Bufo Marinus*). By K. K. Chen and A. Ling Chen. 514
- XLVI. A Study of the Poisonous Secretions of Five North American Species of Toads. By K. K. Chen and A. Ling Chen. 526
- XLVII. The Parotid Secretion of *B. Bufo Gargarizans* as the Source of Ch'an Su. By K. K. Chen and A. Ling Chen. 543
- XLVIII. The Active Grouping in the Molecules of Cino- and Marino-bufagins and Cino- and Vulgaro-bufotoxins. By K. K. Chen and A. Ling Chen. 548
- XLIX. Similarity and Dis-similarity of Bufagins, Bufotoxins, and Digitaloid Glucosides. By K. K. Chen and A. Ling Chen. 561
- L. Index. 581

ILLUSTRATIONS

Electrocardiographic changes caused by areno-bufagin (Fig.1).....	5
— changes caused by areno-bufotoxin (Fig. 2).....	9
Crystalline forms of four different bufagins (Fig. 1).....	17
Electrocardiographic changes caused by virido-bufagin (Fig. 2).....	19
— changes caused by gama-bufotoxin (Fig. 1).....	32
Effects of avertin, amytal and pentobarbital (Fig. 1).....	40
— of avertin, amytal and pentobarbital (Fig. 2).....	41
Premedication value of avertin (Fig. 1).....	53
— values of pentobarbital (Fig. 1).....	61
Effect of calcium on action of cocaine (Fig. 1).....	68
— of calcium on action of cocaine (Fig. 2).....	69
— of calcium on action of cocaine (Fig. 3).....	71
Phosphorous acid esters of phenols (Fig. 1).....	83
— acid esters of phenols (Fig. 2).....	84
— acid esters of phenols (Chart 1).....	90
— acid esters of phenols (Chart 2).....	90
— acid esters of phenols (Chart 3).....	91
— acid esters of phenols (Chart 4).....	91
Effects of ethyl alcohol on liver (Fig. 1).....	108
— of ethyl alcohol on liver (Fig. 2).....	110
— of ethyl alcohol on liver (Fig. 3).....	111
— of ethyl alcohol on liver (Fig. 4).....	112
Action of sodium oxalate in cats (Fig. 1).....	118
— of sodium oxalate in cats (Fig. 2).....	119
— of sodium oxalate in cats (Fig. 3).....	120
Estrin content of sow ovaries (Fig. 1).....	144
— content of sow ovaries (Fig. 2).....	144
Excretion of uric acid and urates by bird (Fig. 1).....	168
An artificial heart for dogs (Fig. 1).....	182
Illustrates the electrical connections (Fig. 2).....	184
Influence of dinitrophenol on the respiratory depression caused by morphine sulphate in a rabbit (Fig. 1).....	197
— of morphine sulphate on the increases in respiration and temperature caused by dinitrophenol in unanesthetized rabbits (Fig. 2).....	200
Action of cocaine on intestine (Fig. 1).....	211
— of cocaine on intestine (Fig. 2).....	211
— of cocaine on intestine (Fig. 3).....	212
Charts of typical experiments illustrating action of pitressin on water diuresis in fish, frog, alligator and chicken (Fig. 1).....	244
Schematic representation of the nephron of the fresh water fish, amphibian, reptile, bird, and mammal (Fig. 2).....	247

