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PHARMACEUTICAL ABSTRACTS

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CONTENTS

PHARMACY

MISCELLANEOUS (*Continued*)

Soap Powder—Detergent Value of. Soap nut (*Sapindus mukorossi*) contains 17.2% extractable saponin, other constituents being gum and resin. The detergent efficiency of soap nut was compared with that of a standard soap and of other detergents. The pericarp of the fruit was roasted for 3 to 4 hrs. at 110° to 130° and then ground to a 60-mesh powder. The *p*H value of the 2% solution of soap nut powder is 3.99. A comparative study of the relative surface and relative interfacial tensions of soap nut solution, a standard soap solution and the solution of some detergents such as Lissapol C and Lissapol T of various strengths was made, values for deflocculating and emulsifying power were determined and washing tests were also carried out. It appears from the results obtained that soap nut is as effective as soap, but the only drawback is that it gives a yellow tinge to the bleached cotton and woolen textiles, especially when it is prepared from roasted pericarp.—*Ind. & News Ed. J. Indian Chem. Soc.*, 4, No. 3 (1941), 199. (F. J. S.)

Sterilized Catgut Manufacture. The raw filaments are heated to 100° to 120° C. in the presence of dialkylene compounds in which both alkylene radicals are combined with oxygen, such as dioxane, ethylene or propylene oxides or dioxane-propylene oxide.—JANOS BUCHGRABER, assignor to JENÖ RAKONITZ. U. S. pat. 2,215,453, Sept. 24, 1940. (A. P.-C.)

Stiffening Bandages. Stiffening is effected by combining with bandages of any kind at least one polyvinyl compound which is insoluble in water but is satisfactorily soluble in organic solvents, and which is selected from the group consisting of the derivatives of polymerized vinyl alcohol and the polymerized vinyl derivatives of the aromatic hydrocarbons and adding at least one member selected from the groups of substances modifying the flexibility and the swelling power of the water-insoluble polymerized vinyl compounds and consisting of hydrophilic polymerized vinyl compounds, polymerized acrylic and methacrylic acid and derivatives of such acids and compounds of the class of rubber cellulose derivatives and softeners.—WILLY O. HERRMANN and BERND BRAUN, assignors to CHEMISCHE FORSCHUNGSGES. M. B. H. U. S. pat. 2,218,710, Oct. 22, 1940. (A. P.-C.)

Summer Preparations. A discussion of sun screen and sun tan products and insect repellents.—JOSEPH KALISH. *Drug Cosmetic Ind.*, 50 (1942), 30-31. (H. M. B.)

Sun Tan Products. A discussion of sunburn and its prevention.—L. STAMBOVSKY. *Am. Perfumer.*, 42 (1941), No. 4, 29-32. (G. W. F.)

Taeniacide for Poultry, Etc. An internal remedy for poultry and other creatures subject to worms contains an alkaloidal substance having nitrogen in quaternary form, such as nicotine, monoethiodide, together with areca nut.—ORLEY J. MAYFIELD and JACK P. HENRY, assignors to DR. SALSBURY'S LABS., U. S. pat. 2,245,530, June 10, 1941. (A. P.-C.)

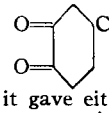
Tooth Paste. The properties and components of these products are discussed and three formulas are offered.—ANON. *Drug Cosmetic Ind.*, 50 (1942), 154-155, 157. (H. M. B.)

Used Prescription Bottles—Collection of, by the Druggist for Re-use. The present situation makes the consideration of the re-use of prescription bottles (in Switzerland) practical. The author discusses the need for a general re-use of bottles and medicinal containers. The hygienic aspects of the problem are obviously of tremendous importance so as to avoid the spread of infectious diseases by the containers. Various tests indicate that organisms may remain virulent from one to seven days when allowed to dry on glasses kept only in diffuse daylight. Various means of thoroughly cleansing and disinfecting the containers are described. The re-use of properly cleansed containers may well be considered. —J. THOMANN. *Schweiz. Apoth.-Ztg.*, 79 (1941), 53-58. (M. F. W. D.)

PHARMACOLOGY, TOXICOLOGY AND THERAPEUTICS

PHARMACOLOGY

Adonis Vernalis, N. F. VI—Utilization of Pigeons for the Biological Assay of. Since this is a potent cardiac drug, it should be assayed but its potency cannot be determined chemically. Several biological methods have been suggested. A report is made of the application of the pigeon emetic method and also some minor comparisons with the one-hour frog and cat methods. The minimum emetic dose and the minimum fatal dose of the tincture were determined. Results parallel those obtained by the one-hour frog and fatal cat methods. The pigeon method possesses a definite end-point, is simple, economical and reasonably accurate and deserves consideration for adoption into the National Formulary. Standardization of the birds to a maximum and minimum dose of ouabain prior to the assay of the drug is recommended. A rest period of one month should be allowed between successive injections.—W. M. BENSON and L. D. EDWARDS. *Jour. A. Ph. A.*, 31 (1942), 49. (Z. M. C.)

Adrenaline—Action of Alkali on the Chemical and Physiological Properties of. The reduction of arsenomolybdic acid by adrenaline is increased by the addition of an alkali. This provides a sensitive and specific test for adrenaline (Shaw. *Biochem. J.*, 32, 19). Adrenaline is probably oxidized to a red quinone which in the presence of an alkali reverts to the corresponding phenol called the leuco base. Both compounds have little or no physiological activity (Green and Richter. *Biochem. J.*, 31 (1937), 596). From chemical and physiological experiments the present author concludes that alkali-treated adrenaline is converted, at least temporarily, to a quinone which retains about 90% of the original activity of adrenaline. The formula suggested for the quinone is  , but attempts to isolate it gave either adrenaline or some physiologically inert material. The chemical and physiological methods employed are described in detail.—F. H. SHAW. *Australian J. Exptl. Biol. Med. Sci.*, 19 (1941), 151-155. (W. T. S.)

Alcohol Concentration—Relation of, to Intoxication. The presence of alcohol in the body over a period of several hours effects a change in the response of the nervous system to alcohol with the result that concentrations which originally produced drunkenness no longer are capable of showing this effect. Thus the effect of a given concentration of alcohol depends not only on its absolute value but also on how long a time it has been present in the body.—HENRY NEWMAN and MASON ABRAMSON. *Proc. Soc. Exptl. Biol. Med.*, 48 (1941), 509. (A. E. M.)

Aldonyl Anesthetic Compounds and Their Salts. By mixing solutions of equimolecular proportions of an anesthetic ester of an amino aromatic acid of the single benzene nucleus series and a lactone of an aldonic acid and subjecting the mixture to a steam pressure of 22 to 25 lbs., products of increased anesthetic potency are produced, such as diethylaminoethanol *p*-galactonylaminobenzoate, ethyl *p*-gluconylaminobenzoate, propyl *p*-gluconylaminobenzoate, propyl *p*-galactonylaminobenzoate, butyl *p*-

gluconylaminobenzoate and butyl *p*-galactonylaminobenzoate.—DAVID CURTIS. U. S. pat. 2,236,166, March 25, 1941. (A. P.-C.)

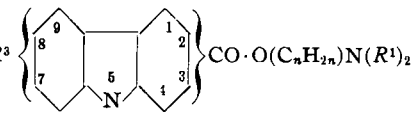
Aliphatic Amines. I. The literature on simple aliphatic amines has been surveyed in order to determine whether a correlation between structure and biological properties can be found. Much has been published but most of it pertains to chemical and physical properties and to methods of synthesis. Good comparative data are available only on the effect of amines on blood pressure on intravenous injection. The lower members are inactive, pressor activity increasing as the chain increases up to a certain point, then decreasing. As a class they seem to stimulate tone and movement of isolated intestinal and uterine tissues. All the amines studied are reported to affect the central nervous system in a manner analogous to ammonia. Amines are metabolized frequently with destruction of aliphatic radical. They have little effect on secretions and in small doses most of them do not affect body temperatures. The replacement of hydrogens of ammonia with alkyl radicals reduces acute toxicity; only a few studies have been reported on chronic toxicity. Details concerning some individual instances are given. There seems to be little characteristic difference between primary, secondary and tertiary amines. Differences are of degree, not type of action, but when the quaternary ammonium salts and bases are formed, the action becomes curare-like. Quaternary ammonium salts have high bacteriostatic and bactericidal properties. On the basis of "phenol coefficients" there is an increase in activityin the primary and secondary series with increasing chain length. Introduction of hydroxyl decreases toxicity. Introduction of second amino group in the chain reduces toxicity. Little has been reported on unsaturated amines but there is evidence that the double bond leads to increase in toxicity. In general, free amines seem to retard fermentation. Some generalizations have been made concerning effectiveness of amines against protozoa. A considerable number of effects are discussed and much more detail given for those mentioned. The report does not lend itself to abstracting. A considerable reference list is appended. —MELVIN F. W. DUNKER and WALTER H. HARTUNG. *Jour. A. Ph. A.*, 30 (1941), 619. (Z. M. C.)

Alkaloid—New Bioassay of Some. An isolated segment of the leech muscle is tested for its response to acetylcholine and the modification caused by various substances including alkaloids is observed. In case of stimulation the standard dose is that which produces a doubling of the effect, inhibition is aimed at a 50% decrease. Morphine, codeine, prostigmine and quinine are augmentors, strychnine and caffeine and others are inhibitors. Veratrine, nicotine and others are indifferent. The test may be modified by applying eserine in the test bath either before or after addition of the test substance. By these modifications some alkaloids are shifted from one group to another, *e. g.*, morphine and prostigmine change from stimulation to antagonistic action.—G. DASTUGUE. *Bull. sci. pharmacol.*, 48 (1941), 301–306. (S. W. G.)

Aloe and Podophyllum—Influence of, on the Flow of Hepatic Bile in the Dog. A study has been made of the choleretic properties of extract of aloe and of resin of podophyllum. The acute technique of Co Tui with certain modifications was used. Details of experimental work are reported and the results are discussed. It was found that intravenous injection of extract of aloe increases the flow of hepatic bile in an anesthetized dog and the duration of the action is relatively long. Likewise intravenous injection of resin of podophyllum increases the flow but the action reaches a maximum within 2 hrs. after the injection. Intravenous injection of rosin had no effect upon biliary flow under the same condition. There is evidence that the critical level of blood pressure necessary to maintenance of biliary flow is approximately 60 mm. of mercury for the dog. —LLOYD W. HAZLETON. *Jour. A. Ph. A.*, 31 (1942), 53. (Z. M. C.)

Anesthetic Bases and Intermediates. An anesthetic is produced by a process which involves treating a monoalkylaniline such as butyl- or propylaniline with ethylene oxide to obtain the corresponding alkyl-hydroxy-ethylaniline, nitrosating the latter, treating the nitrosated material with caustic alkali such as sodium hydroxide to form a monoalkylaminoethanol, combining the latter with a nitrobenzoyl halide such as *p*-nitrobenzoyl chloride to form a monoalkylaminoethyl nitrobenzoate, and reducing this compound to form a monoalkylaminoethyl aminobenzoate.—SAMUEL D. GOLDBERG, assignor to NOVOCOL CHEMICAL MFG. CO., INC. U. S. pat. 2,251,996, Aug. 12, 1941. (A. P.-C.)

Anesthetic Compounds. Various details are given of the production of dialkylaminoalkanol esters of 2-, 3- or 4-carbazolecarboxylic acids of the general formula:



where R is hydrogen, methyl, ethyl, propyl, butyl, amyl or benzyl, R^1 is methyl, ethyl, propyl, butyl, amyl or benzyl, n is an integer from 1 to 4 (the chain being either straight or branched), R^3 is hydrogen, amino, hydroxyl or OR^2 (R^2 being methyl, ethyl, propyl, butyl, amyl or benzyl), and may be attached to any carbon of the carbazole nucleus not already substituted by the carboxyl group. These esters may be used in the form of their free bases or of their salts with organic or inorganic acids or with complexes such as the borates.—ROBERT R. BURTNER, assignor to G. D. SEARLE & CO. U. S. pats. 2,250,004 to 2,250,006, July 22, 1941. (A. P.-C.)

Anesthetic Compounds—Local. Details are given of the production of β-2-piperidylethyl *o*-, *m*- and *p*-aminobenzoate hydrochlorides, which melt at 205° to 207° C., 176° to 180° C. and 243° to 245° C., respectively.—LEWIS A. WALTER and RUSSEL J. FOSBINDER, assignors to THE MALTBIE CHEMICAL CO. U. S. pat. 2,229,533, Jan. 21, 1941. (A. P.-C.)

Anesthetic Potency and Physical Properties—Relationship between. The insolubility of an anesthetic in water is a reliable criterion of its potency.—NELLIE M. CONE, SYLVAN E. FORMAN and JOHN C. KRANTZ, JR. *Proc. Soc. Exptl. Biol. Med.*, 48 (1941), 461. (A. E. M.)

Anesthetics and Intermediates—Local. A process employed for producing an anesthetic base involves transforming a nitrobenzoyl compound into an intermediate nitrobenzoyl compound with a lower alkylamino-substituted ethyl chain and reduction of the nitro group to form a mono lower alkylamino-substituted ethyl aminobenzoate. Details are given of the production of a number of such compounds.—SAMUEL D. GOLDBERG, assignor to NOVOCOL CHEMICAL MFG. CO. U. S. pat. 2,252,713, Aug. 19, 1941. (A. P.-C.)

Anthelmintics—Bioassay of. Anthelmintics may be assayed on earthworms or gold fish with reasonably consistent results. Different lots of material agreed within 10% in successive tests. The anthelmintic principle of brayera flowers is most soluble in benzol.—J. C. MUNCH, J. D. MCINTYRE and Z. J. DROZD. *Pharm. Arch.*, 12 (1941), 17. (A. C. DeD.)

Antipernicious Anemia Liver Concentrates—Assay of, by the Use of an Isolated Bone Marrow Preparation. The authors report their experiences with the method of Overbeek, Gaillard, de Jongh and Yam. This method depends on the measurement of the migration of cells from isolated living guinea-pig bone marrow which has been imbedded in a coagulant of plasma to which various concentrations of liver extract have been added. It is concluded that the method may be used for the determination of the clinical antipernicious anemia activity of liver preparations.—NELLO PACE and R. S. FISHER. *J. Pharmacol.*, 74 (1942), 256–261. (H. B. H.)

Arterial Hypertension—Medical Aspects of. A discussion.—E. V. ALLEN. *Bull. N. Y. Acad. Med.*, 17 (1941), 174. (A. C. DeD.)

Ascorbic Acid Compositions for Parenteral Administration. A small proportion of a substantially neutral, water-soluble hypophosphite is used as a stabilizer, in aqueous solutions, such as those of sodium, piperidine or monoethanolamine salts of ascorbic acid.—WALTER G. CHRISTIANSEN, assignor to E. R. SQUIBB & SONS. U. S. pat. 2,213,977, Sept. 10, 1940. (A. P.-C.)

Ascorbic Acid—Importance of, in Cortico-Suprarenal Functioning. The experiment showed that a high level of ascorbic acid is necessary for cortical hormone secretion and that an insufficiency retards by diminishing the functional capacity of the cortico-suprarenal. It is indispensable in assuring a normal discharge to the organism of the suprarenal secretion. This necessity is more imperative in affections of the suprarenal and in disease where the suprarenal function is impaired particularly by infections or grave intoxications.—A. GIROUD. *Presse Méd.*, 82–83 (1940), 841. (W. H. H.)

Barbiturates—Effect of Vitamin C Deficiency on Action of Different Types of. Vitamin C deficiency does not alter significantly the sleeping time of guinea pigs after administration of barbital or pentothal. The sleeping time with nembutal is considerably prolonged.—R. K. RICHARDS, K. KUETER and T. J. KLATT. *Proc. Soc. Exptl. Biol. Med.*, 48 (1941), 403. (A. E. M.)

Barbiturates—Studies on. XXV. The Effect of Vitamin C Level on Barbiturate Depression in Guinea Pigs. Certain reported findings suggested that there might be a correlation between vitamin C level and the degree of depression produced by barbiturates in animals depending on food for vitamin C supply. This possibility raised the question as to production of scorbutic states if repeated doses of barbiturates are administered to animals, or humans, when diet is barely sufficient in vitamin C. Experiments on guinea pigs were conducted with sodium pentobarbital and sodium phenobarbital and details of this work are reported. It was concluded that there is a definite correlation between the vitamin C level and response produced by the two barbiturates mentioned. The higher the vitamin level, the less the depression. Frequent administration did not cause a depletion of vitamin C from the tissues. Possibly, the most likely cause for the effect of vitamin C level on barbiturate depression is the altered general metabolism due to the lack of the vitamin rather than the effect produced in any great degree of direct conjugation.—MELVIN W. GREEN and RADE R. MUSELIN. *Jour. A. Ph. A.*, 30 (1941), 613. (Z. M. C.)

Belladonna and Stramonium—Comparison of Biological and Chemical Assays of. The principle of the method used is to compare the dilatation of the pupil of mice produced by the sample under assay with that produced by known doses of atropine sulfate. The drug is given subcutaneously, the pupils being measured under a dissecting microscope before injection and at 15-min. intervals after injection. No anesthetic is used. The result for each mouse is expressed by the ratio of the greatest diameter attained by the pupil to the diameter before injection. Each dose of atropine or unknown is given to six mice and the results averaged. Ten per cent tinctures were prepared from No. 60 powders of leaf dried at 50–55° in a forced air draught until friable. Drying took about 24 hrs. and the dried leaf was bright green. Dilutions of these tinctures were used for the assay. It was found that the figures obtained for a given dose of atropine vary considerably with different batches of mice, and in the course of time with a single batch of mice. It was impracticable, therefore, to determine the strength of an unknown tincture by comparing the effect of a single dose with a curve such as that given by Pulewka, and it was necessary to give two test doses of atropine sulfate simultaneously with each unknown. Doses of 1 μg. and 2 μg. were convenient. The pupil ratios obtained were plotted against the logarithm of the dose of atropine sulfate. From this curve the quantity of atropine corresponding to the pupillary dilatation produced by the unknown could be read off. The chemical assay of stramonium was carried out by Allport and Wilson's colorimetric method (*Ibid.*, 12 (1939), 399) based on Vitali's color test for solanaceous alkaloids. Essentially, the method consists in the chloroformic extraction of 1 Gm. of the drug, agitation of the percolate with dilute acetic acid and determination of the alkaloidal concentration in the separated aqueous layer by means of the color test. The intensity of the color produced is a function of the quantity of alkaloid present. A "Spekker" photoelectric absorptiometer was used for determining color intensity. Using solutions of weighed samples of atropine sulfate in chloroform, the relation between the quantity of atropine and the color produced by the test was determined under conditions identical with those employed in the assays. Scale readings on the instrument were related with the quantity of atropine (or of hyoscyamine) on a calibration curve, from which the alkaloidal content of the drug could be directly obtained. In every sample examined, both of belladonna and of stramonium, the biological method gave a higher assay than the chemical. The explanation given is that the calibrating substance used both for the biological and the chemical assays was a pure preparation of atropine sulfate. Atropine itself exists only as traces, if at all, in the species examined, the common alkaloid being *l*-hyoscyamine. The chemical method does not discriminate between *l*-hyoscyamine and atropine (*dl*-hyoscyamine), but the biological method does. The mydriatic effect of hyoscyamine is much greater than that of atropine.—G. M. WATSON, C. R. C. HEARD and W. O. JAMES. *Quart. J. Pharm. Pharmacol.*, 14 (1941), 253–258. (S. W. G.)

Bile Salts—Evaluation of the Cathartic Action of, Following Acute and Chronic Administration to Mice. The investigations covered in the present report deal with the effect of acute and chronic administration of bile salts to mice. Geiger's method for the bioassay of cathartic drugs in mice was used and details of the experimental work are reported. Mice proved satisfactory for evaluation of cathartics. They showed no tolerance to threshold doses; rather susceptibility increased. This increase might be due to a number of reasons which are discussed. The threshold cathartic dose was found to be approximately 40 mg. per mouse. Daily administration of subthreshold doses of bile salts for a period of 150 days induced no tolerance to cathartic action of threshold dose given 24 hrs. after the last daily administration. Daily administration seems to induce increased susceptibility to cathartic action.

Results of a single assay, using a 1:15 dilution of fluidextract of senna, indicate that its cathartic affect remains practically unchanged following daily administration of bile salts to mice. About 4 hrs. are required to develop maximum cathartic action of bile salts in mice. Bile salts induce catharsis more rapidly than senna under the conditions of the experiments.—LLOYD W. HAZLETON and FRANK FORTUNATO. *Jour. A. Ph. A.*, 31 (1942), 60. (Z. M. C.)

Biotin—Effect of, on Certain Physiological Functions. The following functions are not influenced by biotin when intravenously given to anesthetized cats at the rate of 0.25 mg. per Kg: blood pressure, heart rate and respiration. It does not affect the excised guinea-pig and rabbit uterus nor the rabbit intestine suspended in solutions up to 1:40,000; neither the frog heart perfused *in situ* with 200 γ of biotin.—JOHN L. SCHMIDT and MAURICE LANDY. *Proc. Soc. Exptl. Biol. Med.*, 49 (1942), 82. (A. E. M.)

Bismuth Subsalicylate Suspension Suitable for Intramuscular Injections. Finely divided bismuth subsalicylate is suspended in a fatty oil such as olive oil with a small proportion of water (suitably about 2%).—WALTER G. CHRISTENSEN and JOHN L. DEUBLE, assignors to E. R. SQUIBB & SONS. U. S. pat. 2,240,036, April 29, 1941. (A. P.-C.)

Blood Pressure Reducing Substances—Obtaining, from Urine. A process for the manufacture of preparations of non-dialyzable substances capable of depressing the blood pressure and containing a thermostable component in a high concentration, involves precipitating urine freed from phosphate by the use of copper acetate or other water-soluble salt of a heavy metal of the first, second or fourth group of the periodic classification, and then eluting the precipitate with a buffer solution having a *p*H of about 6 to 9, such as a solution of hydrogen diammonium phosphate.—MAX HARTMANN and EMIL SCHLITTLER, assignors to CIBA PHARMACEUTICAL PRODUCTS. U. S. pat. 2,253, 124, Aug. 19, 1941. (A. P.-C.)

Bovine Serum Albumin—Intravenous Administration of, as a Blood Substitute in Experimental Secondary Shock. Bovine serum, plasma and serum globulin are very toxic when given intravenously to dogs. The toxicity of the serum or plasma appears to be due to the contained globulin or related protein fractions. The intravenous administration of bovine serum albumin is not only harmless, but is effective in raising and maintaining the blood pressure of dogs subjected to severe hemorrhage. Since bovine blood is readily available, bovine serum albumin may prove useful as a substitute for blood.—HARRY A. DAVIS and A. G. EATON. *Proc. Soc. Exptl. Biol. Med.*, 49 (1942), 20. (A. E. M.)

Calcium Salt Solution Suitable for Intramuscular or Intravenous Injection—Stable Organic. Use is made of an aqueous solution containing in excess of 5% of calcium sodium lactate and also containing a stabilizer comprising at least one alkaline earth gluconate, an alkali gluconate such as that of sodium and gluconic or lactic acid, the solution having a *p*H of 6.2 to 6.6.—ERNST STURM and RICHARD FLEISCHMANN, assignors to FIRMA JOHANN A. WÜLFING. U. S. pat. 2,222,520, Nov. 19, 1940. (A. P.-C.)

Carbohydrate Metabolism in Thiamine Deficiency. The following summary is given: (1) Certain aspects of carbohydrate metabolism *in vivo* were studied in animals reduced to a subacute state of thiamine deficiency. (2) When compared to normal animals, there was observed a decrease in the rate of absorption of glucose from the intestine and the extent of hepatic glycogenesis as well as the rate of glycogenolysis. (3) This subacute state of thiamine deficiency did not alter the ability of the animal to convert orally administered *l*(+)-sodium lactate or sodium pyruvate into hepatic glycogen. (4) In the thiamine-deficient animals, glucose was superior as a ketolytic agent for the reduction of an endogenous ketonuria produced after high fat diets.—HAROLD A. HARPER. *J. Biol. Chem.*, 142 (1942,) 239. (F. J. S.)

Chloral Clearance in the Blood as a Means of Measuring Hepatic Efficiency. Doses of chloral hydrate ranging from 70 to 200 mg./Kg. were given to healthy dogs and then their blood colorimetrically analyzed for free chloral to determine chloral clearance. The free chloral concentration of the blood reached a peak about 45 to 60 min. after administration, and this coincided with maximum somnolence. The animals were given repeated hepatotoxic doses of CCl_4 and then again subjected to the above treatment. The CCl_4 dosing was stopped and the rate of recovery of the damaged organ gaged periodically by observing the chloral clearance in the blood. In recent and old liver injury a significant increase in the free chloral in the blood is noted which indicates that this may be used as a measure of the detoxicating efficiency of the liver.—K. GHOSE and B. MUKERJII. *Indian J. Med. Research*, 29 (1941), 639–645. (W. T. S.)

Chlorophyll Pigments—Accumulation of, in Visceral Organs and Their Elimination. Chlorin-e-rhodin-g was very slowly eliminated from the tissues of rabbits after intravenous injection. The major portion of that deposited in the spleen and bone marrow after a month of administration was still present in phagocytic cells 3 months later. Somewhat greater elimination occurred from the liver. The deposit in the hematopoietic organs had no evident effect on their function.—HOWARD J. HENDERSON and ESMOND R. LONG. *Proc. Soc. Exptl. Biol. Med.*, 48 (1941), 438. (A. E. M.)

Choline-Deficient Rats—Biochemical Defect in. The choline content of rats with symptoms of "choline deficiency" was not reduced but was slightly greater than normal. Hemorrhagic kidneys contained somewhat more choline than normal kidneys. No sex difference was observed in the choline content of young rats. Moreover, choline synthesis appeared to proceed normally during the critical period when deficiency symptoms develop. It is concluded that symptoms of "choline deficiency" are due to the lack of methyl-containing essential other than choline itself. The choline content of rats remained essentially normal on diets low in "labile methyl," diets low in fat or diets containing sodium selenite. Young rats on a diet low in methionine declined in weight but nevertheless developed kidney hemorrhage which could be prevented by choline. Rats grew to maturity and reproduced on a synthetic diet free of choline.—H. P. JACOBI and C. A. BAUMANN. *J. Biol. Chem.*, 142 (1942), 65. (F. J. S.)

Cinnamic Acid Derivatives with Local Anesthetic Properties. By the reaction of acyl halides with amino alcohols or diamines, esters or amides are formed, which possess local anesthetic properties. Details are given of the preparation of a number of such compounds.—WM. A. LOTT, assignor to E. R. SQUIBB & SONS. U. S. pat. 2,251,287, Aug. 5, 1941. (A. P.-C.)

Congo Red—Effect of, on Plasma Prothrombin. The level of plasma prothrombin of mice can be lowered by the addition of mineral oil to the diet. The diminished level of plasma prothrombin can be raised significantly by Congo red and restored to normal by the parenteral administration of 2-methyl-1,4-naphthoquinone. The hemostatic action of Congo red may be explained in some cases, at least in part, by its vitamin K-like action in raising the

plasma prothrombin level.—W. A. BARNES. *Proc. Soc. Exptl. Biol. Med.*, 49 (1942), 15. (A. E.M.)

