VOL. VII, No. 5 MAY 1941

PHARMACEUTICAL ABSTRACTS

Published by the American Pharmaceutical Association
2215 Constitution Ave., Washington, D. C.

EDITOR: A. G. DUMEZ, 32 S. Greene Street, Baltimore, Maryland

ABSTRACTORS

WILLIAM B. BAKER
GERSTON BRUCH
HENRY M. BURLAGE
ZADA M. COOPER
AMELIA C. DEDOMINICIS
MELVIN F. W. DUNKER
GEORGE W. FIERO
PERRY A. FOOTE
RALPH R. FORAN
GEORGIANA S. GITTINGER
SAMUEL W. GOLDSTEIN
THOMAS C. GRUBB
H. B. HAAG
G. W. HARGREAVES
BERNICE HEYMAN
WILLIAM H. HUNT
CHARLES JAROWSKI
LEONARD KAREL
CLIFFORD S. LEONARD
NATHAN LEVIN
FREDERICK S. MALLETTE
ARTHUR E. MEYER
A. PAPINEAU-COUTURE
E. V. SHULMAN
FRANK J. SLAMA
EDGAR B. STARKEY
W. TAYLOR SUMERFORD
E. G. VANDEN BOSCHE
G. L. WEBSTER
ELMER H. WIRTH

CONTENTS

PHARMACOLOGY, TOXICOLOGY AND THERAPEUTICS

PHARMACOLOGY (*Continued*)

3,4-Benzopyrene—Influence of the Solvent on the Carcinogenic Action of. —In rats it made no difference whether the benzopyrene was dissolved in olive oil, lard or rat fat before injection. It had been thought that the use of rat fat might hasten absorption.—C. OBERLING, P. and M. GUÉRIN and C. SANNIE. *Compt. rend. soc. biol.*, 130 (1939), 17–19; through *Chimie & Industrie*, 42 (1939), 318. (A. P.-C.)

Bile—Excretion of the, in the Eck Fistula Dogs. The Eck fistula was established in two dogs with gall bladder fistula. Prior and subsequent to that operation, the biliary excretion was studied on giving some foodstuffs such as milk, beef, rice or bread, in the amount corresponding to one-third of the total basic calories per diem.—T. KA. *Tôhoku J. Expl. Med.*, 36 (1939), 503. (A. C. DeD.)

Bile Salts—Effect of Oxidized, on Gall Bladder Bile. The choleresis produced in dogs by the administration of oxidized ketocholanic acids does not affect the p_H, the specific gravity, percentage of solids or the cholesterol content of the gall bladder bile.—B. P. PHIBBS, H. S. WIGODSKY and A. C. IVY. *Proc. Soc. Exptl. Biol. Med.*, 45 (1940), 313. (A. E. M.)

Blood Picture After Extirpation of Cerebral Hemispheres. On the results of investigation of 10 rabbits with cerebral hemispheres removed, the author came to the following conclusions: Red cell count showed the minimum value 3–6 hours after operation and approached gradually the mean value before operation in the majority of cases. Hemoglobin value ran parallel to that of red cell count in all the cases. Total white cell count was réduced in parallel to the reduced count of pseudoeosinophiles in the majority of cases. Pseudoeosinophile leucocytosis was present in a different degree according the first day of experiment, the count returned to the initial value before the operation and did not show any remarkable variation on the second day, rather showing a slight tendency to decrease and three rabbits which survived longer than two days showed a gradual tendency to increase until death, excepting only one which showed a decrease before death. Lymphopenia occurred in the majority of cases. As to basophiles, monocytes and eosinophiles, a definite conclusion was not obtained. Three to six hours after operation, nuclear shift to the left was seen in the majority of cases. Nuclear shift to the right was present in three out of the five cases surviving the operation two days, and in the remaining two cases three days after operation. The sedimentation of red blood cells showed a retardation in the majority of cases three to six hours after operation, and then a remarkable acceleration until death.—S. KURIBAYASHI. *Tôhoku J. Exp. Med.*, 35 (1939), 537. (A. C. DeD.)

Bulbocapnine—Influence of, upon Glycemia of Rabbit. The author has found that this poison, injected in doses large or small (10–20 mg./Kg.) to the rabbit produces a proportional hyperglycemia to the dose. It is inhibited by yohimbine which paralyzes the sympathetic, it is not produced after bilateral section of the splanchnics. The hyperglycemia induced by bulbocapnine is prevented by veronal and luminal, somewhat by urethane, chloral, antipyrine and magnesium sulfate. Atropine which paralyzes the parasympathetics has no action. One may believe that bulbocapnine excites the glycemic regulating center; chemical excitation along the splanchnics to the suprarenals produces a secretion of adrenaline. The point of attack is found in the cerebral trunk (the glyco-regulatory center of the hypothalmus of Aschner and the striated body center of Dresel). The parasympathetics do not seem to play an important part. The author studied the influence of bulbocapnine upon the hyperglycemia produced by morphine, diuretin and large injections of glucose also upon insulin hypoglycemia. He has studied the content of adrenaline in the suprarenals and glycogen in the liver. It has been found that the hyperglycemia produced by morphine is in general increased by bulbocapnine. Hyperglycemia produced by diuretin is strongly checked by the alkaloid which distinctly inhibits the hyperglycemia provoked by glucose. It checks in general insulin hypoglycemia, and sometimes produces a hyperglycemia. It definitely lowers the adrenaline content in the suprarenals, most times this effect is inhibited by a previous treatment of ergotamine. Bulbocapnine considerably diminishes the glycogen content of the liver.—H. ASAKAWA. *Okayama Igakkai Zasshi*, 51 (1939), 804; through *Presse méd.*, 3–4 (1940), 6. (W. H. H.)

Cardioventricular Fibrillation—Further Studies of Drug Effect on. Simultaneous injection of diethylamino-ethoxy-2-diphenyl (F 1262) and adrenaline produces an arterial hypotension and prevents the benzol-adrenaline cardioventricular fibrillation. Five to sixty minutes later injection of adrenaline alone produces an arterial hypertension and subsequent death of the benzol-inhaling dog by ventricular fibrillation. Intravenous injection of corynanthine (0.5–2 mg. per Kg.) induces a prolonged fall of arterial pressure, lasting decrease of the carotid sinus vasomotor reflexes and a decrease of the hypertensive action of adrenaline as well as a protective action upon the benzol-adrenaline cardioventricular fibrillation; 5–10 mg. of *p*-oxyphenylethanol-methyl-amine (sympatol) intravenously injected either before or together with adrenaline scarcely protects the benzol-inhaling dog against ventricular fibrillation. Intrapericardial injection of 0.2 mg. of adrenaline per Kg. into a benzol-inhaling dog produces a progressive rise of arterial blood pressure but provokes no ventricular fibrillation. Intravenous injection of 0.02 mg. of adrenaline per Kg. produces an abrupt elevation of the arterial blood pressure and death by ventricular fibrillation. The role of adrenaline itself and the arterial hypertension induced by adrenaline in determining the production of the benzol-adrenaline cardioventricular fibrillation is discussed. The characteristic form of the rise of blood pressure which produces the ventricular fibrillation of the chloroform—or benzol-adrenaline type is pointed out.—T. C. R. SHEN and R. MARRI. *Arch. intern. pharmacodynamie*, 64 (1940), 58. (W. H. H.)

Carotid Sinus and Respiratory Reflexes. The need of oxygen depresses the respiratory and circulatory reflexes by variation of the endo-vascular pressure at the level of the presso-receptors of the carotid sinus. Hyperpnea, produced by the inhalation of carbon dioxide, suppresses the respiratory reflexes at the presso-receptive sino-carotid origin. Weak bleeding does not modify the respiratory reflexes of sinus origin but sometimes reënforces the arterial hypertension reflexes reacting by a raising of the pressure to the level of the carotid sinus. Strong bleeding which produces a stimulation of the respiratory center by acute anemia, depresses the inhibitory respiratory reflexes, also the circulatory reflexes; hyperpnea, determined by the diminution of the carotid-sinus pressure, is, on the contrary, reënforced. During the hyperthermic polypnea, the modifications of the carotid-sinus pressure produces, especially, reflex modification of amplitude and not of respiratory frequency. Eserine, administered in doses which stimulate the respiratory center, suppresses the respiratory reflexes normally determined by the modification of the carotid-

sinus pressure. Morphine sensitizes the respiratory center to the inhibition reflex produced by the excitation of the presso-receptors of the carotid sinus. Morphine injected in large doses depresses the circulatory reflexes of sinus origin. Veronal and evipan do not augment, but depress the sensitivity of the respiratory center with respect to reflex influences of carotid sinus origin. In the course of periodic respiration of Cheyne-Stokes type produced by bleeding or by raised doses of morphine or barbituric derivatives, the new variations of pressure of the carotid sinus do not produce reflex modifications of activity of the respiratory center.—A. MARRI and W. HAUSS. *Arch. intern. pharmacodynamie*, 63 (1939), 449. (W. H. H.)

Cinchonine—Influence of, on Salivary Secretion. The author studied the action of cinchonine on the salivary secretion and after many experimental observations states that it has an inhibitory action.—L. LIACI. *Biochim. terap. sper.*, 26 (1939), 429. (A. C. DeD.)

Curate Preparations and Curare Substitutes—Clinical Experiences with Some. Erythrina derivatives and three curare extracts were used clinically by intravenous and oral administration. The margin of safety is pointed out as that difference in dosage between the desired skeletal muscle effect and the undesired toxic paralysis of the muscles of respiration. The initial symptom is dizziness, as this recedes the upper eyelids become heavy, eventually leading to lid droop. Mistiness of vision is noticed as is diplopia. The facial muscles are relaxed with a smoothing of the facial expression. The face becomes pale, the patient complaining of a gripping sensation in the throat and difficulty in talking. There are no constant pupillary sensations, no nystagmus and no changes in pulse or blood pressure. As the above noted changes reach their peak, the skeletal muscles relax so that all plastic muscle rigidity should be abolished. In one instance, respiratory difficulty ensued when the patient received 500 mg. of erythroidine. Prostigmin is the physiological curare antidote. The author compared the toxicity of several of the preparations on frogs, mice and cats.—MICHAEL S. BURMAN. *J. Pharmacol.*, 69 (1940), 143. (H. B. H.)

Cysteine Hydrochloride as an Anticoagulant for Clinical Use. The intracardial injection of cysteine hydrochloride in dogs was followed by a rise in coagulation time of 40% to 100% in 3 out of 5 experiments. Its administration to dogs by stomach tube was followed by an increase of clotting time of 25% to 100%. On administration by mouth to 23 patients in whom the diagnosis of multiple sclerosis had been made, a rise of coagulation time varying from 30% to 90% was obtained in 17. It is well tolerated by most patients in doses up to 3 Gm. per day, over many months. It is suggested as an anticoagulant of rather low efficiency for use over long periods of time, for conditions in which such an agent might be valuable.—T. J. PUTNAM and P. F. A. HOEFER. *Am. J. Med. Sci.*, 198 (1939), 502–509. (B. H.)

Dental Anesthesia in Children. A series of 200 children were given anesthesia for extraction of teeth under similar conditions with vinyl ether or ethyl chloride. The results showed that these are both safe and useful anesthetics. The action of vinyl ether is shorter and less certain than that of ethyl chloride, but it is useful for producing a short anesthesia for the extraction of a few deciduous teeth in young children. Vinyl ether is more likely to cause struggling during the induction period, and this is attributed in part to its unpleasant smell. Vinyl ether causes troublesome salivation in many cases, but seldom produces rigidity of the jaw; recovery from the anesthetic is very rapid. Ethyl chloride may cause troublesome rigidity of the jaw, but when this is overcome it is certain in its action and duration, and may be used in children of all ages for the extraction of any teeth, deciduous or permanent. Recovery from ethyl chloride is slower than recovery from vinyl ether, and is more likely to be accompanied by vomiting, but these factors do not contraindicate its use.—J. O. FRENCH, M. L. HOOKER, R. B. VAUSE and A. L. ROBINSON. *Brit. Med. J.*, 4132 (1940), 432. (W. H. H.)

Desoxycorticosterone and Testosterone—Effect of, on Water and Chloride Metabolism. In the rat, desoxycorticosterone acetate causes marked diuresis and increased chloride excretion, but not a constant increase of the chloride concentration in the urine. The diuretic effect is more pronounced in the hypophysectomized rat. The blood chlorides decrease in the normal but not in the hypophysectomized rat. Kidney hypertrophy elicited by progesterone and desoxycorticosterone is not responsible for the polyuria, since androgens cause the same enlargement without polyuria. The enlargement of the kidneys in all cases is practically prevented by hypophysectomy.—HANS SELYE and LUCY BASSETT. *Proc. Soc. Expll. Biol. Med.*, 45 (1940), 272. (A. E. M.)

Detoxicating Hormone—Studies on the, of the Liver. Yakriton, the detoxicating hormone of the liver, has been shown to be effectual in the detoxication of rabbits acutely poisoned with *alpha*-dinitrophenol. In the case of low-classed rabbits it exerts the prophylactic detoxication on *alpha*-dinitrophenol poisoning in the amount of $^1/_2$ R. A. U. much more favorably than in the amount of 1 R. A. U. or $^1/_4$ R. A. V.—G. SUGIHARA. *Tôhoku J. Exp. Med.*, 37 (1940), 568. (A. C. DeD.)

Diethyldioxotetrahydropyridine and Diethyldioxopiperidine. Two new hypnotics have been studied, these are 3,3-diethyl-2,4-dioxotetrahydropyridine (referred to as pyridione), and 3,3-diethyl-2,4-dioxopiperidine (piperidione). Pyridone is a central nervous system depressant, producing in appropriate doses, motor paralysis, muscular relaxation, loss of righting reflexes and deep sleep lasting several hours. Its onset of action upon intravenous administration is immediate. Pyridione does not abolish the cardiac slowing produced by electrical stimulation of the vagus. Piperidione produces a similar picture except that the onset of action is somewhat slower and the duration of action more prolonged. The LD_{50} of pyridione intravenously to rabbits is from 300 to 350 mg. and orally 500 to 650 mg. In dogs the intravenous fatal dose is 400 mg. The LD_{50} of piperidione intravenously in rabbits is 940 mg. and orally 1030 mg. The narcotic index (LD_{50}/ND_{50}) is 4.07 for pyridione, 3.42 for piperidione and 2.96 for barbital, all given intravenously in rabbits. The drugs are readily absorbed from the gastrointestinal tract, the subcutaneous tissues and the peritoneal cavity. The rate of essential elimination of pyridione is about 13% of the fatal dose per hour. Both drugs in higher doses depress the respiration and lower the blood pressure. The body temperature is depressed about the same as with barbiturates. Pyridione is mutually antagonistic to central stimulants, such as picrotoxin, Metrazol (Cardiazol) and oil of wormwood.—T. KOPPANYI, R. P. HERWICK, C. R. LINEGAR and R. H. K. FOSTER. *Arch. intern. pharmacodynamie*, 64 (1940), 123. (W. H. H.)

Digiflavone and Other Flavone Derivatives—Diuretic Action of. The authors have studied some flavonic derivatives extracted from digitalis and of different species of plants, and have stated the existence of an experimental diuretic action.—A. CLERC and R. PARIS. *Soc. de Biol.* (Jan. 20, 1940); through *Presse méd.*, 10–11 (1940), 108. (W. H. H.)

Digitalis Assay—Behavior of Belgian Frogs in Relation to Trevan's Dose-Mortality Curve. The author finds that the dose-mortality curve obtained by the injection of digitalis into Belgian frogs shows complete accordance with Trevan's curve.—P. DELTOUR. *Quart. J. Pharm. Pharmacol.*, 12 (1939), 677–679. (S. W. G.)

Digitalis Glucosides—Studies on Purified. II. Potency and Dosage of Lanatoside C in Man. Lanatoside C and a sample of digitalis leaf were compared for potency by the cat and frog methods and by clinical usage. It was found that the Lanatoside C by the cat method was 293 times as potent as their specimen of digitalis, and 438 times as potent by the frog method. Clinically, however, it was only 170 times as active. In both the cat and in man it was found that the Lanatoside C was not particularly rapidly absorbed by oral administration.—N. T. KWIT, HARRY GOLD and MCKEEN CATTELL. *J. Pharmacol.*, 70 (1940), 254. (H. B. H.)

Digitalis—New Approach to the Standardization of. A procedure known as the Mass Culture method, using the test animal *Daphnia magna* has been used as a nontoxic method of assay. Recent studies have disclosed the fact that certain types of drug-induced depression of the rate of heart beat could be wholly or partially prevented in the presence of an active digitalis preparation. These findings suggested an approach to this new method of studying and perhaps standardizing digitalis by its desirable remedial activity. Yohimbine, because of its relatively low toxicity, was found to be the most suitable cardiac depressant for the purpose. While the results of this preliminary work point to the feasibility of the method, further work is necessary to fully explore all angles and to eliminate certain variables.—ARNO VIEHOEVER, N. H. SOKOLOFF and A. A. TARANSKY. *Am. J. Pharm.*, 111 (1939), 466. (R. R. F.)

Earthworm Possessing Antipyretic Properties—Constituent of the. The antipyretic fraction obtained by digestion of earthworm in water and precipitation with alcohol, lead subacetate, etc., seems to be an intermediate compound formed by hydrolysis of the proteins into amino acids. The fraction is soluble in water, insoluble in alcohol, ether and other organic solvents. It contains 7.78% total nitrogen, 1.62% free amino nitrogen and gives a positive test for biuret, ninhydrin, Pauly, Millon and Hopkins-Cole reactions. It corresponds to lumbro-febrin. It is unstable on heating in acid solution, only slightly stable in alkaline solution, but stable in neutral solution.—A. OGATA and F. MORI. *J. Pharm. Soc. Japan*, 58 (1938), 267–269; through *Chimie & Industry*, 42 (1939), 674. (A. P.-C.)

Earthworm—Study of Constituents of, as Antipyretic. II. A ferment has been found in the dried earthworm which is capable of digesting the worm at p_H 8.0–8.2. When the p_H is adjusted to 8.4 by the addition of sodium bicarbonate and the water-soaked worm digested at 40°, a solution is obtained which shows antipyretic activity when injected subcutaneously into a fevered rabbit [*J. Pharm. Soc. Japan*, 58 (1938), 267]. A solution obtained by adding 10 parts of water to one part of ground earthworm was stirred for four hours at room temperature, filtered, and its p_H adjusted to 8.4 by the addition of sodium bicarbonate. The solution was then divided into portions, and each portion was then heated for a definite length of time at 95° to destroy the enzymes and finally concentrated. The results show that by digesting 12 hours or more, a solution possessing a good antipyretic action is obtained. The enzyme of the earthworm retains its activity even after 2 months if its aqueous solution is kept at about 0°. It is suggested that the earthworm does not contain the active antipyretic substance as such in a free state, but during the preparation of the active substance, the proteins in the earthworm undergo decomposition and it is then that the antipyretic substance is generated.—AKIRA OGATA, KAGAMI MORINOTO and FUMINAE MORI. *J. Pharm. Soc. Japan*, 59 (1939), 483–494 (in English, 171–173). (N. L.)

Eserine-Like Compounds—Action of, upon Frog's Nerve-Muscle Preparations. A small after-tension follows the main response to two shocks applied to a frog's nerve-sartorius preparation immersed in a buffered Ringer's solution. This tension was abolished by atropine in concentrations too small to influence the main response, and by curarine in concentrations which somewhat reduced the main response. Prostigmine, eserine or the dimethylcarbamic ester of 8-hydroxymethylquinolinium methylsulfate when applied to the nerve-muscle preparation from "warm" frogs (kept at 14–18° C. before using) caused no change in the main response to one or to two shocks but augmented and caused, respectively, an after-tension following one or two shocks. Treatment of the preparation from "cold" frogs (kept at 0–5° C. before using) by the eserine-like compounds augmented the response to one or to two shocks to be followed by twitching which was abolished by atropine and curarine in the same concentrations as in the first experiment. Treatment of the "warm" preparations with agents known to sensitize to stimuli of long duration as: calcium-deficient Ringer's solution, or Ringer's solution with sodium citrate, guanidine carbonate, etc., produced no appreciable change in the responses. This treatment, followed by eserine-like compounds, caused "warm" preparations to behave like cold preparations treated with eserine-like compounds. Eserine-like compounds nor the sensitizing agents influence the response of a brief shock to a muscle treated with curarine. Calcium deficiency, in large or small degree, affected little the response to stimulation of the muscle but a moderate deficiency changed the response to repetitive stimulation of a nerve to resemble that produced by stimulation at lower frequencies of the nerve of an untreated preparation. Prostigmine offsets such a deficiency slightly but calcium quickly produced a marked improvement.—S. L. COWAN. *Proc. Roy. Soc. London B.*, 129 (1940), S52–53. (W. T. S.)

Histamine—Action of, upon the Epinephrine Secretion from the Suprarenal Gland in Non-Anesthetized Dogs. The effect of histamine administration upon the epinephrine output rate was studied on non-anesthetized dogs, according to the method of the lumbar route preparation of Satake and his co-workers. Histamine was injected intravenously in a dose of 1, 2, 3 and 5 mg. per Kg. of body weight. With these doses of histamine, the epinephrine output rate was increased from 0.00002–0.00003 mg. per Kg. per minute to 0.0003–0.0007 mg. per Kg. per minute for one gland within 5 minutes after the injection; the magnification was ten- to thirty-fold. This increase was entirely due to the increase of the epinephrine concentration in the suprarenal vein blood. The longer the fall of blood pressure following the injection lasted, the longer lasted the hypersecretion of epinephrine. The blood sugar level was increased by histamine to a more or less marked degree. There was found no evidence of increased output rate of epinephrine on histamine after denervation of the suprarenal gland by sectioning the splanchnic nerves. The output rate was rather diminished owing to the decreased blood flow through the gland. Thus, the peripheral effect of histamine on the epinephrine discharge, which has been described by some previous investigators on the cat, was not confirmed in the present investigations on dogs. The hyperglycemic effect of histamine was much reduced after section of the splanch-

nic nerves on both sides.—M. WADA, K. FUZII, H. SINUTA, H. SAKURAI and M.-C. LI. *Tôhoku J. Exp. Med.*, 37 (1940), 442. (A. C. DeD.)

Bis(Hydroxymethyl)dihydrocodeine and Bis(hydroxymethyl)dihydromorphine. These compounds were obtained by introducing methoxyl groups by means of formaldehyde into dihydrocodeinone and dihydromorphinone, respectively. Neither of these compounds is suitable for therapeutic use, as their toxicity is higher and their therapeutic activity lower than those of codeine and morphine, respectively.—C. MANNICH and K. SCHULTE. *Arch. Pharm.*, 276 (1938), 593–596; through *Chimie & Industrie*, 42 (1939), 674. (A. P.-C.)

Insulin Convulsions—Studies on the Mechanism of. This study is reported in three parts. I. Significance of Serum Electrolytes. II. Effects of Breathing Atmospheres Varying Widely in Oxygen and Carbon Dioxide Content. III. Effects of Varying Partial Pressures of Atmospheric Oxygen and Carbon Dioxide in Adrenalectomized Animals.—IRVINE MCQUARRIE *et al. Chinese Med. J.*, 58 (1940), 1–38. (W. T. S.)

Insulin Deficiency and Inefficiency. There is considerable evidence that two types of diabetes can be differentiated on the basis of the speed with which they react to insulin. In one type, the insulin-sensitive type, insulin acts rapidly; in the other the insulin-insensitive type, insulin acts slowly. The evidence is compatable with the suggestion that the disease in the sensitive type cases is due to deficiency of insulin, while in the insensitive type the disease is due not to a lack of insulin but to impairment of insulin action. At present, although there is evidence that the anterior pituitary gland may be responsible for the diabetes associated with hyperpituitarism, the indictment of the pituitary gland as a primary factor in ordinary cases of human diabetes mellitus rests purely on analogy (Himsworth, 1939).—H. P. HIMSWORTH. *Brit. Med. J.*, 4139 (1940), 719. (W. H. H.)

Insulin—Dosage-Response Relation in Cross-Over Rabbit Test for. II. A comprehensive discussion of the mathematical interpretation of dosage-response relationships of the cross-over test based on the following criteria: (1) The difference between the average percentage reductions in blood sugar on test and on standard; (2) The ratio of these average reductions (test/standard); and also when the difference between average reductions (standard − test) corrected for the difference between average initial blood sugar levels. Errors are indicated and discussed.—E. C. FIELLER, J. O. IRWIN, H. P. MARKS and E. A. G. SHRIMPT. *Quart. J. Pharm. Pharmacol.*, 12 (1939), 724–742. (S. W. G.)

Insulin Suppositories. Tests with insulin suppositories made on rabbits and healthy human beings are reported. The action of the insulin sets in very soon and subsides rather rapidly. It is possible to vary the intensity of the action at will. The suppositories proved to be of clinical value.—B. BRAHN. *Lancet*, 238 (1940), 829. (W. H. H.)

Intracaine. Clinical Report of Its Use in Regional Anesthesia. Several reports concerning the regional anesthetic activity of intracaine (betadiethylamino ethyl *p*-ethoxy benzoate hydrochloride) both in experimental animals and clinical subjects are reviewed by the author. From his own study of the drug in one hundred clinical cases, the author concludes that with proper technique intracaine produces satisfactory regional anesthesia without immediate or latent toxic effects. Eighty-two of the cases are tabulated with respect to the type of block executed and the cases in each type are analyzed with respect to the amount of drug used, duration of anesthesia, duration of the operation and number of failures.—PERRY P. VOLPITTO. *Southern Med. J.*, 33 (1940), 1029–1031. (W. T. S.)

Iodine and Element 85 (Eka-Iodine). Comparison of Their Metabolism. A comparison of the metabolism of element 85 and of iodine showed that these two halogens are stored in the thyroid tissue of the guinea pig and are excreted in a similar manner. The article begins with an appropriate introduction which is followed by a description of the procedure used to prepare the radio-halogen and the method used to study it from a metabolic standpoint. The results are discussed.—JOSEPH G. HAMILTON and MAYO H. SOLEY. *Proc. Nat. Acad. Sci. U. S.*, 26 (1940), 483–489. (W. T. S.)

Kidneys and Sex Hormones. Gonadectomy in males, but not in females, produces small "castration" kidneys. In both normal and gonadectomized female rats and castrated males, the male hormones (androsterone and esters of testosterone) produced true hypertrophy of the kidneys and could therefore be defined as nephrotrophic hormones. Except for slight pathological changes produced in the kidneys of normal females by large doses, the action of testosterone esters on these organs appears to have no harmful but a definitely beneficial effect. On the other hand, estrogens in certain doses easily produced peculiar cyst-like degenerative changes in the kidneys, mostly confined to the boundary layer of the cortex and medulla. So far as it is permissable from experimental results on rats to advise the therapeutic application of sex hormones to human patients, it is suggested that androsterone, possessing weak sex and strong nephrotrophic properties, should be clinically tested in suitable kidney diseases in males where physiological stimulation of these organs is required. In women suffering from these diseases, however, the application of estrogens, especially in large doses or for prolonged periods, would probably increase the pathological changes in the kidneys.—V. KORENCHEVSKY and M. A. ROSS. *Brit. Med. J.*, 4137 (1940), 645. (W. H. H.)