Action of diuretics on aglomerular kidney (Fig. 1).....	252
— of diuretics on aglomerular kidney (Fig. 2).....	252
— of diuretics on aglomerular kidney (Fig. 3).....	254
— of diuretics on aglomerular kidney (Fig. 4).....	254
Muscular absorption of bismuth after therapeutic doses of iodobismutol in guinea-pigs and cats (Fig. 1).....	262
Action of the ethyl ether of β -methylcholine (left) and of acetyl- β -methylcholine (right) on heart, blood pressure and pulse rate (Fig. 1).....	285
— of acetyl- β -methylcholine on heart, hind leg volume, blood pressure and pulse rate (Fig. 2).....	286
— of acetyl- β -methylcholine on the perfused isolated cat's heart (Fig. 3).....	287
— of acetyl- β -methylcholine applied locally inside the gastrointestinal tract of a trained dog with Thiry-Vela loop (Fig. 4).....	290
— of acetyl- β -methylcholine on a loop of rabbit ileum (Fig. 5).....	292
— of acetyl- β -methylcholine on a loop of rabbit colon (Fig. 6).....	292
— of acetyl- β -methylcholine on the bronchi (Fig. 7).....	295
Effect of a subcutaneous injection of acetyl- β -methylcholine on heart, leg volume, blood pressure and pulse rate (Fig. 8).....	296
Mortality in white rats from sodium iodobismuthite, with and without iodide, in propylene glycol (Fig. 1).....	303
Microphotograph of heart muscle: 2.5 kgm. rabbit (Fig. 1).....	310
Electrocardiograms taken from animal 51 described in figure 1 (Fig. 2).....	311
— of rabbit (Fig. 3).....	312
Rabbit, weight 2.5 kgm. (Fig. 4).....	313
—, 2.5 kgm. (Fig. 5).....	314
Same as figure 5 except higher magnification (Fig. 6).....	315
Upper tracing—bladder movements. Lower tracing—uterine movements (Fig. 1).....	339
Quinine bi-hydrochloride, 3 mgm. per kilogram (Fig. 2).....	340
Uterus forty-eight hours post partum. Effect of 0.1 mgm. adrenaline per kilogram (Fig. 3).....	341
Effect of quinine bi-hydrochloride, 4.0 mgm. per kilogram (Fig. 4).....	342
Action of morphine sulphate 0.15 mgm. per kilogram (Fig. 5).....	343
Effect of one injection of ephedrine on the blood pressure and coronary flow. Male dog, 11 kgm. (Fig. 1).....	348
Repeated injections of ephedrine. Female dog, 11.3 kgm. (Fig. 2).....	348
Dose for cats: Lower, thin; upper, fat (Fig. 1).....	354
Dosage on logarithmic probability paper expressed as per cent of maximum dose (Fig. 2).....	355
Dose for dogs (thin) (Fig. 1).....	357
Effect of injection of ephedrine sulphate on knee-jerk and plantar responses in spinal monkeys immediately following operation (Fig. 1).....	365
Summaries of 5 cases injected with ephedrine immediately after operation (solid line "acute"), of 4 non-injected cases immediately after operation (cross-hatched line, "acute") and of chronic cases, following injection (Fig. 2).....	367
Effect of injection of ephedrine on knee-jerk and plantar response in spinal monkeys one to twelve weeks following cord transection (Fig. 3).....	369

Secretion of posterior lobe of hypophysis (Fig. 1).....	376
Ileum of the guinea pig (Fig. 2).....	380
— of the guinea pig (Fig. 3).....	380
Uterus of the guinea pig (Fig. 4).....	383
— of the guinea pig (Fig. 5).....	383
Epinephrine on oviduct of skate 3, <i>R. diaphenes</i> . Serosa exposed. Oviduct taken below shell gland. Non-ovulating (Fig. 1).....	389
Pilocarpine and atropine on oviduct of <i>R. stabuliforis</i> (Fig. 2).....	389
Effect of ultraviolet rays on nicotine (Fig. 1).....	412
— of ultraviolet rays on nicotine (Fig. 2).....	420
Diagram of Ludwig manometer tracing of carotid pressure (Fig. 1).....	429
Electrocardiogram showing extrasystoles; synchronized with figure 1 (Fig. 2).	429
— and Hürthle manometer tracing during apparent bradycardia (Fig. 3)..	430
Absorption of insulin from intestinal tract (Fig. 1).....	451
— of insulin from intestinal tract (Fig. 2).....	453
— of insulin from intestinal tract (Fig. 3).....	454
Hyperglycaemic action of certain drugs (Fig. 1).....	457
— action of certain drugs (Fig. 2).....	458
— action of certain drugs (Fig. 3).....	459
— action of certain drugs (Fig. 4).....	460
— action of certain drugs (Fig. 5).....	461
— action of certain drugs (Fig. 6).....	462
— action of certain drugs (Fig. 7).....	463
— action of certain drugs (Fig. 8).....	464
Studies on calcium (Fig. 1).....	480
Rabbit. Urethane. Cardiometer and blood-pressure (Fig. 1).....	489
Cat. Ether. Blood-pressure and intestinal volume (Fig. 2).....	489
— Blood-pressure and respiration (Fig. 3).....	490
— Moribund. Blood-pressure (Fig. 4).....	492
— Moribund. Blood-pressure (Fig. 5).....	492
Isolated heart. Normal rabbit (Fig. 6).....	496
— heart. Advanced toxaemia (Fig. 7).....	497
— heart. Normal rabbit (Fig. 8).....	497
— heart. Advanced toxaemia (Fig. 9).....	497
Rabbit. Isolated intestine (Fig. 10).....	499
— Isolated intestine (Fig. 11).....	499
Assay of epinephrine contained in the secretion of South African toads (Fig. 1).....	510
Electrocardiographic changes caused by Marino-bufagin (Fig. 1).....	517
Assay of epinephrine contained in the secretion of Jamaican toads (Fig. 2) ..	522
Electrocardiographic changes caused by Vallicepo-bufagin (Fig. 1).....	529
Absorption bands of ergosterol (Fig. 2).....	536
Crystalline forms of Querico-bufagin (Fig. 3).....	538
Comparison of the action of cino-bufagin and its derivatives upon the frog's heart (Fig. 1).....	556