Cyclohexylhalophenols Suitable for Use in Antiseptic Solutions. Details are given of the production of 4-cyclohexyl-2-bromophenol, which boils at 130° to 132° under a pressure of 3 mm., and general mention is made of various other compounds which may be similarly formed and which are cyclohexylhalophenols which may be further substituted in the benzene nucleus by a second halogen atom.—LINDLEY E. MILLS, assignor to DOW CHEMICAL CO. U. S. pat. 2,221,809, Nov. 19, 1940. (A. P.-C.)

Cysteine and Cystine—Utilization of, by Rat Liver with the Production of Hydrogen Sulfide. The production of hydrogen sulfide from cysteine and from cystine by the liver of the rat and certain other species has been described. Pyruvic acid and ammonia have been demonstrated to be other principal products of the reaction on both substrates. Elementary sulfur has been shown to be formed from cystine and to a small extent from cysteine. A method of determining small amounts of sulfur has been described. Some properties of the enzyme system involved have been studied and the possible importance of the reactions has been discussed.—C. V. SMYTHE. *J. Biol. Chem.*, 142 (1942), 387. (F. J. S.)

Delvinal Sodium—Effect of, on Respiratory Metabolism. Delvinal is 5-ethyl-5-(1-methyl-1-butenyl)-barbiturate of Na. Doses of 30 to 45 mg. decrease the oxygen consumption of Rhesus monkeys. Surgical anesthesia obtained by doses of 40 and 45 mg. per Kg. lasted for 3 to 5 hrs.—STUART A. PEOPLES and EMMETT B. CARMICHAEL. *Proc. Soc. Exptl. Biol. Med.*, 48 (1941), 381. (A. E. M.)

4:4′-Diamidino Stilbene—Distribution of, in Trypanosomes and Mice as Shown by Fluorescence. The distribution of the trypanocidal 4:4′-diamidino stilbene in living trypanosomes and organs of mice has been studied by fluorescent measurements under ultraviolet light. The fluorescence of this drug, which is due to its stilbene portion, is, however, difficult to distinguish from the fluorescence of Locke's solution. The trypanosomes were observed in a thin blood film taken from the tail of the test animal and the organs were observed by decapitating the mice, opening the abdomens and photographing the displayed organs in water. These were compared with controls. The technique and optical equipment are described in detail. The drug is deposited in the blepharoplast and in the granules in the cytoplasm of the anterior portion of the trypanosome. In mice it collects in the kidney, liver and possibly in the small intestines and skin. Other substances (berberine, palmatine, neoarsphenamine, etc.) were also examined for fluorescence. Palmatine has especial power to produce fluorescence in the pancreas. Plates are shown.—F. HAWKING and J. SMILES. *Am. Trop. Med. Paras.*, 35 (1941), 45–52. (W. T. S.)

Digitalis—Alterations in the Electrocardiographic Features Brought About by. Controversy exists concerning the influence of digitalis on certain electrocardiographic features, especially the T-wave. Studies on the isolated frog's heart perfused with digitalis, and also on the hearts of anesthesized rabbits, dogs and cats, infused with 1:20 dilution of digitalis tincture, show that there is a depression in the S-T interval, followed later by an infarct type of Q-R-S complex. The T-wave did not become inverted, but tended to become more erect and pointed.—S. A. RAHMAN. *Indian J. Med. Research*, 29 (1941), 659–663. (W. T. S.)

Digitalis-Like Principles of Calotropis Compared with Other Cardiac Substances. Physiologic potency of various digitalis principles was established on frogs and cats, and the results were analyzed statistically. It was found that the lethal dose of the various principles in cats were more precise when based on the size of the heart than on the whole body. However, due to the good correlation between heart rate and body weight the relative potencies determined by both procedures agreed closely. The relative potencies of the three digitalis-like principles (in anhydrous form) of calotropis in both cats and frogs, as compared with ouabain, were as follows: ouabain 144 in frogs, 121 in cats; calotropin 100, 100; calotoxin 76, 92; and uscharin 42, 69.—K. K. CHEN, C. I. BLISS and E. BROWN ROBBINS. *J. Pharmacol.*, 74 (1942), 223–234. (H. B. H.)

Estradiol and Its Esters—Absorption of, from Subcutaneously Implanted Tablets in the Guinea Pig. The average degree of absorption of implanted estrogen tablets in the guinea pig is similar to that in the rat. Free estradiol is about 3 times as fast absorbed as the 17-caprylate. Dipropionate is faster absorbed than the free estradiol.—ALEXANDER LIPSCHUTZ and LUIS VARGAS, JR. *Proc. Soc. Exptl. Biol. Med.*, 48 (1941), 464. (A. E. M.)

Estrogen Crystals—Prolongation of Estrus by Injection of Suspensions of. The duration of estrus in castrated rats and mice is prolonged if the estrogen is administered as a suspension in either water or oil as compared with solutions. This method offers a convenient way to produce prolonged effects with free estrogens without resorting to surgical implantations.—R. K. RICHARDS, H. C. SPRUTH and M. K. RUSSELL. *Proc. Soc. Exptl. Biol. Med.*, 48 (1941), 400. (A. E. M.)

Estrogens—Conjunctive Tumorigenesis Elicited by Different Artificial. Uterine and extrauterine fibroids can be induced in guinea pigs by prolonged treatment with hexestrol. Like stilbestrol, hexestrol is more tumorigenetic than the free natural follicular hormones. Its tumorigenetic power is greater than that of stilbestrol.—ALEXANDER LIPSCHUTZ, LUIS VARGAS, JR., ENRIQUE EGANA and SILVIO BRUZZONE. *Proc. Soc. Exptl. Biol. Med.*, 48 (1941), 467. (A. E. M.)

Estrogens—Excretion of, in the Bile and Urine After the Administration of Estrone. The excretion of estrogens in the bile and urine, respectively, has been determined after the injection of estrone into female dogs. The biliary excretion ranged from 1.3% to 8.0% of the injected estrone and the urinary excretion was between 6.4% and 13.5%. The minimum total excretion was 11.5% and the maximum was 17.2%. In five determinations on bile extracts, the non-ketonic fraction constituted practically 100% of the total estrogen present, whereas, in three determinations on urine extracts, only from 61.8% to 80.9% of the total was non-ketonic. The biliary non-ketones were found to include an active substance insoluble in 0.3 *M* sodium carbonate as well as one soluble in this reagent.—BERNARD B. LONGWELL and FRANCES S. MCKEE. *J. Biol. Chem.*, 142 (1942), 757. (F. J. S.)

Estrone and Stilbestrol on the Response of Rabbits' Uteri to Ergonovine—Effect of. In assaying oxytocic drugs on isolated uteri of guinea pigs and rabbits, many are found unsuited for quantitative estimations. It appeared that possibly if immature female rabbits were treated with estrone or stilbestrol their uteri might be more irritable and so more responsive to ergonovine. So the experiment was carried out on a considerable number of immature rabbits. Injected subcutaneously with divided doses of estrone or stilbestrol it was found that a very high percentage of uteri when isolated were suitable for ergonovine assays. Optimal total dose of estrone is about 12γ per animal and that of stil-

bestrol 9γ. This procedure is economical and perhaps more precise.—HARRY J. WICK and CLARENCE E. POWELL. *Jour. A. Ph. A.*, 31 (1942), 46. (Z. M. C.)

Heparin—Liberation of, by Trypsin. The intravenous injection of trypsin in doses of 1 to 2 mg. per Kg. in dogs, or 3 to 5 mg. per Kg. in rabbits produces a varying degree of incoagulability in the blood. As the addition of similar concentrations of trypsin to blood *in vitro* does not produce this incoagulability, the latter appears to be an indirect effect. The addition of suitable amounts of protamine restores the coagulability to normal, indicating that the coagulation defect is due to heparin, presumably liberated *in vivo* from various tissues such as liver.—M. ROCHA, E. SILVA and CARL A. DRAGSTEDT. *Proc. Soc. Exptl. Biol. Med.*, 48 (1941), 152. (A. E. M.)

Hexobarbitone—Rectal, Soluble. The only untoward effect the authors have observed has been restlessness in a few patients. This has not been severe and has been easily controlled by the attendant nurse. It rarely occurs if an opiate has been included in the premedication. In only two cases has undue respiratory and circulatory depression been seen in patients premedicated with morphine; these were given an unnecessarily deep ether narcosis following a full dose (*e. g.*, 0.2 Gm. per lb. body weight) of rectal hexobarbitone. Since the authors have gained more experience in dosage they have not seen this complication. The above patients responded to intravenous coramine and inflation with oxygen. The length of the period of postoperative unconsciousness might be a disadvantage in certain cases, as when fluid therapy by mouth is indicated as soon as possible after operation—*e. g.*, partial thyroidectomy, etc. The contraindications are those which apply to basal anesthesia in general. More than 250 patients undergoing various surgical procedures have been given rectal hexobarbitone as a basal anesthetic followed by various forms of supplementary anesthesia. The authors' experience suggests that the method is a satisfactory and easy way of producing basal narcosis.—F. K. BOSTON and N. R. JAMES. *Brit. Med. J.*, 4174 (1941), 5. (W. H. H.)

Hypertensin—Inhibitory Action of Amine-Oxidase and Tyrosinase upon the Vasoconstrictor Effect of. The vasoconstrictor substance (Hypertensin) obtained by the interaction of renin and hypertensinogen is destroyed by the enzyme action of amine-oxidase (extract of *Sepia officinalis* liver) or tyrosinase (extract of *Psalliota campestris* liver).—H. CROXATTO and R. CROXATTO. *Proc. Soc. Exptl. Biol. Med.*, 48 (1941), 392. (A. E. M.)

Ibogaine and Cocaine—Dissimilarity of Physiological Action of. The author has shown that, like cocaine, ibogaine suppresses, more or less completely, the hypertensive effects of carotid occlusion and augments the rise in pressure produced by the injection of adrenaline. Tainter and Chang have stated that cocaine acts in a contrary manner upon the hypertension produced by tyramine and that produced by adrenaline, diminishing the former and augmenting the latter. The author found that contrary to cocaine, the crystalline alkaloid of iboga clearly augments the hypertensive action of tyramine and at the same time reënforces the renal vasoconstriction effects. Augmenting at the same time the hypertensive action of tyramine and adrenaline, ibogaine shows a physiological action which differs from that of cocaine.—RAYMOND-HAMET. *Acad. Sci.*, Sept. 30, 1940; through *Presse Méd.*, 91-92 (1940), 939. (W. H. H.)

Iodine—Fixation of, by Thyroids of Rats Given Diets Deficient in Iodine. The hyperplastic thyroids of rats given an iodine-deficient diet acquire an increased ability to fix iodine. The thyroid and hypophyseal changes in these animals indicate an excessive release of the thyrotropic factor from the hypophysis.—C. P. LEBLOND and W. MANN. *Proc. Soc. Exptl. Biol. Méd.*, 49 (1942), 102. (A. E. M.)

Malonic Acid Derivatives—Hypnotic. Malonic acid derivatives of the general formula

$$\underbrace{CH_2\cdot(CH_2)_n\cdot CH:CX\cdot CHC(R)}(COZ)_2$$

(where n represents 1 or 2, R represents alkyl or alkenyl, X represents halogen, and the Z's represent halogen, hydroxy, amino or alkoxy) may be prepared by treating a sodiomalonic acid ester with a 1,2-dihalo-Δ^2-cycloalkene having 5 or 6 carbon atoms in the ring. Details are given of the production and properties of a number of such compounds.—WALTER G. CHRISTIANSEN, assignor to E. R. SQUIBB & SONS. U. S. pat. 2,228,256, Jan. 14, 1941. (A. P.-C.)

Morphine-Atropine Antagonism on Colon Motility in the Dog. Four trained appendicostomized dogs were used as experimental subjects. Dogs weighed from 19 to 36 Kg. Colonic motility was studied by means of the balloon method. Morphine sulfate in doses of from 16 to 48 mg. subcutaneously injected increased the tone and the propulsive and non-propulsive motility of the colon. The previous injection of one mg. of atropine antagonized the propulsive action of 16 mg. of morphine but had practically no effect on the tone and non-propulsive activity. The propulsive and non-propulsive activity produced by 4 mg. of atropine were both antagonized by one mg. of atropine. One mg. of atropine was found to depress the spontaneous motility of the colon from one or to several hours.—HARRY F. ALDER and A. C. IVY. *J. Pharmacol.*, 70 (1940), 454. (H. B. H.)

Morphine—Effect of, on Labor. Morphine administered as an analgesic in labor appears not to have an effect on the fetus directly but rather on the labor mechanism.—FRANKLIN F. SNYDER and KHA TI LIM. *Proc. Soc. Exptl. Biol. Med.*, 48 (1941), 199. (A. E. M.)

Morpholino and Some Other Compounds—Preliminary Antispasmodic Tests of a Series of. Thirty-two morpholino and a dozen other compounds have been studied for several years in order to select a limited number for a more thorough investigation. They were tested pharmacologically. Relative antispasmodic action was determined by suspending excised intestinal strips from guinea pigs or rabbits in warm oxygenated Locke-Ringer Solution and exposing them alternately to definite concentrations of the unknowns and of papaverine hydrochloride or diphenylacetyl-diethyl-aminoethanol hydrochloride used as controls. Relative toxicity was determined upon white mice intraperitoneally. One morpholine compound, dimethyl-4-morpholine propyl diphenylacetate was found to be the most promising of the 32 experimental morpholine preparations. Several others were found to be as good as papaverine. Dilantin showed a definite but relatively weak antispasmodic action.—L. W. ROWE. *Jour. A. Ph. A.*, 31 (1942), 57. (Z. M. C.)

Organic Nitrates—Contribution to the Mechanism of Action of. The authors hydrolyzed isomannide dinitrate, erythritol tetranitrate, glyceryl trinitrate and mannitol hexanitrate. After such treatment, all of these substances lost their depressor effect on blood pressure except isomannide dinitrate. It is concluded that the action of certain organic nitrates is not dependent upon their hydrolysis and nitrite formation, but that the effect is due to the intact molecule.—JOHN C. KRANTZ, JR., C. JELLEFF CARR, SYLVAN E. FORMAN and NELLIE CONE. *J. Pharmacol.*, 70 (1940), 323. (H. B. H.)

Pantothenic Acid—Studies of Effect of, on Achromotrichia. Two thousand black and piebald rats maintained on a B complex-free diet supplemented with thiamine, riboflavin, nicotinic acid, pyridoxine and choline developed graying of the fur within three to seven weeks simultaneously with retardation in growth and the appearance of a scant coarse fur, inflammation of the nose, "blood-caked" whiskers and adrenal hemorrhages. The addition of calcium pantothenate prevented the development of the achromotrichia together with the other deficiency lesions, and restored within four to six weeks the black pigmentation of the fur in the rats which had become gray on the basal diet. The efficiency of liver and rice bran in preventing or curing achromotrichia parallels their content of pantothenic acid. Black rats maintained on a B complex-free diet which is supplemented with thiamine, riboflavin, nicotinic acid, pyridoxine, choline and pantothenic acid have been raised through three generations.—K. UNNA, G. V. RICHARDS and W. L. SAMPSON. *J. Nutrition*, 22 (1941), 553; through *Abbott Abstract Service*, (1942), No. 1065. (F. J. S.)

Pantothenic Acid—Studies on the Urinary Excretion of. Summary: (1) The 2-hr. excretion of riboflavin and pantothenic acid during diuresis in two dogs with bladder fistula averaged 7.5γ of pantothenic acid and 9.2γ of riboflavin. (2) After an oral dose of 1 mg. of calcium pantothenate per Kg. of body weight no significant fraction of the dose was excreted in 2 hrs. When the dose was increased to 4 mg. per Kg., however, a distinct rise in the urinary pantothenic acid was observed with a peak at 60 to 100 min. and with a 2-hr. excretion of 0.9% to 5.0%. (3) When 1 mg. of calcium pantothenate per Kg. was injected intravenously, 22% to 31% of the dose was found in the urine with a peak in the excretion in 40 min. After 4 mg. per Kg. intravenously 41% to 57% was excreted in the urine with a peak within 20 min. (4) The blood level of pantothenic acid rose markedly after the intravenous administration of 4 mg. per Kg. but rapidly returned to normal in 2 hrs. (5) No effect of the administration of calcium pantothenate on the blood or urine levels of riboflavin was observed. Similarly, after administration of 4 mg. of sodium riboflavinate per Kg. intravenously, the pantothenic acid content of the blood and urine showed no significant changes.—ROBERT H. SILBER and KLAUS UNNA. *J. Biol. Chem.*, 142 (1942), 623. (F. J. S.)

Physiologically Active Substances—Preventing Decomposition of Solutions of, Such as the Hydrochloride of *p*-Aminobenzoate of Diethylaminoethanol When Sterilizing Them by Heating. The *p*H of the solution is regulated by adding about 0.05% or more of urea, hydrochloric acid and potassium dihydrogen phosphate, or the like (various examples with details being given).—JOSEF EISENBRAND and HERMANN PICHER, assignors to WINTHROP CHEMICAL CO. U. S. pat. 2,250,474, July 29, 1941. (A. P.-C.)

Potassium Salts—Effect of, on Cardiac Irregularities. The administration of potassium salts caused the disappearance of extrasystoles in one case in which they were associated with insulin hypoglycemia and in four in which they were spontaneous. In three of these five cases the level of potassium in the serum was estimated and the disappearance of the extrasystoles was associated with a rise in potassium level. Attempts to produce extrasystoles by the administration of ephedrine were not successful. In contrast with insulin and adrenaline, ephedrine does not produce consistently a fall in the serum potassium. Potassium salts have been reported to produce cardiac irregularities in experimental animals and to increase the incidence of extrasystoles paroxysmal tachycardia in some patients, so that their action in suppressing extrasystoles cannot be utilized with confidence in the treatment of patients until further work has clarified the mechanism of these effects.—L. I. M. CASTLEDEN. *Brit. Med. J.*, 4174 (1941), 7. (W. H. H.)

Rauwolfia Serpentina Alkaloids—Pharmacological Action of. An alcoholic extract of *Rauwolfia serpentina* is used as a circulatory depressant. Three alkaloids, namely, ajmaline, serpentine and serpentinine have been isolated from the drug. Only ajmaline has been investigated pharmacologically. The present report is of a comparative study of all three. Intraperitoneal injection in mice showed serpentine to be the most toxic with the other two of equal toxicity. With large doses of the alkaloids the animals died from respiratory failure preceded by signs of motor excitability. Ajmaline produced death quickly. The mortality figures for the crude extract differ from those of the total alkaloids. Crude extracts produced fall in arterial pressure, apparently by peripheral action. Ajmaline raised blood pressure in decerebrate animals, but lowered the pressure in spinal preparations. Serpentine and serpentinine produced a fall in arterial pressure, both in decerebrate and in spinal preparations. Crude extracts gave sedative effects, as did serpentinine.—RAM NATH CHOPRA and M. CHAKRAVARTI. *Indian J. Med. Research*, 29 (1941), 763–768. (W. T. S.)

Salicylates and Carvone—Effect of, on the Ascorbic Acid Content of Animal Tissues. Working with rats, it is found that sodium salicylate and carvone increased the elimination of ascorbic acid. It appears that the salicylate increases ascorbic acid loss by increasing the amount liberated from tissues into blood whereas carvone tends to increase the formation of this vitamin.—NORTON D. RITZ, LEO T. SAMUELS and GERTRUDE ADDISS. *J. Pharmacol.*, 70 (1940), 362. (H. B. H.)

Salines for Intravenous Use—"Pyrogen" Found in. Undesirable reactions (chills, fever, collapse) often follow parenteral medication. These may be caused by the presence of a "pyrogen" in the distilled water used in the preparation. This "pyrogen" develops rapidly, is soluble, filtrable, thermostable and has been shown to be split protein products of certain bacteria. The "pyrogen" may be kept out mechanically or removed with charcoal. Permanganate titer of water is no index of its "pyrogen" content. Twelve samples of saline purchased at random were found to contain viable bacteria and oxidizable matter.—C. L. PASRICHA, K. S. MALIK and B. M. PAUL. *Indian Med. Gaz.*, 76 (1941), 216–218. (W. T. S.)

Scopolamine—Effect of, on Fetus. There is no evidence of fetal injury in cats following administration of large doses of scopolamine to the maternal animal.—ROBERT DREISBACH and FRANKLIN F. SNYDER. *Proc. Soc. Exptl. Biol. Med.*, 48 (1941), 197. (A. E. M.)

Serum Albumin—Transfusion of Bovine, into Human Beings. The intravenous administration of bovine serum albumin to 13 human beings has given encouraging results, inasmuch as no reactions were observed. The blood pressure was maintained at, or rose above, the initial level. Vasodepression was not observed.—HARRY A. DAVIS, A. G. EATON and J. WILLIAMSON. *Proc. Soc. Exptl. Biol. Med.*, 49 (1942), 96. (A. E. M.)

Smoking—Acute Effects of, on Respiration and Circulation. Smoking one cigarette according to a standardized exaggerated technique, lowers the alveolar pressure of carbon dioxide for 10 to 30 min. It increases the blood pressure and heart rate for 30 to 60 min. in both smokers and relative non-smokers. Nicotine-free cigarettes cause much less effect.—ROLLAND J. MAIN. *Proc. Soc. Exptl. Biol. Med.*, 48 (1941), 484. (A. E. M.)

Sodium Evipal Hypnosis—Comparative Potentiating Effects of Certain Therapeutic Agents on. The effect of sodium evipal, administered intravenously, may be markedly potentiated by acetylsalicylic acid, aminopyrine, demerol (D-140) and morphine. The synergistic effectiveness is in the order named.—O. W. BARLOW, D. R. CLIMENKO and E. HOMBURGER. *Proc. Soc. Exptl. Biol. Med.*, 49 (1942), 11. (A. E. M.)

Sodium Fumarate—Toxicity and Laxative Action of. Rabbits and cats were used in the experiments, 22 animals being used. Blood examinations were made for non-protein nitrogen and creatinine retention. Phenolsulfonephthalein excretion tests were made. Urine was examined for albumin, casts, reducing substances and red blood cells. After autopsy microscopic sections of liver and kidney were made. All these results are tabulated and discussed. The effects were compared with those of sodium chloride and sodium tartrate. Likewise, 26 human subjects were used and a description of these cases is summarized. The susceptibility of rabbits to sodium fumarate administered intravenously varies a great deal. A single dose may be toxic and fatal; repeated injections of the same quantity may have no ill effect. The studies of kidneys and urine showed that the nephropathic action of sodium fumarate is negligible by comparison with that of tartrate. The laxative effect of sodium fumarate was studied in a group of 26 patients suffering from constipation. Oral doses of 5 Gm. to 30 Gm. produced satisfactory effects within an average of 10 hrs. after administration. Examination of urine and blood N. P. N. failed to show any signs of renal damage.—OSCAR BODANSKY, HARRY GOLD and WILLIAM ZAHM. *Jour. A. Ph. A.*, 31 (1942), 1. (Z. M. C.)

Soya Lecithin—Experimental Atherosclerosis and. The feeding of soya lecithin to rabbits receiving cholesterol restricts hypercholerolemia and diminishes the incidence of experimental arteriosclerosis. —HOMER D. KESTEN and RUTH SILBOWITZ. *Proc. Soc. Exptl. Biol. Med.*, 49 (1942), 71. (A. E. M.)

Sulfapyridine and Quinine—Therapeutic Incompatibility between. The administration of quinine to rats increased the absorption of sulfapyridine from the gastrointestinal tract and the excretion by the way of the kidney. This increase in sulfapyridine excretion is due to an increase of the acetylated form; the quantity of free sulfapyridine is actually decreased. Atabrine did not have this effect on sulfapyridine absorption or elimination.—BEN KING HARNED and VERSA V. COLE. *J. Pharmacol.*, 74 (1942), 42–51. (H. B. H.)

Sulfapyridine—Effect of, on Roundworms in a Child with Pneumonia. In view of the fact that a two-year-old patient passed a cigarette tin full of roundworms after dosing with sulfapyridine, H. recommends that the anthelmintic possibilities of these drugs be investigated.—H. L. HALA. *Indian Med. Gaz.*, 76 (1941), 482. (W. T. S.)

Sympathomimetic Amines—Fate of Certain, in the Body. Experiments were done on humans and on dogs. The following amines were administered and their urinary elimination studied: (1) β-phenyl-*n*-propylamine, (2) γ-phenyl-*n*-propylamine, (3) α-methyl-γ-phenylpropylamine, (4) α-phenyl-*n*-propylamine, (5) β-methyl-β-phenylisopropylamine, (6) α-isopropyl-β-phenylethylamine, (7) *o*-methyl-β-phenylisopropylamine. With the exception of 1 and 2 these amines all escaped destruction by the liver, hence are effective by oral administration and are eliminated by way of the kidney. Also, 1 and 2 are deaminated by the liver, hence they are not effective by oral administration and are not found in the urine. The essential chemical difference between these two groups of compounds is that 1 and 2 have an amino group on the terminal carbon atom, whereas, the remainder do not. Not only the liver but the wall of the intestinal tract may play a part in the deaminating process. No decomposition occurs in the digestive tract.—KARL H. BEYER and VERNON W. LEE. *J. Pharmacol.*, 74 (1942), 155–162. (H. B. H.)

Syntropan—Action of, on the Uterus. Experimenting with the excised uterus of the non-pregnant and pregnant rabbit, non-pregnant cat and non-pregnant human and uterus *in situ* of the non-pregnant and pregnant anesthetized and non-pregnant unanesthetized rabbit, the authors found syntropan had a stimulating effect. This action is due apparently to an effect directly on the muscle.—BYRON B. CLARK and E. B. S. SHIRES, JR. *J. Pharmacol.*, 70 (1940), 370. (H. B. H.)

Taste and Smell. A chemical approach.—L. E. JONES. *Chemistry and Industry*, 60 (1941), 248–250. (E. G. V.)

Therapeutic Substances—Chemistry of. VIII. Sedatives and Hypnotics. A review.—F. PRESCOTT. *Chemist and Druggist*, 136 (1941), 148. (A. C. DeD.)

Thiol Compounds—Effect of, on the Activity of Lactogenic Hormone. Treatment of the lactogenic hormone with more than a 200-fold amount of cysteine causes true inactivation. Less cysteine (40-fold) may lead to an inactivation of hormone solutions of sufficient concentration by causing the transformation of the hormone into a very insoluble state. If this insoluble protein is redissolved under conditions which prevent autoxidation, it is fully as active as the untreated hormone. If formation of a precipitate is avoided by performing the cysteine treatment in very dilute protein solutions or in 6 to 8 *M* urea, no inactivation occurs. Thioglycolic acid is approximately 50 times more effective than cysteine in causing true inactivation of lactogenic hormone, although similar amounts of the two thiols are needed to cause precipitation of the protein.—HEINZ FRAENKEL-CONRAT, MIRIAM E. SIMPSON and HERBERT M. EVANS. *J. Biol. Chem.*, 142 (1942), 107. (F. J. S.)

