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PHARMACEUTICAL ABSTRACTS

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ABSTRACTORS

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Resin of Ipomea. Collaborative studies indicate that the use of phenolphthalein as an indicator in determining the acid, ester and saponification numbers is not advisable and for the saponification number alkali blue is a satisfactory substitute.—R. K. SNYDER. *Bull. Natl. Formulary Committee*, 9 (1940), 90–95. (H. M. B.)

Rotenone—Chemical Determination of, in Powders. For small amounts of rotenone, Goodhue's method is recommended although it gives high results. For accurate figures Worsley's method is the best.—H. BÉGUÉ. *Ann. Agron.*, 9 (1939), 121–132; through *J. Soc. Chem. Ind.*, 59 (1940), 306. (E. G. V.)

Sodium Chlorite. Sodium chlorite is a moderately strong oxidizing agent whose use does not introduce the possibility of heavy metal contamination. The solid sodium chlorite is stable and very soluble. Its solutions are stable in the presence of a trace of alkalinity if light is excluded. They decompose but slowly if boiled. In the storage and handling of chlorite many of the same precautions should be observed as with hypochlorite and chlorate. The oxidizing properties of chlorite are accentuated in acid solution. Such solutions are employed in bleaching. When acidified in the absence of oxidizable material, chlorite yields mainly chlorine dioxide and chlorate but not chlorine. Chlorite reacts with hypochlorite. In alkaline solutions chlorate is produced. As the alkalinity is reduced, some chlorine dioxide is formed. This reaction with hypochlorite can be used to bleach cellulosic materials. In more acid solutions the proportionate formation of chlorine dioxide is increased. The addition of chlorine to chlorite solution produces chlorine dioxide efficiently so that it can serve as a practical source for this useful gas.—M. C. TAYLOR, J. F. WHITE, G. P. VINCENT and G. L. CUNNINGHAM. *Ind. Eng. Chem.*, 32 (1940), 899–903. (E. G. V.)

Solution of Histamine Phosphate—Colorimetric Assay Method for. The method is based on a comparison of the colored product formed upon diazotization of histamine with either of two standards, *i. e.*, an artificial color standard or a standard histamine phosphate solution and has an average accuracy of 0.3%.—FREDERICK A. FUHRMAN. *Pharm. Arch.*, 12 (1941), 1–5. (H. M. B.)

Standard Solutions in Quantitative Organic Microanalysis. The purpose of the paper is to show that for all the ordinary requirements in titrations of small quantities of material only 3 standard solutions are necessary: hundredth normal potassium biiodate, hundredth normal sodium hydroxide and hundredth normal sodium thiosulfate. In all acidimetric or alkalimetric titrations, potassium biiodate can be substituted for hundredth normal hydrochloric acid and the same solution can serve for the standardization of hundredth normal sodium thiosulfate as well as for sodium hydroxide. The use of the biiodate solution simplifies organic microchemical analysis particularly since a microbalance is not necessary for the standardization and preparation of the standard solutions. A series of titrations is described covering the standardization with sodium carbonate, titration of benzoic, cinnamic and salicylic acids, determination of aminoid nitrogen in myristamide, tyrosine and *p*-toluamide, titrimetric determination of halogen, titration of *o*-chlorobenzoic acid and 3,5-dibromopyridine, determination of sulfur in sulfonal and in sulfosalicylic acid and determination of iodine in potassium iodide. The agreement of the cited results of determinations made in triplicate all show as close agreement as is ordinarily obtained in titrations; most of them appear to be within 0.2% of the quantity actually present (3–7 mg. samples).—J. B. NIEDERL, V. NIEDERL and MARJA EITINGSON. *Mikrochemie (Mikrochim. Acta)*, 25 (1938), 143–150; through *Chimie & Industrie*, 42 (1939), 793. (A. P.-C.)

Succinic Acid—Microdetermination of. An accurate and rapid method is presented for the estimation of quantities of succinic acid as low as 10 mg. This method has the advantage that it can be carried out without difficulty with the usual laboratory equipment. The reproducibility of the actual titration has been established by using *m*-nitrophenol and dichlorofluorescein as indicators along with potassium bromide; and the time of extraction of succinic acid from the solution has been decreased to 3–4 hours.—GEORGE J. GOEPFERT. *Biochem. J.*, 34 (1940), 1012. (F. J. S.)