Liver Extracts—Biological Standardization of. The effect on rabbits made anemic by poisoning with lead was studied. The method is not suitable for standardization of liver extracts for it is too unreliable.— GASTONE FERRARI. *Arch. sci. med.*, 69 (1940), 226; through *Chem. Abstr.*, 34 (1940), 3879. (F. J. S.)

Methylcholanthrene—Influence of, on Age Incidence of Leukemia in Several Strains of Mice. Leukemia appeared at an earlier age than in controls when mice of the F strain were painted twice weekly with methylcholanthrene.—ARTHUR KIRSCHBAUM, LEONELL C. STRONG and W. U. GARDNER. *Proc. Soc. Exptl. Biol. Med.*, 45 (1940), 289. (A. E. M.)

Morphine—Biological Determination of Small Quantities of. The antagonism between the hydrobromic ester of choline and morphine on the denervated dorsal muscle of the leech is quantitative, and has been used for the bioassay of quantities of morphine of the order of 0.01 to 0.05 mg. The dorsal muscle is prepared according to Minz's technique and is then immersed in 20 cc. of aerated Ringer's solution. The dose of hydrobromide ester of choline required to produce for 3 minutes a muscular contraction resulting in a curve 4 to 6 cm. high is determined, and the morphine hydrochloride is then added to the bath.—DENISE G. FICHTENBERG and JEANNE LÉVY. *Compt. Rend. Soc. Biol.*, 130 (1939), 312–316; through *Chimie & Industrie*, 42 (1939), 450. (A. P.-C.)

Morphine—Reaction of Dog's Colon to Subcutaneous Injections of. The immediate effect of a subcutaneous injection of 0.25 grain is marked increase of the tonus of the colon with a diminution, frequently a disappearance, of quiet periods.

Alternating with the periods of high tone there were exaggerations of certain components of the contractions. The motility of the colon did not show any sign of increased tolerance to 0.25 grain daily. Neither was there a cumulative effect after 60 days treatment. The effect disappears 20 hours after the injection.—R. D. TEMPLETON, E. A. GALAPEAUX and H. F. ADLER. *Proc. Soc. Exptl. Biol. Med.*, 45 (1940), 98. (A. E. M.)

Nikethamide (Coramine) and Water Balance. Following a subcutaneous injection of nikethamide in doses from 10 to 25 mg. body weight, into rabbits, guinea pigs, cats, rats and pigeons there was noted an increase in water loss through the body. This was particularly true if fluid was given prior to the administration of the drug.—E. M. BOYD and J. D. FORDE. *J. Pharmacol.*, 70 (1940), 279. (H. B. H.)

Pancreatic Juice—Secretion of the, in the Eck Fistula Dogs. The Eck fistula was prepared in two dogs, with permanent pancreatic fistula. In the majority of cases the Eck fistula formation induced an exaggeration in the pancreatic secretion, but its degree was far inferior to that of the gastric secretion. The exaggeration was not always observable. —T. KA. *Tôhoku J. Expt. Med.*, 36 (1939), 516. (A. C. DeD.)

Pentobarbital, Evipal, Ether, Aminopyrine and Metrazol—Reactions of Alcohol Tolerant Rabbits to. Working with rabbits made tolerant to alcohol by the intraperitoneal administration of $1^1/_2$ Gm. of alcohol per Kg. daily for from 15 to 25 days, the authors found that these animals were more resistant to the depressant effects of pentobarbital, evipal and ether. No difference was found in response to amidopyrine and metrazol. The authors conclude that these experiments lead to the possible generalization that there is a cross-tolerance between alcohol and other central nervous system depressants, but that this cross-tolerance does not extend to other types of drugs.—R. P. AHLQUIST and J. M. DILLE. *J. Pharmacol.*, 70 (1940), 301. (H. B. H.)

Peroxidase Granula and Giemsa-Stained Granula of Leucocytes. After an administration of morphine in a considerable amount, the myeloid leucocytes in the streaming blood will show a very strong peroxidase reaction (of Sato and Sekiya), quantitatively as well as qualitatively, while the oxidase reaction (of Winkler-Schultze) will remain as normally strong as ever. The increase of peroxidase granules, however, have nothing to do with the increase of the Giemsa-stained granules. The former is the result of effect of morphine on cerebral hemispheres, while the latter is the manifestation of effect of the alkaloid on the organism.—A. SATO and S. KURIBAYASHI. *Tôhoku J. Exp. Med.*, 36 (1939), 583. (A. C. DeD.)

Phaeanthus Ebracteolatus—Chemical and Biological Assays of. A chemical assay method for tertiary alkaloids of *Phaeanthus ebracteolatus* was developed using acid added to a solution of tertiary alkaloid which changed the alkaloid into a salt using methyl red as an indicator. One cc. of $N/50$ H_2SO_4 corresponds to 0.00526 Gm. of phaeanthine. The biological assay was the blood pressure method using doses of 25 mg. of tertiary alkaloid for comparison. Blood pressure was also used for the biological assay of quaternary alkaloids. A dose of 0.1 cc. of the fluidextract or the quaternary aqueous extract produced a distinct fall in blood pressure. This method may be considered as reliable as the assay of epinephrine by the blood pressure method.—FAUSTINA GARCIA and ARACELI A. YLAGAN. *Rev. Filip. Med. Farm.*, 30 (1939), 457. (G. S. G.)

Phaeanthus Ebracteolatus (Presl) Merrill (Kalimatas)—Pharmacological Study of Quaternary Alkaloids and Fluidextract of. *Phaeanthus ebracteolatus* (Presl) Merrill is a common and widely distributed plant in the Philippines. In Los Baños, Laguna Province and in Bataan Province it is known as "kalimatas." The fluidextract of the bark and the alkaloids therefrom were used in this work. Alkaloids of two types are present, tertiary and quaternary. The fluidextract (100%) was made with a menstruum of four parts of alcohol and one of distilled water. The quaternary alkaloid in aqueous or alcoholic solution depresses smooth muscles, especially of the blood vessels, and as a result the blood pressure falls. With moderate and large doses the fall in blood pressure produced by quaternary alkaloids may be partly due also to depression of the heart. With sufficient large doses it also depresses the intestine, tracheal muscles and uterus, and is able to counteract the stimulant effects produced by pilocarpine and barium on the intestine and tracheal muscles, and by pitocin and histamine on the excised uterus. The fall in blood pressure was of longer duration than that produced by nitroglycerin and acetylcholine. With fatal doses (1 cc. fluidextract per Kg. dog weight) the respiration was first increased temporarily then decreased and stopped. The blood pressure fell to as low as 14 mm. or less of Hg and kept at that level until it was raised by asphyxia, and then dropped to zero level through cessation of the heart beat a few minutes after the failure of respiration. When artificial respiration was applied after cessation of respiration, the heart continued to beat, maintaining the low blood pressure for some time, and then gradually recovered to normal inside the 1 hour or more after administration of the drug. Included are 12 plates and 23 tracings.—FAUSTINA GARCIA. *Philippine J. Sci.*, 71 (1940), 361. (P. A. F.)

Piperidomethyl-3-Benzodioxan (F 933)—Action of, upon the Uterus and Sexual Cycle. In the cat, found in a period of sexual cycle rest, small doses of F 933 (2 mg. per Kg.) do not produce any uterine action. With larger doses (5 mg. per Kg.) one obtains a light relaxing of the uterus. Strong doses (10 mg. per Kg.) provoke, on the contrary, a slight contraction of the uterine muscle. In the cat when found in a period of heat, small doses of F 933 produce clear contractions of the uterus. In cats found under the influence of the active yellow body then in a state of pseudo-gravidity or beginning gravidity, F 933 always produces, with strong doses, a relaxing of the uterus. The uterus of the cat at puberty having been treated with estradiol benzoate always reacts with respect to small and large doses of F 933 by a contraction. In cats not at puberty much weaker doses of estradiol benzoate are sufficient for obtaining the same type of reaction of the uterus with respect to F 933. The uterus of the cat having been treated with the yellow body hormone reacts with respect to small and large doses of F 933 by relaxing. The uterus of the cat having been treated by the gonadotropic hormone extracted from the urine of pregnant females, in doses sufficient to produce a pronounced stimulation of the developing follicles, reacts with respect to small and large doses of F 933 by a contraction. The uterus of the normal cat reacts with respect to adrenaline by relaxing. In the different periods of the sexual cycle this relaxation is more pronounced after a preliminary action of F 933. The uterus of the cat having been treated with large doses of follicular hormone, yellow body hormone or gonadotropic hormone reacts with respect to adrenaline by contraction.—J. DAELS. *Arch. intern. pharmacodynamie*, 63 (1939), 359. (W. H. H.)

Procaine—Effect of Atropine on the Local Action of. Prolongation of procaine hydrochloride anesthesia by addition of atropine sulfate in low concentration (10^{-5}) is reported. Tests were made on

rabbit's cornea after subconjunctival injection. The theory is developed that atropine exerts an effect on cell permeability.—A. J. LESER and C. H. THIENES. *Proc. Soc. Exptl. Biol. Med.*, 45 (1940), 109. (A. E. M.)

Progesterone and Desoxycorticosterone—Absorption of. Progesterone is adsorbed from large tablets implanted subcutaneously at an average rate of about 20% per month. Tablets weighing 50 mg. thus supply about 10 mg. per month. Free desoxycorticosterone is absorbed from implanted tablets more than twice as rapidly as desoxycorticosterone acetate.—M. H. WARWICK and A. S. PARKES. *Lancet*, 238 (1940), 406. (W. H. H.)

Quinine Compounds—Histological Effects of Intraneural Injections of. Studies were made on rabbits in which quinine hydrochloride and quinine and urea bihydrochloride were injected into the sciatic nerves. Control injections were made, using Ringer's solution. Both of the quinine salts in one per cent solution damaged the nerves, there being no qualitative difference between the two preparations. The injection of Ringer's solution produced only slight changes. It is concluded that when these quinine salts are used, producing nerve block, the anesthesia is not caused by a "real" anesthesia, but by an actual destruction of nerve tissue. The author decries the use of quinine as a local anesthetic, other than in exceptional cases.—R. SALM. *J. Pharmacol.*, 70 (1940), 245. (H. B. H.)

Snake Venoms. VIII. The rate of inactivation of cobra neurotoxin by sulfite increases with the acidity of the medium. This may be taken as a proof that the sulfite inactivating treatment acts on atomic groups which do not give rise to the formation of SH groups.—F. MICHEEL and G. BODE. *Ber. deut. chem. Ges.*, 71 (1938), 2653–2657; through *Chimie & Industrie*, 42 (1939), 672. (A. P.-C.)

Sodium Benzoate—Abnormal Excretion of Hippuric Acid After Administration of. Repetition of the author's previous work on the excretion of hippuric acid after oral ingestion of sodium benzoate has been carried out on twelve cases of mental disorder. The previous conclusion, that catatonic patients as a class show a diminished ability to detoxicate benzoic acid, has been confirmed. Improvement in the ability to detoxicate benzoic acid has been found in three catatonic patients who have improved mentally after treatment. Similar results have been found after intravenous injection of a solution of sodium benzoate. It is concluded that the lowered rate of excretion of hippuric acid among catatonic (and certain other psychotic) patients after oral ingestion of benzoate is not necessarily due to faulty absorption of benzoate from the gut.—J. H. QUASTEL and W. T. WALES. *Lancet*, 238 (1940), 402. (W. H. H.)

Sodium 1:3-Dimethylbutylethylbarbiturate—Aberrant Action of. Pharmacological tests have shown that the compound causes convulsions in mice, rats, guinea pigs, rabbits, cats, dogs and monkeys, but depression and anesthesia in frogs and toads. The convulsant action in rabbits may be suppressed by the hypnotic action of sodium amytal, although the substance is not detoxified by the latter.—E. E. SWANSON and K. K. CHEN. *Quart. J. Pharm. Pharmacol.*, 12 (1939), 657–660. (S. W. G.)

Steroids and Sexual Hormones. XLIX. Ethinyltestosterone and vinyl testosterone, administered by hypodermic injection, exert a therapeutic effect several times weaker than that of progesterone; by oral administration they are notably more active than progesterone.—L. RUZICKA and K. HOFMANN. *Helv. Chim. Acta*, 22 (1939), 150–155; through *Chimie & Industrie*, 42 (1939), 518. (A. P.-C.)

Stilbestrol—Mammary Carcinomas in Mice Following Oral Administration of. Male mice of astrain that develops carcinomas in the females only, were treated with stilbestrol. All treated animals showed first a retardation in weight gain and later adenocarcinomas of the same type as spontaneously occurred in the females.—MICHAEL B. SHIMKIN and HUGH G. GRADY. *Proc. Soc. Exptl. Biol. Med.*, 45 (1940), 246. (A. E. M.)

Sulfapyridine—Use of, in the Treatment of Gonococcal Urethritis in the Male. Of 63 male patients with gonorrheal urethritis treated with sulfapyridine, 79.2% passed all the tests of cure. The dosage was 3 Gm. of sulfapyridine a day for 4 days. Forty-five patients had one or more toxic reactions. Sulfapyridine is said to have been the most efficient sulfanilamide derivative in the treatment of gonococcal urethritis in the male.—S. H. JOHNSON and P. R. LEBERMAN. *Am. J. Med. Sci.*, 198 (1939), 594–602. (B. H.)

Tincture of Ipecac—Biological Study of. The smallest amount of tincture of ipecac that would cause a fall of tonus and total stoppage of the movements of a prepared strip of rabbit intestine in three to four minutes after its addition to the bath was determined. The following conclusions are given: (1) The action of tincture of ipecac on the pendulary movements of isolated rabbit intestine is not completely in proportion with its corresponding content of emetine and cepheline. The action is greater than would be expected. (2) With equal percentages of total alkaloids similar actions are noted regardless of the temperature at which the tincture was prepared. Temperatures of 35° to 50° do not appear to produce decomposition of the active principles of ipecac when the tincture is prepared with the aid of heat. (3) The amount of 70% alcohol present in the amounts of tincture required to produce the stated effect on isolated rabbit intestine produces a negligible response. (4) Tincture of ipecac, freed from alcohol and made up to its original volume with Tyrode solution is a little less active, on the isolated rabbit intestine, than is the normal tincture.—A. ASTRUC, J. GIROUX and S. BARRAU. *J. pharm. chim.*, 1 (1940), 185–201. (S. W. G.)

Tissue Metabolism—Drugs in. II. Action of Drugs on Metabolism of Tissue in Serum. Methylene blue has been found to increase the oxygen consumption of rat liver respiring in human serum. Chloral hydrate and sodium barbital both depress the metabolism. Following depression of the oxygen consumption by chloral hydrate, methylene blue increases the metabolism. Following sodium barbital, the dye further depresses metabolism. This is interpreted as indicating a difference in the site of action of the drugs on the oxidative system of the tissue cells.—DALE G. FRIEND. *Proc. Soc. Exptl. Biol. Med.*, 45 (1940), 140. (A. E. M.)

α-Tocopherols—Esters of. The dubious reports as to the physiological activity of α-tocopherol esters and the ready availability of synthetic racemic α-tocopherol led to the preparation and biological testing of several of these esters in comparison with esters of natural tocopherol. All the esters tested (acetate, propionate, butyrate, benzoate, succinate, stearate, caproate) possess vitamin E activity at least equal to that of free tocopherol; and the minimum doses required of acetate, propionate and butyrate were smaller than the smallest effective dose of free tocopherol.—V. DEMOLE, O. ISLER, B. H. RINGIER, H. SALOMON and P. KARRER. *Helv. Chim. Acta*, 22 (1939), 65–68; through *Chimie & Industrie*, 42 (1939), 518. (A. P.-C.)

Triphenylchloroethylene. A Synthetic Substitute for Follicular Hormone. Details are now available of a synthetic substance which produces the pharmacological effect of estradiol, the natural follicular hormone of the ovary. The substance is triphenyl-

chloroethylene. The duration of its action, when given orally, approximates that of an equal weight of estradiol benzoate or stilbestrol, but given subcutaneously the duration of action is stated to be about three times that of the former, and five times that of the latter compound. In animals its toxicity has been shown to be extremely low. It is administered in those conditions that respond favorably to the natural follicular hormone of the ovary. Clinically satisfactory results have been reported in the treatment of amenorrhea (total dosage 12 to 16 Gm.), atrophic vulvovaginitis, menopausal symptoms and for promoting the inhibition of lactation. One case of atrophic rhinitis greatly improve following a nasal spray with triphenylchloroethylene in oil.—ANON. *Pharm. J.*, 144 (1940), 53. (W. B. B.)

Triphenylphosphite—Convulsive Action of. By the use of a preparation made with radioactive phosphorus it was possible to follow the behavior of the substance in the organism. It appears that triphenylphosphite is readily hydrolyzed *in vivo*. The phenol fraction was accumulated in excess in the central nervous system, which accounts for the early toxic nervous manifestations. The phosphorus was relatively higher in the diencephalon and motor cortex.—R. B. AIRD, WALDO E. COHN and SIDNEY WEISS. *Proc. Soc. Exptl. Biol Med.*, 45 (1940), 306. 306. (A. E. M.)

Venom of the Indian Cobra (Naia Naia)—Circulatory Effects of the. In the cat and rabbit the intravenous injection of cobra venom in small amounts caused a persistent rise in arterial blood pressure. A second injection proved ineffective. The venom on perfusion of the rabbit's ear caused vasoconstriction which persisted in spite of repeated administrations of the venom. In the discussion the authors point out that the variation of it results from those obtained by others might be ascribed to differences in dosage.—F. GOTTDENKER and M. WACHSTEIN. *J. Pharmacol.*, 69 (1940), 117. (H. B. H.)

Veritol—Action of, on Blood Pressure and Heart. The action of intravenous injections of veritol on arterial blood pressure and on the electrocardiogram was studied in cats under ether, chloralose, pentothal, chloroform or cyclopropane anesthesia. The rise of the arterial blood pressure after administration of veritol in cats under ether, chloralose or pentothal anesthesia varies in extent and duration. There is no direct relationship between the blood pressure response and the dose of veritol or the depth of anesthesia. The blood pressure response did not depend on its initial level. There was no difference in the results obtained in atropinized and non-atropinized animals. Veritol has a tachyphylactic action in cats; the second injection of the drug may produce a fall in blood pressure. Veritol has no pressor action in cats under chloroform and only a negligible pressor action in cats under cyclopropane anesthesia. Intravenous injections of veritol produced slight disturbances of cardiac rhythm in cats under ether anesthesia; severe disturbances of cardiac function were electrocardiographically recorded in cats under pentothal, chloralose, cyclopropane or chloroform anesthesia. These changes were also observed in atropinized animals. The action of veritol is compared with that of ephedrine, its close chemical relative.—G. SCHOENEWALD, A. SCHWEITZER and G. C. STEEL. *Lancet*, 238 (1940), 544. (W. H. H.)

Vipera Aspis Venon—Mechanism of the Detoxification of, by Formaldehyde. When formaldehyde is added to the diluted venom each factor of enzyme is inactivated at a different rate. The blood-coagulating factor is inactivated very quickly, the hemolytic factor, only after a week or more.—E. CESARI and P. BOQUET. *Compt. rend. soc. biol.*, 130 (1939), 19–23; through *Chimie & Industrie*, 42 (1939), 318–319. (A. P.-C.)

Vitamin A—Influence of Graded Doses of, upon Pathological Changes in the Central Nervous System of the Rat, with Suggestions for a Prophylactic Assay of the Vitamin. Rats were placed at weaning on a vitamin A free diet and given graded doses of Vitamin A. They were killed after about 7 weeks and their medulla was examined by Marchi's method. Degeneration was found in the funiculus praedorsalis in those receiving 1 I. U. or less per day but not in those getting 1.5 I. U. or more, the demarcation being extremely sharp. It is suggested that this procedure might be adapted to form the basis of a prophylactic assay of vitamin A. The main source of error in the curative method, in which the test is carried out on animals which may differ widely in pathological condition, is thereby avoided. Further, the procedure is simple and quick enough to be suitable for routine assay.—J. T. IRVING and M. B. RICHARDS. *Biochem. J.*, 34 (1940), 198. (F. J. S.)

Vitamin K and Cerebral Hemorrhage in the Newborn. Where 2-methyl-1:4-naphthoquinone or diacetyl-2-methyl-1:4-naphthohydroquinone is given to the baby after birth the prothrombin index rises to and remains within normal limits. A similar result has been obtained by the use of natural vitamin K. All of the facts given suggest that the administration of a vitamin K analogue, either to the mother between twelve and four hours before delivery or to the newborn would appear to be especially indicated in cases of maternal toxemia; in premature labor; in cases of difficult or instrument delivery; where breast feeding is not possible; when any cerebral symptoms develop during the first few days of life; in cases of hemorrhagic diathesis; icterus gravis neonatorum and anemia; and where an operation is necessary on the newborn.—A. I. S. MACPHERSON, E. MC CALLUM and W. F. T. HAULTAIN. *Brit. Med. J.*, 4142 (1940), 839. (W. H. H.)

Zinc Protamin Insulin and Soluble Insulin. Two post-insulin blood sugar curves of seventeen hospital diabetic patients recently balanced on a combined dose of zinc protamine insulin (Z. P. I.) and soluble insulin (S. I.) and five of a long standing diabetis in full activity were plotted, one in each case being estimated after separate injections and the others after the two kinds of insulin had been mixed in the syringe. When the two insulins were drawn into the same syringe, the action of the S. I. was modified, some of it being delayed in action and some of it apparently lost; in all cases a larger proportion of S. I. was needed when given in the same syringe with Z. P. I. to produce a hypoglycemic action in the early part of the day. It seems from this investigation that it is more economical and insures more accurate balancing to give S. I. and Z. P. I. in separate injections. If drawn into one syringe they must not be allowed to mix. The hardened diabetic does not mind two pricks, and all who lead active lives prefer to take all their insulin in the morning, rather than have to remember a second injection before tea or before dinner; hence the use of the two kinds of insulin is preferred by the patient besides ensuring a more steady blood sugar level throughout the day and night.—G. M. WAUCHOPE. *Lancet*, 238 (1940), 962. (W. H. H.)

TOXICOLOGY

Acetyl-5-Fluorosalicylic Acid—Preparation of. The preparation of 5-fluorosalicylic acid and its acetyl derivative are discussed. These are more toxic than the unfluorinated compounds, the acetyl derivative being about 50% more toxic than aspirin. —C. M. SUTER and A. W. WESTON. *J. Am. Chem. Soc.*, 61 (1939), 2317. (E. B. S.)

Adaline Poisoning. Death resulted after the taking of 96 adaline tablets (0.5 Gm.) by a 17 year

old man. The adaline extract recovered from the tissues by a special process gave a yellow precipitate when treated with mercuric acetate in suitable concentration. The mercury combined with the adaline was then determined titrimetrically. This then served as an indirect method for the determination of the adaline.—K. WOJAHN. *Samml. Vergiftungsfalle*, 8 (1937), 65-71; through *Chem. Abstr.*, 33 (1939), 7237. (F. J. S.)

Adrenaline—Effect of, on Toxicity of Local Anesthetics. The authors summarize their findings as follows: (1) A study has been made of the effect of adrenaline, added in various concentrations to solutions of cocaine, on the toxicity of the latter when given subcutaneously to white mice. (2) The lethality curves of cocaine, alone and in combination with various constant doses of adrenaline, show that doses of 0.2μ g./Gm. (a concentration of 1 in 50,000 of the solution injected) or more of adrenaline cause a substantial increase in the toxicity of cocaine. Doses of 0.118μ g./Gm. (a concentration of 1 in 85,000) or less of adrenaline do not have a significant effect on the toxicity of cocaine. (3) Doses of 0.2μ g./Gm. (a concentration of 1 in 50,000) or more of adrenaline increase the toxicity of procaine in the same way, and roughly to the same extent, as they do that of cocaine.—M. GURD and I. SACHS. *Quart. J. Pharm. Pharmacol.*, 12 (1939), 713-723. (S. W. G.)

Alcohol—Toxicological, Determination of Small Quantities of, by Means of Potassium Dichromate. When a liquid containing alcohol is heated with potassium dichromate in presence of sulfuric acid, most of the alcohol is oxidized to acetic acid, but some (up to 30%) may be lost in the form of acetaldehyde. This loss may be avoided and quantitative results obtained by placing the sample, a slight excess of normal potassium dichromate and an equal volume of 20% sulfuric acid in a long-neck, heavy-glass flask, stoppering tightly, placing in a water bath, slowly heating to boiling and keeping at the boil for 10 minutes, cooling, adding excess of potassium iodide, and titrating the liberated iodine with sodium thiosulfate.—A. RAPIN. *Helv. Chim. Acta*, 22 (1939), 72-75; through *Chimie & Industrie*, 42 (1939), 451. (A. P.-C.)

Ammonia, Chlorine, Hydrogen Cyanide, Hydrogen Sulfide and Sulfur Dioxide Gases—Toxicity of. I. General Methods and Correlations. The apparatus and methods are briefly described. A study was made of the toxicity of a number of gases to 18 species including fungi and bacteria pathogenic to plants and animals, green leaves and stems, seeds, insects and rodents. The various organisms were exposed to 1, 4, 16, 63, 250 and 1000 p. p. m. of gas for time periods of 1, 4, 15, 60, 240 and 960 minutes. The order of toxicity of gases at 1000 p. p. m. was as follows: fungi and bacteria—SO_2 and Cl_2 more than NH_3 more than H_2S and HCN; seeds and sclerotia—SO_2 more than Cl_2, NH_3, H_2S; green leaves—Cl_2 more than SO_2 more than NH_3, HCN more than H_2S; green stems—no difference; animals—HCN more than H_2S more than Cl_2 more than SO_2 more than NH_3. The order of sensitivity of classes of organisms is also given for each gas.—S. E. A. MCCALLAN and C. SETTERSTROM. **II. Fungi and Bacteria.** SO_2 or Cl_2 were most toxic toward the cultures, NH_3 was intermediate, and H_2S and HCN the least toxic. Young cultures are more sensitive than older ones. A reciprocal relation between time and concentration for a given response was noted.—S. E. A. MCCALLAN and F. R. WEEDON. **III. Green Plants.** Tomato, buckwheat and tobacco were the plants tested. The decreasing order of toxicity of the gases to the leaves and of the effect of the gases on p_H of tomato leaves was Cl_2, SO_2, NH_3, HCN, H_2S. Plants were injured by Cl_2 and SO_2 to a greater extent during clear than during cloudy weather.—N. C. THORNTON and C. SETTERSTROM. **IV. Seeds.** The moist and dry seeds of radish and rye were exposed to the various gases in concentrations of 1000 and 250 p. p. m. for periods of 1, 4, 15, 60, 240 and 960 minutes. Hydrogen cyanide and H_2S had no effect on germination percentage, but delayed appearance of seedlings under some conditions. Ammonia and Cl_2 were more toxic while SO_2 proved most toxic under the experimental conditions. Only the exposure of 960 minutes to Cl_2 and SO_2 produced any reduction in germination percentage of dry radish seeds.—L. V. BARTON. **V. Animals.** House flies, mice and rats were exposed to the various gases at different concentrations for varying periods of time. The order of decreasing toxicity of the gases to each of the three organisms tested was found to be HCN, H_2S, Cl_2, SO_2 and NH_3. Chlorine appears to produce the greatest amount of hemorrhage and edema of the lungs, H_2S produces these effects as well as a toxic effect of another type causing cerebral excitement. HCN produces a similar excitement but no striking gross pathologic change. The effects of SO_2 and NH_3 resemble those of chlorine.—F. R. WEEDON, A. HARTZELL and C. SETTERSTROM. *Contrib. from Boyce Thompson Institute*, 2 (1940), 325-385. (F. S. M.)