Thrombin—Effect on Coagulation Time of Oral Administration of Rabbit. Following the ingestion of large amounts of rabbit thrombin the coagulation time of the circulating blood of dogs, normal human subjects and patients with hemophilia is reduced for a short time.—HENRY J. TAGNON and F. H. L. TAYLOR. *Proc. Soc. Exptl. Biol. Med.*, 49 (1942), 32. (A. E. M.)

Turmeric Oil—Pharmacological Action of. True turmeric (*C. longa*) is extensively cultivated in India where it is used, among other things, as a condiment, a dye, a blood purifier and a tonic. Curcumin, the yellow dye, has a molecular formula of $C_{10}H_{10}O_3$ or $C_{16}H_{16}O_4$, a m. p. 172° C., is salified by alkalies, converted by acids to resocyanine, reduced to an oil by zinc, oxidized to oxalic or terphthalic acid and yields protocatechuic acid when fused with potash. Turmeric oil is obtained from the rhizomes and can be fractionated into phellandrene, an alcohol (turmerol) and a semisolid residue. Turmerol has a composition of $C_{19}H_{28}O$, a density of 0.901 and is described as sweet-smelling. The action of the oil was tested on *Parameciun caudatum*, bacteria, the skin, the gastro-intestinal tract, the cardiovascular system and the respiratory system of the human. It is feebly antiseptic, inhibits gastric secretion, is carminative and antispasmodic. Its action on the circulation and respiration is not marked.—RAM NATH CHOPRA, J. C. GUPTA and G. S. CHOPRA. *Indian J. Med. Research*, 29 (1941), 769–772. (W. T. S.)

Tyrothricin—Hemolytic Effect of. The crude extract from Dubos organisms, called tryothricin, is markedly hemolytic for human and rabbit's

erythrocytes. The hemolytic activity resides primarily in the tyrocindin fraction although gramicidin is partially responsible for this action also. The addition of glucose to saline solution causes a slight inhibition of the hemolytic action.—CHARLES H. RAMMELKAMP and LOUIS WEINSTEIN. *Proc. Soc. Exptl. Biol. Med.*, 48 (1941), 211. (A. E. M.)

Thyroxin—Ethers of. General claim is made to thyroxin ethers as being new products, obtainable by the reaction of thyroxin or a thyroxin ester with an etherifying agent such as diazomethane, details of the production of thyroxin methyl ether (m. p. about 228° to 229° C.) being given. The products are of high physiological activity and suitable for peroral administration.—ARNOLD LOESER, assignor to SCHERING CORP. U. S. pat. 2,252,230, Aug. 12, 1941. (A. P.-C.)

Urea and Thiourea Derivatives. General mention is made of the production (by various specified methods) of products possessing hypnotic properties and suitable for use as general or local anesthetics, having the general formula $R'''C_6H_4N(R)C(A)NR'R''$, in which R represents an alkyl or alkenyl radical having less than 8 carbon atoms, A represents oxygen or sulfur, R' represents hydrogen or an alkyl or alkenyl radical of less than 8 carbon atoms and R''' represents an alkyl radical having more than one and less than 8 carbon atoms or a plurality of alkyl radicals each having less than 8 carbon atoms. Details are given of the production of a number of such compounds.—JOHANNES S. BUCKS and EDWIN J. DE BEER. U. S. pat. 2,254,136, Aug. 26, 1941. (A. P.-C.)

Vaginal Smears—A Single Differential Stain for. A single differential stain is described which might encourage the wider use of the vaginal smear as a diagnostic index and guide for the therapeutic use of the reproductive hormones. The stain provides a sharp differentiation between cornified and noncornified elements. The former stain a brilliant orange-red, the latter take on a green stain, deeper in the young cells and paler in those more advanced. The composition of the stain is as follows: ethyl alcohol (50%), 100 cc.; Biebrich Scarlet (water sol.). 0.5 Gm.; Orange G, 0.25 Gm.; Fast Green FCF, 0.075 Gm.; phosphotungstic acid C.P., 0.5 Gm.; phosphomolybdic acid C.P., 0.5 Gm.; glacial acetic acid, 1.0 cc. All the dyes are domestic and can be obtained from the National Aniline and Chemical Company. The slide is prepared and fixed, allowed to stain with the single stain for one minute, after which it is carried through 70%, 95% and absolute alcohol, dipped ten times in each solution.—E. SHORR. *Science*, 94 (1941), 545; through *Abbott Abstract Service*, (1942), No. 1052. (F. J. S.)

Viburnum—Studies on. XI. Bioassay Methods. By a modification of the U. S. P. XI method for the assay of Liquor Pituitarii Posterioris, the uterine sedative action of *Viburnum prunifolium* has been evaluated against U. S. P. Standard Powdered Posterior Pituitary. By a modification of the U. S. P. XI method for the assay of Liquor Epinephrinae Hydrochloridi, the depressor action of *Viburnum prunifolium* has been quantitatively evaluated against Epinephrine U. S. P. Reference Standard. Tentative standards have been developed for the potency of authenticated *Viburnum prunifolium*. Standards for other species will be proposed in later reports.—J. C. MUNCH and H. J. PRATT. *Pharm. Arch.*, 12 (1941), 88. (A. C. DeD.)

Vitamin A as a Clue to Histogenesis of Tumors. Fluorescence microscopy is a new histologic technique which visualizes by special illumination structures not seen by routine microscopic methods. Vitamin A is easily recognized by its fluorescence. In the normal state, vitamin A has been localized by fluorescence microscopy in certain structures such as the Kupffer and epithelial cells of the liver, the fasicular and glomerular layer of the adrenal cortex, the gonads, fat tissue and the lactating breast. The authors studied the presence and distribution of vitamin A fluorescence in 219 tumors and found it present only in certain groups. After careful study of the evidence, the authors concluded that vitamin A fluorescence is seen in tumors which originate from a parent tissue normally containing vitamin A, and therefore, the method is a help in determining the origin of some tumors. In the ovary, the distribution of vitamin A undergoes characteristic changes with the menstrual cycle and disappears during the climacteric.—H. POPPER and A. B. RAGINS. *Arch. Path.*, 32 (1941), 258; through *Abbott Abstract Service*, (1942), No. 1051. (F. J. S.)

Vitamin B Complex—Relation of, to Fatty Liver. A study was made in rats of the various known components of the vitamin B complex in relation to the metabolism of fat. The administration of either pyridoxine or calcium pantothenate in addition to thiamine exerted no effect on the concentration of neutral fat and cholesterol in the liver over that produced by thiamine alone. Calcium pantothenate increased the neutral fat and the cholesterol concentration in the liver, while riboflavin and pyridoxin increased neutral fat but had no effect on liver cholesterol. Nicotinic acid increased cholesterol concentration strikingly, and definitely elevated body neutral fat. Choline reduced the deposition of cholesterol in the liver, but in the nicotinic acid-fed animal the liver cholesterol values remained high in spite of choline administration. Although nicotinic acid may be a factor in the production of choline-resistant fatty livers, it is also considered to be possible that all the factors of vitamin B complex influence the final result.—J. C. FORBES. *J. Nutrition*, 22 (1941), 350; through *Abbott Abstract Service*, (1942), No. 1048. (F. J. S.)

Vitamin B_6 and Pantothenic Acid—Requirement of, in Hyperthyroidism. By a series of experiments on rats, the authors have demonstrated that there are increased requirements for pantothenic acid and vitamin B_6 during the state of hyperthyroidism. In previous experiments it was found that rats fed a normal diet, plus sufficient thyroid gland to produce a loss of weight, would stop losing weight after vitamin B_1 was injected, but would not regain their lost weight until a supplement rich in the vitamin B_2 complex was added to their diet. It was found in these experiments that the injections of both pyridoxine and calcium pantothenate enabled the rats to regain their lost weight without further increasing the food intake. Pyridoxine injections caused a more rapid gain in weight than did calcium pantothenate alone, and it was not necessary to supplement the diet with riboflavin. From these observations the authors conclude that requirements for three B vitamins—thiamine, pyridoxine and pantothenic acid—are increased during experimental hyperthyroidism.—V. A. DRILL and R. OVERMAN. *Am. J. Physiol.*, 135 (1942), 474; through *Abbott Abstract Service*, (1942), No. 1077. (F. J. S.)

Vitamin B_6—Metabolism of. Evidence has been presented to show that both man and the dog excrete large amounts of ingested vitamin B_6 in the urine in the form of a conjugate, whereas the rat does not. This conjugate involves the 3-hydroxyl group of the vitamin and is probably a glucuronide or an etheral sulfate. Concentrations of this material can be quantitatively measured by the indophenol reaction following hydrolysis. A second excretion product has also been detected in the urine of man and the dog, and to a lesser extent, in the rat urine. This product is conjugated by man and the dog, but not by the rat. The structure of this metabolite has been considered and it has been

shown that the 4-hydroxymethyl group of the vitamin is altered to produce this compound. The metabolite can be quantitatively measured by the indophenol reaction carried out with a borate buffer. The excretion of unchanged vitamin B_6 in the dog has been confirmed by isolation. The possible occurrence of other urinary excretion products has been considered.—JOHN V. SCUDI, RUDOLF P. BUHS and DOROTHY B. HOOD. *J. Biol. Chem.*, 142 (1942), 323. (F. J. S.)

Vitamin E—Animal Requirement of, for Reproduction. In experiments on rats which had been fed vitamin E-low diets, the feeding of 2.5 mg. of α-tocopherol at the beginning of gestation permitted the birth of young in at least 85%. The litters were of normal size, there were at least 85% of living young, 60% of which survived the first ten days of lactation. Of the surviving rats, however, 90% developed muscular dystrophy at the end of lactation; the feeding of 0.5 mg. of α-tocopherol on the fifteenth to the seventeenth day of lactation prevented muscular dystrophy in at least 85% of the young. There were no essential differences in the sterility- and muscular dystrophy-preventing properties between natural and synthetic α-tocopherol, but in the rat experiments it was essential to feed the substance to the animals, as it was not active when administered parenterally.—M. GOETTSCH and A. M. PAPPENHEIMER. *J. Nutrition*, 22 (1941), 463; through *Abbott Abstract Service*, (1942), No. 1057. (F. J. S.)

Xylylmethylcarbinamine. Compounds suitable for producing therapeutic effects by their action on the central and sympathetic nervous systems, and which may be used in the form of the bases of their various salts, include α-, *o*-, *-m-* and *-p*-xylylmethyl carbinamines, and the corresponding *N*-methyl compounds, and may be produced from corresponding ketones by a process involving the Leuckart synthesis.—FRED P. NABENHAUER, assignor to SMITH, KLINE & FRENCH LABS. U. S. pat. 2,246,529, June 24, 1941. (A. P.-C.)

TOXICOLOGY

Actinomycin—Studies on the Toxicity of. Actinomycin is a pure substance isolated from soil microörganisms, having a bacteriostatic and bactericidal effect particularly on gram-positive microorganisms. Doses of 1 mg. per Kg. are lethal to rats, mice and rabbits by intravenous, intraperitoneal, subcutaneous and oral administration. The authors further describe the chronic toxicity of actinomycin for rats and mice. In these latter studies the most marked pathological change was a marked shrinkage in the size of the spleen. The compound tends to diminish liver and kidney function. No significant changes are produced on blood pressure or respiration. After intravenous injection actinomycin rapidly disappears from the blood and is found in various quantities in all organs of the body. Rabbits excrete from 10% to 20% in the urine 5 or 6 hrs. after injection.—HARRY J. ROBINSON and SELMAN A. WAKSMAN. *J. Pharmacol.*, 74 (1942), 25–32. (H. B. H.)

Aliphatic Amines II. The *n*-Heptylamines, Preparation and Toxicity. The four primary 1-amines from *n*-heptane were prepared and studies made to see whether the position of the amino group in the chain had any effect on toxicity of the compound. They were administered intraperitoneally in neutral solution to white mice. The 1- and 4-aminoheptanes were least toxic, the 2- and 3-aminoheptanes were approximately equal but more toxic than the 1-aminoheptane. Details of experiments are reported.—MELVIN F. W. DUNKER, WALTER H. HARTUNG and C. W. CHAPMAN. *Jour. A. Ph. A.*, 30 (1941), 623. (Z. M. C.)

Boric Acid Poisoning. Through a mistake a young male received 28 Gm. of boric acid in a hypodermoclysis in place of saline. Fluids were given intravenously and orally, and $MgSO_4$ compresses applied to thighs to prevent sloughing. Total erythema developed and eruptions lasted several days followed by desquamation resembling scarlatina. Dry cough, sore throat, abdominal pain and nausea occurred with the latter lasting about one week. Morphine gave but partial relief, and nausea was controlled by enemata and nasal suction drainage. For four days low grade temperatures existed, and on the second day non-protein nitrogen rose to 52 mg. % and blood chloride fell 370 mg. %. Acute urinary retention developed which was relieved by an indwelling catheter. The pulse was strong and systolic blood pressure normal, but diastolic pressure reached a low of 50 on the second night. The patient was at first restless and anxious, but became confused on second night. Pyelonephritis developed, but patient recovered.—HARRY A. PEYTON and DANIEL GREEN. *Southern Med. J.*, 34 (1941), 1286–1288. (W. T. S.)

Bromide Therapy and Intoxication. The commonest indication for bromide therapy is given, and problems regarding dosage are discussed. The importance of concurrent psychological help is stressed. Notes on bromide intoxication and its treatment are given, and a case of almost fatal intoxication is reported. Another case of severe intoxication is described in which hyperglycemia and glycosuria were produced.—F. PILKINGTON. *Brit. Med. J.*, 4174 (1941), 10. (W. H. H.)

Carbon Monoxide Poisoning—Accidental Acute. Accidental carbon monoxide poisoning may become common from the rupture of gas mains by bombs, from exposure to explosive gases and from fires in inefficiently ventilated shelters. A case is described in a young man who warmed his shelter with a bucket of hot coals. The symptoms are increasing headache, dimness of vision, hyperpnea, confusion, giddiness and vomiting. Collapse often follows removal to the open air. Withdrawn blood may look pink but the patient is pale. Owing to the difficulty of detecting small amounts of CO in the blood the history is of prime importance in diagnosis. Complications and sequelae include mental impairment, tachycardia, electrocardiographic changes, glycosuria and pulmonary lobular collapse often leading to bronchopneumonia. Treatment consists of removal from the poisoned atmosphere, administration of oxygen and carbon dioxide and warmth. Complications may require lengthy aftercare.—J. McMICHAEL and H. D. RUSKIN. *Lancet*, 239 (1940), 677. (W. H. H.)

Carcinogenics and Medicine. As early as 1913, it was shown that certain tars produce cancer in experimental animals. Since then various contributions have extended knowledge of the chemical nature of these substances. The most important carcinogenic chemicals that may exist in coal tar are 1:2-benzpyrene, 1:2:5:6-dibenzanthracene and possibly methyl cholanthrene. Test methods to demonstrate carcinogenic activity are described. There are no outstanding agents used therapeutically which might contain carcinogenics other than tars and oil of tar. Wood tars have not been found in the class. In instances where tar is to be used for therapeutic purposes, especially coal tar, test should be made for presence of carcinogenics before recommending them. Available tests include chemical, biological and physical. These are discussed. The most promising is that of the absorption spectra as used by Lorenz and Shear.—SEWARD E. OWEN. *Jour. A. Ph. A.*, 40 (1941), 252. (Z. M. C.)

Cobra Venom—Separation of a Neurotoxin from, and Its Reaction Toward Reducing Agents. The

pigeon unit of a venom is defined as that amount which intramuscularly is just sufficient to kill a 300–310 Gm. pigeon. Neurotoxins have higher pigeon units than the venoms from which they were isolated. One neurotoxin assayed 17 times stronger. The present paper deals with attempts to isolate the neurotoxin from a highly toxic venom of the cobra (*Naja tripudiana*). The neurotoxin was separated by fractionally precipitating impurities with Na_2SO_3, adsorption of the neurotoxin on tungstic acid, followed by its elution and then fractional precipitation by $(NH_4)_2SO_4$ from the eluted solution. The pigeon unit was 0.0061 mg. Several reducing agents namely: $NaHSO_3$, Zn+HCl, ascorbic acid and cysteine *in vitro* destroyed the neurotoxin to a marked degree.—B. N. GHOSH, S. S. DE and D. K. CHAUDHURI. *Indian J. Med. Research*, 29 (1941), 367–373. (W. T. S.)

Disodium Tartrate and Fumarate, and Magnesium Fumarate—Comparative Toxicity and Cathartic Efficiency of, for the Mouse and Rabbit. Because of the increasing shortage of tartrate and the availability of fumarate, a study has been made of relative cathartic efficiency and the extent of parallelism in toxicity. Experimental details are reported and results shown in several tabulations. Disodium fumarate on a mole for mole basis was found to be 20% less toxic for the mouse and rabbit than disodium tartrate. Neither had a toxicity for the rabbit much greater than sodium chloride. Measured by the warming time test, both had an effect on function, which led to fatality on continued feeding in amounts within the range producing the function-impairing effect. Consecutive daily feedings at levels below this range had no significant effect. Disodium tartrate at levels within the critical range showed evidence of a delayed toxic effect not observed with chloride or fumarate. Disodium fumarate showed cathartic effect in smaller doses than required by disodium tartrate. Magnesium fumarate was a more efficient cathartic for the mouse than disodium fumarate but it had a greater toxicity.—ARTHUR LOCKE, R. B. LOCKE, H. SCHLESINGER and H. CARR. *Jour. A. Ph. A.*, 31 (1942), 12. (Z. M. C.)

Estrogenic Substance and a Poisonous Substance—Preliminary Report on the Presence of an, in the Storage Root of Butea Superba Roxb. The following summary is given: (1) The root of *Butea superba* Roxb. contains an estrogenic substance as well as a poison which is probably one of the glucosides. (2) The poisonous substance dissolves freely in water but sparingly in 95% ethyl alcohol. (3) The alcoholic extract from about 0.002 Gm. of the dried powder is the minimum dose which will cause estrus in mice. (4) The aqueous extract from about 0.015 Gm. of the dried powder is the minimum amount which will cause estrus, and at this dilution the poison dissolved produces no visible effect on the mice.—SUP VATNA. *Thai Science Bull.*, (October, 1939), No. 4, 3. (F. J. S.)

Fluorine Poisoning—Influence of Calcium on. Previous studies have shown that mottled teeth result when drinking water contains 1 to 2 parts per million of fluorine or more. Fluorine poisoning causes bone lesions in man and animals. Diet factors, as C-avitaminosis and calcium balance, contribute to fluorine intoxication. The last factor is considered in the present study. Twenty-four growing albino rats were divided into two test and two control groups to be fed diets and NaF calculated to determine the influence of calcium intake on fluorine poisoning. The study lasted 336 days when the surviving animals were killed. Rats receiving adequate calcium and 4 to 6 mg. NaF daily showed typical symptoms of fluorine poisoning, but average survival time was 207 days. The same amount of NaF with Ca-free diets produced an average survival time of 11 days. Foods rich in calcium also mitigate fluorine poisoning. Fluorine poisoning is not entirely due to formation of insoluble CaF since the mitigating amount of Ca is 30 times the stoichiometric relation. The dose level of NaF used is higher than the human intake in areas of endemic fluorosis.—S. RANGANATHAN. *Indian J. Med. Research*, 29 (1941), 693–697. (W. T. S.)

Formaldehyde—Rapid Death after Ingestion of. The authors performed an autopsy upon a 27-year-old subject who had succumbed three-quarters of an hr. after the accidental ingestion of 150 cc. of a 40% solution of formaldehyde. There were lesions of considerable edema of the laryngeal and pharyngeal-esophageal mucous membranes, which were responsible for the sudden death and small hemorrhagic areas in the viscera. There also was found a fixation of the tissues such as pharynx, esophagus and stomach.—RATHERY, PIEDELIEVRE and DELARUE. *Soc. de Med. Leg. de France*, Oct. 14, 1940; through *Presse méd.*, 93–94 (1940), 962. (W. H. H.)

Gramicidin, Tyrocidine and Tyrothricin—Some Toxicological and Pharmacological Properties of. Tyrothricin is a crude mixture obtained from soil microörganisms possessing marked bacteriostatic and bactericidal properties, particularly against gram-positive microörganisms. This material consists of approximately 85% tyrocidine and 15% gramicidin. The compounds appear to be practically non-toxic when given orally to mice and rats. By intraperitoneal and intravenous injection all proved to be definitely toxic, the least being tyrocidine. The parenteral administration of 2 mg. of gramicidin or tyrothricin per Kg. to dogs caused death in from 2 to 8 days. During this period a moderately severe anemia developed. Lethal doses caused respiratory stoppage somewhat prior to cardiac cessation. Concentrations of gramicidin up to 0.5% were not irritating to the conjunctiva of rabbits on local instillation. Application of the dry material produced marked conjunctival irritation and long lasting opaqueness of the cornea. On injection subcutaneously or intradermally all preparations remained unabsorbed for a long period of time.—HARRY H. ROBINSON and HANS MOLITER. *J. Pharmacol.*, 74 (1942), 75–82. (H. B. H.)

Manganese Intoxication from Well Water. A review (65 references) of the toxicology of heavy metals and an account of mass manganese intoxication caused by drinking water from a well contaminated by old dry cells. Symptoms began with lethargy and edema. Of the sixteen cases, 2 died, and 1 committed suicide from melancholia. Six plates.—R. KAWAMURA, H. IKUTA, S. FUKUZUMI and R. YAMADA. *Kitasato Arch. Exp. Med.*, 18 (1941), 145–169. (W. T. S.)

Marihuana Investigations. IV. A Study of Marihuana Toxicity on Goldfish Applied to Hemp Breeding. Report is made of some studies undertaken to determine whether the degree of toxicity of hemp extracts to goldfish is of value for plant breeding work which is attempting to obtain varieties with little or no active marihuana content. The dog is recognized as the standard test animal for marihuana biological assay work but goldfish have been used and their use would simplify work and reduce expense. Acetone extracts of the leaves of different varieties were put into the water containing the fish and the number of minutes before death occurred was recorded. Purified resins were administered to dogs. The degree of toxicity of fish and potency to dogs had the same relationship. It was concluded that goldfish testing of hemp resins may facilitate hemp breeding.—BRITTAIN B. ROB-

INSON. *Jour. A. Ph. A.*, 30 (1941), 616. (Z. M. C.)

Methyl Chloride—Intoxication by, Used as a Refrigerant. The authors have made two observations of the principal aspects of methyl chloride intoxication. These accidents are generally benign and are rarely heard of. But there exist more severe forms where after a latent period of some hours, vomiting occurs with vertigo and drowsiness. This condition observed in the two cases reported was cured in 48 hrs. One may observe a lethal form with coma and convulsions. The symptoms are essentially nervousness closely resembling those produced by methyl bromide and the same treatment should be applied as in the latter case. Methyl chloride poisoning usually is acquired in the manufacturing or repair of refrigerators. A report of the number of deaths in homes from methyl chloride was reported in Chicago. It is suggested to the refrigerating industry of France that dichloro-difluromethane, which is considerably less toxic, be substituted for methyl chloride.—DUVOIR and GAULLIER. *Soc. Med. des Hopitaux*, Nov. 15, 1940; *Presse méd.*, 91–92 (1940), 941. (W. H. H.)

Poison Ivy—Patch Test Technique for Testing Hypersensitivity to. Of four hundred and sixty-eight males chosen at random, two hundred and nine gave positive histories of poison ivy dermatitis. Seventy per cent of these gave positive patch test reactions in experiments carried on by the authors. They believe that the patch test technique used in experiments provides a suitable method of testing hypersensitivity in the human to the poison ivy plant. In the technique followed, a small amount of 1:25 peanut oil dilution of an ether extract of the fresh leaves and stems of the poison ivy plant was applied to the volar surface of the forearm with a glass rod measuring two millimeters in diameter. A small piece of cotton was placed over the site and a patch placed over the cotton. The patches were removed seven days later and were recorded as positive when obvious erythema or vesiculation occurred. All of the doubtful reactions were classified as negative.—E. L. KEENEY, S. SUNDAY, L. N. GAY and K. LYNCH. *Bull. Johns Hopkins Hosp.*, 69 (1941), 482; through *Abbott Abstract Service*, (1942), No. 1054. (F. J. S.)

Poisoning and Suspected Poisoning—Cases of, Encountered in Punjab, India. In a lecture before the Lahore Branch of the B. M. A., the writer discusses from a doctor's standpoint the medico-legal aspects of poisoning and suspected poisoning. The poisons dealt with in particular are: opium, $KMnO_4$, arsenic, CO, *Illicium religiosum* and yellow oleander.—D. R. THOMAS. *Indian Med. Gaz.*, 76 (1941), 429–433. (W. T. S.)

Poisoning in Peiping—Frequent Causes of. From 1937–1940 the toxicology laboratory received specimens from 437 cases of suspected poisoning, usually attempted suicides. Among the cases, females outnumbered the males, and the young predominated in the age groups. Poisons most often encountered were: opium, barbiturates, lead, arsenic, mercury, phosphorus, bromides, phenol and strychnine, in the order named. Carbon monoxide should be included but was not tested for. Tissues and body fluids are the materials usually submitted for analysis. The poisons were isolated by standard procedures and determined by selected methods most of which are outlined. During this period certain pharmacologic tests were introduced as the detection of atropine and cocaine with the rabbit's pupil, strychnine with mice, digitalis-like drugs, as oleander, in frogs. Mention is made of some of the principal difficulties encountered with the specimens and the various tests. The general principles of the treatments employed are pointed out.—HAMILTON H. ANDERSON, HAN-YING SOONG and WEN-HOU YIN. *Chinese Med. J.*, 59 (1941), 526–539. (W. T. S.)

Potassium Permanganate Poisoning. A Report of Thirty-One Cases. Records of the John Gaston Hospital in Memphis showed 31 cases of permanganate poisoning between 1924–1940 with none fatal. Doses ranged from one tablet to one-half glass of saturated solution. Seven occurred in children, and the others represent suicidal attempts on the part of young, white women. Symptoms were vomiting, abdominal pain, stains, pyema, cardiac depression, renal irritation, and mental disturbance. Lavage, forcing of fluids and symptomatic relief were the measures taken.—DANIEL GREEN and OTIS S. WARR. *Southern Med. J.*, 34 (1941), 1288–1289. (W. T. S.)

Pyrethrum Powder in Colloidal Solution—Use of, as a Larvicide. Pyrethrum has been used safely for more than a century to exterminate harmful anthrapods. It is also anthelmintic. Active principles are two "pyrethrines" present up to 6% in best brands. On sufficient contact pyrethrum powder in colloidal solution in water kills larvæ of culicini and anophelini in dilutions of 1:10,000 and 1:20,000. During the cold season, anopheles larvæ poisoned and paralyzed by fatal dilutions may recover entirely if transferred to pure, untreated water. Proper dilutions of pyrethrum may be recommended for radical extermination of mosquito larvæ in water tanks and small collections of stagnant water.—H. M. JETTMAR. *Chinese Med. J.*, 59 (1941), 565–569. (W. T. S.)

Sulfanilamide—Effects of Continued Administration of, on the Blood. As judged from experiments on mice in which sulfanilamide was administered by way of the diet for periods ranging from two to twelve weeks, the author concludes that this compound can produce secondary anemia in these animals closely resembling that occasionally noted clinically. Removal of the spleen did not influence the development of this anemia.—ARTHUR P. RICHARDSON. *J. Pharmacol.*, 70 (1940), 370. (H. B. H.)