Sulfanilamide—Detection and Determination of. Sulfanilamide can be differentiated from sulfanilic acids by the following reactions: (1) On fusing, sulfanilamide gives an intense violet coloration, while sulfanilic acid carbonizes. (2) Bromine + potassium bromide, and also potassium iodate, give with sulfanilamide white precipitates formed of characteristic needles that are readily identified under the microscope. Sulfanilamide can be determined by direct bromometric titration in presence of indigo carmine.—S. E. BOURKAT. *Fatmatsevtitchnii J.*, 12 (1939), 28–33; through *Chimie & Industrie*, 43 (1940), 411. (A. P.-C.)

Thallium—New Sensitive Microchemical Test for. If, to an aqueous solution of a thallous salt, some potassium mercuric iodide solution is added, an orange-yellow precipitate is formed. Under the microscope, the precipitate is seen to consist of yellow, rectangular or rod-shaped crystals, often grouped together into clusters. The crystals belong to the tetragonal system, show straight extinction and are optically positive. As little as 0.0001 mg. of thallium suffices to give the test in a solution containing 0.0005 mg. of thallium per cc. Silver, lead, stannous tin and trivalent arsenic interfere. The reagent also forms characteristic compounds with caesium. The composition of the crystals is not yet certain and attempts to make the test serve for determining thallium proved futile.—H. JURANY. *Mikrochemie (Mikrochim. Acta)*, 27 (1939), 8–13 through *Chimie & Industrie*, 42 (1939), 959. (A. P.-C.)

Tincture of Cudbear—Color Standard for. The following altered color standard is recommended: "To 1.2 cc. of cobaltous chloride colorimetric solution, add successively 2.4 cc. of 0.02*N* potassium dichromate solution, 25 cc. of ammonium carbonate T.S. and sufficient distilled water to make 100 cc."—KARL B. ROSEN. *Bull. Natl. Formulary Committee*, 9 (1940), 59–61. (H. M. B.)

Tortelli-Jaffé Color Reaction. The test consists in layering an acetic acid solution of the substance with a 2% solution of bromine in chloroform. Sluggishly reacting double bonds, especially those between quaternary carbon atoms, are thought to be responsible for the color reaction. The author

tried it on 26 steroids to determine how far it is characteristic, within this group of compounds, of ditertiary double bonds. The tabulated results show that the reaction is, in general, positive only when the substance tested has a ring ditertiary double bond. Such bonds in a side chain or in semicyclic position give no color. The only apparent exceptions are ergosterol and dehydroergosterol, which give a positive test, but this may be due to the ease with which the double bonds of the ergosterol system shift. 5,7-Androstadiene-3,17-diol, which in ring B has the same system of double bonds as ergosterol, gives only a faint color. The acetates give the same colors as the free alcohols but no color was obtained with the benzoates.—U. WESTPHAL. *Ber. deut. chem. Ges.*, 72 (1939), 1243–1246; through *Chimie & Industrie*, 43 (1940), 320. (A. P.-C.)

Turbidity and Fluorescence—Means of Measuring, Using the Lovibond Tintometer with Rothamsted Device. This investigation was undertaken with the object of devising a simple and easy method of determining turbidity and, in particular, the tubidity of water and other practically colorless liquids. Measurements of the absorption of light through a column of turbid liquid have been made using the Lovibond-Schofield apparatus, which is a modified form of the Lovibond tintometer; this has led to the design and construction of a special cell for use in the instrument, whereby small turbidities can be measured accurately. Turbidities of water 0 to 100 parts per 100,000 expressed as fuller's earth may be measured easily. The special cell also provides a reliable method of making measurements of fluorescent colors, which will be useful in detecting adulteration in many solutions and may open up a new field for methods of determining quantities of fluorescent substances.—G. S. FAWCETT and J. HEWITT. *J. Soc. Chem. Ind.*, 58 (1939), 342–344. (E. G. V.)

Uranium—Sensitive Reaction Suitable for Determination of Traces of. The divalent uranium dioxide ion reacts with hydrogen peroxide in a slightly basic solution to give a yellow coloration which is comparable with the titanium test which, however, is obtained only in an acid solution. As little as 0.2 mg. of uranium gives sufficient color for comparison. Chromium must be absent. The test can be made in the aqueous extract obtained after fusion with sodium carbonate. There is some interference by molybdenum, vanadium and cerium, but in most minerals the quantities of these three elements are too small to appreciably interfere.—O. HACKL. *Z. anal. Chem.*, 119 (1940), 321–326. (S. W. G.)