Animal Poisons. The poisons included in this review are the venoms of amphibians, snakes and bees and the paralytic shellfish poison.—C. H. KELLAWAY. *Ann. Rev. Biochem.*, 8 (1939), 541-556; through *Chem. Abstr.*, 33 (1939), 6963. (F. J. S.)

Argemone Oil—Toxicity of. It is known that the oil from the seeds of *Argemone mexicana* when given orally produces symptoms resembling those of epidemic dropsy. The present paper is a continuation of a previous study of the effects of this oil on laboratory animals. In feeding experiments on guinea pigs using mustard oil, olive oil and liquid paraffin as controls, it was found that argemone oil produced degenerative changes in the liver and kidney followed by death. However heating argemone oil to 240° C. for fifteen minutes materially reduced its toxicity making it resemble a bland oil in this respect. Thus outbreaks of epidemic dropsy caused by the ingestion of argemone oil as a food may be controlled by simply heating this oil or any oil suspected of containing it.—C. L. PASRICHA, S. LAL and K. BANERJEE. *Indian J. Med. Research*, 27 (1940), 947-951. (W. T. S.)

Ascorbic Acid—Antidotal Effect of, in Mustard Gas Conjunctivitis. The authors carefully observed the pathologic changes produced in the eyes of rabbits by the introduction of a droplet of mustard "gas." The poison apparently becomes fixed by the tissues rather quickly, because secretion taken from a poisoned eye does not irritate a normal eye after 15 minutes. Damage to the poisoned eye gives rise to symptoms within 15 minutes, and after 24 hours a purulent conjunctivitis and keratitis is present. In seeking an antidote, the authors experimented with various vegetable and mineral oils, 1:400 bleaching powder, sodium bicarbonate, sodium sulfate and sucrose, and an organic mercurial. None of these prevented the damage, and some increased it. By accident it was observed that rabbits thoroughly saturated with vitamin C seemed to have a higher resistance to mustard gas conjunctivitis. A dose of 500 mg. intravenously before contact with the poison produced a marked prophylactic effect, and 100 mg. administered up to 2 hours after exposure to the gas lessened its severity.—P. C. LIVINGSTON. *Brit. J. Ophthalmol.*, 24 (1940), 67; through *Abbott Abstract Service*, (1940), No. 702. (F. J. S.)

Barite Pneumoconiosis—Study of. A study of 50 cases of pneumoconiosis in workers in barite mills.

In the men who worked indoors at the crushing mills and in sacking the fine dust there were very marked changes in the lungs which began early. These changes were out of all proportion to the clinical findings which were slight in the early stages. The roentgenological findings are minutely described. The dust was 97.7% barium sulfate with small admixtures of silica and iron. It was found that the lesions were caused by the barium sulfate itself and not by the silica. This form of pneumoconiosis does not tend to cause tuberculosis but rather acute forms of lung affection. No measures of protection for the workmen were taken in the mills investigated by the authors but suggestions are given.—F. SPEDINI and P. L. VALDINI. *Radiol. med.*, 26 (1939), 1; through *Am. J. Roentgenol Radium Therapy*, 44 (1940), 464. (F. S. M.)

Barium Sulfate Meal—Respiratory Dyspnoea Following. Two patients, one an asthmatic, upon receiving barium meals for diagnostic purposes, showed marked symptoms of respiratory dyspnoea. Adrenaline was required to relieve one patient but oxygen had to be resorted to in the case of the asthmatic patient. The attacks were attributed to minute quantities of barium which after absorption acted on the muscles involved in the attacks.—R. N. CHOPRA and B. CHAKRAVARTY. *Indian Med. Gaz.*, 75 (1940), 330–332. (W. T. S.)

Benzene Poisoning—Diagnosis and Pathology in the Early Stages of Chronic Industrial. In early benzene poisoning leucopenia is regularly the first symptom observed, while thrombopenia is to be found at a later stage. The bone marrow is poor in cellular elements and the younger form of the myelopoietic cells is definitely increased. The megakaryocytes exhibit degenerative changes.—K. FELLINGER. *Arch. Gewerbepath.*, 9 (1938), 88–96; through *Chimie & Industrie*, 42 (1939), 270. (A. P.-C.)

Cardiac Poisons of the Latex of Calotropis. The chief toxic constituent is uscharine, $C_{31}H_{41}O_8NS$. On hydrolysis the sulfur and nitrogen are removed from the molecule; the residual compound uscharidine, isomeric with calotropine, $C_{29}H_{40}O_8$, is also cardio-toxic. The other toxic compounds isolated from calotropis latex are calotoxine, which is an oxycalotropine, $C_{29}H_{40}O_{10}$, and calactine which offers numerous analogies with calotropine but gives a different genin.—G. HESSE, F. REICHENEDER and H. EYSENBACH. *Liebig's Ann. Chem.*, 537 (1938), 67–86; through *Chimie & Industrie*, 42 (1939), 317. (A. P.-C.)

Chloralose Poisoning—Detection of. Twenty cc. of blood or urine are triturated with enough anhydrous sodium sulfate to take up the water, then extracted with ether, and the ether extract is tested for chloralose by known methods. Under the microscope chloralose recrystallized from water appears as fine needles grouped broom-like. The melting point on the Maquenne block is 184° to 187° C. On heating the substance to boiling with a few drops of caustic soda solution, chlorine ions can be detected with silver nitrate.—H. GRIFFON and R. LEBRETON. *Compt. rend. soc. biol.*, 130 (1939), 535–537; through *Chimie & Industrie*, 42 (1939), 636. (A. P.-C.)

Chlorinated Solvents—Danger of Continuous Inhalation of Oxygen or of Carbogen in Acute Intoxications with. When animals which have been intoxicated experimentally with chlorinated solvents are brought back by means of oxygen or of carbogen (mixture of oxygen and carbon dioxide, containing generally 5% carbon dioxide), it is observed that those which are treated with air only recover more rapidly than the others. Tests showed that the rate of elimination of the poison is slower and less complete according as the duration of treatment with an atmosphere rich in oxygen or carbogen has been greater. The elimination curves show that, in treatment with gases, after a rapid fall in the quantity of poison during the first few minutes of treatment, the curve tends to rise again, while with air there is noted a regular and progressive decrease. It is therefore advisable to shorten the time of the first treatment and to finish the disintoxication by means of air.—MATRUCHOT. *Médecin d'Usine*, 1 (1938), No. 6, 36–41; through *Chimie & Industrie* 42 (1939), 269. (A. P.-C.)

Digitoxin and *k*-Strophanthosid—Comparison of. The toxicity and cumulative action of digitoxin and *k*-strophanthosid was studied in the pigeon, cats and rabbits. The results are given in a table.—J. M. Walker. *J. Pharmacol.*, 70 (1940), 239. (H. B. H.)

Ergot Poisoning. Epidemic Forms Caused by Eating Bread Made from Ergotized Grain. In a note the writer calls attention to the prevalence and the horror of ergot poisoning among people who eat bread made of ergotized grain. It was claimed that such poisoning has reached epidemic form in France and Germany numerous times, and twice as late as the Nineteenth Century.—ANON. *Am. Botanist*, 46 (1940), 87–88. (W. T. S.)

Gas-Contaminated Foodstuffs. A memorandum on arrangements for dealing with food contaminated by war gases has recently been issued by the Ministry of Food. It deals with the administrative control of work in connection with the detection and subsequent treatment of contaminated food, the instruction and duties of officers, and includes recommendations regarding the decontamination of affected foodstuffs.—ANON. *Chemist and Druggist*, 133 (1940), 22. (A. C. DeD.)

Hemp Drugs—Use of, in India. According to historieal writings, the wide spread use of hemp and other habit-forming drugs probably originated in India. The narcotic content of hemp drugs growing wild and under cultivation in India depends upon the geographic location of the plant. Special treatments of and selections among the narcotic plants yield three commercially important forms of the drug, namely, bhang, ganja and charas. The narcotic principle of the hemp drugs is cannabinol obtained from the resin found in various parts of the plant anatomy. Details are given for the consumption of ganja and charas which are generally smoked, and for bhang which is generally drunk in some liquid form. Aside from the euphoric uses of these drugs, they are used in connection with religious and social customs; in the practice of native and western medicine among people and animals. Consumption of the drug by smoking is more harmful than by drinking but abuses exist in both instances. Hemp drug addiction is declining but some 4.24 lbs. per 1000 of population is still annually consumed in British India. Roughly some 855,844 individuals are addicted and these are very irregularly distributed geographically. The harmful effects of the addiction vary widely. The main effects are on the central nervous system and these are divisible into two groups: (*a*) temporary, those existing while the patient is under the influence of the drug; and (*b*) permanent, those following its prolonged use. Temporary and permanent effects are conditioned by the mode of drug consumption and by the duration of the addiction. The effects produced, enabled the author to divide the addicts into four groups depending upon the amount of drug consumed and the degree of harm produced thereby.—R. N. CHOPRA. *Indian Med. Gaz.*, 75 (1940), 356–367. (W. T. S.)

Insect Sprays—Prolonging Toxicity of Pyrethrum. Deterioration of kerosene solutions of pyrethrum extract occurs by the action of air or benzoyl peroxide. Toxicity is prolonged by addition of 0.2% of

p - hydroxydiphenyl, benzaldehyde, β - naphthol, eugenol, *o*-cresol and oleic acid or by 0.5% of a non-volatile olefine, whereas vanillin (0.2%) has an injurious effect.—R. B. TRUSLER. *Soap*, 16 (1940), 115, 117, 119; through *J. Soc. Chem. Ind.*, 59 (1940), 249. (E. G. V.)

Insecticides. Active ingredients are used such as 9-fluorenol, 9-fluorenone or 2-aminofluorene (suitably in sprays or powders).—HOUSTON V. CLABORN and LLOYD E. SMITH, assignors to THE SECRETARY OF AGRICULTURE OF THE U. S. A. U. S. pat. 2,197,249, April 16, 1940. (A. P.-C.)

Insecticides—Suitable for Combating Livestock Pests. A pyrethrin or rotenone is used with sesame oil.—CRAIG EAGLESON, dedicated to the free use of THE PEOPLE IN THE TERRITORY of the UNITED STATES. U. S. pat. 2,202,145, May 28, 1940. (A. P.-C.)

Insecticides Suitable for General Use. Finely divided particles of pyrophyllite, bauxite, alunite or topaz are used with a partial coating of aluminum tetrafluoride.—CHAS. H. PEDDRICK, JR, assignor to FELDSPATHIC RESEARCH CORP. U. S. pat. 2,203,744, June 11, 1940. (A. P.-C.)

Lead Hazard from Soldering and Grinding in Automobile Body Plants. Workers showed high blood-lead content and low hemoglobin and red cell counts. Lead fumes are not a factor in these poisonings since the solder is never heated above a pasty consistency. Dust samples taken near the work places showed high lead contents (up to 43%) but these were due chiefly to coarse particles rather than fine lead dust. Intake of lead in these cases appeared to be chiefly by respiratory tract, and secondly from dirty hands.—K. HUMPERDINCK. *Arch. Gewerbepath.*, 9 (1938) 13-21; through *Chimie & Industrie*, 42 (1939), 269. (A. P.-C.)

Lead Poisoning and the Parathyroid Gland—Relation between. Lead poisoning affects the parathyroid function of mineral regulation. Bone changes occur in chronic lead poisoning similar to those in cases of adenoma of the parathyroid. Serum studies upon these individuals showed hypercalcemia (calcium level, 11 mg. per 100 cc.) and a lowering of the inorganic phosphorous level (below 4 mg. per 100 cc.). These symptoms point toward hyperfunction of the parathyroid.—K. REINHARKT. *Arch. Gewerbepath.*, 9 (1938), 80-87; through *Chimie & Industrie*, 42 (1939), 270. (A. P.-C.)

Lead Poisoning—Criteria for Diagnosis. Criteria for the diagnosis of lead poisoning cannot rest upon any one finding of lead absorption in blood or urine, but must continue to be based upon the whole picture of known lead exposure together with objective evidence of lead absorption as well as upon typical signs and symptoms of lead intoxication, all viewed in the light of clinical experience.—E. L. BELNAP. *Ind. Medicine*, 9 (1940), 505-509. (F. S. M.)

Mercury Poisoning—Combating. Slight chronic mercury poisoning caused by working in rooms containing very small quantities of mercury vapor, its manifestations and recognition, sources of the poison, and activated carbon as a protective measure are discussed.—T. ZIENER. *Glas u. App.*, 20 (1939), 63-66; through *Chem. Abstr.*, 33 (1939), 7428. (F. J. S.)

Methyl-Atropine Nitrate (Eumydrin)—Actions of. Comparative studies are reported as to the action and toxicity of methyl-atropine nitrate and atropine. Both, on the isolated intestine as well as that *in vitro*, showed with the rabbit that these drugs were of comparable potency. The LD_{50} for white mice by intraperitoneal injections was 0.1 Gm. per Kg. and for atropine 0.32 Gm. The authors concluded that eumydrin has a spasmotic power equal to that of atropine, but its toxicity is three times that of atropine.—J. D. P. GRAHAM and S. LAZARUS. *J. Pharmacol.*, 70 (1940), 165. (H. B. H.)

Methyl Bromide—Poisoning with. Dogs kept in an atmosphere containing from 35 to 48 mg. of methyl bromide per liter went into narcosis and died shortly after. Bromine could be detected in the organs, especially in those rich in lipoids. The pathological picture points to a vasomotor crisis. Efforts to counteract this effect with vasoconstrictor substances, especially adrenaline, were unsuccessful. Glutathione is suggested as a stabilizer of the vasomotor system.—M. DUVOIR, R. FABRE and F. LAYANI. *Médecin d'Usine*, 2 (1939), 135-148; through *Chimie & Industrie*, 42 (1939), 471. (A. P.-C.)

Monochlorophenols—Toxicity of, to Goldfish. A study was made of the toxicity of the three monochlorophenols with respect to concentration and survival time at 27° and the results were compared with each other and with those for phenol and rotenone. Goldfish of the same lot, weighing between 2 and 4 Gm. each, were used as the test animals. The introduction of the chlorine atom into the phenol molecule, like that of the nitro group, results in compounds having a markedly different mode of toxic action from that of phenol. Toxicity is affected with respect to both concentration and survival time. However, the change of position of the atom, unlike that of the nitro group but like that of the methyl group, is accompanied by a change in toxicity very nearly, if not entirely, with respect to concentration alone. According to the minimal product of the concentration and survival time, which measures toxicity in its range of most powerful action, the relative toxicity of the chlorophenols as compared with phenol is as follows: *ortho*, 1.15; *meta*, 1.51; and *para*, 1.89.—W. A. GERSDORFF and L. E. SMITH. *Am. J. Pharm.*, 112 (1940), 197. (R. R. F.)

Pantothenic Acid—Toxicity of. Calcium pantothenate is, like other members of the B complex, a substance of extremely low toxicity. Excessively large doses produce death due to respiratory failure. Prolonged feeding of sublethal doses cause no toxic manifestations proving that an excess of pentothenic acid is either quickly destroyed or excreted.—KLAUS UNNA and JOSEPH GRESLIN. *Proc. Soc. Exptl. Biol. Med.*, 45 (1940), 311. (A. E. M.)

Poisonous Plants—Five Suspected. Field observations and feeding experiments showed the toxicity for sheep of the scarlet pimpernel (*Anagallis arvensis*) and the Osage orange (*Maclura aurantiaca*). The toxicity of the former varies greatly and in an unknown manner with varying conditions. Neither is cyanogenetic. Caper spurge (*Euphorbia lathyrus* L.) produced gastrointestinal irritation in sheep. Negative results were obtained with woolly everlasting (*Helichrysum blandowskianum*) and with black nightshade (*Solanum nigrum*). Six references.—E. M. PULLER. *Australian Vet.*, 15 (1939), 19-23; through *Chem. Abstr.*, 33 (1939), 6964. (F. J. S.)

Poisons and Poisoners. Something of the history of poisons is related. Source of the word, first recognition of poisonous properties, difficulty of defining a poison, antiquity of poisons as indicated in literature, capital punishment and suicide by means of, some notorious poisoners of history, passage of laws concerning the use of poisons are some of the topics discussed.—W. H. BLOME and MICHAEL ZAJAC. *Jour. A. Ph. A.*, 29 (1940), 460. (Z. M. C.)

Polyploidy in Relation to Chemical Analysis. The subject is discussed in connection with the fact that a definite relationship exists between genetic factors and the chemical substance produced; also, toxicity in the genus *Aconitum*, cinchona alkaloids

and hybrids, colchicine and double diploids. In the genus *Aconitum*, toxicity varies with the chromosome number. Chemicals that induce polyploidy provide plant breeders with a tool that may make possible a good many changes. Chemical analysis of cinchona hybrids indicates that a shift from one alkaloid to another takes place. This unexplored field should be studied.—WM. J. BONISTEEL. *Jour. A. Ph. A.*, 29 (1940), 408. (Z. M. C.)

Silicosis—Prognosis in. In this study of 511 anthracite coal miners with silicosis, it was found that only 77 were discharged as improved, while 243 were unimproved and 191 died. The ages of those who improved and those who died varied from fifteen to sixty-nine years, with the majority in the fourth, fifth and sixth decades in those who had worked from eighteen to twenty-three years. Emphysema is the most common complication, and, when extensive, prognosis is unfavorable. The second most common complication is tuberculosis. The prognosis in the first and second stages of silicosis complicated by tuberculosis is the same as in non-silicotic tuberculosis; but in Stage III, the prognosis is made much worse. Patients with clinical tuberculosis but with negative sputum have a better prognosis than those with clinical manifestation and positive sputum. The roentgenologic changes most suggestive of tuberculosis are asymmetrical consolidation and cavitation, regardless of the findings in the sputum. Lobar pneumonia terminates fatally more often in patients with silicosis than in non-silicotic patients. Heart disease, which is a common accompaniment of silicosis, has a characteristic clinical course and makes the prognosis unfavorable. The most common type is myocardial with degeneration. Miners with clinical symptoms of myocardial disease and roentgenologic evidence of cardiac enlargement without symptoms and toxemia usually suffer cardiac deaths. Those with clinical and roentgenologic signs of heart disease but with marked toxic symptoms of tuberculosis usually die rapidly of the latter disease. Spontaneous pneumothorax occurs more frequently in silicosis complicated or uncomplicated by tuberculosis than in any other pulmonary disease; it was present in 22 instances in the total series. It may be bilateral and affects the prognosis unfavorably. Carcinoma of the bronchus, although not a common complication, makes the prognosis hopeless.—J. T. FARRELL, JR., M. J. SOKOLOFF and ROBERT CHARR. *Am. J. Roentgenol Radium Therapy*, 44 (1940), 709. (F. S. M.)

Sodium Sulfide as an Antidote for Corrosive Sublimate. Sodium sulfide was an effective antidote for a lethal dose of mercuric chloride ingested by rabbits 1 hour previously.—I. SIMON. *Arch. farmacol. sper.*, 67 (1939), 27–28; through *Chimie & Industrie*, 42 (1939), 315–316. (A. P.-C.)

Sulfanilamide and Sulfanilylsulfanilamide (Disulfanilamide)—Some Toxic Effects of Repeated Administration of, to Rabbits and Chickens. Sulfanilamide has been shown to possess a cumulative toxicity. A dosage which was tolerated by rabbits on a cabbage diet caused a high percentage of deaths in animals on a diet of oats plus cabbage or oats alone. Repeated daily administration of disulfanilamide to rabbits and chicken also produced cumulative and delayed toxic effects. Disulfanilamide was somewhat less toxic than sulfanilamide and results in rabbits also differed in that no differences in mortality were observed between animals on oat and on cabbage diets.—S. M. ROSENTHAL. *Pub. Health Reports.*, 54 (1939), 95–106; through *Chimie & Industrie*, 42 (1939), 517. (A. P.-C.)

Sulfanilamide Therapy—Observations on Some Unusual Toxic Effects of. Cyanosis is the most common toxic effect of this therapy. After reviewing some reports on the causes of this effect, the authors described two fatal cases associated with cyanosis and a previously unreported hemolytic condition. In one case in addition to cyanosis, there was, under a certain concentration of sulfanilamide, a rapid homolysis of RBC resulting in hemoglobinuria. This may have initiated cyanosis thus starting a vicious cycle. Also high leucocytosis occurred with an increase in polymorphonuclear neutrophils. The second case represented extreme drug allergy which resulted in the formation of methemoglobin, general blood destruction and leucocytosis.—M. N. DE and N. R. KONAR. *Indian Med. Gaz.*, 75 (1940), 385–388. (W. T. S.)

Sulfapyridine, Sulfathiazole and Sulfamethylthiazole—Acute Toxicity of Sodium Salts of. The acute toxicity of sodium sulfamethylthiazole in rats, as measured by intraperitoneal injections, is almost twice as high as that of sodium sulfathiazole, which in turn is slightly greater than the toxicity of sodium sulfapyridine.—DAVID LEHR, WM. ANTOPOL, JACOB CHURG and HELMUTH SPRINZ. *Proc. Soc. Exptl. Biol. Med.*, 45 (1940), 15. (A. E. M.)

Sulfur Dioxide—Effects of, on Plants and Animals. A review.—C. SETTERSTROM. *Ind. Eng., Chem.*, 32 (1940), 473–479. (E. G. V.)

Thyroxin—Increased Susceptibility to Chloroform Poisoning Produced in the Albino Rat by Injections of Crystalline. The susceptibility of the albino rat to chloroform poisoning is increased by the administration of thyroxin.—MONROE A. MCIVER. *Proc. Soc. Exptl. Biol. Med.*, 45 (1940), 201. (A. E. M.)

Vinesthene Convulsions. The cause of these convulsions which come on after anesthesia appears quite obscure. It is well known that vinesthene deteriorates rapidly at any temperature, with the formation of aldehydes in considerable quantity. These aldehydes, on the addition of an acid or any hydrogen ion, will polarize and form resins which are definitely toxic to laboratory animals, causing convulsions. On the other hand, the mental symtoms would appear to indicate cerebral damage, fortunately not of a permanent nature. So far as the author is aware no death under vinesthene anesthesia has yet been recorded, although in experimental animals an overdose has resulted in death from a condition resembling acute yellow atrophy. It is therefore recommended that anesthesia with vinesthene should not exceed an hour in duration. The author has however given it for three and a half hours without the occurrence of any untoward symptoms. Until a fatality occurs, which the author hopes may never take place, it is unlikely that the pathology of the vinesthene convulsions will be determined.—C. J. M. DAWKINS. *Brit. Med. J.*, 4126 (1940), 163. (W. H. H.)

Vipera Russellii Venom and Its Antivenene—Reaction between. The author reported a study by which it has been shown that the neutralization curve of *Vipera russellii* venom by its antivenene can be represented by the equation

$$P = \frac{(K + C + TN) - \sqrt{(K + C + TN)^2 - 4TNC}}{2}$$

where P represents the number of units of venom neutralized, C the number of units of venom taken initially and T the amount of antivenene added in cc. K and N are constants. N stands for the maximum number of units of venom which can be neutralized by 1 cc. of a given sample of antivenene and is a characteristic constant of the sample.—B. N. GHOSH and N. L. KUNDU. *Indian J. Med. Research*, 27 (1940), 1121–1127. (W. T. S.)

X-Rays and Radium—Protection against. A consideration of various methods of protection

against radium and x-rays as they are used industrially. There is a discussion of present German codes and a description of an objective control system by means of calibrating films which is easy to apply in industrial plants.—E. HASCHE. *Electrotech. Z.*, 61 (1940), 649. (F. S. M.)

THERAPEUTICS

Acetarsone—Use of, in the Treatment of Trichomonas Vaginalis. The author has examined more than 25,000 female patients for *Trichomonas vaginalis* during the past 8 years and found 25.5% positive. In testing the p_H in over 5000 vaginas in the clinic, the normal was found to be about 4.0. In a normal vaginal smear there are many Döderlein bacilli while in a smear from an infected vagina few if any of these bacilli are seen. In infections there is a depletion of glycogen. Bacterial growths are most abundant at a p_H of 7.6 and 8.0 and as the p_H becomes more acid, bacterial growth becomes less and less. In all the cases tested there was no growth at a p_H of 4.4. Of the drugs used for treatment of *Trichomonas vaginalis* the solutions, tablets, powders or jelly of p_H 5.0 or lower are considered good while those with a p_H above 5.0 are poor and should not be used. Acetarsone with a p_H of 3.9 is considered good. One grain in 5 cc. of tap water is recommended. Silver picrate was not advocated by the author, inasmuch as its p_H is 7.3.—K. J. KARNAKY. *Am. J. Surgery*, 48 (1940), 217; through *Abbott Abstract Service*, (1941), No. 760. (F. J. S.)

Acne. Types and methods of treatment are discussed.—M. A. LESSER. *Drug and Cosmetic Ind.*, 47 (1940), 271–273, 277. (H. M. B.)

Acute Lobar Pneumonias—Treatment of, with Eubasinum. Evaluating the result of eubasinum, the author, in a report covering 303 cases, asserts that the drug is the remedy of choice in the treatment of acute lobar pneumonias. The earlier eubasinum is given, the more certain is its action.—C. HEGLER. *Deut. Med. Wochschr.*, 66 (1940), 281–283. (L. K.)

Adhesions—New Method of Preventing. Amnioplastin is a thin sheet which may be easily prepared from the membranes available in the delivery room of any obstetrical hospital. It may be boiled or autoclaved before use. It is recommended as a preventive of meningocerebral adhesions and as an adjunct radical surgery necessary to prevent post-traumatic and postoperative epilepsy. This membrane allows regrowth of leptomeninges over the brain even after cerebral laceration and re-formation of an overlying dura mater. It thus provides for restoration of the subdural space. Amnioplastin remains a foreign body for a short time, but is completely absorbed within a period of thirty days. It should serve in other surgical fields to prevent adhesions in the peritoneal and joint cavities and also about tendons and sutured nerves. It may therefore be recommended for use in many of the operative procedures of military and civil surgery.—Y. CHAO, S. HUMPHREYS and W. PENFIELD. *Brit. Med. J.*, 4134 (1940), 517. (W. H. H.)