Sulfanilamide Therapy—Toxic Complications of. An analysis is made of the toxic complications of sulfanilamide therapy in over 6000 venereal cases in which 270,000 Gm. of sulfanilamide were given to both sexes. The cutaneous reactions and the blood dyscrasias are stressed.—F. V. RAJAM and N. VASUDEVA RAO. *Indian Med. Gaz.*, 76 (1941), 385–392. (W. T. S.)

Sulfapyridine—Toxic Reaction after. Beginning on the 16th day of a case of lobar pneumonia in a Chinese female nurse, 6 Gm. of sulfapyridine were given in a 36-hr. period. This was followed by abdominal pain, vomiting, headache, mental depression, hematuria and subnormal temperature. Mention is made of 3 related cases described in the literature.—F. CHRISTOPHER MADDOX. *Chinese Med. J.*, 59 (1941), 578–579. (W. T. S.)

Sulfathiazole—Reactions from the Use of. In 300 hospitalized cases receiving on an average of 3 Gm. of sulfathiazole a day for 6.5 days, 89 patients showed a reaction of some form. Of the 89 patients 53 showed one or multiple toxic reactions which disappeared on withdrawal of the drug. Toxic reactions in order of frequency were: nausea, reduced urinary output, conjunctivitis, dermatitis, hematuria, anemia, leucopenia and nystagmus. Of each of the latter two, there was only one case. Incidence and severity were greater in the older age group and operative cases. Toxic reactions may be prevented by moderate dosing (regulated by charting fluid excretion and intake) and a study of the blood picture. Even more care should be taken in using

sulfathiazole in the outpatient department.—CARL E. BURKLAND and RICHARD W. SATTERTHWAITE. *Southern Med. J.*, 34 (1941), 1095–1102. (W. T. S.)

Testosterone Propionate—Effect of Treatment with, on Mercuric Chloride Poisoning in Rats. In male albino rats the author found that with proper doses of both chemicals, testosterone increases survival rate of rats poisoned with mercuric chloride.—L. P. LONGLEY. *J. Pharmacol.*, 74 (1942), 61–64. (H. B. H.)

Toxicological Examinations in the Federated Malay States. In the Colonial Medical Reports (373) of the Federated Malay States the following is revealed. Two hundred and seventy-four exhibits (75 cases of poisoning) were examined. Poisoning was detected in 52 cases. Caustic soda poisoning continues to increase. The stomach of a suicide contained an equivalent of 43 Gm. of anhydrous formic acid, probably swallowed in form of the 95% acid. In a case where the deceased had taken $HgCl_2$, 20 gr. were found in the stomach, 4 in intestines and 6 in the liver and spleen. From another exhibit 9.3 gr. of strychnine were isolated. Under the heading miscellaneous, 34 samples were examined. A proprietary antimalarial contained only a small quantity of quinine. Three bottles of adrenaline solution of doubtful purity gave no toxic action in experimental animals. The face powder samples examined were free of lead. Poppy capsules, *Cannabis sativa*, general medicines and rat poisons were also examined.—*J. Trop. Med. Hyg.* (*Selections from Colonial Medical Reports*), 44 (1941), 39. (W. T. S.)

Tung Nuts—Study of the Toxic Properties of. Experiments were done on rats. Tung oil was found to be non-toxic by oral administration in the diet. Tung meal, made from either the intact kernels or after removal of the oil, was definitely toxic. In these animals there was a marked purgative effect, the animals becoming sluggish and weak and occasionally dying. By heating the oil-free meal to 230° F. with steam for 2 hrs. the toxic principle was almost completely destroyed. Dry heat treatment for 15 hrs. at 212° to 247° F. completely detoxified the meal.—J. L. E. ERICKSON and J. H. BROWN, JR. *J. Pharmacol.*, 74 (1942), 114–117. (H. B. H.)

War Gases—Medical Observations of an American on the, Used in the World War. Gas victims represented 3.33% of total casualties. From April, 1917, to November, 1918, of a total of 70,000 American soldiers that were gassed, 0.28% died on the battle field and 1.7% in hospital. One series of observations dealt with 139 cases of phosgene poisoning. In 1929, 60 of the gassed men were dead, 10 had pulmonary lesions (chronic bronchitis, pulmonary fibrosis), the others showed no symptoms which could be related to their gassing. Another series dealt with 53 cases of yperite poisoning; 11 men died almost immediately, 4 died as a result of the poisoning (1 case of pneumonia, 3 of pulmonary tuberculosis); in 1929 the 38 remaining cases showed no symptoms that could be traced to the original poisoning. A last series of observations in 1929 on 27 World War veterans revealed 21 cases of chronic bronchitis, alone or associated with another affection, 10 cases of pulmonary emphysema either alone or associated, 1 case of pulmonary tuberculosis, 1 of conjunctivitis, 1 of corneal lesion, attributable to yperite poisoning.—M. GERCHIK. *Protar*, 5 (1939), 173–179; 6 (1939), 3–6; through *Chimie & Industrie*, 43 (1940), 821. (A. P.-C.)

THERAPEUTICS

Alebrin, A New Anti-Malarial. Alebrin is a derivative of benzodihydrochloride-methoxydiamino-acridine manufactured in India as an antimalarial. Taken in recommended dosage in two cases of acute falciparum malaria and one case of acute vivax malaria it proved inferior to quinine.—*Indian Med. Gaz.*, 76 (1941), 637. (W. T. S.)

Aliphatic Amine Salts of Nicotinic Acid. Details are given of the production of methylglutamine nicotinate, monoethanolamine nicotinate and isobutanolamine nicotinate, which are all suitable for therapeutic use by injection, and general mention is made of the possible similar production of a number of other aliphatic amine salts of nicotinic acid.—EDMOND E. MOORE, assignor to ABBOTT LABORATORIES. U. S. pat. 2,233,419, March 4, 1941. (A. P.-C.)

Antimony Derivatives of Pyrocatechol and Sodium Salicylate. By the reaction of the antimony derivatives of pyrocatechol with salicylic acid and sodium carbonate, the desired compound is obtained, which is a white solid suitable for therapeutic use.—HAROLD P. BROWN and JAMES A. AUSTIN, assignors to JENSEN-SALSBERY LABORATORIES, INC. U. S. pat. 2,221,831, Nov. 19, 1940. (A. P.-C.)

Antimony Treatment of Kala-Azar. A review of the claims of priority in the use of tartar emetic and other antimony compounds in the treatment of kala-azar.—K. K. SENGUPTA. *J. Trop. Med. Hyg.*, 44 (1941), 168–169. (W. T. S.)

Antiseptic Snuffs. As antiseptic snuff containing sulfathiazole or penicillin may lessen the frequency of effective invasion of the nose by bacteria or the invasion of the nasopharynx through the nose. It may therefore prove of use as a prophylactic against bacterial infections of the upper respiratory tract and perhaps against cerebrospinal meningitis, though on the latter point the authors have no direct evidence apart from the known activity of the sulfanilamide compounds against the meningococcus. The most that can be said at the moment is that the method seems worthy of trial. There is no evidence that it will prevent or cure the common infectious cold. It may favorably effect the course of a cold by preventing secondary infection. It may perhaps prove effective in curing nasal carriers of staphylococci or in reducing the number of vegetative organisms, so that the carrier becomes less dangerous as a source of infection to others. In view of its action on diphtheroids it seems desirable to test its possible usefulness in the treatment of nasal carriers of diphtheria bacilli. How far it will effect other pathogenic organisms in the nose there is as yet no evidence.—M. E. DELAFIELD, E. STRAKER and W. W. C. TOPLEY. *Brit. Med. J.*, 4178 (1941), 145. (W. H. H.)

Antiseptics—Choice of. A dermatologist's plea, based on many years of observation, for abandoning or curtailing the use of strong antiseptics as organic and inorganic mercurials, halogen combinations, phenolic substances, etc., for milder compounds as sulfur, fixed oils and especially boric acid.—HOWARD KING. *Southern Med. J.*, 35 (1942), 59–62. (W. T. S.)

Arsenic Compounds—Therapeutic Composition Containing. Solutions suitable for intravenous injection are formed from a mixture containing a 3-amino-4-hydroxyphenyl-dihaloarsine hydrohalic compound, such as 3-amino-4-hydroxyphenyldichloroarsine hydrochloride, and reactants such as sodium carbonate in such quantity as to neutralize at least one of the acidic halogen groups.—ALBERT B. SCOTT, OSWALD M. GRUHZIT and JAMES A. SULTZABERGER, assignors to PARKE, DAVIS & CO. U. S. pat. 2,222,384, Nov. 19, 1940. (A. P.-C.)

Arsonic Acids—Therapeutic. Details are given of the production of compounds suitable for combating amebic dysentery, such as *p*-(β-hydroxyethyl-

carbamido)benzenearsonic acid (which decomposes at 200° C.), 3-(hydroxyethylcarbamido)-4-hydroxybenzenearsonic acid, 4-(hydroxyethylcarbamido)-3-hydroxybenzenearsonic acid (which decomposes at 237° C.), *p*-2,3-dihydroxypropylcarbamido)benzenearsonic acid, *p*-[(3-diethylamino-2-hydroxypropyl)carbamido]benzenearsonic acid, and a *p*-[(hydroxyethyl)methylcarbamido]benzenearsonic acid.—WALTER HERMANN, HANS HILMER and FRIEDRICH HAMPE, assignors to WINTHROP CHEMICAL CO. U. S. pat. 2,232,232, Feb. 18, 1941. (A. P.-C.)

4-Aryl-4-Piperidyl Ketones. Therapeutic compounds having antispasmodic and anodyne properties and of low toxicity are obtained from 4-aryl-4-piperidine carboxylic acid nitriles as described in U. S. pat. 2,167,351 by reaction with organo-magnesium compounds and decomposition of the products with dilute acids. Details are given of the production of a number of such compounds.—OTTO EISLEB, assignor to WINTHROP CHEMICAL CO. U. S. pat. 2,248,018, July 1, 1941. (A. P.-C.)

***p*-Azidobenzene Compounds.** Compounds suitable for use in the treatment of various infectious diseases, which have the general formula (p-$N_3C_6H_4SO_2NR)_nX$ in which X is hydrogen, alkyl or a metallic ion, R is hydrogen, alkyl, acyl or a heterocyclic radical, and n is a whole number equal to the valence of X, may be prepared by subjecting a *p*-aminobenzenesulfonamide to diazotization and treating the diazonium salt with hydrazine or with hydroxylamine. Details are given of the production of a number of such compounds.—RICHARD O. ROBLIN, JR., assignor to AMERICAN CYANAMID CO. U. S. pat. 2,254,191, Aug. 26, 1941. (A. P.-C.)

Benzenesulfonic Acid Derivatives—Therapeutic. Compounds suitable for the treatment or prophylaxis of malaria and which comprise benzenesulfonic acid anilides substituted at least in the 3'- and 5'-positions of the anilide radical by halogen or haloalkyl and bearing a nitrogen-containing group in the 4-position of the benzene radical are produced by various described methods, in one of which benzenesulfonic acids or their reactive derivatives such as esters or halides, bearing in the 4-position the nitrogen atom of a nitrogen-containing groups such as an amino, acylamino or azomethine group, are caused to react with aniline compounds containing at least one free hydrogen atom in the amino group and substituted at least in the 3'- and 5'-positions by halogen or haloalkyl. Other methods of manufacture are also given, with details for the production of a large number of such compounds.—ROBERT BEHNISCH, JOSEF KLARER and FRITZ MIETZSCH, assignors to WINTHROP CHEMICAL CO. U. S. pat. 2,248,911, July 8, 1941. (A. P.-C.)

Bismarsen—Use of, in the Treatment of Lupus Erythematosis. The authors used bismarsen in the treatment of 28 patients with lupus erythematosis and found that the drug caused remissions in many of the cases. Fourteen patients made an apparent recovery. The lesions disappeared completely, often leaving atrophy but no active inflammatory process. Twelve patients showed improvement: in eight of these the improvement was decided; in three moderate. Two showed no improvement because treatment was not regular. Local reactions were not troublesome. White cell counts were made at least once a week; if the count dropped below 5000, treatment was discontinued or the dose cut down until the count rose above 5000. With the exception of one case of purpura, no blood dyscrasia was encountered. It is thought by the authors of this article that the treatment is less dangerous than gold therapy and more effective than bismuth alone. Many patients were given ascorbic acid while undergoing this treatment because the authors believe it to be an aid in the prevention of reactions to heavy metals.—R. S. WEISS, A. H. CONRAD, A. H. CONRAD, JR., and R. O. PFAFF. *Arch. Dermatol., Syphilol.*, 44 (1941), 1009; through *Abbott Abstract Service*, (1942), No. 1066. (F. J. S.)

Bismuth Compounds—Therapeutic. Details are given of the preparation of compounds, suitable for combating trypanosomes and spirochetes by parenteral injection, such as the sodium, acid sodium and dipotassium salts of dibismuthylsaccharic acid.—CLARENCE W. SONDERN and GEO. O. DOAK, assignors to GEO. A. BREON & CO. U. S. pat. 2,232,411, Feb. 18, 1941. (A. P.-C.)

Bromides. The usefulness of these chemicals in medication is reviewed. Thirty-eight references.—M. A. LESSER. *Drug Cosmetic Ind.*, 49 (1941), 637–640. (H.M.B.)

Burn Therapy—Newer. A review of recent investigations in this form of therapy. Thirty references.—M. A. LESSER. *Drug Cosmetic Ind.*, 50 (1942), 26–29. (H.M.B.)

Ceanothus Americanus Extract Suitable for Therapeutic Uses. A composition comprising yellowish crystals having a high m. p. and being relatively insoluble in ethyl ether, chloroform, acetone, petroleum ether, and water, but soluble in hydrochloric acid, is obtainable by macerating the drug *Ceanothus americanus* with hydrochloric acid, extracting the macerated drug with ethyl ether and then removing the ether from the extract and heating the residue up to about 160° C. in such manner that the residue spatters and in so doing deposits the yellowish crystals on the walls of the container.—GUY C. TAYLOR, asignor to FLINT, EATON & CO. U. S. pat. 2,254,051, Aug. 26, 1941. (A. P.-C.)

Chaulmoogric Compounds—Therapeutic. Diuretic, bactericidal, antiarthritic and blood calcium-retaining compounds for internal use are formed from the reaction of theobromine with chaulmoogric acid. Various examples with details of procedure are given.—ANTHONY J. ORLANDO, assignor of 25% each to ARTHUR B. JOHNSON, GEO. GROSSHANS and HARRY KATZ. U. S. pat. 2,230,576, Feb. 4, 1941. (A. P.-C.)

Chemotherapy of Cancer—Experiments on. In the search for a drug which might be effective in the treatment of cancer, four lines of approach have been pursued. (1) Following the observation that heptaldehyde inhibited tumor growth, several related compounds were tried and it was found that malonic acid and citral were effective. (2) There have been many reports of extracts of normal tissues inhibiting tumor growth. Liver and muscle extracts are particularly effective if prepared in the right way. The active material of an acid muscle extract was not precipitated by trichloracetic acid, but was precipitated by phosphotungstic acid. Inhibition was obtained with a number of natural bases, especially aminoethylalcohol and cadaverine. (3) As tumor tissue is relatively deficient in catalase, catalase poisons, or their possible precursors, such as nitroso phenols, have been tried. α-Nitroso-β-naphthol caused definite reduction in the growth rate of mouse tumors. (4) Many aromatic diamines with their amino groups at the ends of the molecules are active and of almost one hundred of these which have been tried, 4:4'-diaminodiphenylether and its diacetyl derivative have given the most promising results. It would be interesting to know what effect substances mentioned under (1) and (2) had on human cancer, but the substances under (3) and (4) are probably too toxic to be used for the prolonged course of treatment which would be necessary to produce a definite effect.—E. BOYLAND. *Chemistry and Industry*, 60 (1941), 219–220. (E. G. V.)

Cod Liver Oil in Modern Medicine. A review of the value of cod liver oil.—ANON. *Schweiz. Apoth.-Ztg.*, 79 (1941), 200–203. (M. F. W. D.)

Common Cold. The factors of a common cold are susceptibility, exposure and infection. The cold is primarily a physiological disorder, and germs and viruses play only a secondary role. Susceptibility is the result of lack of balance of physiological activities, and fatigue is an important factor, even in "chronic susceptibility." There is always a short prodromal period of a few hours to several days before the local irritations begin. Prevention consists mostly in keeping fit, especially a sufficient diet, with plenty of vitamin B_1. Treatment of a cold should consist of the use of laxatives, hot applications, gargling with hot salt water, a diet of fruit juices and quinine for those who can tolerate it. The patient with a fully developed cold should stay in bed for 24 hrs. Subsequent treatment depends on the symptoms. The author believes that vaccines give assistance.—F. H. GLAZEBROOK. *Ind. Med.*, 10 (1941), 99–101. (F. S. M.)

Convalescent Mumps Serum—Some Observations on the Efficacy of. The author gives the following conclusions: (1) The present status of convalescent serum in the treatment of mumps is equivocal. (2) In the studies reported, 183 mumps patients treated with convalescent human mumps serum had an incidence of orchitis of 15.3%. In 551 untreated cases the incidence of orchitis was 19.9%. (3) In this series, 41 patients receiving 20 cc. convalescent serum, had a higher incidence of orchitis (21.9%) than 142 patients receiving 10 cc. serum (13.4%), and 551 controls receiving no serum (19.9%). (4) Of 135 patients receiving serum from donors without orchitis, 19.2% developed orchitis while of 48 patients receiving serum from donors who had had orchitis, only 4.2% developed orchitis. (5) A simple method adaptable for army camps for the collection of human serum is presented. (6) In collection of human convalescent mumps serum, the authors suggest that donors be selected who have had orchitis.—WILLIAM H. BAILEY and A. T. HAEREM. *Military Surgeon*, 90 (1942), 134. (F. J. S.)

Coryza—Treatment of, with Special Reference to Vaccine. In the author's mind, the common cold is characterized by a hot, dry feeling in the nose for a few hrs. followed by sneezing, nasal obstruction and a thin, watery discharge for 48 hrs., after which the discharge becomes thick and yellowish, gradually diminishing in the third week of the disease. When the first two stages are absent and symptoms are initiated by a viscid, colored discharge, it is indicative of activation of quiescent chronic sinusitis. It is suggested that local nasal treatment does not alter the course of the disease but that shrinking with ephedrine in physiologic saline affords relief and does no harm. The author favors small initial doses of vaccine and recommends $^1/_{60}$ cc. of a respiratory vaccine administered intradermally in the upper arm. One-twentieth of a cubic centimeter of vaccine, diluted to one-third the original strength so that it would contain 33.3 million bacteria, was used by the author in treatment. These small, intradermal, individualized prophylactic doses throughout the season gave protection to many individuals.—C. A. VEASEY. *Am. Otol., Rhin. and Laryng.*, 50 (1941), 1168; through *Abbott Abstract Service*, (1942), No. 1073. (F. J. S.)

Cosmetic Dermatitis—A Review of. A general discussion with 26 references.—F. W. MITTLESTADT. *Am. Perfumer.*, 43 (1941), No. 4, 29–31. (G. W. F.)

Cyclopropane from an Allergic Standpoint—Further Observations on. From his observations (3 cases reported in detail) B. is convinced that cyclopropane, given as an anesthetic, may precipitate allergy in the non-specific exudative type and cause specific asthma. The patient may or may not give a definite history of allergy; however, the severe cases did. Using helium as a diluent improves or relieves the allergy. In a discussion, some physicians concurred with B., others thought the word allergy is used here too freely.—RUSSELL F. BONHAM. *Southern Med. J.*, 34 (1941), 874–878. (W. T. S.)

Diabetes—Oral Anterior Pituitary Extract (Collip) in. The authors clearly failed to confirm Collip's claim that his extract "has a profound effect upon the carbohydrate metabolism" in experiments with the diabetic organism.—R. D. LAWRENCE and F. G. YOUNG. *Lancet*, 239 (1940), 709. (W. H. H.)

4:4′-Diamidino Diphenoxy Pentane—Preliminary Report of, on Its Use in Sleeping Sickness. Fourteen cases of sleeping sickness were treated with 4:4′-diamidino diphenoxy pentane intravenously. This report is divided into a description of the cases, the mode of treatment and the results obtained. Most of the patients were young males. The dosage ranged from 0.02 to 0.04 Gm., and the injections were spaced a day apart. The treatment resulted in a sterilized peripheral blood, and absence of symptoms. Untoward results are few, and the earlier cases appeared to be cured.—G. F. T. SAUNDERS. *Ann. Trop. Med. Paras.*, 35 (1941), 169–174. (W. T. S.)

4:4′-Diamidino Diphenoxy Pentane Successfully Used to Treat Indian Kala-Azar. A case of Indian kala-azar which was successfully treated with 4:4′-diamidino diphenoxy pentane is described, and attention is called to the reduction in blood pressure produced by 100-mg. therapeutic doses of the drug.—A. R. D. ADAMS. *Ann. Trop. Med. Paras.*, 35 (1941), 43–54. (W. T. S.)

4:4′-Diamidino Stilbene in Babesia Infections in Domestic Animals. 4:4′-Diamidino stilbene is satisfactory in the treatment of tick fever (*B. Canis* infections) in dogs. It likewise cures biliary fever in horses, but is an unsuitable treatment because of the severe reactions produced by doses of 1.5 mg./Kg. of the estimated weight of the animal.—R. DAUBNEY and J. R. HUDSON. *Ann. Trop. Med. Paras.*, 35 (1941), 187–190. (W. T. S.)

4:4′-Diamidino Stilbene in the Treatment of Kala-Azar. An advanced case of Indian kala-azar in a 25-year-old cook responded to a prolonged treatment with this drug. It was suggested that the parallel fall in blood pressure and reduction in blood sugar values might be due to an antagonism between 4:4′-diamidino stilbene and adrenaline.—A. L. WINGFIELD. *Ann. Trop. Med. Paras.*, 35 (1941), 55–58. (W. T. S.)

Dilantin Sodium Therapy in Epilepsy. A review of the literature and a preliminary report of 6 cases.—FENG YING-K'UN and HSU YING-K'UEI. *Chinese Med. J.*, 59 (1941), 508–525. (W. T. S.)

Diphtheria—Protective Vaccination Against. The author presents a brief discussion of the terminology of the treatments for diphtheria and the applications.—J. THOMANN. *Schweiz. Apoth-Ztg.*, 79 (1941), 121. (M. F. W. D.)

Dysmenorrhea. This common malady is discussed and three formulas offered, which are recommended to eliminate the source of the pain occurring.—L. STAMBOVSKY. *Drug and Cosmetic Ind.*, 49 (1941), 520–521. (H. M. B.)

Earth Metal Salts of Gold Keratinic Acids—Therapeutic Alkaline. A process for the manufacture of alkaline earth (such as calcium and mag-

nesium) salts of gold keratinic acids (such as may be obtained by the degradation of keratins followed by interaction with a gold salt and neutralization with a basic reacting alkali metal compound) involves treating the alkali metal salts of the gold keratinic acids obtained with a water-soluble salt of an alkaline earth metal. Numerous examples with details are given.—KARL SCHÖLLKOPF, assignor to SCHERING CORP. U. S. pat. 2,236,921, April 1, 1941. (A. P.-C.)

Estradiol Higher Fatty Acid Esters. Therapeutic compounds suitable for use by injection to form a "hormonic depot" in the system, are produced, which have the general formula $C_{18}H_{22}(OX)(OCOR)$, in which X is hydrogen or benzyl and is bound to the oxygen atom in position 3; and R is an akyl radical containing 14 to 17 carbon atoms, the group —COR being bound to the oxygen atom in position 17. Various details of procedure are given.—REZSÖ WEISZ, assignor to CHINOIN GYOGYSZER ÉS BEGYÉSZETI TERMÉKEK GYARA R. T. U. S. pat. 2,253,669, Aug. 26, 1941. (A. P.-C.)

Estrone Series—Therapeutic Esters of the. Esters of estrone, equilin and equilenin are formed with valeric, isovaleric, caproic or caprylic acid. Estrone valerate melts at 103° to 105° C.—KARL MIESCHER and CAESAR SCHOLTZ, assignors to CIBA PHARMACEUTICAL PRODUCTS, INC. U. S. pat. 2,228,397, Jan. 14, 1941. (A. P.-C.)

Ethanolamine Oleate—Treatment of Varices with. Varices were sclerosed by injections of ethanolamine oleate intradermically at the site of the varice. Patients were treated twice weekly, and three or four injections were usually sufficient. Of the cases treated 100% improved and 88% were cured. The only complications noted were subcutaneous hematoma and pruritis, but neither was important. Care must be taken in filling the syringe with the unctuous liquid.—CARLOS CASTANEDO Y PARDO. *Vida Nueva (Habana)*, 15 (1941), 257. (G. S. G.)

Ether. A Cause of Convulsions. A description is given of a case of ether convulsions in a 19-year-old boy receiving the anesthetic by the open method for surgery in acute mastoiditis. Evipan successfully controlled the convulsions. The difference in the relation between the patient's temperature and the meteorological conditions in India, or the open method of administration might be the causative factor.—W. McN. NIBLOCK and D. B. SET. *Indian Med. Gaz.*, 76 (1941), 611–612. (W. T. S.)

Ethylamine Derivatives—Saturated. Compounds having antispasmodic properties, and which have the general formula $R'''R''NCHR'CH_3$, where R' is an alkyl radical containing 6 carbon atoms, R'' is hydrogen or a lower alkyl radical, R''' is an alkyl radical containing 1, 3 or 5 carbon atoms, or a cycloalkyl radical, are produced by treating saturated alkylethylamines of the general formula $R''NHCHR'CH_3$, where R' is an alkyl radical having 6 carbon atoms in a straight or branched chain and R'' is hydrogen or an alkyl, cycloalkyl or aralkyl radical with alkylating, cycloalkylating or aralkylating reagents.—WILFRID KLAVEHN and ANTON WOLF, assignors to E. BILHUBER CORP. U. S. pat. 2,230,752, Feb. 4, 1941. (A. P.-C.)

Fungicidal Preparation for the Prophylaxis of Athlete's Foot. A composition is used comprising *p*-nitrophenol, water and a water-soluble inorganic salt which is chemically non-reactive with the *p*-nitrophenol, the salt enhancing the fungicidal properties of the *p*-nitrophenol, the salt and water being present in the composition in such proportions as to produce an aqueous solution of the salt of at least 2.5% concentration, and the proportion of the salt in the composition greatly exceeding the proportion of *p*-nitrophenol.—CLARENCE L. WEIRICH, assignor to C. B. DOLGE CO. U. S. pat. 2,223,142, Nov. 26, 1940. (A. P.-C.)

Glutathione and Its Derivatives—Therapeutic Metal Compounds of. Compounds suitable for use by injection in the treatment of syphilis and other diseases, in isotonic solution, comprise reaction products such as those of sodium glutathionate with a soluble salt of bismuth, antimony, arsenic, iron, manganese, copper, silver or mercury. Various examples with details are given.—SIMON L. RUSKIN. U. S. pat. 2,250,553, July 29, 1941. (A. P.-C.)

