

## CONTENTS

### NUMBER 1, AUGUST, 1920

I. A Toxicological Study of Some Alcohols, with Especial Reference to Isomers. By David I. Macht . . . . .	1
II. The Elimination of Carbon Monoxide from the Blood after a Dangerous Degree of Asphyxiation, and a Therapy for Accelerating the Elimination. By Yandell Henderson and Howard W. Haggard . . . . .	11
III. The Effect of Emetine on Entamoeba Histolytica in Stools. By William Allan . . . . .	21
IV. The Clotting Efficiency of Thromboplastic Agents: A Reply. By Paul J. Hanzlik . . . . .	35
V. The Carminative Action of Volatile Oils. By J. W. C. Gunn . . . . .	39
VI. The Influence of Reaction on the Precipitation of Proteins by Tannin. By Torald Sollmann . . . . .	49
VII. The Stability of Benzyl Alcohol Solutions. By David I. Macht and Alfred T. Shohl . . . . .	61

### NUMBER 2, SEPTEMBER, 1920

VIII. The Action of Drugs on the Output of Epinephrin from the Adrenals. VI. Atropine; Pilocarpine. By G. N. Stewart and J. M. Rogoff . . . . .	71
IX. A Study of the Action of Cocaine on the Splanchnic and Cervical Sympathetic Neuromuscular Mechanisms. By Arthur L. Tatum . . . . .	109
X. The Part Played by the Liver in the Regulation of Blood Volume and Red Corpuscle Concentration in Acute Physiological Conditions. By Paul D. Lamson . . . . .	125
XI. The Action of Borax on the Uterus. By J. W. C. Gunn . . . . .	135

### NUMBER 3, OCTOBER, 1920

XII. The Influence of Diuresis on the Elimination of Urea, Creatinine and Chlorides. By E. K. Marshall, Jr. . . . .	141
XIII. The Influence of Saccharin on the Catalases of the Blood. By F. C. Becht . . . . .	155
XIV. Quantitative Studies in Chemotherapy. III. The Oxidation of Arsenamine. By Carl Voegtlin and Homer W. Smith . . . . .	199
XV. The Effect of Opium Alkaloids on the Behavior of Rats in the Circular Maze. By D. I. Macht and C. F. Mora . . . . .	219
XVI. A Comparison of the Effect of Certain Saponins on the Surface Tension of Water with Their Hemolytic Power. By H. E. Woodward and C. L. Alsberg . . . . .	237

## NUMBER 4, NOVEMBER, 1920

- XVII. The Action of Adrenalin on the Heart. III. The Modification of the Action of Adrenalin by Chloroform. By W. J. R. Heinekamp.... 247
- XVIII. The Toxicity and Skin Irritant Effect of Certain Derivatives of Dichloroethyl Sulfide. By E. K. Marshall, Jr., and John W. Williams. 259
- XIX. Studies of Chronic Intoxications on Albino Rats. I. Organization of the Investigations. By Torald Sollmann, O. H. Schettler and N. C. Wetzler. .... 273
- XX. Studies of Chronic Intoxications on Albino Rats. II. Alcohols (Ethyl, Methyl and "Wood") and Acetone. By Torald Sollmann. .... 291
- XXI. The Effect of Carminative Volatile Oils on the Muscular Movements of the Intestine. By O. H. Plant. .... 311

## NUMBER 5, DECEMBER, 1920

- XXII. The Action of Caffeine, Theobromine and Theophylline on the Mammalian and Batrachian Heart. By Reginald St. A. Heathcote. .... 327
- XXIII. Comparative Studies on the Physiological Value and Toxicity of Cotton Seed and Some of Its Products. By Icie G. Macy and Lafayette B. Mendel. .... 345
- XXIV. The Influence of Intravenous Injections of Acacia-Glucose Solutions on Urine Excretion and Blood Volume in Rabbits. By P. M. Mattill, Katherine Mayer and L. W. Sauer. .... 391
- XXV. The Anesthetic and Convulsant Effects of Gasoline Vapor. By Howard W. Haggard. .... 401

