

CONTENTS

NUMBER 1, JANUARY, 1936

I. The Relation Between the Action and Concentration of Ether and Camphor Applied to the Heart Muscle. M. A. F. Sherif...	1
II. The Effect of Posterior Pituitary Preparations upon the Colloid Osmotic Pressure of Serum Protein, Water and Mineral Metabolism of Dogs. Kintaro Yanagi.....	23
III. The Respiratory Effects of Morphine, Codeine and Related Substances. V. The Effect of α , β , γ , Dihydro- α -, Dihydro- β - and Dihydro- γ -Isomorphine on the Respiration of the Rabbit. Charles I. Wright and Fleming A. Barbour.....	39
IV. Anthelmintic Studies on Alkylhydroxybenzenes. VI. Alkyl Polycyclicphenols. Paul D. Lamson, Roger W. Stoughton and Allan D. Bass.....	50
V. The Toxicity and Rate of Disappearance of Intracisternally Injected Calcium Salts in the Dog. Morton F. Mason and Harry Resnik.....	53
VI. Anthelmintic Studies on Alkylhydroxybenzenes. VII. Halogenated Phenols. Paul D. Lamson, Roger W. Stoughton and Allan D. Bass.....	60
VII. Anthelmintic Studies on Alkylhydroxybenzenes. VIII. A. Phenolic Ketones. B. Phenolic Ethers and Esters. C. Organic Acids. Paul D. Lamson, Roger W. Stoughton and Allan D. Bass.....	63
VIII. Observations on the Effects of Dihydromorphinone-Hydrochloride (Dilaudid) on the Intact Uterus of Animals Anesthetized by Cerebral Anemia. J. B. Mitchell, Jr. and D. S. Pankratz.....	69
IX. A Note on the Antagonism Between the Cardiac Action of Acetyl- β -Methylcholine and Acetyl Choline, and That of Quinidine. Isaac Starr, Jr.....	77
X. The Use of Bulbocapnine in Pre-anesthetic Medication. Hans Molitor.....	85
XI. Some Observations on the Effect of Drugs on the Ear Vessels of the Unanaesthetized Rabbit, as Seen in the "Preformed-tissue" Chamber. Helene C. Wilson.....	97

NUMBER 2, FEBRUARY, 1936

XII. Studies on the Pharmacology of Ethyl Alcohol. I. A Comparative Study of the Pharmacologic Effects of Grain and Synthetic Ethyl Alcohols. II. A Correlation of the Local Irritant, Anesthetic and Toxic Effects of Three Potable Whiskeys with Their Alcoholic Content. O. W. Barlow.....	117
---	-----

XIII. Opiate Addiction in the Monkey. I. Methods of Study. M. H. Seevers.....	147
XIV. Opiate Addiction in the Monkey. II. Dilaudid in Comparison with Morphine, Heroine and Codeine. M. H. Seevers.....	157
XV. A Study of the Analgesia, Subjective Depression, and Euphoria Produced by Morphine, Heroine, Dilaudid and Codeine in the Normal Human Subject. M. H. Seevers and C. C. Pfeiffer....	166
XVI. The Trypanocidal Action of Azo Dyes. A. St. G. Huggett and S. F. Suffolk.....	188
XVII. A Simple Method of Demonstrating Changes in Blood Supply of the Ear and Effects of Some Measures. P. J. Hanzlik, Floyd DeEds and B. Terada.....	194
XVIII. Ether Anesthesia: Changes in the Serum Potassium Content During and Following Anesthesia. Benjamin H. Robbins and Helen A. Pratt.....	205
XIX. The Effect of Diphtheria Toxin on the Vitamin C Content of Guinea Pig Tissues. Carl M. Lyman and C. G. King.....	209
XX. Studies on the Pharmacology of the Nitrite Effect of Bismuth Subnitrate. Edward J. Steiglitz and Alice E. Palmer.....	216
XXI. Studies on Dinitrophenol. I. The Effects of Dinitrophenol on Deglycogenized Rats. Barrett L. Taussig.....	223
XXII. Studies on Dinitrophenol. II. Some Effects of Dinitrophenol on the Heart. Barrett L. Taussig.....	228
XXIII. Pseudohernia, A Visible Manifestation of Local Anesthetic Action. S. Loewe.....	238
XXIV. Dihydromorphinone Hydrochloride (Dilaudid): Its Tranquilizing Potency, Respiratory Depressant Effects and Addiction Liability, as Tested on the Rat. Eugene J. Stanton.....	252