Hidantal—Use of, in a Case of Essential Epilepsy. A report of a patient who sufferede pileptic attacks for 8 yrs., beginning at the age of fifteen. He had been given luminal and some other unremembered medicine, but attacks continued. He was nervous and luetic. He received hidantal three times daily for 6 days, then twice daily for 150 doses. It was discontinued for 15 days then another course of 150 doses was given. He made notable improvement, attacks diminishing in number and severity and ceasing by the end of the second course, though his nervousness remained. Hidantal is 5,5-diphenylhydantoin.—JAIRO C. DIAS. *Arq. Biol. (São Paulo)*, 25 (1941), 260. (G. S. G.)

Hypertension—Mechanism of, and Its Treatment with Synergistic Drugs. As a means of controlling the psychic and neuromuscular factors in the mechanism of arterial hypertension, Diurbital (Grant), a combination of theobromine-sodium salicylate with phenobarbital and calcium lactate, was employed in the form of enteric coated tablets. In a comparative study of a group of 100 cases of hypertension, the results obtained with the combined therapy (removal of foci of infection, diet, psychic readjustment and rest, plus the drugs here mentioned) were found to be definitely superior. The hypotensive response in the 100 cases treated was effective, gradual and sustained in character, as well as free from the usual irritative effects coincident with the continued use of this form of therapy.—J. M. TARSY. *Clin. Med.*, 48 (1941), 37. (W. H. H.)

Insulin-Histone Composition Suitable for Storage —Therapeutic. An insulin-histone composition is prepared by putting the two substances together in the presence of an amount of zinc, cadmium, nickel or cobalt sufficient to correspond molecularly to at least half a mg. of zinc per 1000 units of the "Insulin."—DAVID A. SCOTT and ALBERT M. FISHER, assignors to THE GOVERNORS OF THE UNIV. OF TORONTO. U. S. pat. 2,232,641, Feb. 18, 1941. (A. P.-C.)

Iodamine Compounds—Clinical Experiments with. Iodine is used in preparations based on metallic iodine, in iodo-albumin, iodized oils and iodized tannates, natural or artificial. Iodamines are produced by the action of iodic acid on a tertiary amine. A less active compound is formed by iodine and urotropin making trimethylenediiodoamine. A still better one is the monoiodate of piperazine, which exhibits complete absence of phenomena of intolerance or iodism. Iodine slightly reduces blood pressure, stimulates growth and nutrition and regulates circulation. It creates hyperemia in the respiratory system thus promoting the elimination of secretions. It is useful in syphilis and in mycoses in general, and has value in ganglionic affections and also in arteriosclerotic affections of eye and ear. It is specific in thyroid dysfunction. Contraindications include individual intolerance appearing in pulmonary diseases and skin infections. Several case records are appended concerning patients intolerant to iodine who benefited by administration of neoiodamine (monoiodate of piperazine) with no untoward symptoms.—VASCO FERRAZ COSTA. *Arq. Biol. (São Paulo)*, 25 (1941), 244. (G. S. G.)

Iron Compounds—Medicinal. A compound suitable for application to the human or animal body, as by intramuscular injection, comprises an iron compound such as that of isolated adenylic acid solubilized by the use of sodium citrate or other suitable salts.—SIMON L. RUSKIN. U. S. pat. 2,215,233, Sept. 17, 1940. (A. P.-C.)

Isoquinoline Series—Therapeutic Compounds of the. Compounds acting on the central nervous system and having emetic and analgesic properties (and which may be partially or completely hydrogenated in the nitrogen-containing nucleus) are prepared by liberation of the hydroxyl groups present in an isoquinoline compound which in the nitrogen-containing nucleus may be (but need not be) di- or tetra-hydrogenated and is substituted by aralkyl or aralkylene group or groups, and may be further substituted, and which contain on only one of the aromatic nuclei present at least two partially or completely esterified or etherified hydroxyl groups, preferably in *ortho* position to each other.—FRITZ KULZ and CARL A. HORNUNG. U. S. pat. 2,223,373, Dec. 3, 1940. (A. P.-C.)

Kosam, An Oriental Amebicide. In 1937 Liu reported that kosam, an old oriental remedy for diarrhea, was a specific for amebic dysentery. Kosam seeds have now been reinvestigated with a bitter powder and a pungent green oil being isolated from them. Kosam is also said to contain an alkaloid, a glucoside, a fixed oil, a gum, a saponin and a sugar. Ground kosam seeds when added to cultures of *Endameba histolytica* compare favorably in amebicidal activity with emetine, chiniofon and carbasone, but so do a number of other unrelated compounds not considered to be amebicides. The bitter principle and the oil of kosam also showed activity. Gastric tolerance and toxicity test in mice, rats, guinea pigs, dogs and cats showed no significant general effect. Gastric irritation appeared in cats and dogs. There were no definite pathological changes in viscera and other tissues. A soluble fraction intravenously produced no effect on blood pressure in cats, and no fatalities in rodents. Of seven patients with amebiasis receiving up to 7 Gm. of the seed with $NaHCO_3$, three relapsed after first improving, two proved not definitely negative and nausea was present in five. Hence, Liu's report is not confirmed.—WILLIAM C. KUZELL, WALTER B. LAYTON, W. D. FRICK and WINDSOR C. CUTTING. *Am. J. Trop. Med.*, 21 (1941), 731–738. (W. T. S.)

Lead Citrate Complex Ion and Its Role in the Physiology and Therapy of Lead Poisoning. The work is summarized as follows: (1) The citrate ion is shown to form with lead a soluble complex ion of the form $PbCit^-$. The lactate, acetate and ascorbate ions also form complexes with lead which dissociate much more readily. (2) The stoichiometric dissociation constant (K_s) of the lead citrate complex ion is determined for ionic strength from 0.615 to 0.020 and at *p*H from 6.95 to 7.45 at 25°. At the ionic strength of blood (0.160) and in the physiological *p*H range the value of pK_s for $PbCit^-$ is 5.74 ± 0.008 standard error. An approximate value of 6.50 is obtained for the negative logarithm of the thermodynamic dissociation constant for $PbCit^-$. (3) Evidence is presented that the normal blood citrate constitutes a physiological mechanism for the removal of lead from the body. (4) It is suggested that the administration of citrates may constitute a safe and effective therapy in plumbism.—SEYMOUR S. KETY. *J. Biol. Chem.*, 142 (1942), 181. (F. J. S.)

Liquid Petrolatum in Pregnancy. This laxative is recommended in pregnancy because it is non-habit forming and physiologically inert. Some believe, however, that it dissolves and removes vitamin A from the alimentary tract before the latter can be metabolized. Reference is made now to a report (Javert and Macri, *Am. J. Obstet. and Gynecol.*, 42 (1941), 409), in which it is claimed that dosing with mineral oil in pregnancy removed vitamin K from the body. This is significant because prothrombin is an essential element of the blood, especially at time of childbirth.—EDITORIAL. *Southern Med. J.*, 34 (1941), 1086–1087. (W. T. S.)

Lung Pathologies—Danger of, from the Aspiration of Oils. The danger of oil pneumonias resulting from aspiration into the lungs of oils or fats taken by mouth or used as nose drops or sprays was considered, with special reference to mineral oil applied intranasally. The diagnosis of oil pneumonia was briefly considered.—G. C. BRUN. *Maanedschr. for Prakt. Laegegerning Social Med.*, July, 1941; through *Arch. Pharm. Chemi*, 48 (1941), 457. (C. S. L.)

Magnesium Sulfate Used to Treat Eclampsia. The writer describes four cases of eclampsia in young women which were successfully treated with intravenous injections of 1–1.5 Gm. of $MgSO_4$, with or without intravenous glucose.—S. K. ROY. *Indian Med. Gaz.*, 76 (1941), 481–482. (W. T. S.)

Neostebene. A New Organic Antimonial for the Treatment of Kala-Azar. As a follow-up on the use of stibamine intramuscularly in the treatment of kala-azar (*J. Trop. Med. Hyg.*, 1941), B. records the results obtained with neostebene in the same disease. Neostebene, an organic derivative of *p*-aminophenyl stibinic acid prepared in the Brahmachari Res. Inst., is described as a greyish, soluble, amorphous powder containing 41% antimony. The report on the 10 cases receiving neostebene is divided into: (1) a description of the patient, (2) the symptoms, (3) results of blood examination on admission, (4) mode of treatment and (5) results therefrom.—SIR UPENDRA NATH BRAHMACHARI. *J. Trop. Med. Hyg.*, 44 (1941), 158–160. (W. T. S.)

Pharmacist and Civilian Defense. The role of the pharmacist in the program of civilian defense is discussed and a list of the equipment for a first aid post and for a casualty station is offered.—ANON. *Am. Professional Pharmacist*, 8 (1942), 19–22. (H. M. B.)

Pneumonia—Chemotherapy of. A review with discussion of the chemotherapy of pneumonia with emphasis on: (1) etiologic agent; (2) choice of the drug; (3) dosage; (4) necessary procedures for a patient receiving sulfonamide drugs; and (5) problem of combining serotherapy with chemotherapy.—THEODORE J. ABERNETHY. *Southern Med. J.*, 35 (1942), 210–216. (W. T. S.)

Prostigmin in the Treatment of Chronic Deafness and Tinnitus Aurium. The following summary and conclusions are given: (1) Studying a series of 20 otological cases manifesting impaired hearing and tinnitus aurium, the author undertook a carefully controlled investigation with prostigmin therapy. (2) Sixty-four per cent of the cases complaining of tinnitus obtained complete or marked improvement. Twenty-one per cent exhibited some relief and only 15% failed to show any improvement. Seventeen per cent of the cases with impaired hearing showed significant audiographic improvement. (3) The author believes that prostigmin therapy is of very definite value in the treatment of tinnitus aurium. Its use in the treatment of deafness resulted in a few cases of improvement, but in view of the paucity of therapeutic agents available for the treatment of impaired hearing, the author is of the opinion that its use should not be abandoned in treating deafness.—A. F. JUDGE. *Military Surgeon*, 90 (1942), 177. (F. J. S.)

Protein Composition Suitable for Combating Anemia. A chemical combination of protein or animal milk and animal hemoglobin is prepared by a process which involves concentrating an aqueous dispersion of animal skim milk to from 20% to 50% of suspended milk solids, mixing the concentrated milk at a *p*H of not over 6 with a suspension of animal blood hemoglobin at a *p*H of not over 6 to provide a suspension of the total proteins of the milk and the hemoglobin, and dewatering the mixture to provide a dry solid product containing a new protein complex which exhibits an X-ray diffraction pattern not exhibited by the component proteins.—LLOY A. HALL, assignor to THE GRIFFITH LABORATORIES, INC. U. S. pat. 2,251,334, Aug. 5, 1941. (A. P.-C.)

Pyrethrum Used to Treat Scabies and Pediculosis. The author describes scabies and mentions the importance it assumes in war time. Usually the treatment is sulfur, and more rarely benzyl benzoate. The author now reports a freshly prepared 10% ointment of powdered pyrethrum in vaseline will generally relieve itching within 48 hrs. and lessen the secondary effects of the disease. A watery extract or a pomade of pyrethrum is equally effective in pediculosis. Only *P. cinerarœifolium* should be used, and it is to be noted that pyrethrin, its active principle, is unstable in light. Results of others using pyrethrum in these conditions are given.—L. EVERARD NAPIER and R. N. CHAUDHURI. *Indian Med. Gaz.*, 76 (1941), 333–335. (W. T. S.)

Serum and Saline Infusions. Observations of hemoglobin concentration, blood volume and blood pressure were made before and after infusion with normal saline, hypertonic saline, serum or concentrated serum in normal people and in patients with postoperative and post-traumatic shock. Physiological or hypertonic saline given intravenously to normal people is rapidly lost from the circulation. Serum given to normal people is retained in the circulation for long periods. The rise in blood volume depends on the total quantity of protein added, and is independent of the dilution of serum employed. In shocked patients intravenous saline produces transient benefit only. Intravenous serum is very effective in overcoming circulatory collapse due to diminished blood volume. The recovery of a shocked patient is invariably heralded by a rise in systolic and pulse pressures. The pulse rate on the other hand is a deceptive index of the patient's condition, for it often remains high, even when the blood pressure has risen to normal. It is useful to follow the concentration of hemoglobin in the blood of shocked patients. A rising hemoglobin means a falling blood volume, and precedes a deterioration in the patient's condition. Recovery can be forecast if the hemoglobin is falling, showing that the blood volume is being spontaneously restored by dilution of the blood. The retention of infused serum or saline can be gaged by estimating the hemoglobin.—D. K. HILL, J. MCMICHAEL and E. P. SHARPEY-SCHAFER. *Lancet*, 239 (1940), 774. (W. H. H.)

Sodium Sulfathiazole—Value of, in Urinary Tract Infections. Urologists have carefully tried all the sulfonamide derivatives in the treatment of urinary tract infections during the past 5 yrs. Studies were made recently at the Mayo Clinic of the use of sodium sulfathiazole in this type of disease. The advantages are thought to lie in the facts that the drug is more rapidly absorbed and is less toxic. It is rapidly excreted from the urinary tract, but in spite of this the author was able to maintain adequate bacteriostatic and bactericidal concentration at all times. In cases of impaired renal function, sulfathiazole in this form can be used more easily than any other sulfonamide derivative. The drug was given to some two hundred patients with urinary tract infections of various types, in doses of from 20 to 60 gr. daily for from 6 to 10 days. In these cases it was observed that toxic reactions were almost nil and that there was rapid relief of symptoms.—E. N. COOK. *Proc. Staff Meetings Mayo Clinic*, 16 (1941), 717; through *Abbott Abstract Service*, (1942), No. 1047. (F. J. S.)

Sulfadiazine Therapy—Case of Anuria Following. The urinary output of patients receiving chemotherapy should be maintained at between 1200 and 1500 cc. per day. Therapeutic enthusiasm must not override common sense in the administration of any new preparation, and it is probable that the formation of crystals will occur as frequently after the administration of sulfadiazine as after the administration of either sulfapyridine or sulfathiazole, if the same precautions are not taken. A case of anuria is reported following the use of sulfadiazine in an average daily dose of between 75 and 90 gr. In the subsequent treatment, catheters were passed to both of the kidneys, a grating sensation being encountered in the lower part of each ureter as the catheters progressed. Crystallized sulfadiazine could be seen. The urine of the patient reported was alkaline in every determination except one during the course of treatment. The acidity of the urine does not appear to be of great significance in acetylation of this compound.—G. J. THOMPSON, W. E. HERRELL and A. E. BROWN. *Proc. Staff Meetings Mayo Clinic*, 16 (1941), 609; through *Abbott Abstract Service*, (1942), No. 1017. (F. J. S.)

Sulfaguanidine in the Treatment of Bacillary Dysentery. A review with eight references and some discussion.—LYDIA B. EDWARDS. *Southern Med. J.*, 35 (1942), 48–55. (W. T. S.)

Sulfanilamide Causes No Tissue Damage in Wounds. Experimental contaminated wounds in rabbits were treated with various agents, such as ether, alcohol, iodine, sulfanilamide powder and salt solution. The state of infection and the condition of the tissues were carefully studied and compared. The results showed that bactericidal agents did not prevent infection and suppuration in the wounds, did cause moderate to severe tissue damage and interfered with repair of bone. Sulfanilamide was more effective than the bactericidal agents in preventing suppuration, caused no apparent tissue damage and did not interfere with the repair of bone. The application of salt solution caused no tissue damage. From the evidence presented it would appear that infection in contaminated fresh traumatic and operative wounds is best prevented by copious mechanical washing with salt solution, followed by debridement and the implantation of sulfanilamide powder.—J. D. BISGARD and C. P. BAKER. *Surgery, Gynecology and Obstetrics*, 74 (1941), 20; through *Abbott Abstract Service*, (1942), No. 1043. (F. J. S.)

Sulfanilamide Reaction Products for Oral or Parenteral Administration. Therapeutic products of good solubility melting at about 227° to 229° C., are obtained by treating *p*-aminobenesulfonamide with alkali metal formaldehydesulfoxylate at the b. p. of and in the presence of methanol or ethanol.—GEO. W. RAIZISS, LEROY W. CLEMENCE and ABRAHAM L. KREMENS, assignors to ABBOTT LABORATORIES. U. S. pat. 2,229,127, Jan. 21, 1941. (A. P.-C.)

Sulfanilamide Solution. A non-toxic therapeutic composition which is substantially stable at all ordinary temperatures is prepared from a mixture such as one of 5% sulfanilamide, 48% glucose, 13% glycerol and 34% water, heated to a temperature of at least 75° C. for at least 30 min.—CLARENCE A. VOGENTHALER, assignor to DONLEY-EVANS & CO. U. S. pat. 2,252,822, Aug. 19, 1941. (A. P.-C.)

***p*-Sulfanilyl-Aminopyridine Produced Leucopenia within Twenty-Four Hours.** Small doses of *p*-

sulfanilyl-aminopyridine caused leucopenia on two occasions without clinical signs or complaints from the patient. Discontinuance resulted in return to normal in both cases.—A. T. M. GLEN. *Indian Med. Gaz.*, 76 (1941), 421–422. (W. T. S.)

Sulfapyridine and Sulfathiazole Therapy in Lobar Pneumonia. By means of six tables and one chart, K. has illustrated the results obtained in treating 213 hospitalized cases of lobar pneumonia with sulfapyridine and 100 cases with sulfathiazole. The fatality rate was approximately 7% with both drugs. Omitting fatalities on the first day of treatment the rate drops to 5.1% for sulfapyridine and 3% for sulfathiazole. Untoward actions were generally less with sulfathiazole. Some abstracted discussion is appended.—WM. H. KELLEY. *Southern Med. J.*, 35 (1942). 203–210. (W. T. S.)

Sulfapyridine—Successful Use of, Against Pneumococcal Meningitis. Two cases of pneumococcal meningitis successfully treated with sulfapyridine are described in detail. These and other successes of sulfapyridine against this disease are definite advances in therapy. Why this drug fails in some cases of meningitis and succeeds in others will be elucidated by subsequent reports.—SOHAN SINGH and R. K. SEN. *Indian Med. Gaz.*, 76 (1941), 285–286. (W. T. S.)

Sulfathiazole in Monkey Malaria. Sulfathiazole administered to monkeys infected with *Plasmodium knowlesi* caused disappearance of parasites from the peripheral blood in moderate infections with doses as small as 0.5 Gm. given once orally. Radical cures were obtained with a dosage not larger than a total amount of 3 Gm. given over a period of 3 days. The parasites disappeared from the peripheral blood within 4 to 6 days. No toxic symptoms that could be attributed to the drug were produced by oral administration of the drug in doses of 1 Gm. per day for 3 consecutive days.—B. B. DIKSHIT and K. GANAPATHI. *J. Malaria Inst. India*, 3 (1940), 525. (A. C. DeD.)

Sulfathiazole—Local Use of, in Dermatoses. The authors treated 94 cases of pyogenic dermatoses (mainly impetigo and ectheyma) with a 5% sulfathiazole ointment in bases of lanolin, petrolatum and vanishing cream. The cases and the results of the treatment are tabulated in detail. This therapy proved superior to ammoniated mercury. The ointment causes contact dermatitis in two instances.—HARRY M. ROBINSON and HARRY M. ROBINSON JR. *Southern Med. J.*, 34 (1941), 1093–1095. (W. T. S.)

Sulfathiazole—Local Use of, in the Peritoneal Cavity. The author has used sulfathiazole in every surgical case since April, 1941, either in the incision, in the peritoneal cavity, intravenously or by mouth and feels that the use of drugs of this type will change many surgical traditions. Drainage of the abdominal cavity will probably be abandoned and the long immobilization required following laparotomy in the presence of infection will probably be shortened. The powder was sprinkled in the incision in 161 major operations and no infections occurred. In 13 cases of perforated appendicitis, and in three cases of abscesses resulting from perforation of a malignant growth of the lower bowel, the powder was used locally. No deaths or serious complications occurred in these cases. The average dose of sulfathiazole intraperitoneally was 8 Gm. either as a powder or suspended in sterile saline solution. One or two Gm. of powder were used in the incisions. In one case a slight rash and in another hematuria occurred.—A. S. JACKSON. *Jackson Clinic Bull.*, 4 (1942), 24; through *Abbott Abstract Service*, (1942), No. 1045. (F. J. S.)

Sulfathiazole Used to Treat Pyemia. The author describes a case of pyemia which responded to sulfathiazole therapy with surgical drainage after sulfanilamide and sulfapyridine had proved ineffective. The blood culture was sterile, but the causative agent was thought to be staphylococcus.—J. W. D. GOODALL. *Indian Med. Gaz.*, 76 (1941), 419. (W. T. S.)

Sulfonamide Compositions—Therapeutic. Compositions for oral administration are formed of a therapeutic sulfonamide compound (not over 5%) together with an oil, fat or glyceride such as olive oil, etc.—DAVID R. CLIMENKO, assignor to AMERICAN CYANAMIDE CO. U. S. pat. 2,238,973, April 22, 1941. (A. P.-C.)

Sulfonamide Drugs in Trachoma. By using ten different types of treatment the writers have shown that sufficient dosage of any sulfonamide drug will arrest trachoma in 90% of cases. Ambulatory treatment is possible, and supplementary local application of the drugs permits smaller dosage. The report is based on 1866 cases.—K. W. COSGROVE and L. K. HUNTLEY. *Southern Med. J.*, 35 (1942), 43–48. (W. T. S.)

Sulfonamide Drugs—Use of, in Wounds. A report on the use of sulfonamide drugs in clean operative wounds based on experiences with 314 patients. —J. ALBERT KEY. *Southern Med. J.*, 35 (1942), 55–58. (W. T. S.)

Sulfonamides—Local Uses of. The importance of these drugs for local application is stressed and a review offered. Fifty-four references.—M. A. LESSER. *Drug and Cosmetic Ind.*, 50 (1942), 144–147, 161. (H. M. B.)

Sulfonamides with Sulfates and Ordinary Diet. One hundred cases have been studied to determine whether sulfemoglobinemia actually results in patients receiving sulfonamides along with therapeutic doses of sulfates and standard hospital diets containing sulfur foods. Most of the cases were young adult males. Full doses of sulfapyridine and other sulfonamides were given. A series of drugs containing the sulfate radical were administered. Eggs and onions were included in the diet. No abnormal spectroscopic bands were observed in the blood, indicating absence of methemoglobinema and sulfemoglobinemia. Cyanosis, occurring in two cases, did not yield to methylene blue. Of eight sulfate salts, only quinine sulfate seemed to have an adverse effect with sulfonamide therapy.—W. MCN. NIBLOCK. *Indian Med. Gaz.*, 76 (1941), 457–459. (W. T. S.)

Swollen Finger—String Method of Removing a Tight Ring from a. The first step is to thoroughly soap the finger, then slip a thin cord string underneath the ring. The proximal end of the string is held taut and the distal end is wound tightly around the finger from the lower border of the ring down to the tip of the finger, and held tightly; this compresses the finger uniformly. The proximal end of the string is then grasped and while still tight it is unwound against the upper edge of the ring. As it is unwound it will be seen that the ring slides down the finger the distance of the string's width with each turn.—MILLARD F. ARBUCKLE. *Military Surgeon*, 90 (1942), 184. (F. J. S.)

Theophylline and Caffeine Solutions—Therapeutic. For improving the solubility of theophlline and caffeine in water, use is made of a water-soluble salt of a purine-acetic acid such as the calcium salt of theobromine acetic acid or the hexamethylenetetramine salt of theobromineacetic acid. Numerous examples are given.—WERNER MOTHES, assignor to E. BILHUBER, INC. U. S. pat. 2,222,952, Nov. 26, 1940. (A. P.-C.)

Therapeutic Substances—Chemistry of. A review.—F. PRESCOTT. *Chemist and Druggist*, 135 (1941), 51. (A. C. DeD.)

Throat Infection—Prophylaxis of. The incidence of pathogenic organisms in the throat is briefly discussed and a method of destroying them by antiseptic throat spray is suggested. A comparison is given of the incidence of infection in two groups each of fifty naval ratings during a period of five weeks, only one group receiving prophylactic treatment. The prophylaxis consisted of a throat spray and gargle of 15% to 20% sodium hypochlorite solution each morning on rising for five weeks. It is shown that the incidence of acute and subacute throat infection in the group receiving prophylactic treatment was greatly diminished. The severity of the clinical condition once it has developed is unaffected by the previous prophylactic treatment.—R. E. KING *Brit. Med. J.*, 4178 (1941), 154. (W. H. H.)

Urea Stibamine in the Treatment of Kala Azar—Notes on the History of. Wine from antimony cups used therapeutically proved poisonous. In 1913 tartar emetic intravenously cured leishmaniasis in Brazil, later in Sicily and India. In 1915 B. introduced sodium antimonyl tartrate. Toxicity of this drug provoked extensive research with antimony. This led to the introduction of suspended metallic antimony, several ordinary salts and finally, *via* atoxyl, to urea stibamine (S-diphenylcarbamide-4:4′-distibinic acid). Extracts from the Annual Reports of the Government of Assam attest to the efficiency and safety of urea stibamine against Indian kala azar. The cost of the drug is most reasonable. The constitution of several related compounds is questioned. Forty-nine references.—SIR U. N. BRAHMACHARI. *J. Trop. Med. Hyg.*, 44 (1941), 67–71. (W. T. S.)

Viper Venom in a Case of Eye Hemorrhage. The authors describe a case of recurrent hemorrhage in the vitreous in which viper venom restored sight by checking hemorrhage and causing absorption of clot.—K. N. PRADHAN and N. G. PATWARDHAN. *Indian Med. Gaz.*, 76 (1941), 221–222. (W. T. S.)

Vitamin Deficiency as Etiology of Ozena. Among the theories advocated as to the cause of ozena is that of avitaminosis. The frequency of the condition among the poor and in countries of low standards of living supports this theory. Many investigations have led to the conclusion that the hypo or dysfunctionary state of the glands which take part in the inner-secretory metabolism is in the last analysis due to lack of vitamin intake. Glasscheib believes that lack of vitamins A and D is the final answer to the ozena problem. In the treatment of the disease, a properly balanced diet is of utmost importance, and the author recommends cod liver oil, supplemented with thyroid, adrenal or parathyroid extracts. Certain operative procedures have been found successful in treating the disease, but the author suggests that in order to establish a better resistance in the nasal structures for the operation, the first preparatory measures should be those of vitamin and hormone therapy.—C. STAMM. *Eye, Ear, Nose and Throat Monthly*, 20 (1941), 331; through *Abbott Abstract Service*, (1942), No. 1053. (F. J. S.)

Vitamin A—Level of, in Blood as Index of Deficiency. The lowest level of vitamin A in the blood observed in examination of 114 normal infants was 45 U. S. P. units per 100 cc. Values below this level were obtained in infants receiving diets devoid of vitamin A and in those suffering from disorders which affected the absorption of fat. A low blood level was associated with poor dark adaptation and with low storage of the vitamin in the liver. The observations on infants as well as on animals show that low levels of vitamin A in the blood indicate the presence of vitamin A deficiency. The daily administration of 17,000 units of vitamin A to infants during the first six months of life brought about an increase in the vitamin A content of the blood, while no effect was noted in the blood of babies which were more than six months old. Accordingly, it would seem advisable to give vitamin A routinely to infants during the early months of life. The importance of febrile disorders in the development of vitamin A deficiency is stressed.—J. M. LEWIS, O. BODANSKY and C. HAIG. *Am. J. Dis. Child.*, 62 (1941), 1129; through *Abbott Abstract Service*, (1942), No. 1071. (F. J. S.)