## NUMBER 6, JANUARY, 1921

- XXVI. V. Further Studies on the Antagonistic Action of Epinephrin to Certain Drugs upon the Tonus and Tonus Waves in the Terrapin Auricles. By Charles M. Gruber. .... 405
- XXVII. Absorption from the Peritoneal Cavity. By A. J. Clark. .... 415
- XXVIII. On the Absorption of Local Anesthetics Through the Genito-Urinary Organs. By David I. Macht. .... 435
- XXIX. Quantitative Studies in Chemotherapy. IV. The Relative Therapeutic Value of Arsphenamine and Neorsphenamine of Different Manufacture. By Carl Voegtlin and Homer W. Smith. .... 449
- XXX. Studies of Chronic Intoxications on Albino Rats. III. Acetic and Formic Acids. By Torald Sollmann. .... 463
- XXXI. The Effect of Morphine upon the Alkali Reserve of the Blood of Man and Certain Animals. By Harry Gauss. .... 475
- XXXII. The Action of the "Emmenagogue Oils" on the Human Uterus. By J. W. C. Gunn. .... 485

## ILLUSTRATIONS

Frog's heart suspension preparation (Fig. 1) . . . . .	2
— heart suspension preparation (Fig. 2) . . . . .	3
— heart suspension preparation (Fig. 3) . . . . .	4
Pig's ureter (Fig. 4) . . . . .	7
— ureter (Fig. 5) . . . . .	8
— ureter (Fig. 6) . . . . .	9
Plotted from the data of experiments 1, 2, and 3 (Fig. 1) . . . . .	15
— from the data of experiments 4 and 5 (Fig. 2) . . . . .	16
— from the data of experiments 6 and 7 (Fig. 3) . . . . .	18
— from the data of experiments 8 and 9 (Fig. 4) . . . . .	19
Regular pendulum movements of the isolated small intestine of the rabbit (Fig. 1) . . . . .	40
The movements of the rabbit's intestine in situ (Fig. 2) . . . . .	42
Same experiment as figure 2 (Fig. 3) . . . . .	42
Pressure bottle for stomach (Fig. 4) . . . . .	43
Movements of stomach of cat in situ (Fig. 5) . . . . .	44
— of stomach of cat in situ (Fig. 6) . . . . .	44
Effect of hydrogen ion concentration on tannin precipitation (Fig. 1) . . . . .	54
— of hydrogen ion concentration on tannin precipitation (Fig. 2) . . . . .	54
Intestine tracings. Bloods from cat 459 (Fig. 1) . . . . .	77
— tracings. Bloods from cat 459 (Fig. 2) . . . . .	77
— tracings. Bloods from cat 459 (Fig. 3) . . . . .	78
— tracings. Bloods from cat 458 (Fig. 4) . . . . .	81
— tracings. Bloods from cat 458 (Fig. 5) . . . . .	81
— tracings. Bloods from cat 458 (Fig. 6) . . . . .	82
— tracings. Bloods from cat 458 (Fig. 7) . . . . .	83
— tracings. Bloods from cat 461 (Fig. 8) . . . . .	85
— tracings. Bloods from cat 461 (Fig. 9) . . . . .	85
— tracings. Bloods from cat 287 (Fig. 10) . . . . .	89
— tracings. Bloods from cat 287 (Fig. 11) . . . . .	90
— tracings. Bloods from cat 287 (Fig. 12) . . . . .	90
— tracings. Bloods from cat 289 (Fig. 13) . . . . .	92
— tracings. Bloods from cat 289 (Fig. 14) . . . . .	93
Uterus tracings. Bloods from cat 289 (Fig. 15) . . . . .	94
Intestine tracings. Bloods from cat 465 (Fig. 16) . . . . .	100
— tracings. Bloods from cat 465 (Fig. 17) . . . . .	100
— tracings. Bloods from cat 465 (Fig. 18) . . . . .	101
— tracings. Bloods from cat 466 (Fig. 19) . . . . .	102
— tracings. Bloods from cat 466 (Fig. 20) . . . . .	103
— tracings. Bloods from cat 466 (Fig. 21) . . . . .	104