Antiseptics—Local, of the Urinary Tract. Local antiseptics are used for infections in the urinary tract to destroy or at least to retard the proliferation of specific invading microbes, and also to excite a reaction of the infected tissues which will increase resistance to invasion. Antiseptic solutions must not be so concentrated that they destroy or injure the tissue; the strength of the solution should be the weakest compatible with efficacy. Personal sensitivity of the patient must be considered; younger patients usually have greater tolerance. At best this form of treatment is only a therapeutic co-adjuvant, but is valuable if carefully used. It is most important to discourage self medication by injections and manual irrigations. Among the common antiseptics and the affections that may be treated with them are: Acute urethritis with silver proteins in dilutions of 1:1000 and 1:2000; chronic urethritis with acriflavine 1:7000, mild silver protein 1:250 and strong silver protein 0.35%, potassium permanganate 1:6000, and zinc permanganate 1:6000. Acute cystitis is benefitted by silver nitrate 1:7500, potassium permanganate 1:8000, or acriflavine 1:8000. Chronic cystitis uses silver nitrate 1:5000 for dilatory irrigation after lavage with 2% boric acid and 2% silver nitrate. Potassium permanganate 1:8000, mild silver protein 10%, or strong 2%, mercury bichloride 1:30,000, mercurochrome 0.25% and acriflavine 1:7500 are also good. Pyelonephritis, acute and chronic responds to acriflavine, permanganate and silver protein.—HENRY W. E. WALTHER. *El Farmaceutico*, 15 (1939), 16. (G. S. G.)

Atropine as Tapeworm Remedy. III. Clinical-Parasitological Investigations. The author recommends atropine as a supporting drug in tapeworm therapy.—R. WIGAND. *Deut. Med. Wochschr.*, 65 (1939), 923. (L. K.)

Beriberi—Treatment of. Since the majority of sufferers from beriberi are poor, giving them pure vitamin B_1 is too expensive and it is difficult to substitute hand-milled rice for the machine milled product. Diet should be augmented by fresh vegetables and fruits and animal proteins. The cure depends less on the form of vitamin therapy employed than on the extension and duration of injuries to the tissues.—RODOLFO V. GUIANG. *J. Philippine I. Med. Assoc.*, 19 (1939), 563; through *Rev. Filipina Med. Farm.*, 30 (1939), 440. (G. S. G.)

Bismuthic Agranulocytosis. The bismuthic salts employed in the treatment of syphilis produced, as the arsenobenzenes, hematologic accidents of an agranulocytic type but in an exceptional fashion. The observation was made on a woman 46 years old, 15 days after a series of intramuscular injections of a liposoluble bismuth salt. She presented a predominant unilateral necrotic stomatitis, increased temperature and an edema at the base of the lung. The blood examination showed 1,380,000 R.B.C.; 9000 leucocytes, absence of polymorphoneuclear, 87% monocytes. Platelets numbered 17,000. Coagulation time was 17 minutes with retractable clot. If the bismuth is directly responsible for the hemopathic accidents, it should be nevertheless accorded an adjuvant role to other factors such as the role of a latent hematic defect, as a vitamin lack or local infection.—CH. AUBERTIN and A. HECTOR. *J. Med. et Chirurgie*, 110 (1939), 583; through *Presse méd.*, 36–37 (1940), 41. (W. H. H.)

Blenorrhagia—Female Treatment of, by Basic Fuchsin. Some failures in the treatment of gonorrhea are due to the failure of the antiseptic used to penetrate the vaginal mucosa. A study on basic fuchsin verifies its antiseptic power agumented by admixture with aniline. Microphotographs demonstrate its activity on the genital tract of women. Solutions of 1:20,000 are effective against gonococcus bacillus coli and staphylococcus. It is best to have the patient hospitalized and carefully examined before the treatment is discontinued.—RAFAEL ARAYA. *Rev. Med. Lat. Amer.*, 21 (1936), 244; through *Rev. brasil. med. pharm.*, 14 (1939), 66. (G. S. G.)

British Pharmaceutical Products. A rather comprehensive table is published which lists a number of foreign made pharmaceuticals along with the corresponding British product and its British maker and/or supplier. The table is divided into two parts: (*a*) Name of foreign product and the British product which corresponds to it in composition;

(*b*) Name of foreign product and the British product which corresponds to it in therapeutic properties.—ANON. *Indian Med. Gaz.*, 75 (1940), 420–428. (W. T. S.)

Calcium Salts—Value of, in Medicine. The common therapeutic uses of calcium are prevention of colloid shock due to arsenic, inexudative diathesis, relief of laryngeal edema, as a diuretic in kidney affections, in circulatory insufficiencies, in acute pulmonary edema, and as a cardiatonic with digitalis. It is also used for urticaria and serum syndromes, for relief of spasmodic action in hepatic and intestinal colic, in disturbances of bone metabolism and fractures, in leukemia, as a coagulant in hemorrhages in tuberculosis and other pulmonary lesions. It is used intramuscularly in leukorrhea, and has value as a hemostatic in hemorrhage from any organ. Its pharmacodynamic properties are accenting the activity of digitalis, and the gluconate or levulonate are used intravenously in shock. Although it is extremely useful it is not the complete panecea.—JOSE MARCELLINO DE CASTRO MARCAL. *Rev. brasil. med. pharm.*, 14 (1939), 1. (G. S. G.)

Chemotherapeutic Results in Tropical Medicine. A discussion.—WALTER KIKUTH. *Deut. Med. Wochschr.*, 65 (1939), 1040–1042. (L. K.)

Chlorophyll in Therapeutics. Among the physical and physico-chemical properties of chlorophyll extracted from plants the particular power of retention to absorb solar rays which could be transformed into chemical energy was observed. Its chemical study has been compared with hemoglobin, hemopyrrol establishing the intermediate between the blood pigment of vertebrates and those of green leaves; moreover chlorophyll contains magnesium. From the physiological point of view the quantity of chlorophyll absorbed by the digestive tube depends upon the form under which it is ingested. Its pharmacodynamic study has demonstrated its complex action: it augments neuromuscular tonus; it constitutes a cardiotonic power; it has shown motor excitation of smooth muscle and augments urinary secretion; further, it may have a premier effect of a stimulating action upon the hematopoietic organs. Its therapeutic application follows the preceding; it is indicated in: anemias, arterial hypotension, growth ailments, where it favors actinotherapy action, tubercular infections, ganglionary troubles, avitaminosis A, acute diseases, cancer, where it advantageously modifies anemia and asthenia and where it diminishes pain. The powdered green leaves are inactive when prepared in the cold. It is given as the pigment in aqueous solution which is stable and well supported.—L. BABONNEIX. *Gazette des Hopitaux*, 72 (1939), 1203; through *Presse méd*, 20–21 (1940), 25. (W. H. H.)

Cholesterol in Anemia of Pregnancy. Anemia of pregnancy, as seen in India, may present various types of blood picture—normocytic, microcytic and macrocytic as well as normochromic, hyperchromic and hypochromic. The same case may pass forward or backward through the different stages, according to whether the blood picture improves or deteriorates. The serum globulin is abnormally high in anemia of pregnancy, the increase being only in the euglobulin fraction. The blood cholesterol is reduced in anemia of pregnancy, especially the ester cholesterol fraction. A small series of patients treated with cholesterol injection have shown improvement, and in advanced cases this remedy appears more effective than any previously tried.—H. N. CHATTERJEE. *Lancet*, 238 (1940), 14. (W. H. H.)

Common Cold—Prophylaxis by the Oral Route. This is a report of a controlled study of the effect of oral vaccine on the common cold in a group of 40 industrial workers. The average number of colds during the previous seasons was 4.85 in the experimental group. During the winter following immunization, the average number of colds in the experimental group was 1.45—a decrease of 70.2%. In the control group, the average number of colds during the previous seasons was 4.2. During the experimental periods the average number of colds in this group was 3.9—a decrease of 7.2%. Definite reactions following oral immunization may be expected, but such reactions are definitely less severe than those resulting from injection.—P. and J. FORGRAVE. *Ind. Medicine*, 9 (1940), 530. (F. S. M.)

Dermal Parasiticides. Dermal parasiticides are best classified according to the type of organism combatted—animal or vegetable. Scabies, the major forms of pediculosis, schistosome dermatitis and the ringworms or trichophyton fungi are discussed and methods of treatment suggested. Twenty-one references.—M. A. LESSER. *Drug and Cosmetic Ind.*, 47 (1940), 33–35, 37, 47. (H. M. B.)

Detoxicating Hormone—Studies on the, of the Liver. On the basis of cardiazol test, yakriton has a curative effect on some cases of epilepsy by itself. In some other cases it exerts a favorable influence in combination with prominal.—A. TAKAMATSU and SH. SATO. *Tôhoku J. Exp. Med.*, 37 (1940), 576. (A. C. DeD.)

Digitaloids—Treatment of Cardiac Insufficiency with. A discussion.—C. KAHLEN. *Deut. Med. Wochschr.*, 65 (1939), 1667–1668. (L. K.)

Embryonic Tissue Extract in Acceleration of Wound Healing. The basic work of Carrel in tissue culture is reealled, and the technique employed in clinical experiments is detailed. Case histories are given which demonstrate marked acceleration of wound healing under the influence of embryonic tissue extract. The equations and graph curves referable to two of the quoted cases are set out; these confirm the clinical deductions drawn from these cases. A note as to the form in which the tissue extract is available commercially is added.—W. G. WAUGH. *Brit. Med. J.*, 4128 (1940), 249. (W. H. H.)

Endocrine Treatment in Prostatic Hypertrophy. Testosterone propionate was administered to a group of 25 patients suffering hypertrophy of the prostate. Some exhibited moderate or no retention of urine with normal blood urea, some had acute retention of urine and high blood urea, and the rest had grave retention of urine and general intoxication. Testosterone was administered every other day in doses of 0.025 Gm. over a period of three or four weeks. Therapy was repeated after a two month interval. Testosterone propionate controlled or diminished painful, difficult and frequent urination. Sexual functions and general condition improved. This treatment is of value as a preparatory to and complement after prostatectomy. The dose of 0.025 Gm. administered every other day should not be increased nor given daily.—A. MUXO GONZALEZ. *Rev. de la Sanidad Militar, Havana*, 3 (1939), 284; through *J. Am. Med. Assoc.*, 113 (1939), 1371. (G. S. G.)

Estrogens—Ineffectiveness of, in Preventing Polyneuritis. The administration of estrogenic hormones was without effect upon the development of polyneuritis in pigeons on a vitamin B_1-free diet. There was no significant increase in the respiration of avitaminous cerebrums when estrogen was added *in vivo* or *in vitro*.—W. W. WESTERFELD. *Biochem. J.*, 34 (1940), 59. (F. J. S.)

Estrone Action—Mechanism of, in Dysmenorrhea. The cause of pain in essential dysmenorrhea is not well understood, though several theories have

been proposed. Some attribute the cramp to a relative deficiency of progesterone and these have used progesterone therapeutically. The authors, however, on the basis of cases observed by them, believe the presence of a normal corpus luteum is essential for dysmenorrhea, and have never seen cramping without one. They reasoned, therefore, that if the development of the corpus luteum could be inhibited, dysmenorrhea should disappear. To inhibit corpus luteum development, the authors gave massive doses of an estrogenic substance, starting within the first week after the onset of menstruation. In cases so treated, the next period was invariably free from cramping. If treatment was not started until two weeks after the onset of the previous period, cramping was as painful as before. Endometrial biopsy seemed to confirm inhibition of corpus luteum in treated cases.—S. H. STURGIS and F. ALBRIGHT. *Endocrinology*, 26 (1940), 68; through *Abbott Abstract Service*, (1940), No. 713. (F. J. S.)

Estrone—Effect of, on Repair of Experimental Fractures. Pollock performed experiments on rats in which experimental fractures were produced in order to investigate the effect of the estrogenic hormones. Castrated female rats in whom experimental fractures had been produced were found to be deficient in callus formation in comparison to normal control animals. This seemed to indicate that the estrogenic hormone might have some effect upon callus formation, and accordingly estrone was given to normal female rats with experimental fractures. Better callus formation was obtained by this means than when estrone was not given. Women past the menopause, who suffer fractures, and especially fractures of the neck of the femur, are known to show very slow healing, and in some cases a permanent non-union results. Whether this is in any way connected with the decreased production of estrogens by the ovary in the menopausal state is not known at present, but further investigations may clear up this point.—G. A. POLLOCK. *Proc. Staff Meetings Mayo Clinic*, 15 (1940), 209; through *Abbott Abstract Service*, (1940), No. 703. (F. J. S.)

Ethyl Alcohol in the Treatment of Bronchial Asthma. Inspired by the principal of the stimulation of the reticular system by the intravenous injection of ethyl alcohol and possessing the knowledge of the interference or suppression of allergic states, the author applied this method of treatment to bronchial asthma. His experience extended to sixty personal cases. The injections were made in a dose of 5 to 10 cc. of ethyl alcohol in 33% physiological solution. The injections were made in a series of 30 or 40. In 40% of the cases the author observed remissions of long duration; in 26% of the cases the treatment was noted to greatly diminish the attacks. He found in 34% of the cases no success but did not notice any reaction that would contraindicate its usage.—M. SZOUR. *Warszawskie Czasopis mo Lekarskie*, 16 (April 20, 27, 1939); through *Presse méd.*, 13–14 (1940), 22. (W. H. H.)

Foreign Protein Treatment—Use of, in Ophthalmology. Of the foreign protein material used in treating various diseases of the eyes, the two most popular seem to be boiled milk and typhoid vaccine. If pasteurized milk is used, it should be allowed to incubate for three or four hours before being boiled in order to assure a high bacterial content, as it is the protein of the bacteria that produces the shock. The author believes that the one disease in which foreign protein treatment has proved the most beneficial is gonococcal ophthalmia. Most workers are also favorably inclined toward this type of treatment in serpiginous ulcer, hypopyon keratitis and idiopathic iritis and iridocyclitis, sympathetic ophthalmia, postoperative infections and in the prophylaxis of infection following intraocular foreign bodies. The chief contraindications to the use of foreign protein therapy are old age, diabetes, pregnancy and a history of asthma. Shock is the chief objection to typhoid vaccine as a foreign protein.—E. W. GREEN. *Mississippi Doctor*, 17 (1940), 384; through *Abbott Abstract Service*, (1940), No. 711. (F. J. S.)

Gold Treatment of Severe Infections. Treatment with auro-detoxin holds forth a great promise for the therapy of acute, sub-acute and chronic infections.—ERWIN FROMMELT and GUNTHER SCHOLZ. *Deut. Med. Wochschr.*, 65 (1939), 748–749. (L. K.)

Hormone (Synthetic) Versus Glandular Extract in Treatment with Male Sex Hormones. A review. —THEO. MORELL. *Deut. Med. Wochschr.*, 65 (1939), 550–551. (L. K.)

Hormones in Menstruation and Pregnancy. A résumé of the use of hormones in menstruation and pregnancy with reference to physiology, pathology and treatment.—A. P. PILLAY. *Indian Med. Gaz.*, 75 (1940), 404–413. (W. T. S.)

Hypovitaminosis C and Phthisis. Ascorbic acid is of no value in the treatment of pulmonary tuberculosis and its complications, including hemoptysis, for which most benefit might be expected. Saturation with the vitamin neither contributes to recovery nor retards retrogression. As hypovitaminosis C is encountered in many infections the state found in this disease must be assumed to be the result of toxemia, and is therefore non-specific.—G. S. ERWIN, R. WRIGHT and C. J. DOHERTY. *Brit. Med. J.*, 4138 (1940), 688. (W. H. H.)

Infected Burns—Treatment of. The treatment of tannic acid and dye therapy of eighteen cases of severe septic burns has been described. Tannic acid treatment has not failed when sepsis is established. Pus formation is not an indication for removal of the coagulum, and incisions into it are seldom, if ever, necessary. The speed of healing is greatly impeded if the coagulum softens and comes off and gauze dressings have to be used. Satisfactory final results were obtained. Absence of scarring and contractures was noteworthy. In burns affecting the hands, normal movements and function were obtained in sixteen out of eighteen cases.—B. C. MURLESS. *Brit. Med. J.*, 4123 (1940), 51. (W. H. H.)

Injectable Liver Extracts—Treatment of Benign Infectious Icterus by. The treatment of functional hepatic troubles with liver preparations has been carried out for a long time. Nevertheless it has been renovated by the use of concentrated and injectable liver extracts. Not having obtained convincing results with the administration of very strong concentrations of liver extract by mouth, the author gave intramuscular injections for 10 to 12 days for the treatment of icterus without the production of fever. In 10 observations reported, this therapy has proved favorable; and its action was manifested by very rapid regression of the icteric syndrome after the third or fourth injection, sometimes a little later. The regression of the icterus is parallel to that of other liver troubles. Convalescence seemed more rapid and less painful.—F. MEERSEMAN. *J. de Med. de Lyon*, 20 (1939), 539; through *Presse méd.*, 36–37 (1940), 42. (W. H. H.)

Insulin—Active Suppository of. In the course of oral administration of insulin, it is destroyed in the acid medium by the peptic ferments and after rectal administration by alkaline medium by the tryptic ferments. It was found that suppositories made with cacao butter and powdered insulin were inac-

tive in animals and man. On the contrary, the addition of acid to the preparation of cacao butter and insulin protected the activity of the hormone against the tryptic action. A number of acids have been studied. The most active were lactic and palmitic. With the latter which melts at 60°, it is mixed with cacao butter in the proportion of 15.85% producing a product which melts at 33°. The addition of saponin reënforces the activity of these suppositories, also from the point of view of intensifying their duration.—B. BRAHM and T. LANGNER. *Nederland. Tijdschr. Geneeskunde*, 83 (1939), 3784; through *Presse mëd.*, 31-32 (1940), 39. (W. H. H.)

Insulin Shock as a Therapeutic Factor in Angioneurotic (Allergic) Skin Diseases. A discussion.—WILHELM BRÜHL. *Deut. Med. Wochschr.*, 65 (1939), 326-327. (L. K.)

Malaria—History of Pre-Colonial Control of, in Peru. Pre-colonial Peruvians had advanced ideas of education for public hygiene. From Lima to the mountains above the Rimac River observations were made on living conditions. Houses were well constructed and ventilated. It is certain that they recognized malaria and built their houses to keep out insects. Their classification of diptera included three types of anopheles, one culex and one eusimulium. The three anopheles were the known vectors of malaria.—EDMUNDO ESCOMEL. *Reforma Medica*, 25 (1939), 729. (G. S. G.)

Mandelic Acid. It has been known since the middle of the 19th century as amidalic, phenylglycollic, formobenzoilic, and phenyltanoic acid. It was first used therapeutically as a derivative of phenylglycoantipyrine acid for respiratory affections, particularly whooping cough. Interest in it was revived about 1935 by its use as a urinary antiseptic. It exists in three forms, dextrarotary, levorotary and racemic. The crystals are rhomboid, colorless, brilliant, with strong acid taste and are readily soluble in water and alcohol but not ether. It forms acetates, benzoates, carbonates and formates. Oxidation with potassium permanganate gives diacetic mandelate. It is prepared by aqueous distillation of bitter almond, with HCl added; by the action of hydrocyanic acid on benzaldehyde; by decomposition of phenylchloracetic acid by an acid; by adding dilute alkali to dibromphenoacetone; or alkali added to phenylglyoxyl; and by treating essence of bitter almonds with hydrocyanic acid and then with acidulated or alkalized water.—ANTONIO CAPELLETI. *Rev. quím. farm.*, 4 (1939), 61. (G. S. G.)

Meningitis Epidemica—Chemotherapy of. Sixteen cases of meningitis epidemica were treated with the sulfonamide preparation, eubasinum. Fourteen of these cases received meningococcus serum at the same time. In 15 cases, 6 of whom were infants, complete recovery was obtained.—K. STENGER. *Deut. Med. Wochschr.*, 65 (1939), 973. (L. K.)

Mental Disorder—Faulty Detoxication in. The excretion of hippuric acid after the oral administration of sodium benzoate has been examined in seventy-five cases of mental disorder, of which seventeen were catatonic. The average value of hippuric acid excreted (expressed as sodium benzoate) by 58 non-catatonics was 3.1 grams, and by 17 catatonics 2.7 grams. Further, 15 out of 17 catatonics gave low results. These results confirm those of Quastel and Wales (1938). Of the author's 75 patients, 40 gave low results, and of the 204 studied by the three sets of workers 84 yielded low results. From this it is inferred that the phenomenon is not specific to catatonia, although it may be a characteristic of this subgroup. Further work is needed before the significance of these results can be assessed.—D. R. DAVIES and T. P. E. HUGHES. *Lancet*, 238 (1940), 403. (W. H. H.)

Metaphen in Collodion in the Treatment of Chigger Bites. Chiggers are stated to attach themselves to the skin by means of their mouth parts, in much the same way as ticks do. They apparently feed on epidermal tissue liquefied by a secretion which they themselves inject into the skin. When they become fully engorged they drop off. They do not burrow into the skin as is widely believed. An intense itching develops within the first 24 hours after exposure and this is followed by a breaking out of wheals or papules, surrounded by an inflamed area. As soon as possible after exposure, a thick lather of soap should be applied to the affected parts and allowed to remain 10 minutes or more before bathing. Even though the larvae are killed soon after attachment, usually enough secretion has been introduced to cause the characteristic itching lesion, which may be temporarily relieved by ammonia. "Collodion with Metaphen applied to the lesions is recommended both to relieve the itching and to prevent infection." ANON. *Pub. Health Reports*, 55 (1940), 1312; through *Abbott Abstract Service*, (1940), No. 746. (F. J. S.)

Mycotic and Similar Skin Infections—Composition for Treatment and Prevention of. From 2% to 12% of salicylic acid, 2% to 15% of menthol and 3% to 15% of camphor are used with a vehicle such as alcohol.—DOUGLAS T. PREHN. U. S. pat. 2,175,780, Oct. 10, 1938. (A. P.-C.)

Night Blindness—Experimental Production of, in Man. A healthy, thirty-one-year-old man was placed on a diet deficient in vitamin A and the dark adaptation was frequently tested with the Birch-Hirschfeld photometer. After three days of the diet, his dark adaptation had begun to decrease, and it reached its lowest value at the end of 22 days. Thereafter, the dark adaptation remained approximately constant up to the end of the experiment, which lasted 72 days. This is taken to indicate that diminished dark adaptation is related only to the duration of the deficiency, and does not measure its severity. No symptoms appeared until the 58th day of the deficiency. On the 60th day, psychic disturbances were noted, and after this easy fatigueability, loss of initiative and muscular cramps appeared. The patient did not feel definitely ill, but lost his former sense of well-being. Some photophobia appeared about the 30th day. All the symptoms disappeared on the addition of vitamin A to the diet.—W. v. DRIGALSKI. *Z. Vitaminforsch.*, 9 (1939), 325; through *Abbott Abstract Service*, (1940), No. 715. (F. J. S.)

Oxygen Inhalation—Use of, in the Treatment of Migraine Headache. Progress in the study of treatment of migraine and similar headaches has been slow. In some patients the administration of ergotamine has proven beneficial and in others oxygen inhalations have helped. In a study of headaches at the Mayo Clinic, the authors of the present paper have continued to use one hundred per cent oxygen for the treatment of various types. They have accumulated records of 97 cases. Of these, 62 obtained complete or partial relief and 38 obtained no relief. The best results are to be looked for in typical migraine headaches and in these cases oxygen seems to work about as often as ergotamine. Oxygen is usually preferred by the patient when it works, since there are no unpleasant side effects. It is also safer where attacks occur every day. In cases of typical migraine, there are about 4 chances out of 5 that oxygen will relieve it. The results are better when treatment is promptly instituted.—W. C. AVAREZ and A. Y. MASON. *Proc. Staff Meetings Mayo Clinic*, 15 (1940), 617; through *Abbott Abstract Service*, (1941), No. 748. (F. J. S.)

Pectin—Medical Literature on. A review dealing with the development of the use of pectin for the treatment of colitis, diarrhea, dysentery and other intestinal disorders, as a hemostatic, antigen, a paste base and an emulsifier; and its action in combination with heavy metals. One hundred and two references.—GLENN H. JOSEPH. *Bull. Natl. Formulary Committee*, 9 (1940), 2–17. (H. M. B.)

Perspiration. The physiology and function of the skin are discussed. Hyperidrosis, hyphidrosis, bromidrosis and chromidrosis are described with suggested remedies.—M. A. LESSER. *Drug and Cosmetic Ind.*, 47 (1940), 393–396. (H. M. B.)

Pervitin (1-Phenyl-2-methylamino-propane)—Action of, on Humans. A discussion.—W. SEIFERT. *Deut. Med. Wochschr.*, 65 (1939), 913–915. (L. K.)

Pneumonias and Grippe Infections—Treatment of. Eubasin, a sulfonamide preparation, has proved effective in bronchial and in cyclic lobar pneumonia.—K. STENGER. *Deut. Med. Wochschr.*, 65 (1939), 634–636. (L. K.)

Potassium Chlorate in Gynecology and Obstetrics. Potassium chlorate is one of the many forms by which one may administer potassium. Potassium chlorate has been recommended against habitual abortion. The author has utilized it for this purpose, associated with antisyphillitic treatment and in thyroid organotherapy. The author employed this salt with some success and some failure. To avoid gastric intolerance it is so incorporated so as to dissolve in the intestine in a dose of 2 grams per day taken in 4 doses. This medication has also been proposed for ovarian cysts.—H. VIGNES. *Progres Medical*, 67 (1939), 1231; through *Presse méd.*, 36–37 (1940), 42. (W. H. H.)

Prontosil as a Specific Therapeutic Agent for Erysipelas. Prontosil, in salves, gave results no better than those obtained without prontosil.—W. KÖNIG. *Deut. Med. Wochschr.*, 65 (1939), 601. (L. K.)

Prontosil—Effect of, on Avian Malaria. Ten birds infected with plasmodium praecox were treated with prontosil by injecting it into the breast muscle. An equal number of infected birds were used as controls. Blood smears were examined before each injection and untreated birds were examined at the same time. There was complete disappearance of parasites in the treated birds but long continued persisting parasites in the untreated ones. This suggests a justification for the use of prontosil in human malaria, at least as far as the effect on parasites is concerned.—CANDIDO M. AFRICA. *Rev. Filipina Med. Farm.* 30 (1939), 217. (G. S. G.)

Prontosil—Treatment of Bacterial Infections in Obstetrics with. A discussion.—HILDE DOROTHEE MÜLLER. *Deut. Med. Wochschr.*, 65 (1939), 972–973. (L. K.)