Vitamins A and D—Attempted Prevention of Coryza with. Many claims have been made that the administration of vitamins A and D prevented colds. Accordingly, during three winters the author studied 54 patients, each of whom had a previous record of five to seven colds each winter for several years. One group of these patients received only vitamin A up to 40,000 units daily; one group received only vitamin D up to 300,000 units daily; and the third group received both vitamins, starting with 9000 A and 120,000 D units daily; followed by slow increases to an unspecified level. None of the subjects receiving A or D alone derived any benefit from treatment, but of those who received both vitamins, 15% were completely free of colds during the second two years of treatment, 65% experienced a reduction in the number and severity of colds and 20% were not benefited. The author believes that the combination of vitamins A and D reduced the number and severity of colds in the majority of susceptible persons.—I. G. SPIESMAN. *Arch. Otolaryng.*, 34 (1941), 787; through *Abbott Abstract Service*, (1942), No. 1067. (F. J. S.)

Vitamin C—Use of, in Disease of the Liver. The author reports results, obtained in particular by German authors, in the treatment by vitamin C of various hemorrhagic syndromes. The efficacy of the treatment was extended to hemorrhagic tendencies due to hepatic insufficiency. The author has treated hepatic gastrorrhagia to advantage by the etiologic therapeutic administration of vitamin C. The author obtained improvement, with the action of ascorbic acid, by intravenous administration in various types of liver ailments, but has not noticed a responsive action in cholecystitis.—J. G. GALVAN. *Rev. méd. Latino-Amer.*, 25 (1940), 645; through *Presse méd.*, 97–98 (1940), 99. (W. H. H.)

Vitamin D—Influence of Massive Doses of, on Dental Caries. A group of two hundred children who had tuberculosis or had been in contact with a person with the disease were studied carefully for a period of approximately one year to determine the effect of a single massive dose of vitamin D on the incidence of dental caries. A control group received only the hospital diet devoid of any extra source of vitamin D; a second group received 305,000 U. S. P. units of vitamin D and 2,455,000 units of vitamin A; and a third group received 600,000 U. S. P. units of vitamin D in the form of crystalline vitamin D_2 in 1 cc. of oil. In the control group, thirty-nine cavities, or 1.18 new cavities per child, developed; thirteen cavities, or 0.39 cavity per child, developed in the second group; and six cavities, or 0.17 cavity per child, developed in the third group. None of the children in the series studied showed any toxic manifestations after administration of the single massive dose.—R. H. BROSKY, B. SCHICK and H. VOLLMER. *Am. J. Dis. Child.*, 62 (1941), 1183; through *Abbott Abstract Service*, (1942), No. 1068. (F. J. S.)

Vitamin K—Effect of, on Hemorrhage in the Newborn. In the study of a series of infants the authors found: that cord blood at birth possessed a normal prothrombin time; that a temporary hypoprothrombinemia developed in the first three days of life and almost disappeared in the next three days,

although wholly normal levels were not usually reached until about the tenth day; that infants with hemorrhagic disease showed a markedly prolonged prothrombin time, premature infants a moderately prolonged time and infants with neonatal asphyxia a markedly prolonged time. In the light of these findings the authors believe: that a prophylactic dose of vitamin K should be of value in premature infants and in those suffering from asphyxia; that the use of the vitamin is indicated in cases of traumatic bleeding, especially in cases in which intracranial hemorrhage is present; and that administration of the vitamin is advisable in all operative procedures occurring during the first week of life.—S. G. Ross and H. T. MALLOY. *Can. Med. Assoc. J.*, 45 (1941), 417; through *Abbott Abstract Service*, (1942), No. 1075. (F. J. S.)

Vitamin K in Other Than Hemorrhagic Diseases. Using the bedside method of Ziffren, the author has found that the prothrombin level is lowered by a number of diseases and exogenous toxins, especially those disturbing hepatic functions. Some of the patients were benefited by vitamin K, indicating its usefulness in conditions other than jaundice and hemorrhage in the newborn.—WILLIAM B. RAWLS. *Southern Med. J.*, 34 (1941), 1266-1271. (W. T. S.)

Vitaminic Compositions—Therapeutic. A concentrate of vitamin A or D is used with a high-vacuum distillate of an oil such as linseed oil, walnut oil, perilla oil or hempseed oil, for increasing the availability of the vitamin to the animal body.—KENNETH C. D. HICKMAN, assignor to DISTILLATION PRODUCTS INC. U. S. pat. 2,221,690, Nov. 12, 1940. (A. P.-C.)

Wounds—Healing of. Biophysical, mechanical, chemical and bacterial factors are briefly considered as they relate to wound healing. The use of various and diverse substances in the treatment of infected wounds is discussed and numerous points are raised with the hope that additional investigative work will be stimulated.—WARNER F. BOWERS. *Military Surgeon*, 90 (1942), 140. (F. J. S.)

X-Ray Contrast Compositions—Iodine Compounds for Use as. Use is made of a water-soluble and nontoxic salt such as the sodium salt of tetraiodo-*m*-phthalic or tetraiodo-*p*-phthalic acid.—ANDRÉ G. J. GUERBET. U. S. pat. 2,247,880, July 1, 1941. (A. P.-C.)

MODERN REMEDIES

Actophen (Biochemical Research Laboratories, Chicago, Ill.) contains in each capsule 50,000 U. S. P. units of vitamin D and 32 mg. of bile salts and is used in the systemic treatment of arthritis. It is supplied in bottles of 50, 100 and 500 capsules.—*Am. Professional Pharmacist*, 7 (1941), 730. (F. J. S.)

Allantoin "Genatosan" (Genatosan Ltd., Loughborough, Eng.) is a cell proliferant found in the embryonic fluids and in growing parts of many plants. Chemically pure synthetic allantoin, used as a stimulant of cell prolification, is particularly useful after skin grafting in varicose veins and other sluggish ulcers, bed sores and slow healing wounds. It is available as the pure substance; sterile solution in saline; 2% ointment in special "Fissan" base; 2% ointment with 5% or 10% sulfanilamide (for cases of gross infection); also allantoin powder 4% with sulfanilamide 96%.—*Australasian J. Pharm.*, 22 (1941), 782. (A. C. DeD.)

Allantomide (The National Drug Co., Philadelphia, Pa.) is allantoin ointment 2% with 10% sulfanilamide in a greaseless base. It is indicated in sulfanilamide wound therapy to prevent and combat infection in compound fractures, grossly contaminated wounds, clean surgical wounds, infected burns, leg ulcers, decubitus ulcers, infected traumatic wounds, localized abscesses and carbuncles. The preparation is spread over the entire infected area and covered with gauze after the infection has been controlled by instillations of sulfanilamide powder. The dressings are changed daily. Allantomide is supplied in 1-oz. tubes and 4-oz., 1-lb., and 5-lb. jars.—*Am. Professional Pharmacist*, 7 (1941), 730. (F. J. S.)

Alpha-Tocopherol (Sharp & Dohme, Philadelphia, Pa.) contains in each elastic capsule 10 mg. of alpha-tocopherol (synthetic vitamin E) and has been used in threatened and habitual abortion, amyotrophic lateral sclerosis and muscular dystrophy. It is administered orally as follows: In threatened abortion, daily doses of 15 to 30 mg.; in habitual abortion, a daily dose of 10 to 20 mg. is usually given; in amyotrophic lateral sclerosis, a minimum daily intake of 50 mg. is essential for therapeutic effectiveness. It is supplied in packages of 25, 100, and 500 soluble capsules.—*Am. Professional Pharmacist*, 7 (1941), 658. (F. J. S.)

Apophasan (Apogepha, Fabrik chem.-pharmaz. Präparate, Dresden) contains succinic acid, extracts of phaseolin, myrtillin and syzgium, together with vitamin B_1. It is marketed in the form of dragees.—*Pharm. Zentralhalle*, 81 (1940), 258. (N. L.)

Argiod Silver Iodide Wound Powder ("Linde," chem.-pharmaz. Präparate G. m. b. H., Wiesbaden-Biebrich) consists of calcium phosphate together with 1.5% silver iodide. It is indicated in the healing of severe wounds.—*Pharm. Zentralhalle*, 81 (1940), 258. (N. L.)

Bio-B-Plex (Biochemical Research Laboratories, 1525 E. 53rd St., Chicago, Ill.) is a sterile injectable liver concentrate with the vitamin B complex and each cc. contains thiamine 10 mg., riboflavin 200 μGm., pantothenic acid 250 μGm., pyridoxine 500 μGm. and nicotinamide 10 mg. It is indicated for the rapid administration of B-complex factors in gross deficiencies and conditions where oral administration is not readily assimilated. Bio-B-Plex is administered parenterally according to indications; and is supplied in 5-cc. vials, 10-cc. vials and 500-cc. vials.—*Am. Professional Pharmacist*, 7 (1941), 795. (F. J. S.)

Cardiovalat (Apoth. M. Bock, Wickede/Rhur) contains gelsemium, spigelia, potassium carbonate, extract of valerian, glycerin and distilled water. It is recommended in various cardiac and neurotic conditions.—*Pharm. Zentralhalle*, 81 (1940), 258. (N. L.)

Cortrophin (Organon Laboratories Ltd., London) is an adrenotrophic extract of the anterior pituitary gland. It is used for stimulating the adrenal cortex in complaints due to its hypofunction. The dose depends on the case.—*Australasian J. Pharm.*, 22 (1941), 852. (A. C. DeD.)

Daldrin (Sharp & Dohme, Philadelphia, Pa.) is a sugar-free sedative and expectorant containing the following in each fluidounce: propadrine hydrochloride, 1 gr., codeine phosphate, 1 gr., sodium citrate, 20 gr., fluidextract of ipecac, 2 minims, menthol, $^3/_{16}$ gr., chloroform, 2 gr. and alcohol, 5%. It is used for the treatment of coughs due to common colds and those due to minor bronchial or asthmatic conditions (especially useful for diabetics). The dose is one teaspoonful every 2 or 3 hr., children in proportion. Daldrin is supplied in pint and gallon bottles.—*Am. Professional Pharmacist*, 7 (1941), 795. (F. J. S.)

Ephedrine and Cyclopal Capsules (The Upjohn Co., Kalamazoo, Mich.) contains in each capsule ephedrine sulfate, $^3/_8$ gr. and cyclopentenylallylbarbituric acid, $^1/_2$ gr. and they are indicated in re-

ducing nasal obstruction and relieving symptoms of vasomotor rhinitis, hay fever and the acute stages of the cold, also in the symptomatic treatment of bronchial asthma. The capsules exhibit a more uniform bronchodilator and vasoconstrictor action of ephedrine; and the dose is one or two capsules two or three times daily as required. They are supplied in bottles of 100 and 500 capsules.—*Am. Professional Pharmacist*, 7 (1941), 731. (F. J. S.)

E. M. F. (Intramuscular) (Frederick Stearns & Co., Detroit, Mich.) is a liver concentrate containing the erythrocyte factor with 4.5 mg. of thiamine hydrochloride 1500 U. S. P. Units per cc. and is indicated in pernicious anemia and its complications; anemias of the macrocytic type, frequently caused by liver diseases, carcinoma of the stomach, sprue, pregnancy, parasitic infections and vitamin deficiency states. The dose is one cc. or more daily, given intramuscularly. E. M. F. is supplied in 1-cc. ampuls in boxes of 3, and 60; also 5-cc. vials.—*Am. Professional Pharmacist*, 7 (1941), 659. (F. J. S.)

Expectosan (Chem.-pharmaz. Präparate, Berlin) is an expectorant recommended in the treatment of coughs and bronchial catarrh. It is marketed in tablet form and contains extract of primula, licorice, sodium benzoate, ammonium chloride and oil of anise.—*Pharm. Zentralhalle*, 81 (1940), 258. (N. L.)

Hexavibex (Parke, Davis & Co., Detroit, Mich.) is crystalline pyridoxine hydrochloride formerly termed vitamin B_6 and is used in the supplementary treatment of certain cases of pellagra, and in beriberi, cheilosis and polyneuritis. It is administered orally, or in emergencies parenterally and is issued in 10-mg. sealed capsules, in boxes of 20 and 100; also as 15-mg. ampuls for parenteral use in boxes of 6 and 25.—*Am. Professional Pharmacist*, 7 (1941), 658. (F. J. S.)

Immunal Tablets (C. F. Asche & Co., A.-G., Hamburg) contain in each tablet 0.05 Gm. quinine, together with acetylsalicylic acid and phenacetin, and are recommended as an analgesic.—*Pharm. Zentralhalle*, 81 (1940), 258. (N. L.)

Infricol Salve (Hofapotheker R. Baur, Donaueschingen) consists of camphor, methyl salicylate, oils of mustard, thyme and rosemary, together with extract of capsium in an ointment base containg soap. —*Pharm. Zentralhalle*, 81 (1940), 258. (N. L.)

Lithiopurgetten (Fabrik pharmaz. Präparate Apoth. Willi Derschum, Mannheim) are dragees consisting chiefly of sodium oleate, extracts of rhubarb, belladonna, sodium and potassium iodides and papaverine hydrochloride. It is indicated in disorders of the gall.—*Pharm. Zentralhalle*, 81 (1940), 259. (N. L.)

Mannitol Hexanitrate (E. R. Squibb & Sons, New York, N. Y.) is used as a prophylactic in frequent anginal attacks and to reduce blood pressure. It is an effective vasodilator with prolonged action. The dose is $^1/_4$ grain initially which is increased to 3 grains daily; and it is administered orally. Mannitol Hexanitrate is supplied as $^1/_4$-gr. tablets in bottles of 100; and as $^1/_2$-gr. tablets in bottles of 100.—*Am. Professional Pharmacist*, 7 (1941), 731. (F. J. S.)

Morelix (Gale, Baiss and Co. Ltd., London) contains morrhuol, malt extract, hypophosphites and vitamins A and D. It is a nutritive tonic. The dose should be directed by physician. It is marketed in 4-, 8- and 16-oz. bottles.—*Australasian J. Pharm.*, 22 (1941), 852. (A. C. DeD.)

Moryl (Savory and Moore Ltd., London) is carbaminoxylcholine hydrochloride. It is a parasympathetic stimulant in postoperation intestinal stasis and retention of urine. The dose, $^1/_2$-1 ampul, subcutaneously or intramuscularly up to 4 cc. per day; tablets, $^1/_2$–2 tablets three times a day. Solution and substance, as the physician orders. It is marketed as ampuls (1 cc.), in boxes of 3, 5, 10 and 100; tablets, 20, 50, 100, 250 and 500; solution: for ozena, 20 cc.; for glaucoma, 5 cc.; substance: boxes of 3 and 10 phials containing 0.1 Gm.—*Australasian J. Pharm.*, 22 (1941), 852. (A. C. DeD.)

Neo-Oestranol (Crookes Laboratories, Inc., New New York, N. Y.) is α,α'-diethyl-4,4'-stilbenediol and is indicated in diethylstilbestrol therapy. Neo-Oestranol is supplied as follows: tablets of 0.1 mg. in bottles of 50, 250 and 1000; tablets of 1 mg. in bottles of 25, 100 and 1000; and oil ampuls of 1 mg. in 1 cc. in boxes of 6, 25 and 100.—*Am. Professional Pharmacist*, 7 (1941), 794. (F. J. S.)

Nicorbin (Glaxo Laboratories Ltd., Greenford, Middlesex) contains in each tablet 1 mg. aneurin hydrochloride, 25 mg. ascorbic acid and 10 mg. nicotonic acid. It is used in subclinical multiple-deficiency states; protection against beriberi, pellagra and scurvy. The dose, three tablets daily, supplies an optimum amount of each factor.—*Australasian J. Pharm.*, 22 (1941), 852. (A. C. DeD.)

Novotussin (Dr. R. Reiss, Berlin) is a medicated cough drop containing the plant extracts of senega, fenchel, anise and thyme together with ammonium halides, ephedrin and a synthetic expectorant.—*Pharm. Zentralhalle*, 81 (1940), 234. (N. L.)

Nuxol Crookes (The Crookes Laboratories Ltd., London) is pure vegetable oil, containing vitamins A and D in same proportion as in fine cod liver oil. It is used as dietary adjunct and protective medicine. Each gram contains 1000 I. U. vitamin A, and 100 I. U. vitamin D. The dose is based on cod liver oil. It is issued in 1-, 5-, and 25-gal. drums.—*Australasian J. Pharm.*, 22 (1941), 852. (A. C. DeD.)

Parentosol-B (E. R. Squibb & Sons, 745 Fifth Ave., New York, N. Y.) is a solution of three synthetic vitamin B complex factors, each cc. containing 10 mg. thiamine hydrochloride (3333 U. S. P. XI Units), 1 mg. riboflavin and 100 mg. nicotinamide. It is used in the treatment of pellagra and other conditions involving severe deficiency of thiamine, riboflavin and/or nicotinic acid. Parentosol-B is given intravenously (adults, 1 to 2 cc.; children, 0.5 to 1 cc. daily) and is supplied in 1-cc. ampuls in boxes of 6.—*Am. Professional Pharmacists*, 7 (1941), 659. (F. J. S.)

PCMX (Monsanto Chemicals Ltd.) is parachlormetaxylenol. It is a basic germicide, practically non-poisonous and non-irritant. It is used in antiseptic fluids, spray, mouthwashes, gargles, tooth pastes, lotions, pastilles, ointment, etc. It is soluble in spirit and water.—*Australasian J. Pharm.*, 22 (1941), 782. (A. C. DeD.)

Sarcoptan (Duncan, Flockhart and Co., Edinburgh and London) is a clear saponaceous solution of benzyl benzoate. It is used in cases of scabies. It is applied to the skin. It is marketed in 7-, 13- and 26-oz. bottles.—*Australasian J. Pharm.*, 22 (1941), 852. (A. C. DeD.)

Solution Aminophylline (E. R. Squibb & Sons, 745 Fifth Ave., New York, N. Y.) consists of theophylline with ethylene diamine in sterile aqueous solution. It is a diuretic and myocardial stimulant and is indicated in Cheyne-Stokes respiration, paroxysmal cardiac dyspnea, bronchial asthma and for the relief of pain due to coronary sclerosis. It is supplied as a solution for intravenous administration, $^3/_8$ gr. (0.025 Gm.) per cc., in boxes of 6, 25 and 100 10-cc. ampuls; also as a solution for intramus-

cular administration, 3¾ gr. (0.25 Gm.) per cc., in boxes of 6, 25 and 100 2-cc. ampuls.—*Am. Professional Pharmacist*, 7 (1941), 658. (F. J. S.)

S$_1$-Schnupfen Salve (Labor. Jung, Inh. F. Jung, Frankfurt, a. M.) contains ichthyol, redoxon, extract of witch hazel, menthol, oils of orange, eucalytus and citron, together with white vaseline and anhydrous eucerin.—*Pharm. Zentralhalle*, 81 (1940), 234. (N. L.)

Stimurheu (Aglukon Gesellschaft für chem.-pharmaz. Präparate G. m. b. H. Berlin) is an ointment containing sodium salicylate, lithium salicylate, volatile oils, alcohol, capsicum and glycerin, properly compounded with a suitable ointment base. It is indicated in the treatment of rheumatism, etc.—*Pharm. Zentralhalle*, 81 (1940), 235. (N. L.)

Stomatin Salve (Frankfurter Dentalia, F. Jung, Frankfurt, a. M.) contains ormicet, thymol, tincture of myrrh, camphor, oil of peppermint and glycerin in a suitable base. It is used as a dental remedy.—*Pharm. Zentralhalle*, 81 (1940), 235. (N. L.)

Sulfanilamide Ampules (Eli Lilly & Co., Indianapolis, Ind.) contain in each ampul 5 Gm. or 8 Gm. of pure sterile sulfanilamide. It is used in implantation in compound fractures; in the peritoneal cavity at the close of operations; or other conditions where the peritoneum is known to be contaminated or infected; and in clinically clean operative wounds where infection is especially to be feared. Four to 15 Gm. are implanted in compound fractures; 10 to 12 Gm. in peritoneal infections; an 8% solution is used in badly infected wounds of the scalp; surgical or traumatic wounds of the thorax and pericardium; abdominal incisions which do not heal well; and various types of orthopedic wounds. Also used in the treatment of meningococcic meningitis, 100 cc. of 0.8 per cent solution per 40 lbs. of body weight may be administered every 12 hrs. Sulfanilamide ampules are supplied in packages of 6, 25 and 100.—*Am. Professional Pharmacist*, 7 (1941), 730. (F. J. S.)

Synapoidin (Parke, Davis & Co., Detroit, Mich.) is a combination of chorionic gonadotropic (luteinizing hormone) from human pregnancy urine and the follicle stimulating hormone (gonadal synergist) from the anterior pituitary. It is used in pathologic conditions attributable to deficiency of pituitary gonadotropins and patients should be under careful medical supervision. Synapoidin is administered parenterally according to indications. It is supplied in 10-cc. rubber-diaphragm-capped vials and each cc. of solution contains 15 synergy rat units.—*Am. Professional Pharmacist*, 7 (1941), 795. (F. J. S.)

Synkayvite (Hoffman-La Roche, Inc., Nutley, N. J.) is 2-methyl-1,4-naphthohydroquinone diphosphoric ester tetrasodium salt and is indicated in hemorrhagic disorders in which there is hypoprothrombinemia, such as hemorrhagic disease of the newborn, obstructive jaundice, biliary fistula, gastrointestinal fistula, intestinal obstruction, ulcerative colitis and sprue. In adults, 5 to 15 mg. daily suffices to raise low prothrombin levels; in infants and children, 5 to 10 mg. is usually adequate daily dosage. It may be given orally or parenterally. Synkayvite is supplied as tablets of 5 mg. in bottles of 40, 100, 500 and 1000; ampuls of 1 cc. with 5 mg. of drug in cartons of 6, 25 and 100; and ampuls of 1 cc. with 10 mg. of drug in cartons of 6, 25 and 100.—*Am. Professional Pharmacist*, 7 (1941), 794. (F. J. S.)

Synpharma Tincture (Synochem-Präparate, Apotheker G. Jacoby, Berlin N) is a 60% alcoholic solution of a brominated fluorescein mercurial derivative. The mercury content is 5%. The tincture is said to have a slow but more prolonged disinfectant action than tincture of iodine, and is recommended in the treatment of skin wounds.—*Pharm. Zentralhalle*, 81 (1940), 235. (N. L.)

Tangar-Gelee Früchte (Brotella-Werke, Dr. Landolt & Co., Hannover-Hainholz) contains as its principal ingredients agar, tamarind pulp, senna and other herbs. It is recommended as a cathartic.—*Pharm. Zentralhalle*, 81 (1940), 235. (N. L.)

Tetanus Toxoid (Intranasal) (Sharp & Dohme Philadelphia, Pa.) is a purified and concentrated antigenic solution of tetanus toxoid, in physiological saline, containing 5% glycerin. It is used for repeat immunization against tetanus. It should be given in courses consisting of three daily instillations of 0.1 cc. in each nostril beginning six or twelve weeks after the last injection. Tetanus Toxoid is supplied in 1-cc. and 5-cc. "Topagen" vials with dropper.—*Am. Professional Pharmacist*, 7 (1941), 659. (F. J. S.)

Tetronox (Savory and Moore Ltd., London) is barbituric acid, with small amounts of phenacetin, phenazone and lactophenin. It is a hypnotic and sedative. The dose is 1 or 2 tablets, as the physician prescribes. It is marketed in vials of 10 tablets and bottles of 100 tablets.—*Australasian J. Pharm.*, 22 (1941), 852. (A. C. DeD.)

Tophirheumol Liniment (Badag, pharmaz. und biolog. Präparate, K. Rinke, Baden-Baden) contains cinchophen 8%, salicylic acid 3%, camphor 3%, menthol 0.1%, olea 22%, formic acid 3.9%, alcohol 20% and distilled water 40%. It is indicated in the treatment of rheumatism, gout, neuralgia, etc.—*Pharm. Zentralhalle*, 81 (1940), 235. (N. L.)

Trasentin-6H (Ciba Lts., Horsham, Sussex, Eng.) is a synthetic antispasmodic. It is used for spasms of the gastrointestinal tract and genitourinary system. It is now available in ampul form, which will eventually replace the original transentin (diphenylacetyldiethylaminoethanolester hydrochloride) in both the other forms, tablets and suppositories.—*Australasian J. Pharm.*, 22 (1941), 782. (A. C. DeD.)

Triofax (Triple Dye Jelly) (Burroughs Wellcome and Co., London and Sydney) contains gentian violet 1 per cent, euflavine 0.1 per cent, brilliant green 0.1 per cent; and water soluble base. It is used for burns and scalds, where tannic acid is contraindicated. It produces a light flexible coagulum, combats sepsis and prevents reinfection. It is applied direct from the tube to injured surface. It is marketed in collapsible tubes of two sizes.—*Australasian J. Pharm.*, 22 (1941), 782. (A. C. DeD.)

Vimaltol (A. Wander Ltd., London) is a concentrated vitamin food (A, B, C and D), containing halibut liver oil, fortified with added vitamins, in a basis of malt extract. It is used in the dietary of children; for building up strength and weight; and for increasing resistance to winter ailments. It is supplied in 1-lb. and 2-lb. jars.—*Australasian J. Pharm.*, 22 (1941), 782. (A. C. DeD.)

Vitahele (Rotunda Ltd., Denton, Lancs.) is a gauze covered with a medium containing 2000 I. U. of vitamin A per Gm. It accelerates epithelialization and granulation of wound tissues. It is marketed in packs of 2-in. by 3-yard roll, with adhesive plaster, also a medical pack (gauze only).—*Australasian J. Pharm.*, 22 (1941), 852. (A. C. DeD.)

Vomiton Tablets (Nicolaisen & Co., Flensburg) are represented to consist of bromides, bismuth and cerium.—*Pharm. Zentralhalle*, 81 (1940), 235. (N. L.)

BACTERIOLOGY

Aerobic Sporulating Bacilli—Production of Bactericidal Substances from. Dubos in 1939 announced the discovery of a highly bactericidal substance which he had extracted from aerobic sporulating bacilli. Since this substance destroyed gram positive organisms but was ineffective against gram negative bacteria, it was called "gramicidin." In the present paper the authors discuss the preparation and action of gramicidin as well as a new bactericidal substance more recently discovered and called "tyrocidine" because of its high content of tyrosine. Organisms which possess these bactericidal substances are apparently ubiquitous and have been isolated from soil, sewage, manure, cheese, etc. The organisms are grown in broth, the active fractions precipitated with acid and extracted with alcohol. The active substances are water insoluble, which limits their therapeutic value to some extent. Gramicidin destroys gram positive organisms only *in vitro* but tyrocidin destroys both gram positive and negative organisms *in vitro*. However, *in vivo* tyrocidin has no effect on gram negative organisms and but a slight effect on gram positive organisms. Gramicidin does not actually disintegrate bacteria but apparently renders them unable to multiply, while tyrocidin actually destroys the bacterial cells.—R. J. DUBOS and R. D. HOTCHKISS. *J. Exptl. Med.*, 73 (1941), 629. (T. C. G.)