Blood pressure tracing. Dog. Ether anesthesia (Tracing I).....	112
— pressure tracing. Dog. Ether anesthesia (Tracing II).....	113
Dog. Ether anesthesia. Double adrenalectomy. Double vagotomy. Splanchnic nerve stimulation. Control. (Tracing III).....	114
— after femoral vein injection of 5 cc. of 0.3 per cent solution of cocaine hydrochloride (Tracing IV).....	115
Rabbit. Urethane anesthesia. Blood pressure record. Double adrenal- ectomy. Double vagotomy. Splanchnic nerve stimulation. Control (Tracing V).....	116
— after ear vein injection of 1.5 cc. of 0.3 per cent cocaine hydrochloride (Tracing VI).....	116
— Decerebration. Double vagotomy. Blood pressure. Splanchnic nerve stimulation. Control (Tracing VII).....	117
— after ear vein injection of 1.5 cc. of 0.3 per cent cocaine hydrochloride (Tracing VIII).....	118
Effect of stimulation of the cervical sympathetic nerve (Tracing IX).....	120
— of stimulation of the cervical sympathetic nerve (Tracing X).....	120
— of stimulation of the cervical sympathetic nerve (Tracing XI).....	121
Showing the movements of the excised uterus of the non-pregnant cat, and the effect of adding borax up to 1:5000 (Fig. 1).....	136
— the movements of the excised uterus of the non-pregnant rabbit, and the effect of adding sodium carbonate to 1:4000 (Fig. 2).....	136
— the movements of the non-pregnant uterus of the rabbit, and the effect of adding neutral borax (see text) up to 1:4000 (Fig. 3).....	137
— the movements of the uterus of a non-pregnant cat recorded in situ, and the effect produced by intravenous injection of 0.1 gram borax (Fig. 4).....	138
Effect of saccharin on the catalase content of the blood of cats (Fig. 1)...	160
Variations in the catalase content of the blood of dogs over long periods of time (Fig. 2).....	164
Daily variations in the catalase content of the blood of dogs (Fig. 3).....	165
Effect of bleeding on the catalases of the blood (Fig. 4).....	168
— of salt solution on the catalases of the blood (Fig. 5).....	170
— of saccharin by mouth on the catalases of the blood (Fig. 6).....	173-174
— of saccharin intravenously upon the catalase of the blood (Fig. 7).....	181
Relation between the erythrocyte count and the catalase content of the blood (Fig. 8).....	184
— of saccharin on the catalase content of the blood of diabetic dogs (Fig. 9)	188
— of saccharin on the catalase content of the blood of man (diabetic) (Fig. 10).....	191
— of saccharin on the catalase content of the blood of man (non-diabetic) (Fig. 11).....	194
Summary of all experiments on the catalase content of the blood (Fig. 12)...	195
Oxidation of m-amino-p-oxyphenyl arsenious oxide (Chart 1).....	202
— of arsphenamine (Chart 2).....	205
Rate of oxidation of arsphenamine and arsenoxide (Chart 2a).....	206
Ratio of arsenoxide and arsphenamine during the oxidation of the latter (Chart 3).....	213