NUMBER 3, MARCH, 1936

XXV. The Antiseptic Action of Certain 2-Furan Mercurials. N. M. Phatak and C. D. Leake.....	265
XXVI. Protective Measures in Diphtheria Intoxication. P. J. Hanzlik and B. Terada.....	269
XXVII. The Determination of Ethyl Alcohol in Body Fluids. Henry Newman.....	278
XXVIII. The Effect of Methyl-Amino Methyl Heptene (Octin) upon the Intact Intestine in the Non-Anesthetized Dog. Charles M. Gruber.....	284
XXIX. Studies upon the Site of Stimulation of Salivation by Intraventricularly injected Pilocarpine in Dogs. Robert B. Aird and Mary F. Montgomery.....	290
XXX. The Antagonism between Ephedrine and Procaine after Cisternal Injection During Morphine-Sodium Amytal Anesthesia and Ether Anesthesia. Robert M. Isenberger and James C. Rice....	307
XXXI. A Comparative Study of Choline and Certain of Its Analogues. II. Cationic Exchange as a Means of Reaction of Choline, Acetylcholine and Their Analogues with Cells. Martin H. Roepke and Arnold DeM. Welch.....	319

XXXII. The Effects of Morphine and Its Derivatives on Intestinal Movements. V. Contributions to the Analysis of Intestinal Records. Hugo Krueger, Isadore Lampe and J. G. Reid.....	327
XXXIII. A Comparative Study of Effects of Sodium n-Hexylethyl Barbiturate (Ortal Sodium) and of Sodium Isoamylethylbarbiturate (Sodium Amytal) upon Excised Smooth Muscle. Charles M. Gruber, Roger Scholten, Anthony DeNote, and John F. Wilson.....	341
XXXIV. Iodine Metabolism of the Adult Rat in Relation to Trauma, Thyroid Activity, and Diet. Versa V. Cole and George M. Curtis.....	351
XXXV. A Study of the Acquired Resistance of Fixed Tissue Cells Morphologically Altered through Processes of Repair. I. The Liver Injury Induced by Uranium Nitrate. A Consideration of the Type of Epithelial Repair Which Imparts to the Liver Resistance against Subsequent Uranium Intoxications. Wm. De B. MacNider.....	359
XXXVI. A Study of the Acquired Resistance of Fixed Tissue Cells Morphologically Altered through Processes of Repair. II. The Resistance of Liver Epithelium Altered Morphologically as the Result of an Injury from Uranium, Followed by Repair, to the Hepatotoxic Action of Chloroform. Wm. De B. MacNider.....	373
XXXVII. A Study of the Acquired Resistance of Fixed Tissue Cells Morphologically Altered through Processes of Repair. III. The Resistance to Chloroform of a Naturally Acquired Atypical Type of Liver Epithelium Occurring in Senile Animals. Wm. De B. MacNider.....	383

NUMBER 4, APRIL, 1936

XXXVIII. The Effect of Ephedrine on Erythrocytes, Leucocytes and Platelets in the Normal and Splenectomised Guinea Pig. S. Levy Simpson and B. H. E. Cadness.....	389
XXXIX. Depressor Substances in the Posterior Lobe of the Pituitary. Edward Larson.....	396
XL. The Antagonism Between Posterior Lobe Pituitary Hormones and Insulin. H. C. Ellsworth.....	417
XLI. Studies of Morphine, Codeine and Their Derivatives. XII. The Isomers of Morphine and Dihydromorphine. Nathan B. Eddy.....	421
XLII. A Comparison of the Effects of Sodium Isoamylethylbarbiturate (Sodium Amytal) and of Sodium n-Hexylethyl Barbiturate (Ortal Sodium) upon the Intact Intestine in the Unanesthetized Dog. Charles M. Gruber.....	432
XLIII. Further Observations with a New Method of Demonstrating Changes in Blood Supply of the Ear. P. J. Hanzlik, F. De Eds and B. Terada.....	440
XLIV. The Central Action of Acetylcholine. George A. Silver and Henry G. Morton.....	446
XLV. The Increased Cardiac Output of Dinitrophenol. J. V. Galgiani and M. L. Tainter.....	451

XLVI. On the Alleged Occurrence of Acetylcholine and Adrenaline in Cat's Saliva. J. Secker.....	464
XLVII. A Study of Twenty-three Quaternary Ammonium Iodides. Henry M. Lee, A. M. VanArendonk and K. K. Chen.....	466
XLVIII. Choline as a Factor in the Elaboration of Adrenaline. R. L. Stehle, K. I. Melville and Frances K. Oldham.....	473