Alkylidenedisulfanilamides. Alkylidenedi - *p* - aminobenzenesulfonamides which are suitable for use in the treatment of streptococcus, pneumococcus and staphylococcus infections are produced by treating an alkyl aldehyde having 8 to 18 carbon atoms in the alkyl radical with *p*-aminobenzenesulfonamide in the molar proportions of 1:2 (suitably with use of methanol as a solvent reaction medium). Details are given of the production of several such compounds.—JOSEPH EBERT, assignor to THE FARASTAN CO. U. S. pat. 2,235,145, March 18, 1941. (A. P.-C.)

Aminobenzene Sulfamidothiazole—Action of, on B. Coli. The authors report a series of observations of affections with *B. coli* which was rapidly and definitely cured by aminobenzene sulfamidothiazole (Compound 2090 R P.).—F. GOURNAY and MOLITOR. *Soc. Med. des Hopitaux*, Nov. 29, 1940; through *Presse méd.*, 95-96 (1940), 981. (W. H. H.)

4-(4'-Aminobenzenesulfonamido)benzenesulfonamide with Aldoses—Condensation Products of. Compounds suitable for use by injection in the treatment of gonorrhea and other bacterial infectious diseases are obtained by condensations in which use may be made of *d*-glucose, maltose, arabinose, mannose, galactose, lactose, etc., preferably in a solvent such as methanol, alcohol or propyl alcohol and in the presence of a catalyst such as hydrochloric acid, with heating under reflux.—JOSEF KLARER, assignor to ALBA PHARMACEUTICAL CO. U. S. pat. 2,247,913, July 1, 1941. (A. P.-C.)

***p*-Aminobenzoic Acid—Antagonism of, to Sulfanilamide.** The authors describe some interesting results obtained from the use of *p*-aminobenzoic acid ("p. a. b.") as a growth factor for *Clostridium acetobutylicum*. Earlier work had shown that a yeast concentrate would support growth of *Cl. acetobutylicum*. From thirty Kg. of brewers' yeast the writers prepared 750 mg. of yeast concentrate. An ether extract of this concentrate yielded, after evaporation and benzoylation, 2 mg. of *p*-benzoylaminobenzoic acid. A study of nine species of *Cl. acetobutylicum* showed that "p. a. b." and its derivatives, such as novocaine, act as growth factors for this organism. *p*-Aminobenzoic acid is removable from yeast concentrates, and the removal of the "p. a. b." removes the growth factor activity of the concentrate. Following up recent work of Woods on the antisulfanilamide action of "p. a. b." it was found possible to titrate the two substances, using growth of the organism as the end-point. One molecule of "p. a. b." antagonizes 23,000 molecules of sulfanilamide. The tremendous disproportion between the reagents indicates the difficulty of the growth activator, "p. a. b.," in overcoming the effect of the sulfanilamide, assuming that the two molecules are each directed toward a common receptor site on the organism.—S. D. RUBBO and J. M. GILLESPIE. *Nature*, December 28, 1940; through *Australasian J. Pharm.*, 22 (1941), 213. (A. C. DeD.)

Aminohydroxyarsenobenzene. A product of the formula 3-[$(HOCH_2CH(OH)CH_2)(HOCH_3CH_2)$-N] - 4 - $HOC_6H_3AsAsC_6H_2(OCH_3)$ - 3 - OH- 4-$(NHCH_2OSO_2Na)$-5 is a yellow powder, soluble in water, insoluble in ether, acetone and benzene, and effective against spirochetes. It is produced by a process described in detail.—ALFRED FEHRLE, WALTER HERRMANN, PAUL FRITZSCHE and HANS HILMER, assignors to WINTHROP CHEMICAL CO. U. S. pat. 2,232,659, Feb. 18, 1941. (A. P.-C.)

Antibody—Application of "Falling Drop" Measurement of Density to Quantitative Determination of, in Immunological Reactions. The falling drop method devised by Barbour and Hamilton for the determination of the concentration of protein solutions has been found applicable to the estimation of the antibody content of antipneumococcus serum. After the precipitate has been separated from the reacting mixture by centrifugation, the density of the supernatant fluid can be determined in less than one minute by this method.—W. J. NUNGESTER and S. ROBERT LEWIS. *Proc. Soc. Exptl. Biol. Med.*, 48 (1941), 425. (A. E. M.)

Azo Dye from *p*-Aminobenzenearsonic Acid. The dye 1-(*p*-arsonophenylazo)-2-naphthol-4,8-disulfonic acid is suitable for therapeutic use against trypanosoma infection.—ERNST A. H. FRIEDHEIM. U. S. pat. 2,244,293, June 3, 1941. (A. P.-C.)

Bacteria—Destroying, Such as Those in Air. The bacteria are subjected to the action of a gaseous medium into which a silver compound such as silver nitrate has been vaporized so that the gaseous treating agent contains finely divided silver.—RICHARD MÜLLER. U. S. pat. 2,235,843, March 25, 1941. (A. P.-C.)

Bacterial Metabolism—Action of Synthetic Detergents on. A study was made of the effects of synthetic detergents and wetting agents on respiration and glycolysis of gram positive and gram negative microörganisms. It was found that all of the *cationic detergents* studied were very effective inhibitors of bacterial metabolism at 1:3000 concentration, and several were equally active at 1:30,000. Few of the *anionic detergents* inhibit as effectively as the cationic compounds. Gram positive and gram negative microörganisms were equally sensitive to the cationic compounds. On the other hand, all of the anionic compounds studied selectively inhibited the metabolism of the gram positive organisms. The inhibitory action of both types of detergents was markedly influenced by the hydrogen ion concentration. Cationic detergents exhibited their maximum activity in the alkaline *p*H range, and the anionic in the acid range. Studies were made of a homologous series of straight chain alkyl sulfates and sulfoacetates (C_8 to C_{18}) and indicated that maximum inhibition was exerted by the 12, 14 and 16 carbon compounds (lauryl, myristyl and cetyl). It was observed that three lauryl esters of amino acids were powerful inhibitors of bacterial metabolism. This apparently was the first time that the inhibitory action of such cationic detergents (with-

out quaternary ammonium structure) had been recognized. It was found that certain detergents, in concentrations lower than the inhibiting values, actually stimulate bacterial metabolism.—Z. BAKER, R. W. HARRISON and B. F. MILLER. *J. Exptl. Med.*, 73 (1941), 249. (T. C. G.)

Bacteriological Laboratory Procedures and Apparatus—Suggested Innovations in. The writers outline improved and new techniques in the following laboratory operations. (1) Desiccation of cultures, serum and other biological products. (2) Opening glass ampuls and cutting glass. Innovations, simplifications, and improvizations are given for the following laboratory equipment. (1) Certain types of asbestos filters. (2) Supports for filtration membranes. (3) Metal petri-dish covers. (4) Porcelain lids for petri-dishes. (5) Coverslips. (6) A double loop for bacteriophage work. (7) A cover for microscopes and other apparatus. With respect to wartime economy in the laboratory, the writers make these suggestions. The cellulose material of old films may be used to frame photographs and maps, serves as coverslips and dissolved in proper solvent provides a substitute for collodion. Cotton-wool plugs can be salvaged. Newspapers may be used instead of brown paper for wrapping objects to be sterilized. Fine sand instead of Kieselguhr can be used for filtration. Oil of ground nut or hydnocarpus serves in place of cedar wood and paraffin oils in microscopy. High cost agar can be salvaged and used for less fastidious bacteria. Bottles of standard glass will replace flask. Wooden packing cases for small specimens give way to bamboo sections.—C. L. PASRICHA, *et al. Indian Med. Gaz.*, 76 (1941), 270–276. (W. T. S.)

BCG Vaccination—Investigation of the Percutaneous. Experimental results on guinea pigs indicate that the percutaneous (Rosenthal) method of BCG vaccination yields 58.3% positive Mantoux tuberculin reactions in 1 week, 66.7% in 2 weeks, 83.3% in 3 weeks and 100% in 4 weeks, and that 91.7% remain tuberculin positive as late as 14 months after vaccination. Microscopic studies reveal that the percutaneous BCG vaccination produces typical tubercles at the junction of the epidermis and cutis and in the cutis proper, as well as in adjacent lymph nodes; and that occasional acid-fast bacilli occur in the sections of the skin and adjacent lymph nodes as long as 6 months after the percutaneous BCG vaccination. Thus the prolonged tuberculin allergy is occasioned by multiple bacillary foci which persist in harmless symbiosis with the organism. When the percutaneously vaccinated animals are exposed to virulent tuberculous infection, we find that resistance is negligible up to 10 days after vaccination but becomes significant during the second and third post-vaccination weeks. Clinical results on 246 adults and 38 children vaccinated percutaneously with approximately 40 punctures indicate good takes in 94%. One adult and 3 children remained refractory to the percutaneous BCG vaccination and revaccination, but became slightly tuberculin positive after the intracutaneous injection of 0.2 mg. of BCG. It is postulated that such refractory individuals are partially immune. Among the 63 adults who were successfully vaccinated by the percutaneous route, 93.7% became Mantoux positive (1 mg. tuberculin) as soon as two weeks after vaccination and every one reacted positive 4 weeks after vaccination (100%). The Mantoux test with 1 mg. tuberculin was done on 3 persons 6 months after the percutaneous BCG vaccination and on 16 persons as late as 13 months after vaccination and 100% reacted positive. Because the Rosenthal percutaneous BCG method gives equally as good results as the single intracutaneous injection, the former method is superior because it requires no injection, produces no suppuration of adjacent lymph nodes nor visible scars; and it stimulates rapid and lasting allergy and tuberculo-resistance.—K. BIRKHAUG. *Nord. Med.*, 10 (1941), 1224; through *Bull. Hyg.*, 16 (1941), 601. (T. C. G.)

Chlorophyll Compounds. Chlorin-e-Rhodin-g in Experimental Tuberculosis. Chlorin-e and rhodin-g occur in combination in the proportion of approximately 2.75 to 1 in the breakdown of chlorophyll. The mixture inhibited the growth of tubercle bacilli *in vitro*, but had no influence on the course of experimental tuberculosis in rabbits.—HOWARD J. HENDERSON and ESMOND R. LONG. *Proc. Soc. Exptl. Biol. Med.*, 48 (1941), 435. (A. E. M.)

Camphorylidene Sulfanilamides. Camphorylidene mono- and di-*p*-aminobenzenesulfonamides, which melt (with decomposition) at 194° to 197° C. and 145° to 148° C., respectively, are produced by treating camphoraldehyde with *p*-aminobenzenesulfonamide (suitably in methanol on a steam bath for 6 hrs.). They are suitable for use in combating cocci infections.—JOSEPH EBERT, assignor to THE FARASTAN CO. U. S. pat. 2,237,342, April 8, 1942. (A. P.-C.)

4:4′-Diamidino Stilbene—Action of, on L. Donovani and L. Infantum Infections in the Syrian Hamster. Twelve Syrian hamsters, infected with *L. donovani* bodies by intraperitoneal or intrasplenic injections, received from 1 to 15 mg./Kg. of 4:4′-diamidino stilbene, depending on degree of infection, over a period of one to several months. The infections were definitely controlled even in the rapid infection produced by intrasplenic injection. Eighteen hamsters infected with human strain of *L. infantum*, and seven hamsters infected with canine strain of *L. infantum* received doses of the same drug ranging from 1 to 40 mg./Kg. at intervals of from 1 to 2 days for periods of from 6 to 72 injections. The therapeutic effect here is distinct, but less so than with *L. donovani*.—S. ADLER and I. TCHERNOMORETZ. *Ann. Trop. Med. Paras.*, 35 (1941), 9–14. (W. T. S.)

Dibenzacridines. Dibenzacridine and its derivatives are obtained in quantitative yield by causing 2,2′-dihydroxy-1,1′-dinaphthylmethane and the carboxylic acids thereof to react under pressure and at an elevated temperature with aqueous solutions of ammonia or primary aliphatic amines, *e. g.*, methylamine, ethanolamine or butylamine, and by dehydrogenating, if necessary the 9,10-dihydrodibenzacridines obtained, which may be substituted on the nitrogen by alkyl or hydroxyalkyl. Details are given of the production of several such compounds, which are bactericides and are suitable for use as intermediates for preparing other pharmaceutical products.—ERICH LEHMANN, assignor to GENERAL ANILINE & FILM CORP. U. S. pat. 2,242,585, May 20, 1941. (A. P.-C.)

Formaldehydesulfoxylate Derivatives of Phenyl Sulfides, Disulfides, Sulfoxides and Sulfones. Therapeutic compounds, suitable for administration by mouth or by injection, for combating bacterial infections, comprise formaldehydesulfoxylate derivatives of the general formula $p\text{-}NaSO_2CH_2NHC_6H_4RC_6H_4R'\text{-}p'$, in which R represents S, SS, SO or SO_2, and R' represents NH_2, $NHCH_2SO_2Na$ and NO_2. Details are given of the production of 4,4′-diaminodiphenyl sulfone disodium formaldehydesulfoxylate, and general mention is made of the production of various other related compounds.—SANFORD M. ROSENTHAL and HUGO BAUER, assignors to THE GOVT. OF THE U. S. AS REPRESENTED BY THE SECRETARY OF THE TREASURY. U. S. pat. 2,234,981, March 18, 1941. (A. P.-C.)

Germicides. Use is made of *N*-tetradecyldiethylenetriamine in which the tetradecyl radical is at-

tached to a terminal nitrogen atom, or other compounds selected from the group consisting of *N*-alkylated alkylenepolyamines and salts thereof with acids, such as *N*-alkylated alkylenepolyamines corresponding to the general formula XNH-R-(NH-R)n-NHY, in which R is an ethylene, propylene or trimethylene radical, n is a number from 0 to 4, and X and Y are hydrogen or alkyl radicals at least one of which has 12 to 16 carbon atoms.—LUCAS P. KYRIDES, assignor to MONSANTO CHEMICAL CO. U. S. pat. 2,246,524, June 24, 1941. (A. P.-C.)

Gramicidin—Effect of, Administered by the Oral Route. Gramicidin is an extract from spore-bearing soil bacilli of bactericidal properties against gram-positive organisms. Tyrothricin, which contains gramicidin and tyrocidin, is bactericidal against *L. acidophilus in vitro*. Even giving 160 times the *in vitro* killing dose, it has no effect if given by mouth to animals harboring this organism. It does not cause any lesions of the gastrointestinal tracts.—LOUIS WEINSTEIN and CHARLES H. RAMMELKAMP. *Proc. Soc. Exptl. Biol. Med.*, 48 (1941), 147. (A. E. M.)

Hemolytic Streptococci and Acute Rheumatism. Hemolytic streptococci were isolated from the hearts of five of ten patients dying of acute rheumatism and never from controls. Hemolytic streptococci were isolated from damaged valves, but not from undamaged valves. Other types of streptococci were isolated from both damaged and undamaged valves, but more often from the former. The significance of these findings is discussed.—S. THOMSON and J. INNES. *Brit. Med. J.*, 4169 (1940), 733. (W. H. H.)

Hemolytic Streptococcus—Studies on the. IV. Further Purification and Concentration of Scarlet Fever Toxin. A heat-coagulable protein apparently identical with scarlet fever (erythrogenic) toxin was separated from filtrates of cultures in improved diffusate mediums. The toxic protein contained about 200,000,000, skin test doses per mg. and was approximately 50% pure. It was not obtained in crystalline form.—A. H. STOCK. *J. Biol. Chem.*, 142 (1942), 777. (F. J. S.)

Human Bile After Oral Administration of Hexamine and Sulfanilamide—Bacteriostatic Effect of. Hexamine is commonly used as a biliary antiseptic, but formaldehyde has not been discovered in the bile following its oral administration. Sulfanilamide may be expected to control biliary infections, especially streptococci. A patient with a biliary fistula made it possible to study the antiseptic action of bile after oral administration of these two drugs. Following hexamine dosing, the patient's bile (filtered through an L_3 candle) showed the highest bacteriostatic action against *streptococci*, least against *B. coli*, and intermediate against *B. typhosus*. No definite relationship could be shown between the *p*H (generally alkaline) of the bile and its bacteriostatic action. Presence of formaldehyde was not reported. These results were confirmed *in vitro*. After 28 Gm. of sulfanilamide had been administered, the bacteriostatic effect of the bile was comparatively more marked against *streptococci*, but *B. coli* and *B. typhosus* showed considerable growth. —S. P. DE, S. K. DATTA and S. C. CHATTERJEE. *Indian J. Med. Research*, 29 (1941), 271-277. (W. T. S.)

Hypochlorous Acid Gas—Air Purification by. In order to prevent the transmission of air borne diseases such as influenza, meningitis, etc., the author has been experimenting for many years with a hypochlorous acid spray. After extensive investigations in closed rooms, it was concluded that sterility of the air (99.75% reduction in bacterial content) may be achieved by the HOCl gas with a volumetric concentration in air of not more than $(3.5 \times 10^9)^{-1}$. The author answers the objections which have been raised against the practical use of HOCl sprays. Irritation of the mucus membranes of individuals in the sprayed rooms, corrosion of metals, bleaching and rotting of cloth do not occur with the proper concentration of the gas. The above objections result from the general belief that free chlorine is liberated in the air, but in reality there is no proof that free chlorine is produced from the hypochlorite.—A. T. MASTERMAN. *J. Hyg.*, 41 (1941), 44. (T. C. G.)

Influenza—A Complex Vaccine against. In 1940 Horsfall and Lennette startled the medical world by announcing the preparation of a complex vaccine against the influenza A virus. The unusual feature of this vaccine was that in addition to containing the influenza A virus it also contained the canine distemper virus (X strain). Although the canine distemper virus was immunologically unrelated to the influenza A virus, nevertheless its presence in the complex vaccine markedly increased the production of antibodies against the influenza A virus. No explanation has yet been offered for this immunological puzzle. In the present paper the authors prepared various combinations of influenza A virus passed through ferrets, mice and chick embryos, and the X and Y strains of the canine distemper virus. Human volunteers were vaccinated with complex vaccines of the two viruses, and the degree of immunity resulting was estimated by blood serum titrations of neutralizing antibodies. The injection of either complex ferret lung and spleen or complex chick embryo vaccines prepared with the X strain of canine distemper virus was found to produce the most effective results. The Y strain of canine distemper failed to influence the effect of the vaccine, even though it is antigenically identical with the X strain.—F. L. HORSFALL, E. H. LENNETTE and E. R. RICKARD. *J. Exptl. Med.*, 73 (1941), 335. (T. C. G.)

Iodine Solution—Aqueous Antiseptic. An alkylamine hydriodide such as ethylenediamine dihydriodide is used as a solubilizing agent.—ROBB V. RICE and GEO. D. BEAL, assignors to GANE and INGRAM, INC. U. S. pat. 2,211,837, Aug. 20, 1940. (A. P.-C.)

Labile Antigenic Constituents—Extraction of, from Bacteria and the Like. Apparatus is described, and a method, suitable for the treatment of *Bacterium typhosum* or *Streptococcus hemolyticus*, etc., which involves treating a suspension of the bacteria in a solution, in which the antigenic constituents are soluble, to compressional wave vibrations of cavitational amplitude for a time not substantially greater than 1 hr., and rapidly removing the bacterial residue as well as other suspended matter, the temperature of the liquid being continuously maintained below that at which substantial deterioration of the antigenic constituents takes place during the time required for treatment. A physiological saline solution may be used.—LESLIE A. CHAMBERS and EARL W. FLOSDORF, assignors to the UNIV. of PENNSYLVANIA. U. S. pat. 2,230,997, Feb. 11, 1941. (A. P.-C.)

Mercurated Halogenated Phenylphenol Derivatives. Antiseptic and fungicidal compounds such as anhydrohydroxymercuri - 4 - chloro - *o* - phenylphenol (which melts with some decomposition at 229° to 231° C.) are produced, *e. g.*, by the reaction or mercuric acetate with a halogenated *o*-phenylphenol (suitably 140° C.) for about 2 hrs.—HOWARD WORNE and JOHN S. PIERCE, assignors to SAMUEL BRASS. U. S. pat. 2,240,025, April 29, 1941. (A. P.-C.)

Mosquito Larvicides—Comparative Value of Some. In an effort to find a substitute for costly pyrethrum, the comparative value of phenothiazine,

p-dichlorbenzene, trichlorethylene and tetralin has been determined with pyrethrum extracts as a control. The substances were formulated in oil and water emulsions and ranged in cost from 1.46 to 3.24 Chinese national dollars per U. S. gallon of stock emulsion. Technique of emulsification is given. Tests were made in the laboratory with temperature and humidity observations and in the field under varying weather conditions. *p*-Dichlorbenzene and tetralin proved useful additions to pyrethrum larvacides, but the former is difficult to dissolve and the latter somewhat expensive. Phenothiazine has possibilities, but practical means of application are needed. It loses its power in acetone and benzene. Trichlorethylene was neither suitable nor safe in the form employed being the only substance tested which was toxic to ducks and mosquito fish.—J. H. JORDAN and W. J. SILVEY. *Chinese Med. J.*, 60 (1941), 66–72. (W. T. S.)

Organo-Mercurials and Some Copper Salts on Ringworm Fungi—Action of Some. Successful use of copper salts in control of plant fungi prompted the study of these salts in treatment of dermatoses. Since salicylic and benzoic acid are good in the treatment of mycoses of hands and feet, it was decided to investigate fungicidal properties of copper salicylate and benzoate. This was done and a table shows comparative effects. Both copper salts were found to be inferior to the acids themselves. Comparison was made also of chlorophenyl-mercuric chlorides and the corresponding fluorophenyl derivatives. The effect of position isomerism was observed. Six aromatic mercurials were tested and activities summarized. It was found that introduction of halogen or hydroxyl into phenylmercuric chloride increases fungicidal-static activity, the halogen substitution increasing in the order, ortho, meta, para. *p*-Fluorophenylmercuric chloride was more active than *p*-chlorophenylmercuric chloride. Antibacterial and fungicidal activity were parallel in *p*-fluoro and *p*-chloro mercuric halides. The mercurated chlorothymols are good fungicides increasing in this series as acetate, bromide, chloride. Substitution of a nitroso group for halogen lowers activity of thymol.—RICHARD H. BARRY, WALTER H. HARTUNG and THOMAS C. GRUBB. *Jour. A. Ph. A.*, 31 (1942), 43. (Z. M. C.)

Phosphorus—Transformations of, During Glucose Fermentation by Living Cells of Streptococcus Fæcalis. At the beginning of glucose fermentation by resting cells of *Streptococcus fæcalis* there is a marked decrease in inorganic phosphorus both in the cell and in the medium. The phosphorus appears chiefly in the barium-soluble alcohol-insoluble fraction which has not yet been completely characterized. The changes in phosphorus distribution during glucose fermentation by the living cell are in accordance with the theories of phosphorylating glycolysis. —D. J. O'KANE and W. W. UMBREIT. *J. Biol. Chem.*, 142 (1942), 25. (F. J. S.)

Poliomyelitis Virus—Distribution in Human Tissues of the. For many years it was generally accepted that the poliomyelitis virus was transmitted by droplet infection, and that the virus, gaining entrance to the respiratory tract, traveled *via* the nerve tracts to the spinal cord. These assumptions were based primarily upon the results of experimental work carried out some 25 to 30 yrs. ago when methods for identifying the virus were not always reliable and experiments were carried out entirely upon experimental animals. In the present study an attempt has been made to locate the poliomyelitis virus in the body by removing a number of tissues at autopsy of persons who had died of the disease. These tissues were tested by appropriate methods for the presence or absence of virus. Poliomyelitis virus was demonstrated in the walls of the pharynx, ileum and only once in the walls of the descending colon. However, the contents of the descending colon regularly contained virus. The presence of virus in the walls of the alimentary tract appears to be the result neither of generalized dissemination of the virus nor of secondary centrifugal spread, but rather a primary localization or portal of entry. The absence of demonstrable virus in the nasal mucosa, olfactory bulbs and anterior perforated substance suggests that neither the upper respiratory tract nor the olfactory pathway was affected in the cases of human poliomyelitis studied in this investigation.—A. B. SABIN and R. WARD. *J. Exptl. Med.*, 73 (1941), 771. (T. C. G.)

Potassium Tellurite—Bacteriostatic, Bactericidal and Possible Chemotherapeutic Properties of. This salt has long been used to prepare selective media for the cultivation of *C. diphtheriæ*. Dilute solutions of it inhibit the growth of organisms like certain cocci, but permit that of *C. diphtheriæ*. In weak dilutions the salt is bacteriostatic to members of the *Bacterium*, *Corynebacterium*, *Pasteurella* and *Bacillus* groups, to staphylo- and streptococci as well as to Gram-negative cocci, *H. influenzæ*, *Ps. pyocyaneus* and *V. cholera*. The writer describes the procedure he used in determining the bacteriostatic property of potassium tellurite in the absence and presence of serum against members of the *Bacterium*, *Vibrio*, *Neisseria*, *Brucella* and *Pasteurella* groups. The results are tabulated. Against these groups it shows bacteriostatic and bacteriocidal properties with serum interfering slightly with the former action and greatly with the latter. In view of the chemical relationship of S and Te, organic compounds of Te related to the sulfonamides may eventually be prepared and tested therapeutically. Potassium tellurite, as such, is a poor chemotherapeutic agent since it has a poor T. I., produces leucopænia and is, in general toxic. Doses of 0.0001 Gm. in rabbits immediately after infection with *B. coli* save 50% of the animals. The dosage required for similar results when given six hours after infection was much larger. Against *Past. bovisepticus* infections in the same animals it gave even poorer results.—M. A. GOHAR. *J. Trop. Med. Hyg.*, 44 (1941), 96–99, 106–107. (W. T. S.)

Quaternary Ammonium Salts—Germicidal Activity of Some. These salts have received considerable attention in recent years. Introduction of the methyl group into the phenol molecule increases germicidal activity. For this reason a comparison of the activity of certain alkyl pyridinium halides with the corresponding alpha- and gamma-picolinium compounds has been made. Twenty-seven compounds were synthesized and preliminary germicidal tests made according to the F. D. A. method using *Staphylococcus aureus* at 37° C. Each of the products showed germicidal activity but, in general, the introduction of the methyl group was not accompanied by any significant increase in such activity. Experimental work is reported in some detail and results are shown in several tabulations.—H. G. KOLLOFF, A. P. WYSS, R. E. HIMBLICK and F. MANTELE. *Jour. A. Ph. A.*, 31 (1942), 51. (Z. M. C.)

Serum Therapy, Serum Prophylaxis and Chemotherapy. Review and Outlook. A brief review of the progress in serum therapy and chemotherapy during the past five decades.—J. THOMANN. *Schweiz. Apoth.-Ztg.*, 79 (1941), 25–28. (M. F. W. D.)