Radioactive Preparations. The weakly radioactive preparations such as drinking waters, compresses and various types of commercial apparatus are considered. The customary dose of the preparations for internal use is given. The preparations for internal use are considered under the headings: preparations for oral administration, radon emanation for inhalation and baths and preparations for injection. The preparations for external use are divided as follows: dermatological preparations which contain radioactive elements or are activated by radon; preparations to be applied as compresses, impregnated cloths and miscellaneous preparations, many of which are valueless, such as radioactive soaps, radioactive toothpastes, etc. A discussion is also given of the means of controlling the prices of these items.—H. HIRSCHI. *Schweiz. Apoth.-Ztg.*, 77 (1939), 237–241, 249–253. (M. F. W. D.)

Sodium Diphenyl Hydantoinate—Treatment of Epilepsy with. The general results of the treatment of sixty epileptics with sodium diphenyl hydantoinate are described, and the detailed results are given for nineteen patients who received the drug for at least nine months. The results have on the whole been favorable and often striking, in comparison with those obtained with other anticonvulsants. There has been improvement in the general physical and mental conditions and in the incidence of major and minor attacks. Toxic symptoms, mainly mild, developed in twelve patients. Bronchopneumonia caused the death of two patients after a condition approximating to status epilepticus, which appeared during treatment by the drug.—R. COOPE and R. G. R. BURROWS. *Lancet*, 238 (1940), 490. (W. H. H.)

Strophanthin—Use of, in Treatment of Heart Failure. Numerous varieties of strophanthin are known, all consisting of a sugar and a genin. The genin portion of the molecule is similar in all varieties, and resembles that obtained from the glucosides of digitalis. The sugar portion, however, is different in different varieties. Fraenkel preferred *K*-strophanthin for intravenous application because the gap between the therapeutic and toxic dosage is greater than it is in *G*-strophanthin or *H*-strophanthin. Strophanthin is particularly valuable in the emergency treatment of acute heart failure, and the intravenous route is also useful in cases where venous stasis of the stomach and intestines interferes with the absorption of orally administered drugs. Other cases in which strophanthin may be used advantageously are those of cardiac failure with dilatation or in decompensation with beginning coronary sclerosis. The drug has less tendency than digitalis to produce bradycardia in heart failure associated with slow pulse.—F. M. GROEDEL and B. KISCH. *Med. Clinics N. America*, 24 (1940), 877; through *Abbott Abstract Service*, (1940), No. 724. (F. J. S.)

Sulfamide Preparations and Spermatogenisis. There is no agreement concerning the modifications produced by sulfamido therapy and spermatogenisis However the author has studied 43 subjects before and after treatment with sulfamide and has noted almost always a diminution in the number of spermatozoides with, in some cases, morphological alterations; these alterations have disappeared and the number of spermatozoides have returned to normal in one or two months after the disease; in two cases the number of spermatozoides, greatly diminished under the influence of the medicament, was greatly augmented. This is a direct toxic action of the medicament in its course of elimination by the genital glands which the author attributes to the passing modifications of spermatogenisis.—C. MADERNA. *Rinascenza medica*, 16 (1939), 367; through *Press méd.*, 13–14 (1940), 21. (W. H. H.)

Sulfamides in the Treatment of Trachoma. The author states from experimental and clinical observations that the local application of sulfamides in the eye do not produce sufficient bactericidal effect. The introduction of these products into the conjunctival sac produces a reaction eventually beneficial but appears inferior to the constant risk. During the treatment by the sulfamides by intramuscular and oral route associated with the habitual antitrachomatic therapeutics, the certain marked progress obtained by this method indicates its large scale usage. However the general usage of sulfamides should not be considered absolutely inoffensive for the general state of the diseases.—L. POLEFF. *Press méd.*, 20–21 (1940), 235. (W. H. H.)

Sulfanilamide and Uliron. Rat experiments were made to determine the destruction and elimination of *p*-aminobenzolsulfonamide (Sulfanilamide) and 4 - (4′ - aminobenzolsulfonamide)benzolsulfondimethylamide (Uliron). Both substances were separated from the rat organs in separate and coupled form. Sulfanilamide was found separated in a quantity of 45%, Uliron 10–15%. The compounds were also eliminated in separate and combined forms. Sulfanilamide was eliminated 3–4 times faster than Uliron.—M. H. SIMENSON. *Arch. intern. pharmacodynamie*, 64 (1940), 250. (W. H. H.)

Sulfamidics. Extensive use of sulfonamide derivatives confirms their usefulness and also their toxicity. Toxic indications are cyanosis with methemoglobinemia, nausea and vomiting (ameliorated by ingestion of soda bicarbonate), erythemas and asthmas. They are efficacious in treating acute gonorrhea, either orally or locally; the cure being demonstrated both clinically and bacteriologically. They are active against penumococcus in both acute and grippe pneumonias, and to a less degree in the repair of pulmonary abscess. They are also remarkably successful against penumococcus meningitis. There is definite action against streptococcus in purulent and streptococcic meningitis and against meningococcus. But the action against divers microbes is less definite. Their manner of action is not directly bactericidal but bacteriostatic Investigation tends toward products more active and less toxic.—R. BENDA. *Escuela Farm.*, 2 (1939), 22. (G. S. G.)

Sulfanilamide Derivatives. I. A variety of *p*-acylamidobenzenesulfonamides, *p*-acylamidobenzenesulfonalkanolamides, *p*-aminobenzenesulfonalkanolamides, *p*-alkyl- and *p*-aralkylaminobenzenesulfonalkanolamides, *p*-carbethoxyaminobenzenesulfonamides, *p*-acylamidobenzenesulfonmorpholides, *p*-aminobenzenesulfonmorpholide, *p*-acyl- and *p*-aminobenzenesulfonanilides and derivatives of 4-methoxy-3-aminobenzenesulfonamide have been prepared. All show less antistreptococcal activity than sulfanilamide but practically all are much less toxic, and therefore have a more favorable therapeutic ratio. The antimeningococcal activity of many is equivalent to that found in sulfanilamide. Ten tables are presented with chemical and pharmacological data.—R. ADAMS, P. H. LONG and A. J. JOHANSON. *J. Am. Chem. Soc.*, 61 (1939), 2342. (E. B. S.)

Sulfanilamide Derivatives—Clinical Evaluation of. Five amido-substituted sulfanilamides have been clinically evaluated with particular reference to their use in urologic infections. Testing of N^4-sulfanilyl-, N^4-sulfanilyl-N^1,N^1-dimethyl sulfanilamide and 2-sulfanilamido-methyl-thiazol was discontinued due to the reported high incidence of paralytic neuritis caused by these three drugs. Sulfathiazole was chosen over sulfapyridine for the purpose at hand. In the same dosage, sulfathiazole was more effective against gonorrhea than sulfanilamide. Sulfathiazole was safe and produced fewer untoward reactions than sulfanilamide or sulfapyridine. Forty-five gonorrheal patients were treated.—EDGAR G. BALLENGER, HAROLD P. MCDONALD and REESE C. COLEMAN. *Southern Med. J.*, 33 (1940), 911–913. (W. T. S.)

Sulfanilamide—Excretion of, through the Skin. The excretion of sulfanilamide through the skin is of interest in connection with diseases of the skin which may be treated with sulfanilamide. Previously published work on the distribution of sulfanilamide in the body is reviewed in this paper, especially observations showing that the drug is excreted in sweat bath two to three days after the last dose of sulfanilamide would cause the drug to reappear in the blood and urine, although it had disappeared previous to the test. Another observer found that the skin in rabbits contained a relatively large amount of sulfanilamide. The author's experiments on dogs and human beings indicated that sulfanilamide finds its way into the sweat within fifteen minutes after the oral administration of a single dose. As the sweat evaporates, the drug becomes concentrated on the surface of the skin. No evidence was found that sulfanilamide accumulates in the skin of dogs.—T. CORNBLEET. *Arch. Dermatol. and Syphilol.*, 41 (1940), 912; through *Abbott Abstract Service*, (1940), No. 742. (F. J. S.)

Sulfanilamide—Heterocyclic Derivatives of, Experimental Chemotherapeutic Investigation of. A study was made of the effectiveness of five sulfanilamide derivatives in mice infected with pneumococci Type I and pneumococci Type III. 2-(*p*-Aminobenzenesulfonamide)-pyridine, 2-(*p*-aminobenzene sulfonamide)-4-methyl-thiazol and 2-(*p*-aminobenzenesulfonamide) - 6 - methyl - pyridine, in the order named, were found to be effective against both Types I and III pneumococci; 2-(*p*-aminobenzenesulfonamide)-6-amino-pyridine and 2-(*p*-aminobenzenesulfonamide)-quinoline possess approximately the same activity as that of sulfonilamide—these three compounds have little value against pneumococci Types I and III.—KYOSUKE TSUDA and KANITI SUZUKI. *J. Pharm. Soc. Japan*, 59 (1939), 204 (in German, 224–228). (N. L.)

Sulfanilamide—Use of, in Lymphogranuloma Venereum. Thirty-five cases of lymphogranuloma venereum of the bubonic and related forms treated with sulfanilamide are presented. A review is given of the proof of the disease as a distinct clinical entity. The statement was made by Frei as late as April, 1938, that "there has been until now no really effective chemotherapeutic agent for its treatment." Experimental and clinical evidence is quoted to prove that sulfanilamide acts specifically on the virus of the disease. The results have been uniformly good. Complete resolution of the lesions occurred within from 2 to 4 weeks in all patients adequately treated. Few toxic effects were noted and in no case was it necessary to stop medication. Therapy is continued for a week or ten days after the lesions have completely subsided. This amounts to 4 weeks of treatment with 60 gr. a day, 3 weeks with 80 gr. and 2 weeks with 100 gr. a day. Surgery should be used with the drug if indicated.—R. O. STEIN. *Amer. Jour. Syphilis Gonorrhea Venereal Diseases*, 24 (1940), 454; through *Abbott Abstract Service*, (1941), No. 754. (F. J. S.)

Sulfanilamide—Use of, in the Treatment of Wounds. In this report from the Mayo Clinic, a list of twelve cases is given in which various sulfonamide compounds were used locally in wounds. The list of wounds includes scalp infections with osteomyelitis, operative wounds of various kinds, wounds following excision of a lung, compound fracture wounds, ulcerating granuloma and other ulcerations. In every case treated locally with sulfanilamide or a derivative of it, the infections improved more than would have been expected from other methods of treatment. The authors believe the best method of administering the drugs is to use a thick suspension prepared by adding 2 Gm. of the powder to 100 cc. of a saturated solution of the drug. The question is discussed as to the necessity of sterilizing sulfanilamide or sulfathiazole powder. The authors state that they have never seen or heard of any infection resulting from non-sterilized powder. The use of the powdered drugs did not seem to retard healing, and no irritative effects were observed.—W. E. HERRELL and A. E. BROWN. *Proc. Staff Meeting Mayo Clinic*, 15

(1940), 611; through *Abbott Abstract Service*, (1941), No. 752. (F. J. S.)

Sulfapyridine—Agranulocytosis After. Previously reported cases of agranulocytosis during sulfapyridine therapy are briefly described and reviewed. A similar case is described in which the blood condition is attributed to the treatment of pneumonia with sulfapyridine, no other drug known to cause agranulocytosis having been administered.—B. PRINGLE, G. C. DOCKERAY and R. H. MITCHELL. *Brit. Med. J.*, 4127 (1940), 212. (W. H. H.)

Sulfapyridine for Meningitis. In the absence of definite evidence of the optimum dose of sulfapyridine in the treatment of pneumococcal meningitis large doses should be used from the beginning. The soluble form is recommended, whether by intramuscular injection or, as Hodes, Gimbel and Burnett recommend, intravenously. In every case of meningitis the organism should be ascertained without delay, so that if it prove to be a pneumococcus, treatment with larger doses than would appear justifiable for meningococcal-meningitis may be started. Some cases have become better with moderate doses, while others relapse after very large ones. It is possible that the use of large doses in the first twenty-four hours might reduce the present high mortality by curing patients who would die on moderate doses.—S. T. FALLA. *Brit. Med. J.*, 4141 (1940), 804. (W. H. H.)

Sulfapyridine—Treatment of Gonorrhea with. A very high percentage of cures can be readily obtained with sulfapyridine provided the drug is not withdrawn too early. A satisfactory scheme of dosage appears to be 3 grams daily for one week, followed by 1.5 grams daily for a further week. Patients appear to improve more satisfactorily when irrigations are used in addition to the drug but the advantage is not very great. Complications during treatment are rare. Toxic reactions to the drug are not more than 6%. Cures can be obtained in 92.5% of early acute cases and in 82.1% of chronic cases in all grades of severity. No preliminary period of waiting is necessary or advisable.—E. E. PREBBLE. *Brit. Med. J.*, 4124 (1940), 89. (W. H. H.)

Sulfathiazole—Preparation and Properties of. A review is given of the synthesis, toxicity and chemotherapeutic acitivity of sulfathiazole. Cited in favor of the compound are its equal or greater therapeutic effectiveness, its lower toxicity and more rapid absorption and elimination than sulfapyridine, and the slighter tendency of formation of the acetyl derivative. Thirty-five literature references are cited.—B. SJÖGREN and J. LAUDON. *Farm. Revy*, 39 (1940), 393, 413. (C. S. L.)

Sulfathiazole—Use of, in the Treatment of Gonorrhea. The authors of this paper report their experiences in the treatment of gonorrheal infections with sulfathiazole and sulfamethylthiazole. In a study of the treatment of one hundred and thirty-six cases of gonorrhea in the various stages with sulfamethylthiazole, the cure rate was 91.2% in the patients who had not been previously treated, but was lowered to 53.8% in the group which failed to be cured by earlier chemotherapy. In view of the fact that sulfamethylthiazole produces peripheral neuritis in many cases, its use is not advised. Sulfathiazole was used in treating one hundred and six cases. The cure rate was 91.1% in seventy nine cases. The group which had previously failed to be cured by chemotherapy did not have a lowered cure rate. Evidences of toxicity with this drug were negligible. The inference is that sulfathiazole is an effective addition to the therapy of gonorrhea.—J. F. MAHONEY, R. R. WOLCOTT and C. J. VAN SLYKE. *Am. J. Syphilis Gonorrhea Venereal Diseases*, 24 (1940), 613; through *Abbott Abstract Service*, (1941), No. 769. (F. J. S.)

Suprarenal Cortical Extract in Acute Confusional States. Five cases of acute confusion developing during typhoid fever have been treated successfully with suprarenal cortical extract and vitamin C. Four cases of mental confusion in the puerperium after prolonged and difficult labor and severe postpartum hemorrhage responded well to this treatment. Other confusional states of indefinite origin did not respond. It seems to the authors that low blood pressure, pale yellow complexion and asthenia are the best clinical indications.—H. HOFF and J. A. SHABY. *Lancet*, 238 (1940), 27. (W. H. H.)

Syphilis—Prevention of Cardiovascular Involvement. A cardiovascular study of 241 individuals who had contracted syphilis 15 to 25 years earlier revealed definite cardiovascular syphilis in 18 (7%) and probable syphilitic aortitis in 8 (3%). In 190 (80%) the heart and aorta were normal, while 25 (10%) had questionable dilatation of the aorta. The amount of antisyphilitic treatment given differed but little in the various clinical groups, except that in all cases of definite cardiovascular involvement there had been inadequate early treatment and in all but one of them late treatment had also been insufficient. Six of the 8 patients with probable syphilitic aortitis had received poor early treatment. These findings give some support to the clinical impression of the authors that adequate treatment of syphilis tends to prevent cardiovascular involvement, and that inadequate early treatment will tend to favor the development of complications at a later stage of the disease.—W. P. THOMPSON, W. J. COMEAU and P. B. WHITE. *Am. Heart J.*, 17 (1940), 286; through *Abbott Abstract Service*, (1940), No. 726. (F. J. S.)

Tar Preparations—Studies of the Sensitizing Action of, on Skin Irradiated with Ultraviolet and Grenz Rays. Coal tar preparations seem better than wood tars for experiments with irradiation with ultraviolet and Bucky's grenz rays. With both of these rays, the parts of the skin treated with tar reacted more sensitively than the untreated. The possible causes of this sensitizing action of tar are discussed.—L. PEUKERT and H. KOEHLER. *Strahlentherapie*, 67 (1940), 266; through *Am. J. Roentgenol Radium Therapy*, 44 (1940), 803. (F. S. M.)

Trench Mouth—Treatment of. The author describes a treatment for trench mouth, the merits of which, it is stated, can be proved by applying it to one half of the mouth and using the other half as a control. The treatment consists of (1) complete removal of tartar and all foreign matter from the pockets; (2) irrigation of the pockets; (3) packing of the pockets with a mixture that will prevent further contamination and at the same time restore a normal circulation of the parts. The general treatment consists in keeping the bowels open and administering a tonic to the patient. For packing the troughs, the author uses a mixture of magnesium sulfate and glycerin, and after a section of the mouth has been treated the teeth and gums close to the pockets are dried and the opening sealed off by means of yellow sticky wax. By this method, effective action of the hypertonic mixture is prolonged and contamination of the pockets prevented for several hours. After five or six applications, ichthyol is added to the mixture. At the commencement of each treatment the sides of the mouth, gums and tongue are syringed and swabbed with eucalyptus.—J. L. O. TILLEY. *Brit. Dental J.*, (Aug. 1, 1939), 93; through *Chemist and Druggist*, 133 (1940), 139. (A. C. DeD.)

Triphenylchlorethylene—Clinical Use of. Triphenylchlorethylene is a synthetic substance which simulates the action of estrogenic hormones. It can

be safely administered by mouth, by injection, or as a local application. It causes the same effects as the naturally occurring estrogens—namely, uterine growth, proliferation of the endometrium, withdrawal bleeding, transition of menopausal to estrous vaginal smear, relief of menopausal symptoms, an inhibition of lactation. The threshold activity is low; consequently its action is not sudden or dramatic. It has no definite toxic effects and can be administered in large doses or over a long period of time. Under these conditions adequate dosage is easy to maintain and gives a remarkable certainty of action. The duration of activity by mouth closely approximates to that of stilbestrol. By injection, however, the duration is singularly prolonged; after 500 mg., by the technique described, effective action persists for six to nine weeks. By this method therefore, a very small dosage is sufficient to maintain a continuous high level of estrogenic activity. —A. I. S. MACPHERSON and E. M. ROBERTSON. *Lancet*, 237 (1939), 1362. (W. H. H.)

Tuberculosis of the Lungs—Treatment of, with Drugs. (Experiments with Silogran.) In more than 100 cases, silogran-treated individuals showed no advantages over the controls.—KARL BÜHLER. *Deut. Med. Wochschr.*, 65 (1939), 87-90. (L. K.)

Tuberculosis—Studies in the Chemotherapy of. VI. Action of Silogran. In animal experiments, silogran furthers the destruction of the capsules in tuberculous foci in the lungs. As long as more effective preparations are not discovered, this well-tolerated lipoid soluble silicic acid compound will retain its place in therapy. It is recommended as an adjuvant in tuberculosis of the lungs.—ERICH HESSE and GERTRUD MEISSNER. *Deut. Med. Wochschr.*, 66 (1940), 407-408. (L. K.)

Uliron and Albucid—Action of, in Gonorrheal inflammation of the Cervix Uterus during Pregnancy and in Inflammations of the Appendages. Gonorrheal infection of the cervix uterus in pregnancy is healed in most instances by treatment with uliron and albucid and probably more frequently than with other types of treatment. Already existing gonorrheal infections of the appendages of the uterus are favorably influenced by uliron or albucid treatment. Local inflammation of appendages is, on the contrary, very little influenced. Spread of the gonorrhea to the inner organs, especially to the appendages, is not prevented by uliron or alucid. Inflammations of the latter type are generally not healed by uliron or albucid.—F. SCHAEFER. *Deut. Med. Wochschr.*, 65 (1939), 373-375. (L. K.)

Vitamin A Deficiency—Is Vernix Caseosa Due to? In a preliminary report this author presents evidence to show that vernix caseosa may be a manifestation of vitamin A deficiency in the newborn and that it represents disturbances in cornification analogous to the skin changes accompanying keratomalacia and other signs of vitamin A deficiency. He questions that vernix is a normal product because many normal babies are born without it and because it varies in amount and character. He doubts the fact that the vernix may be derived from sebaceous glands because it occurs in places where there are no sebaceous glands such as on the soles and palms. In an experimental study twenty-five women received 50,000 to 100,000 units of vitamin A through six months of pregnancy. Twenty-one had babies with little or no vernix; only four had babies with moderate or greater vernix. Of thirty-one women who received no additional vitamin A, twenty-three had babies with moderate or much vernix.—J. V. STRAUMFJORD. *Western J. Surg., Obstet. Gynecol.*, 48 (1940), 341; through *Abbott Abstract Service*, (1940), No. 745. (F. J. S.)

Vitamin B Complex—Treatment of Functional Intestinal Disorders with. It is stated that functional disorders constitute the majority of all intestinal disturbances for which the physician is consulted. The assessment of results of treatment in these cases is extremely difficult, but the results obtained in the present series have been confirmed by other independent studies. Attention was drawn to the possibility of B-complex deficiency being concerned with "functional" intestinal disorders because it has been suggested that a considerable percentage of Americans may be deficient in these vitamins. Observations were made on 44 patients who showed no organic defects on laboratory and x-ray examination, but who complained of a variety of gastrointestinal symptoms. Bioassay of the urine for thiamin showed that in general the values were subnormal. The patients were given a B-complex preparation made from yeast, and 100 to 200 mg. daily of nicotinic acid. Some received thiamin and riboflavin. About 60% of the complaints were relieved.—F. F. CHESLEY, J. DUNBAR and L. A. CRANDALL. *Am. J. Digestive Diseases Nutrition*, 7 (1940), 24; through *Abbott Abstract Service*, (1940), No. 719. (F. J. S.)

Vitamins B_1 and C—Effect of, on Leprosy. Treatment of leprosy with 45 injections of 1 mg. of vitamin B_1 (crystalline synthetic aneurin: 1 mg. in each cc. betaxin) produced improvement in the general condition and appetite, increase in body weight and, for the most part, lowering of the blood sugar and cholesterol. Intramuscular injections of 1 to 2 mg. of vitamin B_1 were effective in the treatment of the painful symptoms of nerve leprosy. The treatment of skin leprosy with 42 injections of vitamin C (100 mg. ascorbic acid in each ampul) was not markedly successful except for a possible increased tolerance to chaulmoogra preparations.—G. G. VILLELA. *Arch. Schiffs- u. Tropen-Hyg.*, 43 (1939), 127-129; through *Chimie & Industrie*, 42 (1939), 516. (A. P.-C.)

Vitamin C Deficient Diet—Failure of Scurvy to Develop on a. A normal active adult placed himself on a vitamin C-free diet supplemented by the other known vitamins. Over a period of four months during which the ascorbic acid content of the plasma, white cells and platlets fell to zero, no signs or symptoms of scurvy developed. An experimental wound made after twelve weeks of the diet, when the plasma readings had been zero for at least forty-four days, showed good healing, both grossly and microscopically. There was only a transient fall in hemoglobin, reversed by iron. It is, of course, to be remembered that only a single case is reported, so that no possitive conclusions can be reached. However, it is suggested that in the absence of multiple avitaminosis, infection or growth factor, a plasma ascorbic acid reading which falls below 0.5 milligram per 100 cc. should not be considered as being dangerously low. The author believes that plasma ascorbic acid levels are an unreliable index of clinical vitamin C deficiency in the adult.—J. H. CRANDON and C. C. LUND. *New Eng. J. Med.*, 222 (1940), 748; through *Abbott Abstract Service*, (1940), No. 747. (F. J. S.)

Vitamin C in the Treatment of Eczemas. In several stubborn cases of eczema, administration of vitamin C cleared up the symptoms of the disease within a short time.—H. C. C. WAGNER. *Deut. Med. Wochschr.*, 65 (1939), 1851. (L. K.)

Vitamin C Treatment of Chronic Leukemias. Treatment of myeloid and lymphatic chronic leukemias with vitamin C was not successful. However, the vitamin exerts a favorable action on the general condition of the patient and is, moreover, indicated in the presence of hemorrhagic tendencies. Both types of leukemias result in a deficiency of

vitamin C. According to Tonutti, the deficit is caused by an increase in the cellular activity of the organism.—ALFRED VOGT. *Deut. Med. Wochschr.*, 66 (1940), 369–372. (L. K.)

Vitamin D—Parenteral Treatment of Osteomalacia and Rickets with. A discussion.—M. KLOTZ. *Deut. Med. Wochschr.*, 65 (1939), 1000–1001. (L. K.)

Vitamins D_2 and D_3—Potency of. The therapeutic effects of pure specimens of vitamin D_2 from irradiated ergosterol and of vitamin D_3 from irradiated 7-dehydrocholesterol were compared in thirteen pairs of patients with osteomalacia and in two pairs with late rickets among Indians, aged 6–70, in the Kangra Valley, Punjab. The results, appraised by clinical estimates of the patient's progress and by the disappearance of carpopedal spasm, of pain in specified sites, and of difficulty in walking, showed the two preparations to be equally effective. For both preparations a dose of 10,500 I. U. of vitamin D weekly caused only a slow improvement within a period of two weeks whereas as a dose of 21,000 I. U. caused improvement in a week. The advantages of spaced weekly doses are indicated.—D. C. WILSON. *Lancet*, 238 (1940), 961. (W. H. H.)

Vitamin E in the Treatment of Muscular Dystrophies and Nervous Diseases. The laboratory work of Einarson and Ringsted (1938) is discussed, and the reasons are given for their suggestion that the muscular dystrophies, amyotrophic lateral sclerosis, and tabes dorsalis are deficiency diseases due to lack of vitamin E. Normal human diets may be poor in vitamin E. The results of giving vitamin E for muscular dystrophy and amyotrophic lateral sclerosis support the contention that these are deficiency diseases and curable.—F. BICKNELL. *Lancet*, 23 (1940), 10. (W. H. H.)

Vitamin E—Negative Results with, in Muscular Dystrophy. Deficiency of vitamin E among certain experimental animals results in various neuromuscular disorders. During the past year several reports from this country and abroad have suggested that vitamin E might be of benefit to patients with muscular dystrophy and other neuromuscular disorders. Investigations were undertaken at the Mayo Clinic to verify, if possible, these hopeful reports. Wheat germ oil was administered by mouth in doses of three tablespoonfuls with each meal to 18 patients with neuromuscular disorders. This was supplemented by synthetic alpha-tocopherol intramuscularly in 100 mg. doses twice daily. No definite evidence of improvement in any case has been observed over a period of 5 months. These negative results should not be interpreted as failure of the agents. The period of treatment may not have been long enough, or it may be found that the vitamin will be effective when combined with some other vitamin. The experiment will continue for some time.—C. H. SHELDON, H. R. BUTT and H. W. WOLTMAN. *Proc. Staff Meeting Mayo Clinic*, 15 (1940), 577; through *Abbott Abstract Service*, (1940), No. 741. (F. J. S.)