ILLUSTRATIONS

Typical tracings of the effect of ether on whole isolated toad's heart (fig. 1) . . .	2
Experiments with ether on whole hearts (fig. 2)	4
Median percentage effect of camphor on ventricular strips compared with those of camphor and ether on isolated whole hearts of toads (fig. 3)	5
Typical tracings of the effect of camphor on strips of toad's ventricle (fig. 4) . .	7
Effect of different concentrations of camphor on heart (fig. 5)	8
Action of ether on whole heart (fig. 6)	12
Effect of ether on heart compared with its effect on surface tension and with the effect of alcohol on the heart (fig. 7)	14
Effect of camphor on heart compared with its effect on surface tension (fig. 8) .	15
Effect of applying weights to the lever recording the movements of the heart (fig. 9)	18
Effect of posterior pituitary hormones on colloid osmotic pressure and other blood constituents and nitrogen and water balance in dogs (fig. 1)	28
Effect of pitressin on colloid osmotic pressure and other blood constituents and nitrogen and water balance in dogs (fig. 2)	29
Blood dilution and change in mineral content of serum due to the effect of pitressin and pituitrin in dogs (fig. 3)	33
Daily excretion of minerals and nitrogen in the urine of dogs (fig. 4)	34
Respiratory activity after injections of morphine expressed as a percentage of the normal (fig. 1)	45
Respiratory activity while inhaling a carbon dioxide mixture expressed as a percentage of the preinjection value (fig. 2)	46
Inhibition of contraction in non-pregnant rabbit uterus following initial injection of dilaudid (fig. 1, A)	71
Elevation of tonus in non-pregnant rabbit uterus following second injection of dilaudid (fig. 1, B)	71
No alteration of tonus or contractions in full term rabbit uterus following injections of dilaudid (fig. 2)	74
No alteration of tonus or contractions in full term cat uterus following injections of dilaudid (fig. 3)	74
Effect of quinidine upon a dose of acetyl- β -methylcholine large enough to cause brief cardiac arrest (fig. 1)	80
Effect of a large dose of quinidine upon a smaller dose of acetyl- β -methylcholine (fig. 2)	81
Relation of quinidine block of vagus stimulation to block of cardiac action of acetyl- β -methylcholine (fig. 3)	82
Toxicity of premedicants (bulbocapnine, morphine, atropine, scopolamine) in mice (fig. 1)	87
Mortality curves of ethyl ether and divinyl ether in mice (fig. 2)	89
Mortality curve of three-hour divinyl ether anesthesia after premedication with bulbocapnine (fig. 3)	90

Mortality curve of three-hour divinyl ether anesthesia after premedication with morphine (fig. 4).....	91
Respiration and blood pressure changes during slow intravenous infusion of bulbocapnine in a rabbit (fig. 5).....	92
Influence of premedication with bulbocapnine on smoothness of divinyl ether anesthesia in a cat (fig. 6).....	94
Diagram of the larger blood vessels present in the observation area of a typical "preformed tissue" chamber (fig. 1).....	99
Photomicrograph of the blood vessels of a stable "preformed tissue" chamber, a month after its installation in the ear (fig. 2).....	103
Photomicrograph of same chamber, taken thirty seconds after injection of adrenalin (fig. 3).....	104
Chart showing action of adrenalin and pitressin on rhythmic contractions of arteries (fig. 4).....	107
Effect of ethyl alcohol on perfused frog heart (fig. 1).....	125
Comparison of effects of alcohol and whiskey on growth rate of rat (fig. 2)....	130
Toxicity of ethyl alcohol and whiskey for rabbits, oral, 30 per cent alcohol (fig. 3).....	133
Curves of analgesia of two subjects obtained by subcutaneous administration of duplicate weekly doses of heroine HCl, morphine sulphate and dilaudid HCl (fig. 1).....	170
Curves of analgesia obtained from eight subjects following subcutaneous administration of codeine sulphate, 64 mgm., and heroine hydrochloride, 2 mgm. (fig. 2).....	172
Curves of analgesia obtained from eight subjects following subcutaneous administration of morphine sulphate, 10 mgm., and dilaudid hydrochloride, 1 mgm. (fig. 3).....	173
Influence of route of administration of drugs upon curve of analgesia (fig. 4) ..	174
Summary of sixty-four experiments on eight subjects, showing pain threshold following administration of drugs (fig. 5).....	177
Arrangement for use of photoelectric cell on rabbits' ear (fig. 1).....	195
Production and subsequent reduction of NO_2^- from NO_3^- by B. coli (fig. 1) ..	218
Relationship of blood nitrite content to arterial tension (fig. 2).....	220
Relationship of blood nitrite content to arterial tension on oral administration of bismuth subnitrate (figs. 3 and 4).....	221
Electrocardiograms of rabbits before and after administration of dinitrophenol (fig. 1).....	230
Effect of dilaudid and morphine on spontaneous discomfort movements of albino rat (fig. 1).....	254
Effect of dilaudid compared with morphine on respiration of albino rat (fig. 2).....	255
Responses of rats during daily administration of dilaudid and morphine and after permanent withdrawal (fig. 3).....	259
Protective measures in diphtheria intoxication (fig. 1).....	273
Apparatus for alcohol determination (fig. 1).....	279
Record obtained on non-anesthetized female dog following injection of octin hydrochloride (fig. 1).....	287
Record made on un-anesthetized female dog following injection of papaverine hydrochloride and octin bitartrate (fig. 2).....	287