Circular maze viewed from above (Fig. 1).....	220
— maze with camera lucida attachment (Fig. 2).....	221
Rise in pressure and change in volume produced by 1 cc. 1:10,000 adrenalin. Ether anesthesia (Fig. 1).....	249
Effect of 0.1 cc. chloroform injected intravenously (Fig. 2).....	251
Changes in pressure and heart volume produced by chloroform and adrenalin (Fig. 3).....	252
Inhibition produced by 1 cc. 1:10,000 adrenalin after section of vagi (Fig. 4).....	253
Growth curves for albino rats (Fig. 1).....	275
Standard growth charts, male (Fig. 2).....	276
— growth charts, female (Fig. 3).....	277
Actual growth curves of male rats on normal food (Fig. 4).....	278
— growth curves of female rats on normal food (Fig. 5).....	279
Food consumption (Fig. 6).....	282
— consumption (Fig. 7).....	283
Effect of alcohols and acetone on growth of female rats (Fig. 1).....	296
Ethyl alcohol on growth of male rats (Fig. 2).....	296
Methyl and wood alcohols on growth of male rats (Fig. 3).....	297
Ethyl alcohol on food consumption (Fig. 4).....	300
Methyl and wood alcohols, 2.5 per cent, on food consumption (Fig. 5).....	301
— and wood alcohols, 5 per cent, on food consumption (Fig. 6).....	302
Acetone on food consumption (Fig. 7).....	303
Dog "L." Balloon filled with water (Fig. 1).....	314
— "L." Balloon filled with water (Fig. 2).....	315
— "L." Balloon filled with water (Fig. 3).....	315
— "G." Balloon filled with air (Fig. 4).....	316
— "G." Balloon filled with air (Fig. 5).....	316
— "L." Balloon filled with water (Fig. 6).....	317
— "G." Balloon filled with water (Fig. 7).....	318
— "L." Balloon filled with water (Fig. 8).....	321
— "G." Balloon filled with water (Fig. 9).....	322
— "L." Balloon filled with water (Fig. 10).....	323
Isolated frog heart (Fig. 1).....	332
— frog heart (Fig. 2).....	334
— rabbit's heart (Fig. 3).....	335
— rabbit's heart perfused with theobromine (Fig. 4).....	335
— rabbit's heart perfused with diuretine 1:2500, i.e., theobromine 1:5000 (Fig. 5).....	336
— rabbit's heart perfused with theocine 1:5000, i.e., theophylline 1:7500 (Fig. 6).....	336
— rabbit's heart (Fig. 7).....	340
— rabbit's heart (Fig. 8).....	340
Galvanized-iron chick cup.....	348
Toxicity of cotton seed products (Chart 1).....	350
— of cotton seed products (Chart 2).....	354
— of cotton seed products (Chart 3).....	356
— of cotton seed products (Chart 4).....	357
— of cotton seed products (Chart 5).....	358

Toxicity of cotton seed products (Chart 6).....	359
— of cotton seed products (Charts 7 and 8).....	362
— of cotton seed products (Charts 9 and 10).....	364
— of cotton seed products (Charts 11 and 12).....	366
— of cotton seed products (Charts 13 and 14).....	367
— of cotton seed products (Charts 15 and 16).....	370
— of cotton seed products (Charts 17 and 18).....	371
— of cotton seed products (Chart 19).....	372
— of cotton seed products (Charts 20 and 21).....	376
Anesthetic and convulsant effects of gasoline vapor (Fig. 1).....	403
Tonus waves in the terrapin auricles (Fig. 1).....	406
— waves in the terrapin auricles (Fig. 2).....	407
— waves in the terrapin auricles (Fig. 3).....	408
— waves in the terrapin auricles (Fig. 4).....	409
— waves in the terrapin auricles (Fig. 5).....	409
— waves in the terrapin auricles (Fig. 6).....	410
— waves in the terrapin auricles (Fig. 7).....	411
Dog, 61.8 kilos. Paraldehyde anesthesia (Fig. 1).....	437
—, 5 kilos. Paraldehyde anesthesia (Fig. 2).....	438
Effect of alypin on the absorption from the bladder (Fig. 3).....	439
Absorption of alypin from urethra (Fig. 4).....	440
— of cocain hydrochloride from ureter of the dog (Fig. 5).....	441
Dog, 6 kilos. Paraldehyde anesthesia.....	443
—, 6 kilos. Paraldehyde anesthesia (Fig. 7).....	444
—, 5.8 kilos. Ether anesthesia (Fig. 8).....	445
—, 10 kilos. Paraldehyde anesthesia (Fig. 9).....	446
Effect of acetic acid on growth (Fig. 1).....	468
Formic acid on growth of male rats (Fig. 2).....	469
— acid on growth of female rats (Fig. 3).....	469
Acetic acid on food consumption (Fig. 4).....	471
Formic acid on food consumption (Fig. 5).....	472
Action of emmenagogue oils on human uterus (Fig. 1).....	486
Effect of 1 in 10,000 oil of pennyroyal on the movements of the human Fal- lopian tube (Fig. 2).....	487
— of 1 in 100,000 adrenaline and subsequent addition of 1 in 1000 oil of tansy on the movements of the human Fallopian tube.....	487
— of 1 in 2000 oil of savin on the tone of the excised human uterus (Fig. 4).....	488
— of 1 in 200,000 adrenaline and subsequent addition of 1 in 1000 oil of pennyroyal on the human uterus (Fig. 5).....	488