Vitamin K—Use of Synthetic, in Hemorrhage. In this paper ten cases of clinical hypoprothrombinemia of various causes are presented, with responses of the patients to administration of synthetic vitamin K (2-methyl-1,4-naphthoquinone). The results obtained with naphthoquinone compare favorably with results obtained in prothrombin-deficient patients receiving natural vitamin K concentrate. Daily studies of the plasma prothrombin were made for each patient while he was receiving the drug. All received at least 8 mg. daily and some received as much as 16 mg. daily for from 2 to 4 days. Each patient was given 0.325 Gm. of bile salts with each 2 mg. of naphthoquinone. There were no symptoms of untoward reaction. Occasional nausea was observed, but this was absent if the bile salts were omitted in the test dose. In half of the cases the prothrombin rapidly returned to normal because the low level in these cases was due to lack of bile in the intestinal tract. In cases of liver cirrhosis no change was observed.—J. G. ALLEN and O. C. JULIAN. *Arch. Surg.*, 40 (1940), 912; through *Abbott Abstract Service*, (1941), No. 762. (F. J. S.)

MODERN REMEDIES

SYNTHETICS

Albucid (for Injection) (Schering A.-G., Berlin) is a 30% solution of the sodium salt of *p*-aminophenylsulfonylacetamide. It is indicated in the treatment of gonorrhea, cystitis and pyelitis.—*Pharm. Zentralhalle*, 81 (1940), 43. (N. L.)

Anteron Ampuls (Schering A.-G., Berlin) contain a gonadotropic hormone in serum. It is indicated for subcutaneous and intramuscular injection in the treatment of hypogenitalism of both sexes.—*Pharm. Zentralhalle*, 81 (1940), 43. (N. L.)

Archanium is stated to be sodium phenyl-dimethyl-carboxylate, a white crystalline powder which dissolves and effervesces in hot water. It was originally produced from the bark and twigs of the dwarf willow *Salix repens* by dry distillation. It is similar to salicin, and it gives no reaction with ferric chloride for salicylate, but breaks down in the body into salicylic acid which is excreted in the urine. Archanium is recommended for the treatment of rheumatism, backache, neuritis and fevers. For rheumatic fever and as an antirheumatic the dose suggested is half a teaspoonful (20 grains) in hot water three to six times a day. As an antipyretic a quarter teaspoonful every four hours should be given. Archanium does not affect the heart, but is slightly constipating. It is supplied in 1-oz., 2-oz. and 8-oz. packages.—*Quart. J. Pharm. Pharmacol.*, 12 (1939), 654. (S. W. G.)

Carbachol (B. D. H.) (British Drug Houses, Ltd., London) is carbamylcholine chloride. It is used in certain cases of deficient muscular activity, *e. g.*, postoperative urinary retention and paralytic ileus; paroxysmal tachycardia, hypertonia and Reynaud's disease; amblyopia. It is given orally, 1 mg. to 4 mg. up to three times a day. Injection (subcutaneously, intravenously or intervenously) 0.125 mg. to 0.25 mg.—if necessary repeated 2 or 3 times daily. It is supplied as tablets in bottles of 25 × 2 mg. and 100 × 2 mg; solution in ampuls in boxes of 6 × 0.25 mg. in 1 cc.—*Australasian J. Pharm.*, 21 (1940), 857. (A. C. DeD.)

Cedinalid is the lanata glucoside (Digilanid C), occurring in *Digitalis lanata*, that is placed on the market by Sando (Basel) in dragees of 0.25 mg. and ampuls of 0.2 mg.—*Pharm. Weekblad*, 76 (1939), 1259. (E. H. W.)

Di-Folliculine (Meurice) is the benzoate of estradiol, placed on the market by the Union Chimique Belge, in ampuls, drops, dragees and in ointment form.—*Pharm. Weekblad*, 76 (1939), 1521. (E. H. W.)

Dolantin (Bayer, I. G. Farbenindustrie, A.-G., Leverkusen a. Rh.) is the ethyl ester of 1-methyl-4-phenylpiperidine-4-carboxylic acid. It is marketed in tablet form, each tablet containing 25 mg. and in the form of ampuls, each consisting of 2 cc. of a solution containing 100 mg. It is indicated in the treatment of angina pectoris, migraine, spasms of the gastrointestinal tract, etc.—*Pharm. Zentralhalle*, 81 81 (1940), 44. (N. L.)

Derobin (Glaxo Laboratories, Greeford, Middlesex) is dioxyanthranol. It is used for psoriasis and

many other common skin affections (including fungoid diseases). It is applied in suitable base as ointment cream or paint. It is supplied in glass tubes of 10 and one grams.—*Australasian J. Pharm.*, 21 (1940), 624. (A. C. DeD.)

Ephynal Acetate (Hoffmann-LaRoche, Inc., Roche Park, Nutley, N. J.) is *d,l*-alpha-tocopherol acetate, synthetic vitamin E in chemically pure, highly potent form, approximately 170 times more active than crude wheat germ oil, and 8 times more active than the refined non-saponifiable fraction of the oil. It is indicated in intensive vitamin-E therapy in amyotrophic lateral sclerosis (a neuromuscular disorder), experimentally in threatened abortion, habitual abortion, abruptio placentae and all vitamin-E deficiencies. It may be administered in large doses over long periods of time without deleterious effects or gastrointestinal irritation typical of wheat germ oil administration. Ephynal Acetate is supplied in 3-mg. tablets for threatened and habitual abortion and abruptio placentae, etc., in bottles of 30 tablets; as 10-mg. tablets for the maintenance therapy in amyotrophic lateral sclerosis, muscular dystrophies, etc., in bottles of 50 and 250 tables; as 25-mg. tablets for active initial treatment of nerve diseases and dystrophies, in bottles of 50 tablets.—*Amer. Professional Pharmacist*, 6 (1940), 586. (F. J. S.)

Glucuchaux (Union Chimique Belge) is calcium gluconate. It is found on the market in tablets, granules, in ampuls and in powder form.—*Pharm. Weekblad*, 76 (1939), 1521. (E. H. W.)

Hormovita is a preparation of testicular hormone supplied in the form of liquid and tablets. The hormone is prepared from the testicular glands kept alive in a special solution after the animal itself has been killed. This solution is the foundation of hormovita. It is claimed to be a natural tonic for men, restoring health and vigor, banishing mental and physical fatigue. It is also recommended in cases of neurasthenia, senile eczema, infantilism and incontinence. The dose of the liquid is from 3 drops, increasing to 9 drops, three times daily. The tablets contain in addition to the testicular hormone, lecithin and vitamins. The dose is 3 to 4 tablets, three times daily, before meals. A combined treatment with 3 drops of the liquid, followed by 2 tablets three times a day is recommended.—*Quart. J. Pharm. Pharmacol.*, 12 (1939), 790. (S. W. G.)

Insulamine (Union Chimique Belge) is insulin-protamine zinc. The 5-cc. ampul contains 200 International Units.—*Pharm. Weekblad*, 76 (1939), 1521. (E. H. W.)

Leptazol (B. D. H.) (British Drug Houses, Ltd., London) is pentamethylenetetrazol. It is used in cardiac or respiratory failure in infectious diseases; poisoning by barbiturates or coal gas; in surgical or obstetrical emergencies involving cardiac failure, asphyxia or collapse; convulsive treatment of schizophrenia. The dose is prescribed by the physician. It is supplied as a powder in bottles of 1/4 ounce; solution (10% for parenteral injection), boxes of 6, 1-cc., 3-cc. and 5-cc. ampuls; solution (10% for oral administration) in bottles of 1/2 fl. oz.—*Australasian J. Pharm.*, 21 (1940), 857. (A. C. DeD.)

Nicotinic Acid Tablets (Parke, Davis & Co., Detroit, Mich.) consists of nicotinic acid which is pyridine carboxylic acid ($C_6H_3O_2N$) and it occurs in the form of white crystals which are soluble in water and alcohol. They are used for the prevention and treatment of pellagra; also used in the treatment of glossitis and stomatitis which accompany pellagra. Nicotinic Acid Tablets, 50 mg., and Nicotinic Acid Tablets, 100 mg., are supplied in bottles of 100 and 1000 tablets. The tablets are grooved in the middle to facilitate smaller dosage if necessary.—*Modern Pharmacy*, 24 (October 1940), 13. (F. J. S.)

Nikethamide (Abbott Laboratories, North Chicago, Ill.) is the synthetic stimulant, pyridine-beta-carboxylic acid diethylamide, acting on the cerebrum and medullary respiratory and vasomotor centers to produce stimulant effect. It is used as a temporary stimulant in toxemia depressions due to illness, anesthesia or asphyxia, to raise blood pressure, increase respiration and restore consciousness; valuable in emergencies with depressed respiration, acting more quickly than picrotoxin; emergency treatment of CO asphyxia and drowning to supplement oxygen; has derivative effect of nicotinic acid in pellagra. The adult dose (initial) is 5 cc. repeated at 5 to 10 minute intervals, determined by individual case and reaction; in noncardiac circulatory failure, 1 1/2 cc. is the emergency treatment; children in proportion to body weight. Nikethamide is supplied as a 25% solution (in ampuls) of 1 1/2 cc. and 5 cc., in boxes of 6 and 25.—*Amer. Professional Pharmacist*, 6 (1940), 521. (F. J. S.)

Pirevan (Evans, Sons, Lescher and Webb Ltd., Liverpool and London) is dimethylquinolylmethyl sulfate urea (5% solution). It is a specific against British red-water fever and other piroplasmoses. The dose is 10 cc. by subcutaneous injection. It is supplied in boxes of 6 × 10 cc. ampuls.—*Australasian J. Pharm.*, 21 (1940), 624. (A. C. DeD.)

Revasa (Bayer Products Ltd., London) is *bis*-2-methyl-4-aminochinolyl-6-carbamid hydrochloride. It is used in cases of inflammatory and ulcerative processes of the mouth and throat; after treatment in tonsillectomy; thrush, measles prophylactic against influenza. The dose is 1 tablet (3 mg.), dissolved slowly in the mouth at intervals. It is supplied in tins of 20 tablets.—*Australasian J. Pharm.*, 21 (1940), 624. (A. C. DeD.)

Riboflavin (Burroughs Wellcome & Co., Inc. (U. S. A.), 9 E. 41st St., New York, N. Y.) contains in each compressed product 1 mg. of pure, crystalline riboflavin (α-dimethyl-ribityl-iso-alloxazine), identical in chemical structure and physiologic effects to natural vitamin B_2 (latoflavin, vitamin G). One mg. of riboflavin is the equivalent of approximately 400 Sherman-Bourquin units of vitamin B_2; it combines with phosphoric acid and protein to form Warburg's yellow oxidation enzyme which is essential to normal cellular metabolism but which cannot be synthesized by the body in the absence of riboflavin. Riboflavin is given by mouth in the treatment of riboflavin deficiency (ariboflavinosis). It is supplied in 1-mg. tabloids in bottles of 100 and 500.—*Amer. Professional Pharmacist*, 6 (1940), 587. (F. J. S.)

Strophoside (Chemische Fabrik, Sandoz) is Strophanthoside *K*, the crystallized genuine glucoside discovered by Prof. Stoll in *Strophanthus Kombé* ($C_{42}H_{64}O_{19}$). It is found on the market in 1-cc. ampuls containing 0.5 mg. of strophanthoside. The dose for injection is 0.4 to 1 cc.—*Pharm. Weekblad*, 76 (1939), 1522. (E. H. W.)

Subenon is the calcium double salt of benzoic acid and succinic acid benzyl ester, a white odorless substance soluble in water and dilute alcohol. It is indicated in arthritis and rheumatism of all types in a dosage for adults of one or two 5-grain tablets or capsules three or four times daily, the dosage for children being in proportion to age and condition. Subenon is supplied in capsules and tablets of 5 grains, in bottles of 100, 500 and 1000.—*Quart. J. Pharm. Pharmacol.*, 12 (1939), 656. (S. W. G.)

Sulfathiazole Tablets (Parke, Davis & Co., Detroit, Mich.) consist of sulfathiazole (2-sulfanilyl aminothiazole) which is a sulfonamide derivative, related chemically to sulfanilamide and sulfapyri-

dine. The tablets are indicated in the treatment of pneumococcic and staphylococcic infections and in cases where the patient can be kept under close observation by the attending physician in order that necessary blood and urine studies may be carried out as needed. Sulfathiazole Tablets, 0.25 Gm. (3.86 grains), are supplied in bottles of 100; 0.5 Gm. (7.7 grains), in bottles of 100 and 1000.—*Modern Pharmacy*, 24 (October 1940), 12. (F. J. S.)

Syntestrin is stilbestrol dipropionate which has been shown by Dodds and Goldberg to produce a more prolonged effect than stilbestrol, while exerting an equally intensive action. It is recommended for the treatment of functional disorders of the female genital cycle, and also extra-genital diseases. It has also proved effective in the rearing of prematurely born infants. Syntestrin can be administered by mouth in tablet form, by intramuscular injection in oily solution, or by suppositories. The dose by mouth is 0.5 to 5 mg. three times a day. Intramuscularly 1 to 5 mg. can be given twice weekly. **Syntestrin Ointment** for local application contains 0.5 mg. per Gm. The tablets are supplied in three strengths, 0.5, 1.0 and 5 mg., in bottles of 25 and 100 tablets. The ampuls contain 1 to 5 mg., and are supplied in boxes of 3, 6 and 12. **Syntestrin Suppositories** contain 1 or 5 mg., in boxes of 12. The ointment is supplied in 1-oz. pots containing 5 mg.—*Quart. J. Pharm. Pharmacol.*, 12 (1939), 656. (S. W. G.)

Thyloquinone (E. R. Squibb & Sons, 745 Fifth Ave., New York, N. Y.) and **Kayquinone** (Abbott Laboratories, North Chicago, Ill.) consist of the synthetic 2-meth l-1,4-naphthoquinone having a high degree of activity of natural vitamin K and each mg. contains 2000 Ansbacher units (about 1700 Thayer-Doisy units or 25,000 Dam units). It is to be used where vitamin K has been shown to be of benefit particularly where bile is excluded from the intestinal tract or enters the tract in insufficient amount or concentration. Obstructive jaundice of moderate severity employs an initial dose of 1 mg. accompanied as always by bile salts in doses of 5 to 7 1/2 gr. If prothrombin level does not improve, the dosage should be repeated at 12-hour intervals. It is not of value in hemorrhages where the blood prothrombin is normal. As a caution determine the hemoglobin and white counts at intervals and never administer more than 2 mg. in one day. Kayquinone Tablets contain 1 mg. each and are supplied in bottles of 25 and 100; Kayquinone in sesame oil in soft capsules (1 mg.) in bottles of 25 and 100. Thyloquinone is supplied in corn oil in 5-cc. (5 mg. activity) 10-cc. and 50-cc. vials; also Thyloquinone in capsules of corn oil (1 mg.) in boxes of 20, 50 and 100 capsules.—*Amer. Professional Pharmacist*, 6 (1940), 521. (F. J. S.)

Thyroid-Ovarian Emplets (Parke, Davis & Co., Detroit, Mich.) are enteric-coated tablets containing 5 grains of Ovarian Substance, Desiccated, and 1/4 grain of Thyroid Gland, P. D. & Co., Desiccated. They are used in the treatment of menstrual abnormalities and endocrine deficiencies. The word "Emplets" designates special enteric-coated tablets manufactured by Parke, Davis & Company, the coating contains no salol and is therapeutically inert. Thyroid-Ovarian Emplets are supplied in bottles of 100 and 500.—*Modern Pharmacy*, 24 (October 1940), 13. (F. J. S.)

SPECIALTIES

Abdol with Vitamin C Capsules (Parke, Davis & Co., Detroit, Mich.) contain in each capsule 10,000 U. S. P. units of Vitamin A; 1000 U. S. P. units of Vitamin D; 200 International Units of Vitamin B_1 (thiamin hydrochloride); 100 gammas (40 Sherman units) of Vitamin B_2(G) (riboflavin); and 500 International Units of Vitamin C (ascorbic acid). The capsules are indicated in prophylaxis and treatment of deficiencies of Vitamins A, B_1, B_2(G), C and D. Abdol with Vitamin C Capsules are supplied in boxes of 25, 50, 100 and 250 capsules.—*Modern Pharmacy*, 24 (October 1940), 12. (F. J. S.)

Abecedin is a preparation of the natural vitamins A, B_1, B_2, C and D_3 supplied in tablets and as an emulsion. Each tablet contains vitamin A 5000 International Units; vitamin B_1 50 International Units; vitamin B_2, equal to 2.5 Gm. of fresh brewers' yeast; vitamin C 200 International Units, vitamin D_3 600 International Units. One teaspoonful of emulsion is equivalent to one tablet, except in regard to vitamin B_2 which is omitted from the emulsion, as the latter is designed primarily for young children. The dose of the tablets is one daily for children, two daily for older children and adults. For infants half a teaspoonful of the emulsion mixed with the food is the dose recommended. Older children and adults can take up to two teaspoonfuls daily. Abecedin Tablets are supplied in bottles containing 21, and 105 tablets. The emulsion is supplied in 4-oz. and 16-oz. bottles.—*Quart. J. Pharm. Pharmacol.*, 12 (1939), 654. (S. W. G.)

Amodrine (G. D. Searle & Co., 4737 Ravenwood Ave., Chicago, Ill.) consists of aminophyllin, 1 1/2 gr., racephedrine hydrochloride, 3/8 gr. and phenobarbital, 1/8 gr. It is indicated in bronchial asthma and hay fever; and is supplied in bottles of 100 and 1000 tablets.—*Amer. Professional Pharmacist*, 6 (1940), 586. (F. J. S.)

Baravit (Schering Corporation, Bloomfield, N. J.) consists of palatable granules of bassorin coated with thiamine-reënforced vitamin B complex and contains 127 International Units of vitamin B_1 (thiamine hydrochloride, U. S. P. XI); 44 gammas of vitamin B_2 (riboflavin), 220 gammas of nicotinic acid U. S. P. XI and 55 gammas of B_6 (pyridoxine) per ounce. It is used as a physiological treatment for functional constipation and an adjunct to reducing and other diets lacking bulk and vitamin B. In functional constipation, the dose is one or two teaspoonfuls, once or twice daily as required. Baravit is supplied in packages of 8 ounces and 20 ounces.—*Amer. Professional Pharmacist*, 6 (1940), 652. (F. J. S.)

Betaplexin Capsules and Tablets (Winthrop Chemical Co., 170 Varick St., New York, N. Y.) consist of vitamin B complex, each capsule or tablet containing vitamin B_1, 0.375 mg. (125 U. S. P. or International Units); vitamin B_2 (G), 250 gammas (100 Bourquin-Sherman units); vitamin B_6, 100 gammas; nicotinic acid, 4 mg; filtrate factor, 20 Jukes-Lepkovsky units. It is specific in the prophylaxis and cure of beriberi, pellagra and ariboflavinosis. The average daily prophylactic dose is: children, two or three capsules or tablets; adults, four capsules or tablets. The therapeutic dose is six to twelve capsules or tablets daily. Betaplexin is supplied in bottles of 50 capsules or tablets.—*Amer. Professional Pharmacist*, 6 (1940), 589. (F. J. S.)

B-Tablets (Troponwerke, Köln-Mülheim) contain vitamin B complex, vitamin C, dextrose and phosphates. It is indicated as a tonic.—*Pharm. Zentralhalle*, 81 (1940), 44. (N. L.)

Butisol-Ephedrine Comp. (McNeil Laboratories, Inc., 2900 N. 17th St., Phila., Pa.) contains butisol (ethyl secondary butyl malonyl urea), 1/8 gr., ephedrine hydrochloride, 3/8 gr. and acetylsalicylic acid, 2 1/2 gr. It is an antispasmodic, sedative and analgesic; and it is indicated in allergic conditions, hay fever, bronchial asthma, bronchitis, etc., where spasm is prevalent. The dose for adults is one or two capsules with water or fruit juice, every three

hours as required; children, one-half to one capsule with warm water or fruit juices as required. This product should not be used in cases of cardiovascular disease, including high blood pressure. Butisol-Ephedrine Comp. is supplied in bottles of 100, 500 and 1000 capsules.—*Amer. Professional Pharmacist*, 6 (1940), 589. (F. J. S.)

Carovit is a combination of chlorophyll and beta-carotene in tablets which contain in each, carovit chlorophyll 0.01 Gm.; soluble ferric phosphate 0.008 Gm.; calcium phosphate 0.06 Gm.; sucrose to 0.125 Gm. It is stated that the chlorophyll and beta-carotene (pro-vitamin A) are present in the tablets in association as in plants. Carovit is recommended for the treatment of hypertension, arteriosclerosis, anemias, general fatigue and debility and conditions where vitamin A is indicated. The dose is from 1 to 3 tablets, three times a day, taken before meals. Carovit tablets are supplied in tins containing 80 tablets.—*Quart. J. Pharm. Pharmacol.*, 12 (1939), 789. (S. W. G.)

Citonervin (Ernst Sack, Chem.-Pharm. Produckte, Ulm-Donau) is a nervine and sedative, each teaspoonful of which contains 0.033 Gm. of a peptone bromide compound, 0.01 Gm. lactophenetidin, 0.0083 Gm. oil of peppermint, 0.0067 Gm. oil of valerian, 0.033 Gm. lupulin and 0.04 Gm. of a molecular compound of phenylethylbarbituric acid and aminophenazon (1:1).—*Pharm. Zentralhalle*, 80 (1939), 587. (N. L.)

Criniton (Dr. A. Atzinger, Berlin) is a shampoo for the hair, and consists of sulfonated oils and volatile oils.—*Pharm. Zentralhalle*, 81 (1940), 44. (N. L.)

Dolorsan Dragees (Johann G. W. Opfermann & Sohn, Bergisch-Gladbach) contain berberine hydrochloride, salicin, quinine sulfate, cinchonidine, quinoidine, phenacetin and amidopyrine. It is recommended in the treatment of rheumatism, grippe, etc.—*Pharm. Zentralhalle*, 81 (1940), 44. (N. L.)

Enseals (Eli Lilly and Co. Ltd., Basingstoke, Hants) are enteric-sealed tablets containing in each, iron pyrophosphate 0.05 Gm. (3/4 gr.) and copper sulfate 0.002 Gm. (1-32 gr.). It is used in oral treatment of anemias. The dosage is governed according to the hemoglobin level. It is supplied in bottles of 100 and 500.—*Australasian J. Pharm.*, 21 (1940), 857. (A. C. DeD.)

Ereton Tablets (Bayer, I. G. Farbenindustrie A.-G., Leverkusen a. Rh.) contain natural vitamin E together with phosphatides and vitamin B complex. It is recommended in the treatment of female sterility, habitual abortion, etc.—*Pharm. Zentralhalle*, 81 (1940), 44. (N. L.)

Esdavite Pearls (Sharp & Dohme, Phila., Pa.) contain in each pearl (3 minims content) vitamin A, 10,000 U. S. P. XI Units and vitamin D, 1000 U. S. P. XI Units (equivalent to three teaspoonfuls U. S. P. cod liver oil); vitamin B_1, 333 U. S. P. XI Units (or 1 mg. thiamine hydrochloride U. S. P. XI); vitamin C, 500 U. S. P. XI Units (or 25 mg. ascorbic acid U. S. P. XI); vitamin G (B_2), 50 gammas riboflavin (representing 1/2 oz. moist compressed yeast); and 5 mg. nicotinic acid. It is indicated wherever a high-potency vitamin therapy is indicated in clinical need and vitamin deficiency. Esdavite Pearls are supplied in prescription boxes of 25 and 100.—*Amer. Professional Pharmacist*, 6 (1940), 587. (F. J. S.)

Grippe-Delmin (J. H. Schaub, Delmenhorst) is an extract of juniper, chamomile, quinine and betula. It is indicated in the treatment of grippe.—*Pharm. Zentralhalle*, 80 (1939), 614. (N. L.)

Iodobesin is supplied in the form of specially coated tablets (opocrin) containing in each the following desiccated gland substances: hepatic, 5 cg.; pituitary (whole) 4 mg.; orchitic, 4 cg.; ovarian, 5 cg.; thyroid (deprived of lipoids), 5 mg.; suprarenal, 1 mg.; and iodalbumin (colloidal), 5 cg. It is recommended for the treatment of obesity caused by disordered metabolism due to glandular dysfunction. It is claimed to be a safe remedy which can be used for either sex, and the gradual reduction of weight is unaccompanied by any depressing symptoms, but has a marked tonic effect on the patient. The dosage is from 2 tablets daily for ten days, with a rest period of five days followed by 3 or 4 tablets daily for ten to fifteen days, the correct dosage being judged by the physician. It is advisable to reduce the dose gradually, when the patient's weight approaches the normal. Iodobesin is supplied in bottles containing 60 and 120 tablets, also in bulk for dispensing, in bottles of 500 and 1000 tablets.—*Quart. J. Pharm. Pharmacol.*, 12 (1939), 655. (S. W. G.)

Menopax (Clinical Products Ltd., London) is compound estrogenic sedative. It is used in all symptoms of the climacteric. Each tablet contains: Estrin, 100 International Units; ovarian extract, 0.115 gr.; theobromine calc. sol. 3/4 gr., caffein cit. 1-4 gr., monobromisovalerylcarbamide 1 gr., calc. lact. 1 1/2 gr. The dose is prescribed by the physician. It is supplied in packages of 42, 75, 168, 310, 500 and 1000 tablets.—*Australasian J. Pharm.*, 21 (1940), 857. (A. C. DeD.)

Nicobee Elixir (Endo Products, Inc., Richmond Hill, N. Y.) is a palatable combination of nicotinic acid 20 mg., and thiamine chloride, 4 mg. (1332 I. U. of vitamin B_1) per fluidounce in a wine base. It is useful in subclinical pellagric conditions. Nicobee Elixir is supplied in 8-oz., 16-oz. and 1-gallon bottles.—*Amer. Professional Pharmacist*, 6 (1940), 653. (F. J. S.)

Oxysanol (Schering & Co., Fabrik pharm. Präparate, Stralsund) is a powder containing iron, copper, kamala, rhubarb and flavoring ingredients.—*Pharm. Zentralhalle*, 80 (1939), 634. (N. L.)

Partagon (Sandoz Products, J. Flint, London) are annulated bougies 5 cm. long, 4-5 mm. in diameter, presenting a silver salt (1 1/2% $AgNO_3$) assorted with organic colloids. They are used in all septic inflammations (gonococcic or other), urethritis, cervicitis, gonorrhea (acute or chronic), cervical and urethral discharges, gonorrhea of the rectum, vulvo-vaginitis, leucorrhea. Introduced into the urethra and cervix. They are supplied in boxes of 20 and 200 bougies.—*Australasian J. Pharm.*, 21 (1940), 857. (A. C. DeD.)

Pertussis Vaccine Immunizing (Sauer) (Parke, Davis & Co., Detroit, Mich.) is prepared from recently isolated strains of Phase I pertussis bacilli (*Hemophilus pertussis*) according to the specifications of Dr. L. Sauer, Evanston, Illinois, and authorized by Northwestern University School of Medicine. It is used as a prophylactic immunization against whooping cough. Pertussis Vaccine Immunizing (Sauer) is available in three strengths: 8-cc. vial and 32-cc. vial, each cc. containing approximately 10,000 million killed bacteria; 7-cc. vial and 28-cc. vial, each cc. containing approximately 15,000 million killed bacteria; and 5-cc. vial and 20-cc. vial, each cc. containing approximately 20,000 million killed bacteria.—*Modern Pharmacy*, 24 (October 1940), 13. (F. J. S.)