Average quantities of submaxillary saliva secreted following injection of pilocarpine hydrochloride, without anesthesia (fig. 1).....	298
Average quantities of submaxillary saliva secreted following injection of pilocarpine hydrochloride, under chloralose anesthesia (fig. 2).....	301
Average quantities of phenolsulphonephthalein excreted in urine of dog following administration of normal solution; chloralose anesthesia (fig. 3).....	303
Composite results of 20 experiments, showing effect of intravenous ephedrine and of cisternal ephedrine on duration of cisternal novocaine respiratory paralysis (fig. 1).....	312
Serial record of return of spontaneous breathing after its abolition by cisternal procaine hydrochloride (fig. 2).....	314
Record of breathing following cisternal injection of procaine hydrochloride (fig. 3).....	315
Intestinal motility; roentgenograms showing change in balloon outline induced by increase in tone following morphine (fig. 1).....	330
Intestinal motility; roentgenograms taken during passage of peristaltic wave over two balloons (fig. 2).....	333
Intestinal motility; diameter at middle of posterior balloon during passage of peristaltic wave (fig. 3).....	334
Intestinal motility; roentgenograms taken during passage of K-wave over anterior balloon and roentgenograms showing activity localized over portion of balloon (fig. 4).....	337
Intestinal motility; roentgenograms taken during wave involving musculature over entire length of balloon (fig. 5).....	338
Longitudinal segments of rabbit intestine (fig. 1).....	345
Record showing general tonus and rhythmic contractions of longitudinal segment of rabbit duodenum (fig. 2).....	347
Excised longitudinal segments of rabbit intestine (fig. 3).....	348
Acquired resistance of fixed tissue cells morphologically altered through processes of repair: Liver injury induced by uranium nitrate (plates 1 to 8).....	372
Acquired resistance of fixed tissue cells morphologically altered through processes of repair: Liver injury induced by uranium (plates 1 to 7).....	382
Acquired resistance of fixed tissue cells morphologically altered through processes of repair: Resistance to chloroform of naturally acquired atypical type of liver epithelium occurring in senile animals (plates 1 and 2).....	388
Experiments on cat, showing effects of depressor substances in pituitary (figs. 1-5).....	403
Experiments on cat and guinea pig, showing effects of depressor substances in pituitary (figs. 6-12).....	412
Experiments showing effect of administration of insulin and postlobin-O on blood sugar (fig. 1).....	419
Effect of injection of sodium on non-anesthetized dog (fig. 1).....	434
Effect of injection of ortal sodium on non-anesthetized dog (fig. 2).....	435
Effect of injection of sodium amytal on non-anesthetized dog (fig. 3).....	435
Effect of injection of sodium amytal on non-anesthetized dog (fig. 4).....	436

Effect of injection of ortal sodium on non-anesthetized dog (fig. 5)	438
Effect of injection of acetylcholine on blood pressure (fig. 1)	447
Kymograph record before and after intravenous injection of dinitrophenol (fig. 1)	455
Increases in metabolism of dogs, plotted against doses of dinitrophenol (fig. 2)	456
Correlation of respiration, temperature, cardiac output, and arterio-venous oxygen differences with each other and with oxygen consumption (fig. 3) .	457
Hydroxide forms of four amines and acetyl and catechol derivatives (fig. 1) .	474
Choline as factor in elaboration of adrenaline (fig. 2)	477
Choline as factor in elaboration of adrenaline (fig. 3)	478
Choline as factor in elaboration of adrenaline (fig. 4)	479
Choline as factor in elaboration of adrenaline (figs. 5 and 6)	480