Snake Venom Solutions—Sterility of. Snake venoms are being employed in an increasing number of clinical conditions. A severe reaction following a subcutaneous injection of venom led the writers to run sterility tests on 24 samples of venom solutions. Standard methods were used and each sample was

examined for aerobic and anaerobic bacteria. Of 11 cobra samples, 9 passed the sterility test, and of 14 viper samples, 8 passed. Crude venoms are often contaminated and must be filtered through asbestos to render them sterile.—C. L. PASRICHA and Z. ABEDIN. *Indian Med. Gaz.*, 76 (1941), 276–277. (W. T. S.)

Sterilization—Contribution to the Technique of. The sterilization procedures of the Swiss Pharmacopœia V are subjected to a critical discussion on the basis of the scientific principles of bacteriology. The procedure (f) of this pharmacopœia requires only thirty minutes' exposure to steam at 100°, conditions which are not sufficient to kill the vegetative forms of some organisms. Only procedure (g), which requires a sterilization time of 15 min. at 115–120°, would be sufficient in all cases. The rise of temperature in the articles to be sterilized is a function of several factors: the condition of the sterilizer, the heat source, the amount and surface of the material to be sterilized, the nature of the containers and the type of material to be sterilized. The rate of heating of varying amounts of substance in different types of sterilizers was studied and the following conclusions drawn. The time necessary to heat the material is dependent on the amount of substance to be sterilized, larger amounts requiring a longer time. The time required to attain sterilization temperature in the chamber for the amounts of material usually sterilized in pharmaceutical practice is plotted for different types of sterilizing apparatus. An increased surface as in ampuls favorably influences the rate of heating. In the sizes of ampuls studied the time required to heat the substance was the same as that required to heat the chamber. In order not to subject the material to be sterilized unnecessarily long to high temperatures, it should be put in containers of uniform size. The influence of the nature of the containers on the rate of heating was also studied. Thin-walled containers allowed the most rapid heating. The rate of heating was also found to depend on the nature of the substance. Distilled water and solutions of electrolytes heated about equally well, whereas gelatin or agar solution heated more slowly. It is also shown that the time of exposure to heat can be materially reduced if the sterilizer is preheated.—J. BÜCHI. *Pharm. Acta Helv.*, 16 (1941), 1–14. (M. F. W. D.)

Succinyl Sulfathiazole, a New Bacteriostatic Agent Locally Active in the Gastrointestinal Tract. The drug has a special effect on bacteria of the coli type. It is nontoxic in animals and humans. Therapeutic doses profoundly alter the feces which become semifluid, practically odorless and contain only a few bacteria.—EDGAR J. POTH and F. LOUIS KNOTTS. *Proc. Soc. Exptl. Biol. Med.*, 48 (1941), 129. (A. E. M.)

Sulfamethylthiazole (Toriseptin-M)—Action of, against Pneumococci Infections in Mice. The author has determined the toxicity and the prophylactic and the therapeutic effects of Toriseptin-M (2-*p*-aminobenzenesulfonamide-4-methyl thiazole) in mice. Emulsions of Toriseptin-M *per os* were 56.6% as toxic as sulfapyridine. A solution of sodium Toriseptin-M *per os* was 30.3% as toxic as sulfapyridine, and 65% as toxic subcutaneously. Prophylactic doses (60 mg. to 20–23 Gm. mice) of Toriseptin-M given to 10 mice infected with type I pneumococci either saved or prolonged life. Untreated mice died. Toriseptin-M is superior to sulfapyridine in controlling pneumococcic infections of types I, IV and V, equal in types II and III; and inferior in type VIII. Clinically, Toriseptin-M is useful. A one radical sulfonamide (plenin) appears to have some antibacterial action with the X group of pneumococci.—FUMIYOSHI OZEKI. *Kitasato Arch. Exp. Med.*, 18 (1941), 135–144. (W. T. S.)

Sulfamido Compounds—Action of, on M. Lysodeikticus and Lytic and Bactericidal Activities of Lysozyme. Sulfanilamide in high concentration (1000 mg. %) exerts bacteriostatic action against small numbers of *M. lysodeikticus*. Sulfanilamide in concentrations up to 1000 mg. % and sulfapyridine and sulfathiazole in concentrations up to 100 mg. % do not interfere with the lytic activity of lysozyme (egg white). The combined use of lysozyme and sulfamido compounds exerts a somewhat greater bactericidal effect on *M. lysodeikticus* than either agent alone.—ERWIN NETER. *Proc. Soc. Exptl. Biol. Med.*, 48 (1941), 106. (A. E. M.)

Sulfanilamide and Sulfapyridine—Effects of, on Experimental Streptococcus Infections. Sulfapyridine tested in white mice and hamsters is less toxic than sulfanilamide at equally effective doses. A large dose of sulfapyridine can be given at one time to sterilize the infection without producing toxic symptoms. The experiments indicate a prompt penetration of the drug into the brain tissue.—C. H. HUANG and R. H. P. SIA. *Proc. Soc. Exptl. Biol. Med.*, 48 (1941), 109. (A. E. M.)

Sulfanilamide Camphorate. This compound, suitable for treating pneumococcus infections, etc., and which melts (with partial decomposition) at 156° to 158° C., is prepared by the reaction of camphoric acid with *p*-aminobenzenesulfonamide (suitably by heating in methanol for 5 to 6 hrs).—JOSEPH EBERT, assignor to THE FARASTAN CO. U. S. pat. 2,223,937, Dec. 3, 1940. (A. P.-C.)

Sulfanilamide Phosphamic Acid—Bactericidal Salts of. By reactions such as that of quinine hydrochloride with the sodium salt of sulfanilamide phosphamic acid, salts are obtained such as the quinine salt of sulfanilamide phosphamic acid. Details are given of the production of a number of similar salts of sulfanilamide phosphamic acid.—KURT WARNAT, assignor to HOFFMANN-LA ROCHE, INC. U. S. pat. 2,245,539, June 10, 1941. (A. P.-C.)

2-Sulfanilamido-4-Methylthiazole—Activity of, Against Type I Pneumococcus Infections in Mice. This compound was prepared from 2-N^4-acetyl sulfanilamido-4-methylthiazole (Fosbinder and Walter, *Jour. Amer. Chem. Soc.*, 61, p. 2032) by refluxing the above acetyl compound with 5% HCl, and diluting the hydrolyzed solution with ammonia. The drug was given in 10–30 mg. doses to 22–25 Gm. mice which had received 1500 M. L. D. of an 18-hr. broth culture of type I pneumococci. Observations were made over a period of 7 days. In another set of experiments, the protective action of the drug was observed by injecting the infected mice with a 4-mg. dose of this thiazole just before and twice after the innoculation. This new thiazole proved protective by both routes and compared favorably with sulfapyridine. It must now be subjected to test for acute and chronic toxicity.—A. N. BOSE, B. J. DAS GUPTA and U. P. BASU. *Indian J. Med. Research*, 29 (1941), 265–269. (W. T. S.)

2-Sulfanilamido-Pyridine. This is almost a specific in cases of pneumonia, but is also useful in combating infections by streptococcus hemolyticus, meningococcus and pneumococcus. Its value is in its prompt reduction of fever and modification of the development of the disease. In advanced cases it is better than serum but less effective in complications such as empyema.—ANON. *Quim. Farm.*, 6 (Sept., 1940), 6. (G. S. G.)

Sulfonamide Compounds—Failure of, in Treatment of Experimental Corynebacterium Diphtheriæ Infections in Guinea Pigs. Neoprontosil, sulfanilamide, sulfapyridine and sulfathiazole by oral administration proved ineffective in the treatment of experimental *Corynebacterium diphtheriæ* infections of guinea pigs in so far as survival was concerned.—

—JOHN A. KOLMER. *Proc. Soc. Exptl. Biol. Med.*, 48 (1941), 390. (A. E. M.)

Sulfonamide Compounds in Treatment of Experimental B. Typhosus Infection in Rabbits. Sulfanilamide, sulfapyridine and sulfathiazole were slightly effective in the treatment of *Salmonella typhosus* septicemia in rabbits. The efficacy decreased in the sequence as given. Recovery was apparently aided by the production of antibodies.—JOHN A. KOLMER and ANNA M. RULE. *Proc. Soc. Exptl. Biol. Med.*, 48 (1941), 388. (A. E. M.)

Tetanus—Imperfect Sterilization as Cause of. Experiments have been conducted to show that tetanus spores inserted into dressings are not killed when the technique of sterilization is imperfect. As tetanus spores are present everywhere there is ample opportunity for dressings to become infected. Many small sterilizers are not efficiently constructed, and from personal observation it can be stated that in many instances the methods used in preparing dressings for sterilization and the technique leave much to be desired. Bacteriologists have shown that cotton-wool may contain tetanus spores. It is reasonable to accept that postoperative tetanus may be caused through using dressings that are infected with tetanus spores and have been imperfectly sterilized.—S. N. HAYES. *Brit. Med. J.*, 4171 (1940), 825. (W. H. H.)

Tuberculin Patch Test. The author reviews the literature on the Vollmer patch test and by means of a table shows that in a series of ten investigations by various workers there were, in 15% of the cases, negative patch tests with positive Mantoux (using P. P. D. or O. T.), and in 3 per cent, positive patch tests with negative Mantoux. The author has performed 379 tests with the Mantoux (O. T.) and patch techniques and has found in 27% negative patch with positive Mantoux, and in 11% positive patch with negative Mantoux. It is therefore concluded that the patch test cannot reliably be used to replace the Mantoux.—C. KERESZTURI. *Am. Rev. Tuber.*, 44 (1941), 94; through *Bull. Hyg.*, 16 (1941), 373. (T. C. G.)

Tuberculosis—Experimental Chemotherapy of. The authors treated guinea pigs infected with bovine tubercle bacilli, by means of subcutaneous or intramuscular injections of thymol, menthol, eucalyptol or cinnamic aldehyde, dissolved in various strengths of sterile peanut oil. The longevity of the animals was increased over that of the controls, and tubercle bacilli could not, in some cases, be found in the organs; the treated animals, nevertheless, remained tuberculous. Certain alkyl phenols and amino acids had no such effect.—H. H. PERLMAN, H. BROWN and G. W. RAIZISS. *Am. Rev. Tuber.*, 44 (1941), 83; through *Bull. Hyg.*, 16 (1941), 576. (T. C. G.)

Tularemia in Massachusetts. In recent years officials of certain game clubs in Massachusetts have imported cottontail rabbits from States west of the Mississippi to stock their covers. During 1940 the authors demonstrated tularemia among rabbits imported from Missouri and Arkansas. In 1939 and 1940 complete postmortem examinations have been made of 136 rabbits which died in transit to or soon after arrival in Massachusetts. One hundred and nine examined before tularemia was demonstrated and later a second infected animal was detected. The lesions in the liver and spleen were typical and confirmation was obtained by culture and by inoculation into guinea pigs. Between 1937 and 1940 there were 24,474 cottontails and 215 jack rabbits imported into Massachusetts, under certification that there had been no epidemic of tularemia or rabbit fever for the 2 yrs. preceding. Their findings have shown that such certificates have not prevented introduction of infected animals. The dog tick, *Dermacentor variablis*, abounds in southern Massachusetts and is a capable transmitter to both animal and man. Three human cases of the disease have been reported from Falmouth since 1937, *i. e.*, since the importation of these rabbits. In the interests of public health, therefore, importation of rabbits should be prohibited.—D. L. BELDING and B. MERRILL. *New Engl. J. Med.*, 224 (1941), 1085; through *Bull. Hyg.*, 16 (1941), 581. (T. C. G.)

Vaccines and the Common Cold. The article is limited to a discussion of the nature of the vaccines and closely allied products used for prophylactic and curative treatments of the common cold.—ANON. *Chemist and Druggist*, 135 (1941), 154. (A. C. DeD.)

Yellow Fever Vaccine (17D) in Human Groups—Comparison of High and Low Subcultures of. In 1936 Theiler and Smith began the use of yellow fever virus (17D) modified by *in vitro* cultivation for human immunization. The vaccines were prepared from the 227th and 229th subcultures of the virus. The results from these and similar inoculations by additional workers were successful. Later, successes diminished especially with relatively high subcultures, *i. e.*, 305 to 391 culture passages. Comparative tests in human groups under laboratory conditions have now shown no significant difference to exist in the efficiency of high (450th) and low (212th) culture passage with comparable doses. With dosages of virus near 100 M. L. D. for mice, some individuals fail to produce demonstrable antibodies while others show immunity after dosages of 10 M. L. D. for mice of either high or low subculture virus.—HUGH H. SMITH, HECTOR CALDERON-CUERVO and JOSE PABLO LEYVA. *Am. J. Trop. Med.*, 21 (1941), 579–587. (W. T. S.)

BOTANY

Air Temperatures and Humidities—Relation of Certain, to Viability of Seeds. The amount of water absorbed by seeds of lettuce, onion, tomato, flax, peanut and long-leaved pine at 5°, 10°, 20° and 30° C. at relative humidities of 35, 55 and 76 per cent was determined. It was noted that the seeds showed differential water absorption according to species. In the order of increasing water-absorption capacity, the seeds were peanut, lettuce, flax, pine, tomato and onion. This order persisted regardless of storage temperature or atmospheric humidity. With a relative humidity of 35 per cent, seeds took up approximately the same amount of water at 5° and 10° C., but, in every case, less water was absorbed at the higher temperatures of 20° and 30° C. At 55 and 76 per cent relative humidities, however, the peak of moisture absorption was at 10° C. and the lowest absorption at 30° C. Comparisons of curves showed no direct relation of actual amount of water absorbed to germinability. However, it was found that seeds of high initial vitality were much more resistant to unfavorable storage humidities and temperatures than were those with low initial vitality. This fact was also demonstrated in a test using 8-year-old seeds of eggplant, onion and tomato selected to give a range in viability. It was shown that deterioration of a seed lot, once initiated, proceeds rapidly to the death of all the seeds under unfavorable storage conditions. Moisture determinations made on seeds of carrot, eggplant, lettuce, tomato and long-leaved pine, which were stored open in the laboratory, showed the moisture contents in August approximately double that in January or February. It is believed that these fluctuations contribute to deterioration of seeds in open storage.—LELA V. BARTON. *Contrib. Boyce Thompson Inst.*, 12 (1941), 85–102. (B. M. B.)

Autotrophic Organisms—Chemical Components of Some. In continuation of a study of the chemical constituents of primitive autotrophic organisms,

amino acid analyses have been made of the hydrolyzates of the total proteins extracted from five brown and two green algæ. Of the former, all contain lysine but three lack arginine; of the latter, one lacks lysine. The second blue-green fresh water alga to be examined is, like the first, devoid of cystine. Further confirmation of the apparent generality that mannitol is present in brown marine algæ, but not in green, has been secured.—ABRAHAM MAZUR and H. T. CLARKE. *J. Biol. Chem.*, 143 (1942), 39. (F. J. S.)

Balm of Gilead. The name Balm of Gilead is rare north of the Ohio River. "Balsam poplar" (*Populus tacamahacca*) and *Populus balsamifera* are two trees in this region which are confused with the true Balm of Gilead (*Populus candicans*). The two latter trees are much alike having large buds covered with a medicinally-useful sticky resin, but the true Balm of Gilead is more domesticated and possesses heartshaped leaves. Both leaves have crenulated margins; those of "Balsam poplar" being twice as abundant.—ANON. *Am. Botanist*, 47 (1941), 125–126. (W. T. S.)

Crystalline Cellulose in the Cell Wall of Valonia—X-ray Studies Regarding the Formation and Orientation of. The marine alga, *Valonia Ventricosa* Agardh, has been examined by X-ray diffraction analysis with special reference to the inner liquid cytoplasm, the surrounding layer of viscous cytoplasm and the outer limiting cellulosic membrane. The liquid cytoplasm upon purification shows the presence of cellulose, the crystallinity of which is more perfect than that of the cellulose obtained from other cellulosic membranes. The viscous cytoplasm is composed largely of crystalline cellulose which may be dried in the form of either films or fibers. The films show a selective orientation of the 101 crystallographic plane parallel to the surface, but a random orientation in the plane of the surface. The fibers show a uniaxial orientation parallel to the fiber axis. The outer membrane possesses a selective orientation of the 101 plane parallel to the surface, but a cross spiral orientation of approximately 80° in the plane of the membrane, confirming the observations of other investigators. No correlation was found between the angle of the cross spiral orientation and the size of the *Valonia* cell. The selective orientation in the dried films and the parallel orientation in the stretched fibers indicate that dehydration and tension may play a part in producing the orientation found in a mature *Valonia* membrane. The X-ray orientation is compared with the fibril orientation and a close correlation is indicated between the X-ray crystallite and the microscopic cellulose particle. This correlation enables one to conclude that the cellulose chain molecules are arranged parallel to the long axis of the particle and that the crystalline regularity of the particle approaches that of a single crystal.—WAYNE A. SISSON. *Contrib. Boyce Thompson Inst.*, 12 (1941), 171–180. (B. M. B.)

Digitalis Purpurea—Flowering in, Initiated by Low Temperature and Light. Digitalis plants failed to flower in a greenhouse when grown for several years with night temperatures of 55° to 60° F. It was found that a period of approximately 4 months of cold treatment at 41° F. would produce flowering in these plants when returned to a warm greenhouse and long days. The plants could be kept in good condition during the long cold treatment by exposure to reduced sunlight (slatted shade) for two days and nights each week. Plants left out-of-doors in cold frames until December 18th, then returned to a long day and higher temperature in the greenhouse, flowered after two and one-half months, while approximately only one month of lighting was required after the more carefully regulated cold room treatment at 41° F. It is proposed that this flowering response in plants brought about by low temperature be called thermoperiodism.—JOHN M. ARTHUR and EDWARD K. HARVILL. *Contrib. Boyce Thompson Inst.*, 12 (1941), 111–117. (B. M. B.)

Dill Seeds—Embryoless. An examination of 12 different lots of dill seeds revealed that most of the seeds which failed to germinate were without embryos although the endosperm was present. The occurrence of these embryoless seeds (in several instances approximately 60%) is quite frequent and accounts for the great variation in the germinative capacity found in the various lots.—FLORENCE FLEMION and ELIZABETH WATERBURY. *Contrib. Boyce Thompson Inst.*, 12 (1941), 157–161. (B. M. B.)

β-Gentiobioside and β-Glucoside—Simultaneous Formation of, in Gladiolus Corms Treated with Chemicals. Condensation of ethylene chlorohydrin with *d*-glucose to form the β-glucoside and formation of the β-gentiobioside from absorbed *o*-chlorophenol took place in gladiolus corms even when the chemical treatments were carried out under conditions involving the simultaneous production of the two glycosides. No evidence was obtained for the formation of either β-2-chloroethyl-gentiobioside or β-*o*-chlorophenyl-*d*-glucoside.—LAWRENCE P. MILLER. *Contrib. Boyce Thompson Inst.*, 12 (1941), 163–166. (B. M. B.)

Holly Leaf Miner—Preliminary Experiments on the Control of the. In a series of sprays and dusts tested for the control of the holly leaf miner (*Phytomyza ilicicola*), at Yonkers, New York, plots treated with a foliage spray consisting of 2 qts. fish oil and 1 qt. nicotine sulfate made up with 100 gals. of water showed a 91 per cent reduction in mines as compared with the unsprayed check. Spray applications were made the second and third week of May, mid-June and mid-July.—ALBERT HARTZELL and GEORGE F. MCKENNA. *Contrib. Boyce Thompson Inst.*, 12 (1941), 119–126. (B. M. B.)

Impatiens Balsamina L.—Dormancy in the Seeds of. Seeds of *Impatiens balsamina* are dormant when freshly harvested and require from four to six months of dry storage at room temperature for after-ripening. Twenty-five degree Centigrade was found to be the most favorable temperature for germination. Germination of fresh seeds was accelerated by pretreatment for two weeks in a moist condition at 5° C. before the seeds were placed at the germination temperature. Prechilling ceased to be effective after the seeds had been stored dry for two to three months and in some cases proved harmful after that time. There was a tendency for seeds harvested later in the season to be inferior in germination capacity, but less dormant as measured by time required for the completion of germination. Seed size was not responsible for this difference.—GARNETTE S. KROEGER. *Contrib. Boyce Thompson Inst.*, 12 (1941), 203–212. (B. M. B.)

Jerusalem Oak. This plant is a common weed from the tropics naturalized in America, Europe and Asia. Linnaeus named it *Chenopodium ambrosiodes* in 1753, while Gray called our common form *C. ambrosiodes anthelminticum*. Several corruptions of the latter name have also been applied to it, including the addition of the word *vulgare*. Different habitats and soils have produced a number of forms and races the exact identification of which is always dependent on the characteristics of the seed.—ANON. *Am. Botanist*, 47 (1941), 124. (W. T. S.)

Lagenaria Leucantha—Fate of Chloral Hydrate Absorbed by Growing Plants of. Plants of *Lagenaria leucantha* Rusby have been shown to form β-2,2,2-trichloroethyl-*d*-glucoside when grown in a

medium containing chloral hydrate. The glucoside was characterized through the identity of its tetraacetate with synthetic β-2,2,2-trichloroethyl-*d*-glucoside tetraacetate, m. p. 144.5°–145.5°, $[\alpha]_D^{25°}$ = −29.0°, which was prepared for the first time.—LAWRENCE P. MILLER. *Contrib. Boyce Thompson Inst.*, 12 (1941), 167–169. (B. M. B.)

Mineral Contents of Fruits—Spectrum Analysis of. Using a high frequency spark discharge of the type employed by Walther and Werner Gerlach in their study of biological specimens, the mineral contents of mangoes, plantains, grapes, oranges and apples have been investigated spectroscopically. It has been shown that in the epicarp, mesocarp and endocarp of the same fruit the mineral contents are different, and the conclusion is drawn that generally the outer covering of a fruit is richer than the interior in calcium, magnesium, manganese and silicon.—L. SIBAIYA and M. S. VENKATUSUBBA RAO. *J. Indian Chem. Soc.*, 18 (1941), 523. (F. J. S.)

β-Naphthoxyacetic Acid—Formative Effects Induced with. β-Naphthoxyacetic acid and its amide, ester and salt derivatives have been applied in solution and in vapor form to several species of plants and the induced responses were compared and contrasted with regulatory and formative effects brought about by other growth substances. The principal differences concerned modifications of new organs formed after the plants were treated with β-naphthoxyacetic acid or the derivatives. Water solutions and emulsions containing 50 to 1000 mg./l. were effective. Aerosol and other spreaders were helpful. The following plants were used in the experiments: tomato (*Lycopersicon esculentum* Mill.), hibiscus (*Hibiscus rosa-sinensis* L.), Turkish tobacco (*Nicotiana tabacum* L.), sensitive plant (*Mimosa pudica* L.), fuchsia (*Fuchsia hybrida* Voss.), Jerusalem artichoke (*Helianthus tuberosus* L.), marigold (*Tagetes erecta* L.) and yellow Paris Daisy (*Chrysanthemum frutescens* L.). The plants showed the characteristic epinasty of leaves within a short time after treatment. New organs (leaves, stems, flowers and fruit) which grew thereafter were modified in size, shape, pattern and venation. Tomato leaves appeared sometimes frenched or fasciated though frequently simple instead of compound. The leaflets often failed to separate on one side of the midrib, giving a different appearance to the two sides of the leaf. In many respects the leaves resembled those of virus-diseased or mite-infested plants. Clearing of the veins was pronounced in hibiscus, tomato, artichoke and tobacco leaves. *Mimosa* leaves were fasciated or fern-like with peculiar projections on the leaflets. Tobacco plants sprayed at the tip with a solution (300 to 500 mg./l.) of naphthoxyacetic acid grew taller and flowered ahead of controls. Plants exposed to vapors of naphthoxyacetic acid first showed epinasty of leaves followed by swelling and proliferation of stems and petioles. These are characteristic effects also for other growth substances. The new leaves which developed after the vapor treatment showed the characteristic modifications. Solutions of the acid applied to the soil brought out all the characteristics described for sprays or vapors but the effects were more pronounced and lasting. The flower buds of plants treated by way of the soil were abnormally long with calyx tube separating only at the tip. Parthenocarpic development of tomato fruits was induced when flowers or well-developed buds were sprayed with emulsions or solutions of β-naphthoxyacetic acid or exposed to vapors of the ester. The ovaries often enlarged before the flowers opened, eventually breaking through on one side of the calyx tube. The floral parts—petals, stamens and styles—persisted for an abnormally long time during parthenocarpic development. In some cases both petals and stamens remained in good condition for 21 days, whereas controls usually withered within 3 days after the flowers opened. Compared with other growth substances, naphthoxyacetic acid has several advantages for practical production of seedless tomatoes and possibly of fruits. It is effective in very low concentrations and can be applied as a spray to the flower cluster or as a vapor in a large case or greenhouse.—P. W. ZIMMERMAN and A. E. HITCHCOCK. *Contrib. Boyce Thompson Inst.*, 12 (1941), 1–14. (B. M. B.)

Nitrogen—Effect of Temperature on the Availability of Insoluble. The rate of nitrate formation from urea, cottonseed meal and UAL-37 base was determined after 30 and 60 days in sassafras soil incubated at 10°, 20°, 27° and 35° C. The urea was the most active and was the only one which nitrified at 10° C. The UAL-37 base was the least active and most strikingly so at 20° C. Cottonseed meal and UAL-37 base were added to soil cultures at seeding and 17, 34 and 68 days prior to the seedling of millet. The yields were greatly augmented over the control in all cases. The addition of the materials 68 days before seeding gave a singificant increase in yields over the yields found when the materials were added at shorter intervals before seeding.—M. M. MCCOOL. *Contrib. Boyce Thompson Inst.*, 12 (1941), 213–216. (B. M. B.)

Plant Names—Meaning of. In an article on this subject the writer gives the derivation of some names associated with the *Hamamelidaceæ* which comes from two Greek words meaning "with the apple" in allusion to some species bearing fruits and flowers at the same time. *Hamamelis virginica* is called witch hazel because of the resemblance of its leaves to the true hazel (*Ulmus montana*), so named because the wood of the latter was formerly employed in making chests known as wyches. The capsules of the witch hazel spring open, hence its synonym "snapping hazel." *Liquidambar styraciflua* (sweet gum) comes in part from liquid amber because of its sweet exudation, and in part from storax that is derived from a similar tree.—WILLARD N. CLUTE. *Am. Botanist*, 48 (1942), 10–15. (W. T. S.)

Plastids of the Cotton Fiber—Formation of Microscopic Cellulose Particles in Colorless. The observed formation of cellulose particles of microscopic dimensions in the chloroplasts of *Halicystis* constituted a basis for the re-investigation of the cotton fiber protoplasm during the period of formation of cellulose crystallites of similar dimensions. Through improved microscopic technique it was found that native cellulose particles are formed in colorless plastids of living cotton fibers by a process which is essentially similar to the method of formation of mercerized cellulose particles in the chloroplasts of *Halicystis*. The physical aspects of cellulose formation have no apparent points in common with the process of starch formation in either the chloroplasts or colorless plastids of the cotton plant. The cells of the leaves, stems and boll walls of the cotton plant carry on the formation of these two closely related carbohydrates, starch and cellulose, simultaneously, in separate plastids.—WANDA K. FARR. *Contrib. Boyce Thompson Inst.*, 12 (1941), 181–194. (B. M. B.)