Priovit is a combination in pellet form, of the water-soluble vitamins of the B and C groups. Each pellet contains vitamin B_1 (betaxan) 0.5 mg.; vitamin B_2 (lactoflavin) 0.25 mg.; vitamin C (cantan) 25.0 mg.; factor P. (citrin) 5.0 mg., in a standardized and stable form. Priovit is indicated for the treatment of febrile diseases, endocrine disorders with increased basal metabolism, hypo-

vitaminosis during pregnancy, lactation and hemorrhages, to correct vitamin-poor dietaries, and to compensate an increased need for vitamins due to increased demands on body function. The usual dose is one pellet twice daily; for infants one pellet daily should be given crushed and mixed with food Priovit pellets are supplied in tubes of 20.—*Quart. J. Pharm. Pharmacol.*, 12 (1939), 791. (S. W. G.)

Rheumacomp (Riska-Laboratorium, Berlin) is an emulsion consisting chiefly of capsium, chloroform, salicylates, volatile oils and oil of mustard. It is recommended in the treatment of rheumatism, nerve pains, etc.—*Pharm. Zentralhalle*, 80 (1939), 587. (N. L.)

Sedo Gastrine (Bengue and Co. Ltd., Alperton, Mdx.) contains maculatum leaves, sodium phosphate, calcium phosphate, magnesium hydroxide, calcium carbonate, excipient. It is used in cases of hypersecretion, hyperacidity, painful dyspepsia, spasm, gastric ulcer. The dose for the granules is one teaspoonful in a little water, one hour after meals, repeated if necessary two hours later; the tablets 2 to 4 after meals, or when in pain.—*Australasian J. Pharm.*, 21 (1940), 857. (A. C. DeD.)

Siblin (Parke, Davis & Co., Detroit, Mich.) is a palatable granular preparation of a highly water-absorbent material derived from certain species of plantago, combined with Crysto-Vibex (crystalline vitamin B_1); and each rounded teaspoonful (about 4.5 Gm.) contains approximately 50 International Units of vitamin B_1. It is employed by physicians in the systematic treatment of constipation of atonic or spastic type. Siblin is supplied in 4-ounce and 1-pound friction-top tins.—*Modern Pharmacy*, 24 (October 1940), 12. (F. J. S.)

Siegener Nervine Tablets (Apoth. K. Schuh, Köln) consist principally of bromine compounds, nux vomica, ignatius bean and oil of peppermint. They are recommended as a nervine, antineuralgic and sedative.—*Pharm. Zentralhalle*, 80 (1939), 600. (N. L.)

Tar Dermament is a combination of a special type of alcohol-soluble phenolic resin, with 6% of washed crude coal tar. When painted on the skin the solvent evaporates, leaving a covering of resin which holds the tar at the place of application. Tar Dermament is indicated for the treatment of eczema, seborrhea, psoriasis and all forms of pruritus. It should be applied to the affected skin 2 or 3 times daily with a small brush or cotton wool applicator. Tar Dermament is practically odorless and does not soil dressings or clothing. It is supplied in 15-cc. and 50-cc. vials.—*Quart. J. Pharm. Pharmacol.*, 12 (1939), 791. (S. W. G.)

Vagula (Chem. Werke, H. & E. Albert, A. G., Wiesbaden-Biebrich) are vaginal tablets containing silver triethanolamine iodide, dextrose and starch. They are indicated in the treatment of gonorrhea, etc.—*Pharm. Zentralhalle*, 80 (1939), 587. (N. L.)

Ventron Capsules contain in each, ventriculin (a concentrate of desiccated stomach substance), 5 grains; naferon (iron and sodium citrate), 2 grains; vitamin B_1 (thiamin chloride), 20 International Units; vitamin B_2 (riboflavin), 5 Sherman units. It is claimed that the capsules contain all the anti-anemic factors which, in addition to proper diet, are essential for normal red blood cell formation. It is recommended for the treatment of anemia, and associated diseases. The average dose is 2 to 4 capsules three or four times daily after meals. The dose should be adjusted according to the severity of the disease, the average maintenance dose being 6 to 10 capsules daily. Ventron Capsules can be used to supplement parenteral treatment with liver extract if desired. The capsules are supplied in bottles of 50.—*Quart. J. Pharm. Pharmacol.*, 12 (1939), 792. (S. W. G.)

Vitamin B Complex Capsules (Schieffelin & Co., 16 Cooper Square, New York, N. Y.) contain in each gelatin capsule vitamin B_1, 330 International Units, vitamin A, 200 gammas riboflavin ($^1/_2$ of that quantity is derived from liver extract), plus other factors of the vitamin B complex present in liver extract. It is indicated in those cases displaying general symptoms of vitamin B deficiency; and it is supplied in packages of 25, 100, 500 and 1000 capsules.—*Amer. Professional Pharmacist*, 6 (1940), 655. (F. J. S.)

BACTERIOLOGY

Acridine—New Sulfamido Derivative of. An alcoholic solution of diaminoacridine was treated with an alcoholic solution of sulfonaminophenyl-azopyruvic acid. After heating, filtration and partial evaporation, a red powder was obtained which was soluble in ethyl alcohol and warm water, giving an orange-yellow fluorescent solution. This preparation inhibited the growth of *Staphylococcus pyrogenes aureus* and *Streptococcus hemolyticus*.—ANTONIO MOSSINO. *Ateneo parmense*, 11 (1939), 470; through *Chem. Abstr.*, 34 (1940), 3879. (F. J. S.)

Air Sterilization—Evaporation of Mist Particles and Its Bearing on. Ultramicroscopical investigation of the evaporation of droplets in mists of phenolic germicide solutions, correlated with biological behavior, reveals three classes of bactericidal activity depending on the volatility of the solute. The highly volatile solutes are the least active.—S. R. FINN and E. O. POWELL. *Nature*, 144 (1939), 864-865; through *J. Soc. Chem. Ind.*, 59 (1940), 175. (E. G. V.)

Antirabic Vaccine for Animals—Comparison of the Prophylactic Value of. Using both dogs and monkeys, the authors have shown that proprietary antirabic vaccine given by the "one-shot" method affords much less protection against street virus infection than does the Kasauli vaccine given by the seven-dose method. (In fact the survivors were more numerous among non-treated animals than among animals receiving prophylactic doses of the proprietary vaccine.)—W. J. WEBSTER, J. P. MCGUIRE, E. D. STEPHENS and B. N. LAHIRI. *Indian Med. Gaz.*, 75 (1940), 349. (W. T. S.)

Antiseptics—Method for Testing the Toxicity of. A simple method is proposed by these investigators for testing the toxicity of antiseptics, using guinea pig or human blood as an indicator. The method is based on the complete inhibition by antiseptics of the phagocytosis of artificially opsonized staphylococci, or, in other words, it depends on the ability of the normal guinea pig or human leukocyte to engulf artificially opsonized staphylococci in the presence of increasing concentrations of the germicidal substances under test. The toxicity and germicidal power of ten germicides are reported. The results are interesting in that the toxicity indices were found to agree closely with those computed by Salle, whose method is based on a comparison of the killing power of the antiseptic for bacteria with its toxic action toward living embryonic tissue. Lugol's solution was found to be the least toxic of the germicides; tincture of iodine was next, and metaphen next.—H. WELCH and A. C. HUNTER. *Am. J. Pub. Health*, 30 (1940), 129; through *Abbott Abstract Service*, (1941), No. 757. (F. J. S.)

Autoserotherapy. Treatment of Toxemias with Serum Vesiculation. Four cases of toxemias were treated with autoserum from vesiculations. Plaster of cantharides was applied to the skin surface about 6 to 8 cm. square, for 15 to 20 hours. The vesicle

raised contained a liquid having albumen, fibrin and cantharides. This liquid was withdrawn aseptically and injected in the arm or the abdominal wall. From 2 to 10 cc. of serum were injected each time, depending on the quantity in the vesicle. The vesicle cured quickly with aseptic care. In general, 2 to 3 injections were sufficient. Patients naturally allergic may react unfavorably to serum shock. The mechanism seems to be that the toxic substance of the vesicle activates antigens which form antibodies in the blood serum.—R. E. CARRATALA. *Rev. Assoc. méd. argentina*, 49 (1935), 346; through *Rev. brasil. méd. pharm.*, 14 (1939), 60. (G. S. G.)

B. Typhosus Isolated from Patients and Carriers —Homogeneity of "Bacteriophagic" Types of. Studies on multiple colonies derived from primary plating of various specimens from twenty unselected cases of patients and carriers substantiate the findings that there is homogeneity of "bacteriophagic" type of V-form *B. typhosus* in human infections.—C. H. YEN. *Chinese Med. J.*, 57 (1940), 556–558. (W. T. S.)

Bacteria—Vitality of, in Alcoholic Beverages. In time of war there is always the danger of water supplies being contaminated by pathogenic bacteria. Open water may be purified by sunlight, but wells and cisterns are less accessible to this sterilization. Since alcoholic beverages are usually substituted for drinking water in doubtful cases, this study was made on the probable survival of pathogenic bacteria in common beverages such as beer, light wine and strong wine. The beverages were previously sterilized by filtration since heat would have altered the alcoholic content. The liquids were used full strength and in three aqueous dilutions, 3:1, 2:1, and 1:1 with distilled water. The organisms used for inoculation were typhus, dysentery and *Brucella abortus*, and the cultures were kept at less than room temperature. It was found that the acidity of the beverage was important in the length of time the organism was viable. Beer provided a favorable medium for the preservation of vitality of these organisms, especially typhus, both because of its low alcohol content and because of its nutritive properties. The two wines provided poorer hosts to the bacilli, though typhus survived much longer in every case. However two hours was sufficient to destroy it. The study suggests that alcoholic beverages should be examined for pathogenic bacteria in wartime, but that little is to be feared in the case of wines.—MARIA SERPA SANTOS, et al.—*Noticias farm.*, 5 (1939), 424. (G. S. G.)

Bacterial Spores as Antigens. By direct agglutination and agglutinin absorption tests of antisera prepared against both predominately vegetative and predominately sporing suspensions of *Cl. sporogenes*, *B. cereus* and a soil spore bearer, the authors have obtained clear evidence that spores behave as an antigen distinct from the O or H antigens of the bacteria from which they are derived. The possibility that effective antigens of the vegetative forms are necessarily present in spores was excluded in studies of an unidentified spore-bearer, which spored so completely on asparaginate agar that rabbits immunized with the resulting spore suspension failed to produce any detectable antibacterial agglutinin. A complete chemical metamorphosis of the spore as it germinates is thus postulated, at any rate as far as the antigenic determinants of the spore are concerned; and the authors have observed confirmatory changes in the staining properties of spores during the period between inoculation into, and germination in, a favorable medium.—J. W. HOWIE and J. CRUICKSHANK. *J. Path. Bact.*, 50 (1940), 235; through *Bull. Hyg.*, 15 (1940), 589. (T. C. G.)

Bacteriophate—Nature of, From the View Point of a New Chemical Concept. Oxidation, through the agency of oxidizing enzymes, appears to be the principal reaction upon which the reproduction of phage entirely depends during its action on susceptible bacteria. The phenomenon of the development of resistance of bacteria to phage seems to be intimately related to their ability of power of developing their reductive system, through the agency of peroxidase or catalase or both, and which incidentally can furnish explanations for the phenomenon of lysogenesis as exhibited by many types of bacteria. The dissolution or lysis of susceptible cells in the presence of phage appears to be the direct action of endocellular ferments alone and not that of the phage since below the lytic threshold of phage its unique action is, literally speaking, stimulation rather than lysis. From the results of the numerous experiments performed it is concluded that bacteriophage is an ester-like combination of nucleic acids and heteroproteose alternatingly in chain, in which there are about 90,000 nucleic acids and 80,000 heteroproteose. The role of phage in nature appears to be that of liberating enzymes, whether oxidizing, reducing or hydrolytic, by removing the anti-enzyme fraction from the enzyme-anti-enzyme complex, thereby resulting in increased activity, the intensity of which evidently depends upon how many enzymes it has liberated.—J. F. LEYVA, P. I. DE JESUS and W. DE LEON, *J. Philippine I. Med. Assoc.*, 19 (1939), 195; through *Proc. Fifth Sci. Convention Nat. Res. Council Philippines Bull.*, 23 (1939), 155. (P. A. F.)

BCG—Early Appearance of Allergy and Resistance in Animals Vaccinated by Scarification with. The authors have confirmed earlier work that vaccination by multiple punctures through a drop of a suspension of BCG is efficient in producing allergy, and have found that scarification through a drop is equally effective. The development of the allergic state after these procedures is rapid and the present work is an estimation of the rate of production of allergy and protection afforded to guinea pigs by the scarification method. The vaccination was performed by making 6 scarifications each 1 cm. long across a drop of BCG emulsion containing 5 mg. per cc. Subsequent intradermal tuberculin tests showed that on the 4th or 5th day 10% were positive, on the 6th to 8th day almost 50%, from the 12th to 19th day about 80% and it was rare not to find all allergic at the end of the first month. Guinea pigs were given subcutaneous injections of 0.001 mg. of virulent human tubercle bacilli at varying periods after vaccination, controls were also inoculated, and the animals were killed and compared. It was found that those inoculated 7 days after vaccination behaved like the controls, but in those inoculated 9 or more days after vaccination the extent of the lesions found was definitely smaller than in the controls and that the protection afforded increased with increasing interval between vaccination and virulent inoculation until at the 19th day it was equivalent to that seen at the 30th to 45th days after vaccination. Allergy and increased resistance to tuberculosis therefore appear more quickly after the scarification method than after other methods of vaccination, and it is noted that the evolution of both is parallel. The authors do not claim that this will necessarily be so in children, but point out that if it is so, the period of isolation after vaccination may be shortened.—L. NEGRE and J. BRETEY. *Bull. acad. méd.*, 123 (1940), 26; through *Bull. Hyg.*, 15 (1940), 388. (T. C. G.)

BCG Vaccine—Vaccination against Tuberculosis with. The subjects of this study were 725 children vaccinated within 10 days of birth with BCG by Calmette's method and 1178 unvaccinated children serving as controls. All these children were in con-

tact with sputum positive parents, and the experience extends to eleven years. The number of deaths from tuberculosis since 1926 has been 11 in the vaccinated and 58 in the control group, the tuberculosis morbidity has been 47 and 145 cases, respectively. The advantage in favor of the vaccinated children is apparent when the mortality figures are considered by age, by age at the beginning of contact, and by duration of contact, and when the morbidity figures are analyzed by age, it appears that the resistance to tuberculosis lasts longer than would be suggested by the mortality figures alone. The protection lasts for two or more years. The author admits that the figures studied are small and that only time and extension of the work can produce completely reliable statistics, but he is so impressed with the value and harmlessness of the method that he states that "vaccination of new born babies with BCG vaccine should be included in any campaign directed against tuberculosis. All babies born in families in which a patient is suffering from tuberculosis should be vaccinated".—J. A. BAUDOUIN. *Can. Pub. Health J.*, 31 (1940), 362; through *Bull. Hyg.*, 15 (1940), 712. (T. C. G.)

Brucella Infection—New Agglutination Test Facilitating the Rapid Bedside Diagnosis of. The antigen consists of a dense suspension (about 10,000 million per cc.) of a suitable strain of *Br. abortus* grown for two to three days, emulsified in 10% sodium citrate and sterilized with 0.2% formol. A large drop of antigen is placed on a slide, a small drop of the patient's blood is added and mixed by rocking. In about four minutes the blood corpuscles collect in the center of the drop and clear-cut agglutination of the bacteria may be observed at the periphery in a positive case. All bloods from control subjects gave negative reactions, while a positive result was obtained in all of six cases of undulant fever which had given tube-agglutination titers of 1:150 to 1:1600. The author states that the test would probably not be positive if the tube titer were below 1:100, which is the approximate threshold of significance. He notes, however, that the test is a rapid, cheap, easy and a safe one, likely to be useful in war conditions but that it is not intended to replace the normal quantitative method.—L. C. BRUMPT. *Bull. et mém. soc. méd. hôp. Paris*, (May 1940), 253; through *Bull. Hyg.*, 15 (1940), 556. (T. C. G.)

Carbohydrate Component of Proteins—Note on the Possible Relationship of the, to Their Antigenic Properties. The possible importance of the carbohydrate groups of egg albumin and ovomucoid in the serological reactions of those proteins has been studied by specific precipitation (ring and bulk techniques), complement fixation and serological inhibition reactions; no evidence has been obtained that the carbohydrate groups play any significant part.—A. NEUBERGER and M. E. YUILL. *Biochem. J.*, 34 (1940), 109. (F. J. S.)

Coal Tar Disinfectants Made with Sulfonated Oil. Due to their bactericidal efficiency, economy and simplicity in preparation, stability, rapid miscibility with water in all proportions, and low toxicity, 50%, sulfonated castor oil-cresol mixtures are advocated. Sulfonated castor oil is highly recommended for making cresol and other coal tar disinfectants (which are immiscible with water) w ter miscible.—L. GERSHENFELD and BERNARD WITLIN. *Am. J. Pharm.*, 112 (1940), 45. (R. R. F.)

Cod Liver Oil—Bactericidal Power of. Tested against paratyphoid B, cod liver oil had a bactericidal power about equal to a 20% solution of pine oil, or a 2% emulsion of oil of Ceylon cinnamon, or a 1% solution of phenol.—P. NELIS. *Compt. rend. soc. biol.*, 130 (1939), 329-332; through *Chimie & Industrie*, 42 (1939), 517. (A. P.-C.)

Coliform Bacteria—Inhibitory Action of Potassium Tellurite on. The use of potassium tellurite in media for the isolation and identification of the diphtheria bacillus is now a well established practice in many diagnostic laboratories. However, the author also shows that it may be very useful in the isolation of staphylococci and streptococci from feces. In concentrations of from 1:5000 to 1:800,000 of potassium tellurite the coliform organisms may be completely eliminated in fecal cultures, thus allowing the profuse growth of the gram positive cocci. A very simple way of applying the tellurite is to streak a blood agar plate in the usual manner then spread two drops of a 1:1000 solution over the surface of the plate and incubate in the customary fashion. While this procedure finds little use in a public health laboratory, it is of considerable value in hospital laboratories where the intestinal flora of some patients must be studied.—A. FLEMING and M. Y. YOUNG. *J. Path. Bact.*, 51 (1940), 29. (T. C. G.)

Corynebacterium Diphtheriae—Infection of White Mice with Three Types of. White mice 6–8 weeks old were inoculated intravenously or intraperitoneally with saline suspensions of *C. diphtheriae gravis, mitis* and *intermedius* types. Deaths took place in 20 hours to 24 days after symptoms varying from diarrhea to severe paralysis. At autopsy subcutaneous congestion and suprarenal hyperemia were noted in acute cases, and loss of weight and pale kidneys in the subacute. The organism was recovered from various organs, generalization of infection being evidenced by its presence in the brain in numerous cases. The order of pathogenicity and invasiveness of the different types for white mice appeared to be *mitis* less than *gravis* and *gravis* less than *intermedius*. The lethal dose by the routes mentioned were of the order of 100–150 million viable organisms.—K. ZINNEMANN. *J. Path. Bact.*, 50 (1940), 243; through *Bull. Hyg.*, 15 (1940), 441. (T. C. G.)

Diphtheria Antitoxin—Stability of Solutions of Standard, at Different Temperatures. The following summary is given: Solutions of standard diphtheria antitoxin in 66% glycerol-saline were found to lose less than 10% of their potency during six years' storage at −4°; at room temperature a loss of about 23% occurred after storage for four years; and at 35° the potency declined to one-half after nine months' storage.—M. L. SMITH. *Quart. J. Pharm. Pharmacol.*, 12 (1939), 707-712. (S. W. G.)

Diphtheria Prophylaxis. The results are given of antitoxin titrations in forty-nine children who were bled sixteen months after 0.1 cc. of A. P. T. followed in two weeks by 0.5 cc. It is shown that sixteen months after A. P. T. administered in this fashion at least 10% of children may be susceptible to a large dose of virulent organisms. Certain modifications in dosage and technique are advocated as a means of increasing the antigenic effect without increasing the number of injections. It is suggested that this procedure may with advantage be adopted by all scheme making authorities.—J. T. LEWIS. *Brit. Med. J.*, 4139 (1940), 728. (W. H. H.)

Disinfectants—Relationship between Lowering of Surface Tension and the Action of. The reduction in concentration of mercuric Hg in aqueous $HgCl_2$ due to the addition of serum or wool is increased by the presence of a surface active substance (*e. g.*, tributyrin). The phenomenon is discussed with reference to Traube's theory of bactericidal action (*Chem. Abstr.*, 14, 2515).—SILVIO BIOZZI. *Boll. soc ital. biol. sper.*, 14 (1939), 278; through *Chem. Abstr.*, 34 (1940), 3875. (F. J. S.)

Enteric Bacteria—Isolation of, from Excreta. This comparative study indicates that in cases of typhoid fever it is advisable to use the media of Wilson and Blair and of L. Müller, in paratyphoid B those of Müller and Ruys, and in the enteric form of the disease those of Kauffmann and Ruys. Endo's agar should not be neglected, because it may give a positive result one day earlier than any of the others. In bacillary dysentery both Leifson's desoxycholate-citrate-agar and Endo's agar should be used.—A. C. RUYS. *Brit. Med. J.*, 4136 (1940), 606. (W. H. H.)

Fermentations—Effect of Aeration on. Fermentation by the acetic acid bacteria and fermentation of sugar solution by yeast are considered.—K. R. BUTLIN and W. H. D. WINCE. *Chemistry and Industry*, 59 (1940), 41–42. (E. G. V.)

Filariasis—Chemotherapy of. Some 35 trypanocidal agents including arsenicals, bismuth compounds, dyes, alkaloids, sulfanilamides, etc., were tested against this organism *in vitro* to determine the minimum filaricidal concentration of each agent. The arsenicals and tartar emetic were found active but only in toxic doses. Therapeutic doses of fouadin, anthiomaline, tartar emetic, neoarsphenamine, acetylarsan, espundal, arsant, emetine and the glucoside of a sulfanilamide were also given to patients infected with *W. bancrofti* but the filariae persisted. It was thought that a suitable laboratory animal for studying this infection must be found before the problem is solved.—FRANK HAWKING. *J. Trop. Med. Hyg.*, 43 (1940), 204–207. (W. T. S.)

Fluorescene Microscope—Recognition of Mycobacterium Tuberculosis and Other Acid-Fast Bacteria by the. Acid fast bacilli, after treatment with certain fluorochrome dyes such as acridine yellow or auramine, used by the present authors, show, when exposed to ultraviolet rays, a golden fluorescence (secondary fluorescence) which renders them easily demonstrable under the mieroscope. There has been a wide difference of opinion as to the value of the method, compared to the usual Ziehl-Neelsen technique. One thousand specimens, mostly sputum, yielded 154 positives in direct film by the Ziehl-Neelsen method, using methylene blue as a counterstain, and a further 18 after concentration. All these specimens were positive by the fluorescence microscope after auramine, and also a further 62 specimens. The authors, however, consider the chief advantage of the method is the great saving of time—three to four minutes being sufficient for a complete examination. Saprophytic acid-fast bacilli showed the same fluorescence as tubercle bacilli, but when exposed to 4% HCl-alcohol, after auramine, smegma bacilli lost the capacity for fluorescence more rapidly than tubercle bacilli, and young tubercle bacilli from culture more rapidly than older bacilli. A powerful mercury vapor lamp is used with a filter to eliminate visible light. Lower magnifications are used than for ordinary microscopy and some advantage is obtained from the relatively larger amount of material seen in each field.—K. LUZ and B. MEDING. *Zentr. Bakt., Parasitenk. Infekt., I. Abt., Orig.*, 145 (1940), 500; through *Bull. Hyg.*, 15 (1940), 689. (T. C. G.)

Formamol—Use of, as Preservative in Galenical Preparations. For testing the antiseptic power of formamol, comparing it with hexamine, citric acid and formaldehyde, 1 cc. of a culture of *B. coli* (containing about four million bacteria) was added to 1% solutions of these substances, in sterile flasks, and the solutions allowed to stand at room temperature (18°) for a given time and then 0.1 cc. transferred to broth. The tube of broth was then incubated at 37° for forty-eight hours or more and then observed. No growth was obtained after five or six hours' action of formamol, after six hours' action of hexamine and ten to twelve hours' action of citric acid. With dilutions from 0.05% to 0.3% little bactericidal power was shown, except that the 0.3% formamol had an action after eight hours, as had the same strength of formaldehyde. To test the bacteriostatic power 10 cc. of broth was mixed with from 0.1 to 3 cc. of 1% solutions of the substances tested and 0.1 cc. of a suspension of *B. coli*, made with two loopfuls on an agar culture mixed with 10 cc. of physiological saline solution, was added, and the mixture incubated at 37°. The results showed that 0.5 cc. of formamol and of formaldehyde solutions prevented growth for forty-eight hours and 1 cc. prevented it for seventy-two hours. Hexamine and citric acid had no effect. Since a 1% solution of formamol only contains 0.523% of formaldehyde its antiseptic power is greater than that due to the formaldehyde it contains. Since it is effective in low concentrations, has a low toxicity and few incompatibilities, it is very suited for preserving pharmaceutical preparations.—G. TONI. *Il. Farm. ital.*, 7 (1939), 41; through *Quart. J. Pharm. Pharmacol.*, 12 (1939), 642. (S. W. G.)

Gram Stain—Simple Substitute for. Growth from a young culture is mixed on a slide with a drop of 3% aqueous solution of sodium hydroxide. Gram negative organisms become markedly viscous, while the positive show no change. This reaction takes place within 30 seconds. The author reports complete correlation between this method and ordinary gram staining with a range of 50–60 bacterial species. Another method is described depending on the observation that gram negative organisms in a drop of concentrated sulfuric acid are rendered clear and transparent. With this method the author also claims complete agreement with the results of staining.—E. RYU. *Kitasato Arch. Exp. Med.*, 17 (1940), 58; through *Bull. Hyg.*, 15 (1940), 509. (T. C. G.)

Hirudin—Coagulative Serum Prepared By Injecting, into Animals. Repeated injections of hirudin into rabbits makes their blood resistant to the ordinary anticoagulative effects of this substance. The serum of animals thus immunized when added to the blood from other animals, accelerates coagulation. The action of this "immune" serum on coagulation is much more powerful than the action of normal serum. Smaller quantities can therefore be used and troublesome secondary effects are correspondingly less likely.—O. ORSZAGH and J. ALFÖLDY. *Lancet*, 238 (1940), 28. (W. H. H.)

Infections of the Respiratory Tract—Effect of Irradiation of the Air in a Ward on the Incidence of. The failure of previous attempts to control the incidence and severity of upper respiratory tract infections among infants congregated in the wards of an institution led the observers to try the effect of the sterilization of the air in the ward by means of ultraviolet irradiation from mercury vapor lamps. A group of infants, from seven to sixteen months of age, were observed in a ward where the air was irradiated intermittently for half an hour at half-hourly intervals from 6:00 A.M. to 8.00 P.M. for a period of four and a half months from January to May 1938. A similar group of children was observed during the same period in a ward where the air was not irradiated. A definite decrease in the incidence and severity of upper respiratory tract infections was noted in the irradiated group as compared with the controls and a subsequent study confirmed this. Continuous irradiation of the air is suggested as a measure in prophylaxis which might still further reduce the incidence of such infections.—L. H. BARENBERG, D. GREENE and L. GREENSPAN. *Am. J. Dis. Child.*, 59 (1940), 1219; through *Bull. Hyg.*, 15 (1940), 659. (T. C. G.)

Measles—Use of a Phenol Extract of Placenta in the Prophylaxis of. The author made an extract of normal placenta with phenol and gave an injection of 0.5–1 cc. subcutaneously, of a 1% solution in saline, to children who have been exposed to the risk of measles. In support of its prophylactic value he quotes the following: (1) At Camigliatello Bianchi some cases of measles having occurred in the neighborhood on the 25th of August, three days later 67 children received inoculation. No local or general reaction followed. Only four of these developed the disease, two on September 2nd and two on the 3rd; and all were mild cases. (2) At Reggio Emilia 16 cases were notified in the last two weeks in August. Of the 74 children inoculated here, none developed the disease. (3) In Bellaria di Rimini a case was reported early in August. Twelve adolescents were immunized and none was attacked.—G. PETRAGNANI. *Bibliografia Med. Biol.*, 2 (1940), 3; through *Bull. Hyg.* 15 (1940), 413. (T. C. G.)

Nicotinic Acid Amide—Determination of, by means of the Proteus Test. Nicotinic acid amide is the only growth factor of *Proteus*. Near the limit of active dilutions the bacterial development is practically proportional to the concentration of growth factor in the medium. The following modified Fildes medium is used: ammonium sulfate 0.75 Gm. monopotassium phosphate 4.5 Gm., potassium chloride 0.5 Gm., magnesium sulfate 0.05 Gm., redistilled water 1000 cc., and sufficient 10% sodium hydroxide solution to give a p_H of 7.5. Growth of the bacteria is measured by means of the Meunier electrophotometer.—A. LWOFF and A. QUERIDO. *Compt. rend. soc. biol.*, 129 (1938), 1039–1043; through *Chimie & Industrie*, 42 (1939), 32. (A. P.-C.)

Ointments—Antisepticity Tests for. In this article methods for testing antiseptic ointments are compared and a modification of the F.D.A. Agar Cup-Plate method is described. This new technique uses a collapsible tube so as to control more readily the amount of ointment, by measuring the length of the ribbon employed.—L. GERSHENFELD and JORGE E. ZEPEDA. *Am. J. Pharm.*, 112 (1940), 93. (R. R. F.)

Pertussis—Effect of Hyperimmune Human Serum and Sulfapyridine on. The authors have tested the protective power of human antipertussis serum, made "hyperimmune" by active immunization of the doners, against intranasal injections of mice by *Hemophilus pertusis*. The serum, a reconstituted dried product, was given intraperitoneally at the time of infection and on the following two days. The degree of protection was inferred from the death rates, the amount of consolidation in the lungs, and the presence of living bacilli in the lungs and spleen. By all criteria the antisera conferred a statistically significant degree of protection on three weeks old mice. With six weeks old mice the effect of the serum was much less marked, though suggestive of protection. The administration of sulfapyridine in doses of 20 mg. on the day of infection and on three succeeding days did not affect the death rates in three or six weeks old mice. Combined treatment with drug and antiserum was no more effective than with serum alone in three weeks old mice, but in six weeks old mice the combination appeared to give better protection than that obtained with antiserum alone.—W. L. BRADFORD and M. WOLD. *Am. J. Dis. Child.*, 58 (1939), 1228; through *Bull. Hyg.*, 15 (1940), 386. (T. C. G.)

Pfeiffer Bacillus Meningitis Unsuccessfully Treated by Chemotherapy. Three cases of meningitis due to *H. influenzae* or to *H. para-influenzae* are described and all ended fatally despite the administration of sulfanilamide or of sulfapyridine. Death took place after fourteen days in all cases. These were pronounced focal signs in the terminal stages.—J. C. H. MACKENZIE, A. P. M. PAGE and E. M. WARD. *Lancet*, 238 (1940), 785. (W. H. H.)

Pine Oil—Value of, as an Antiseptic. As a rule, one part of pine oil and two parts of tar soap give the best antiseptic action with *Staphylococcus aureus*, *B. pyocyaneus* and *E. typhi* as test organisms, when tested by the Rideal-Walker method. The mixture produces a stable emulsion. When tested against *E. coli* its phenol coefficient was 0.27 as compared to 2.5–3.0 for lysol and 0.08 for lysoform. In a protein containing medium the phenol coefficients for the pine oil soap emulsion, for lysol and for lysoform were 0.39, 1.66 and 0.08, respectively. In order to kill in 5 minutes the concentration of pine oil in the soap emulsion must be 1:20. A 5% emulsion can be applied to the hands for 7 minutes without causing irritation. The skin of the rabbit was inflamed by the application of 0.5–5.0% emulsions. A 3% emulsion was not irritating to the mucous membrane of the mouth. There was no absorption through the skin of the dog, but in the rabbit toxic symptoms and death could result. In the rabbit 1.5 cc. per Kg. body weight caused an acute nephritis. Twenty-four references.—JAR LEBDUSKA and J. PIDRA. *Zentr. Bakt. Parasitenk., Infekt., I Abt., Orig.* 145 (1940), 261; through *Chem. Abstr.*, 34 (1940), 3879. (F. J. S.)

Pneumococcus Pneumonia—Treatment of. A Comparison of the Results Obtained with Specific Serum and with Sulfapyridine. Ninety-six cases of pneumococcus pneumonia treated with serum showed a mortality rate of 16.7%, as compared with a rate of 11% for 136 cases treated with sulfapyridine. Mortality rates were essentially the same for bacteremic cases in the two groups, but were definitely lower in the sulfapyridine group for patients over 40 years and for patients with two or more lobes involved.—H. F. DOWLING and T. J. ABERNETHY. *Am. J. Med. Sci.*, 199 (1940), 55–62. (B. H.)

Pyridine—Germicidal Mercury Derivatives of. The reaction between pyridine and mercuric acetate at elevated temperatures was investigated over a rather wide range of conditions. The mercuration of pyridine was effected at 155° C. to give yields of monosubstitution products which make the process commercially feasible. The presence of substantial quantities of water minimizes the production of polymercurated derivatives. For the first time a true pyridylmercuric compound has been tested germicidally. This is an extremely potent type of bactericidal agent of relatively low host toxicity. 3-Pyridylmercuric chloride in a dilution of 1 part in 2 million parts of water completely prevents the growth of *Staphylococcus aureus*. The mercury derivatives of pyridine are stable toward hydrolysis, and possess possible application as antibacterial agents in medicine and many commercial processes.—M. W. SWANEY, M. J. SKEETERS and R. N. SHREVE. *Ind. Eng. Chem.*, 32 (1940), 360–363. (E. G. V.)

Rabbit Serum—Use of, for Pneumococcic Pneumonia. One hundred and fifty-three patients comprising twenty-one different types of pneumococcic infection were treated with concentrated and refined rabbit serum. The typing was done by the Neufeld method on sputum, and blood cultures were done as routine. Lung puncture, sputum culture and mouse inoculation were employed only for difficulties with direct sputum identification. Sensitivity tests were also employed, ophthalmic tests being preferred to the intracutaneous. A single total undiluted dose was used to avoid chills. The first cc. was given in two minutes, then the entire re-

mainder at the rate of 1 cc. per minute. The serum may be combined with intravenous fluid if that is being given at the time. Results indicate the death rate between $^1/_3$ and $^1/_4$ of that of non-serum treated mortality. Four of the 15 deaths in the series were of bacteremic patients and four others occurred within 18 hours after admission to the hospital. It is concluded that concentrated and refined antipneumococcus rabbit serum is efficient as a therapeutic agent in type specific treatment of lobar pneumonia. Sensitivity to rabbit serum is rarely encountered.—ITALO F. VOLINI and ROBERT O. LEVITT. *J. Am. Med. Assoc.*, 113 (1939), 1314. (G. S. G.)

Schick Immunity. An investigation is described which showed that a representative group of elementary school children had gained a better Schick immunity following immunization than that obtained by a comparable group who had passed through an attack of diphtheria.—J. F. WARIN. *Brit. Med. J.*, 4137 (1940), 655. (W. H. H.)

Smallpox Vaccination—Study with Two Viruses for. The results obtained in this comparative study were as follows: 77.7% of 515 infants inoculated intradermally with culture virus (Rivers) gave "takes;" 10% of 128 infants inoculated cutaneously with culture virus (Rivers) gave takes; 92.7% of 313 infants inoculated intradermally with 1:100 dilution calf lymph gave takes. The two groups inoculated intradermally with culture virus and diluted calf lymph gave practically identical cutaneous reactions and invasion by virus as indicated by regional lymphadenopathy, but the calf lymph inoculations were followed by a shorter incubation period. In these groups there were no cases of bacterial infection (the calf lymph contained brilliant green) and the inoculations resulted in minimal cutaneous trauma. In the group vaccinated cutaneously with undiluted calf lymph over 10% of the takes were too severe with vesicles 20 mm. in diameter and large areolas.—H. H. DONALLY, M. M. NICHOLSON, W. S. ANDERSON and M. H. GROSVENOR. *Am. J. Dis. Child.*, 59 (1940), 322; through *Bull. Hyg.*, 15 (1940), 415. (T. C. G.)

Sodium Azid as an Inhibiting Substance for Gram Negative Bacteria. Sodium azid (NaN_3) in a concentration of 0.01% in blood agar inhibits the growth of *E. coli*, *E. typhi* and *Bact. proteus*. In this concentration it does inhibit the growth of *Streptococcus hemolyticus*, *fecalis* or *viridans*. Thus where it is desired to isolate streptococci from the feces for diagnostic purposes, the addition of sodium azid to the medium practically reverses the usual preponderance of gram negative organisms. Sodium azid may be added to the medium before sterilization since it apparently is not decomposed by temperatures up to 120° C.—M. L. SNYDER and H. C. LICHSTEIN. *J. Infect. Diseases*, 67 (1940), 113. (T. C. G.)

Sozoiodolic Acid Solution (1%)—Sterilization of. This solution killed *Micrococcus aureus* rapidly, but it was not effective against spores of soil bacteria. Despite the fact that some iodine is set free when this solution is heated for 2 hours at 80° C., such sterilization is recommended.—E. JENSEN. *Arch. Pharm. Chemi*, 47 (1940), 474. (C. S. L.)

Staphylococci—Effect of Azochloramide on Physiological Products of. Clinical observations on the successful use of azochloramide (*N,N'*-dichloroazodicarbonamidine) in cases of localized infections producing generalized toxic symptoms prompted an investigation of the effect of this disinfectant on bacterial toxins. A study was made of the effect of azochloramide on the hemotoxic, dermo-necrotizing and plasma-coagulating substances from staphylococci. *In vitro* titrations with rabbit erythrocytes were used to determine the effect on the hemotoxin. The skin necrotizing toxin was assayed by intradermal injections of the treated toxin into white rabbits. The effect on the plasma-coagulating substance was determined by *in vitro* tests with rabbit plasma. The results showed that incubation of staphylococcus filtrates with azochloramide at 37° C. for 6–8 hours greatly reduced their hemolytic and dermo-necrotizing activity. The inactivation of the plasma coagulating factor took place more slowly.—M. D. HEISE and W. A. STARIN. *J. Infect. Diseases*, 67 (1940), 70. (T. C. G.)

Staphylococci of Human Origin—Physiological and Serological Characteristics of. Two hundred and twenty strains of staphylococci of human origin were examined by various physiological and serological methods. In general the coagulase test was found to be the most useful single test for the identification of pathogenic strains. Hemolysis on blood agar, pigmentation of the colony or the fermentation of mannitol are not sufficiently reliable tests for the identification of pathogenic strains. A serological study of the strains indicated that the non-pathogenic strains isolated from the nose, throat or sputum usually belonged to serological types 1, 2 or 3; while the pathogenic strains belonged to other types. A determination of the serological type of a strain is useful in tracing the origin of an infection in many instances. In 22 cases of ostiomyelitis studied, the same serological type was isolated from the lesion as found in the nose or throat in 13 instances.—R. CHRISTIE and E. V. KEOGH. *J. Path. Bact.*, 51 (1940), 189. (T. C. G.)

Staphylococcus Alpha-Antitoxin—Stability of, at Different Temperatures. The following summary is given: (1) The loss of potency of staphylococcus *alpha*-antitoxin, when stored in sealed ampuls, is independent of the original potency of the antitoxin, of the protein content, of the processes involved during preparation and of the presence of phenolic preservative. (2) Stored at 35° the antitoxin loses potency at a rate of about 30% per annum during the first eighteen months. (3) Stored at room temperatures not exceeding 20° the rate of loss of potency is not greater than 10% per annum. (4) Stored at 4° the antitoxin is very stable; after three and a half years' storage at this temperature, the loss of potency was only 5%.—M. L. SMITH. *Quart. J. Pharm. Pharmacol.*, 12 (1939), 699–706. (S. W. G.)

Staphylococcus Enterotoxin—Kitten Test for. In cases of staphylococcus food poisoning it may be of importance to determine whether staphylococci isolated from the suspected foodstuff produce enterotoxin. Good yields of enterotoxin are obtained by growth on a soft agar medium with a nutrient base of salts and Difco proteose peptone. The filtrate to be tested for enterotoxin is first treated with dilute acid and boiling to destroy the alpha and beta toxins after which it is used to inoculate kittens intra-abdominally. Three animals, aged between 6 and 12 weeks, and weighing between 350-700 grams should be used. One animal receives 3 cc. and another 1 cc. of the filtrate warmed to 37° C. while the third receives 3 cc. of the uninoculated medium. In typical positive results symptoms begin with lassitude, weakness and unsteadiness occasionally interspersed with bouts of restlessness a few minutes after injection. Strong peristalic movements may be noted which culminate in from 15 minutes to one and a half hours, in the first series of attacks of retching and vomiting which may recur over a period of an hour or more. Diarrhea is often marked but the passage of a single small stool shortly after injection should be disregarded. Large amounts of an exceptionally powerful filtrate may

cause death. If an animal is to be used for several tests these should all be made within a 7–10 day period, the injections being spaced so as to permit complete recovery from the preceding dose. After any longer period some degree of active immunity may interfere with the results.—C. E. DOLMAN and R. J. WILSON. *Can. Pub. Health J.*, 31 (1940), 68; through *Bull. Hyg.*, 15 (1940), 443. (T. C. G.)

Streptococcal Infections—Chemotherapy in. Mice were injected with four strains of hemolytic streptococci and some hours later were given a single large dose of sulfanilamide, with or without a subeffective dose of homologous immune serum. Of 42 mice receiving the combined treatment 26 survived; of 42 mice receiving sulfanilamide alone 18 survived. When, instead of a single dose of sulfanilamide, repeated small doses of sulfanilamide (or of sulfapyridine) were given, with or without serum, the survival-rates were approximately the same in each group. Of 53 mice receiving the combined treatment 23 survived; of 53 mice receiving sulfanilamide (or sulfapyridine) alone 20 survived. An *in vitro* experiment is reported in which the addition of immune serum plus sulfanilamide to normal human blood conferred on it a considerable bactericidal power to hemolytic streptococci, whereas a similar small addition of each agent separately enabled the blood to exert only a slight bacteriostatic effect. In the absence of more conclusive evidence from mouse experiments the treatment of human streptococcal infections with serum plus a chemotherapeutic agent is not advocated.—L. COLEBROOK and W. R. MAXTED. *Lancet*, 238 (1940), 21. (W. H. H.)

Sulfamethylthiazol—Protective Effect of, on Experimental Salmonella Enteritidis Infection in Mice. Sulfamethylthiazole exerts a definite protective effect in mice which have been experimentally infected with a virulent strain of *Salmonella enteritidis*. The protective effect is manifested only by an increase in average survival time of medicated animals. Eventually all of the medicated animals succumb to the infection.—R. D. MUIR, VIRGINIA SHAMLEFFER and L. R. JONES. *Proc. Soc. Exptl. Biol. Med.*, 45 (1940), 31. (A. E. M.)

Sulfanilamide—Mode of Action of. Experiments were carried out using 10 mg. % of sulfanilamide in human, rabbit and mouse blood which had been heated to remove antibodies and leucocytes. The effect of temperature, carbon dioxide tension and antibodies on the action of sulfanilamide was also studied. All cultures were inoculated with a group A hemolytic streptococcus. The controversy concerning the mode of action of sulfanilamide apparently lies in the fact that it acts differently under different conditions. In human blood which is a poor medium the authors claim that sulfanilamide has a direct killing action. However, when streptococci are grown in a favorable medium then sulfanilamide only has a bacteriostatic action.—A. T. FULLER, L. COLEBROOK and W. R. MAXTED. *J. Path. Bact.*, 51 (1940), 105. (T. C. G.)

Sulfanilamide, Sulfapyridine and Sulfathiazole and Experimental Infections in Mice Due to Shigella Paradysenteriae Flexner. All mice survived when fed ad libitum a complete diet containing 1% of sulfathiazole for 2 or more days before and 7 days after injecting *Shigella paradysenteriae* Flexner. Seven of 18 mice survived when offered ad libitum 1% drug diet of sulfanilamide, sulfathiazole and sulfapyridine immediately after injecting the organisms. Fifty-seven of 72 mice survived when given four feedings by stomach tube of these three drugs in doses varying between 2 mg. and 0.1 mg. All of 72 mice survived when given 4 feedings of 2 mg. of either drug by stomach tube, regardless of whether the first dose of drug was administered 2, 3, 4 or 5 hours after the injection of the organisms. Nine out of 48 control mice survived.—MERLIN L. COOPER and HELEN M. KELLER. *Proc. Soc. Exptl. Biol. Med.*, 45 (1940), 111. (A. E. M.)

Sulfapyridine and Its Sodium Salt—Treatment of Severe Staphylococcus Infections with. Seven cases of severe infection with *Staphylococcus aureus* which satisfactorily responded to sulfapyridine or its sodium salt are described in detail. From a study of these cases it was concluded that the sodium salt of sulfapyridine may be safely and advantageously used where it is not possible to secure optimal blood concentrations of sulfapyridine by the oral route.—WALTER B. MARTIN and R. BRYAN GRINNAN. *Southern Med. J.*, 33 (1940), 1039–1044. (W. T. S.)

Sulfathiazole—Results of Treating Colon-Typhoid-Dysentery Organisms with. Various concentrations of sulfanilamide, sulfapyridine and sulfathiazole were prepared in test-tubes and inoculated with strains of *E. coli*, *E. typhi*, *S. paratyphosum A*. *Sh. paradysenteriae flexner*, *Staphylococcus aureus*, group C hemolytic streptococci and Type II pneumococci. After 1, 2, 3 and 4 hours incubation the population densities in the various tubes were determined by means of photron-reflectometric turbidity readings. All three of the sulfonamide drugs were found to be about equally effective against the pneumococcus and streptococcus strains used. Sulfathiazole and sulfapyridine were considerably more active than sulfanilamide on the strain of staphylococcus used. Sulfathiazole was considerably more active than either sulfanilamide or sulfapyridine on the colon-typhoid-dysentery strains employed.—R. L. LIBBY and A. L. JOYNER. *J. Infect. Diseases*, 67 (1940), 67. (T. C. G.)

Sulfonamides and Streptococcus Viridans. Four cases of subacute bacterial endocarditis are described, two of which were apparently influenced by treatment with sulfonamide compounds, while the other two were quite unaffected by such treatment. Simple, *in vitro*, tests are described in which it is shown that strains of *Strep. viridans* derived from these cases differ in their susceptibility to the three sulfonamide derivatives tried. The two strains isolated from cases which were clinically influenced by treatment were susceptible, whereas the strains isolated from the two cases which resisted treatment were also resistant to the drugs *in vitro*. It is suggested that the existence of resistant strains of *Strep. viridans* may be responsible for the failure of some cases to respond to sulfonamide therapy. Sulfapyridine is less toxic than 4:4′-diaminodiphenylsulfone, and its activity only slightly less marked. The use of shake cultures of the blood is recommended in following cases of subacute bacterial endocarditis.—R. H. A. SWAIN. *Brit. Med. J.*, 4139 (1940), 722. (W. H. H.)

Tetanus Toxoid—Anaphylaxis after Injection of. A case of anaphylaxis after the injection of tetanus toxoid is described. Allergic phenomena, though alarming, appear to be rare, and are due to some constituent of the medium in which tetanus toxoid is prepared, possibly the Witte peptone. Adrenaline, 1 in 1000, should always be readily available as a precautionary measure when tetanus toxoid is injected.—H. J. PARISH and C. L. OAKLEY. *Brit. Med. J.*, 4129 (1940), 294. (W. H. H.)

Tetanus Toxoid—Anaphylaxis Following Administration of. Two cases of anaphylactic shock following administration of a second dose of tetanus toxoid are described. The incidence of general and local reaction following the subcutaneous inoculation of 61,042 healthy individuals with tetanus toxoid, using two 1-cc. doses at a six-weeks interval, is reviewed. Anaphylactic reactions occurred in

0.003% of cases, less severe constitutional symptoms in 0.02% and local reactions in 1.06%. Though the incidence of general reaction after tetanus toxoid is rare it is advisable to be prepared to treat it expeditiously with adrenaline hydrochloride when it does occur.—H. E. WHITTINGHAM. *Brit. Med. J.*, 4129 (1940), 292. (W. H. H.)

Tubercle Bacilli—Comparative Value of Various Media for the Isolation of Bovine. It is generally believed that glycerol is a necessary ingredient in media for the isolation of tubercle bacilli. To test this belief, the author prepared four different types of media (coagulated egg and potato water; egg yolk agar; egg yolk agar with potato infusion; and egg yolk meat infusion agar). Each medium was divided in half and from three to four per cent glycerol was added to half of the batch and the other half did not receive any glycerol. These media were inoculated with material from ground up lymph nodes from cattle suspected of having tuberculosis. In every case where the bovine tubercle bacillus developed, growth was more rapid and profuse in the media not containing glycerol. Several strains of avian tubercle bacilli were found, but these grew equally well in the presence or absence of glycerol.—A. G. KARLSON. *J. Infect. Diseases*, 67 (1940), 1. (T. C. G.)

Tuberculin Protein—Methods of Preserving. The authors show that PPD can repeatedly be made with constant potency and that solutions of 1% in saline which contains 0.5% phenol, can be kept without loss of potency for at least five years, and that no loss of poteney occurs immediately after adding the phenol. Drying from the frozen state and in high vacuum (the lyophile and the cryochem processes) was found to be highly effective for preserving the PPD, but it was found that drying in the presence of saline causes a decrease in potency which does not occur when a buffered diluent is employed. This is a significant detail in keeping with previous reports that high dilutions of tuberculin are more stable in buffer solution than in saline. Preparations of PPD of varying potency can be obtained in various places and the explanation is not yet apparent but will be discussed in a later paper. The tests were carried out with full controls on both man and guinea pigs.—F. B. SEIBERT and E. H. DUFOUR. *Am. Rev. Tuber.*, 41 (1940), 471; through *Bull. Hyg.*, 15 (1940), 582. (T. C. G.)

Tuberculins—Stability of Dilute Purified. The skin reactivity of dilute purified tuberculin is preserved for at least 4 months at 20° and 6 months at 8° by the use of a buffer solution that is prepared as follows: To each liter of normal saline add 20 cc. of a stock buffer solution consisting of 62.5 gm. $Na_2HPO_4.12H_2O$ and 14.4 gm. $NaH_2PO_4.2H_2O$ in 500 cc. of water. The saline has p_H of 7.0 and is sterilized at 122° for 20 minutes; 5% phenol is finally added to effect a 0.5% concentration.—SAM C. WONG and GEORGE OUYANG. *Proc. Soc. Exptl. Biol. Med.*, 45 (1940), 83. (A. E. M.)

Typhoid Toxoid for Specific Prophylaxis of Typhoid Fever. A Vi strain of *Bact. typhosum* was grown for one week in meat infusion broth, the organisms removed by centrifugation and the supernatant, after Berkefeld filtration, was formalized (0.4%), and incubated for four weeks. This toxoid preparation was harmless to rabbits. An ordinary heated phenolsaline vaccine was made from the same strain, and a combined toxoid-vaccine also made by washing off organisms with toxoid. Groups of rabbits receiving three subcutaneous injections of these three vaccines all produced a high titer H and O agglutinins, the toxoid-vaccine group probably with the greatest consistency. No Vi antibodies were detectable. The rabbits in all groups withstood a lethal dose of toxin intravenously or of the living organisms intraperitoneally. An attempt to concentrate the toxoid by precipitation with acid alcohol was unsuccessful. The results were almost paralleled by those obtained by similar injections in human subjects, passive protective power of the sera being estimated in mice. The author concludes that toxoid-vaccine confers rather better protection than toxoid or vaccine alone, and anticipates better results when a satisfactory method of concentration of the toxoid is devised. The absence of Vi antibodies is considered unimportant as these are not usually detectable even in the sera of individuals recovering from typhoid infection.—H. YU. *J. Malaya Branch Brit. Med. Assoc.*, 3 (1940), 374; through *Bull. Hyg.*, 15 (1940), 547. (T. C. G.)

Vaccinia Virus—Studies on the Immunization of Rabbits with the Formalized. The effectiveness of formalized vaccinia virus as an immunizing agent was compared with that of living virus. Suspensions of elementary bodies were standardized to contain 1 mg. of elementary bodies per cc. Rabbits were immunized by giving three doses at weekly intervals of either untreated or formalized suspension. Their immunological response was investigated by complement fixation tests and virus neutralization tests on their sera and by tests for active immunity by the intradermal inoculation of tenfold serial dilutions of living virus suspension. Forty-six rabbits inoculated with formol vaccine gave immunological responses similar to those of 18 control rabbits inoculated with living virus, except that their sera gave lower complement fixation titers. To obtain this response, however, it was found necessary to give doses of vaccine of the order of milligrams of elementary bodies. Doses of the order of 0.1 mg. gave irregular results. The addition of 1% alum to the formol vaccine did not increase antibody response. The immunity peak occurred from the 3rd to 8th day after the last injection of formol vaccine and about the 10th day after injection with living virus. Active immunity persisted for about five weeks whereas complement fixation and virus neutralizing titers declined after about three weeks.—A. J. WEIL and L. S. GALL. *J. Immunol.*, 38 (1940), 1; through *Bull. Hyg.*, 15 (1940), 394. (T. C. G.)