Vitamin A and Carotene—Determination of, in Organs. Unless alcohol be added to the digested liver prior to extraction with ether, extraction of vitamin A by that solvent is most irregular. If the residue after evaporation of the ether contains traces of water, 1 or 2 drops of acetic anhydride are added to the chloroform solution of this residue before addition of the antimony trichloride reagent.—A. W. Moore and T. Moore. *Z. Vitaminforsch.*, 9 (1939), 254–255; through *Chimie & Industrie*, 43 (1940), 198. (A. P.-C.)

Vitamin B_1—Determination of, by a New Reagent. Pure vitamin B_1 may be identified by a color reaction using ammonium molybdate in sulfuric solution and 1,2,6,-*p*-aminonaphthosulfonate. A blue color with density relative to the quantity of vitamin results. A modification of the method is required for a vitamin solution containing phosphorus. Both procedures are described.—G. G. VILLELA and A. M. LEAL. *Ata. Medica*, 3 (1939), 3; through *Rev. Soc. brasil. quím.*, 8 (1939), 157. (G. S. G.)

Wijs Iodine Numbers for Conjugated Double Bonds. Iodine numbers obtained by the Wijs method for systems containing conjugated double bonds are strongly influenced by the excess amount of reagent present. Data are presented to show this effect for the conjugated systems (1) 9,11-linoleic acid, (2) tung oil and (3) dehydrated castor oil. Contrasting data show that the excess of reagent is of relatively slight importance for the isolated systems 9,12-linoleic acid and 9,12,15-linolenic acid and for raw castor oil. A procedure is suggested by which the ratio of volume of reagent to weight of sample is kept constant to obtain comparable iodine numbers if conjugated double bonds are present. A simple test for the presence of conjugated double bonds is suggested, based upon the relative effects of excess reagent upon systems of isolated and conjugated double bonds.—W. C. FORBES and H. A. NEVILLE. *Ind. Eng. Chem., Anal. Ed.*, 12 (1940), 72–74. (E. G. V.)

Zinc—Determination of, as Zinc Mercuric Thiocyanate. To a solution containing about 0.1 Gm. of zinc and 1 to 2 milliequivalents of nitric acid add 40 cc. of a reagent prepared with 27 Gm. of mercuric chloride and 39 Gm. of potassium thiocyanate per liter; after 30 minutes filter and wash successively with water, alcohol and ether, and weigh. The sensitivity is increased by adding to the solution containing the precipitate about one-third as much 96% alcohol and by washing with 33% alcohol instead of water.—I. SARUDI. *Œsterr. Chem.-Ztg.*, 42 (1939), 297–298; through *Chimie & Industrie*, 43 (1940), 195. (A. P.-C.)

PHARMACOGNOSY

VEGETABLE DRUGS

Apocynaceæs—Study of. This gives a detailed pharmacognostic description and chemical study of vegetable drugs of the family *Apocynaceæ*, including *Pan Pereira* which is prepared as fluidextract, powder and tincture; *Agoniada* used as fluidextract, powder and tincture; *Peroba* used as fluidextract; and *Strophanthus gratus* used as powder and tincture.—CARLOS STELLFELD. *Trib. Farm., Parana*, 8 (1940), 5. (G. S. G.)

Digitalis Ambigua—Pharmacognostic Study of. Since this species of digitalis has been reported to be efficient, a study has been made of it. The report covers a list of the many names that have been applied to the species, a review of the literature and its habitat. Experimental work included an examination of the entire plant, physical characteristics of the leaf, microscopic examination of a transverse section of a leaf, study of the powder. Drawings were made from fresh material. A bibliography is appended.—BARBARA JACOBS. *Jour. A. Ph. A.*, 30 (1941), 21. (Z. M. C.)

Labiates—Pharmacognostic Study of. This study includes: rosemary leaves and flowers, lavandual flowers, nepeta (Herb of St. John) leaves and flowers, salvia leaves, marjoram leaves and flowers, melissa (verbena) leaves and flowers, thyme flowers, *Mentha piperita* and *Mentha viridans* leaves and flowers.—CARLOS STELLFELD. *Trib. Farm., Parana*, 8 (1940), 73. (G. S. G.)

Medicinal Plants of Guatemala—Catalogue of. This journal is carrying a list of medicinal plants and their habitat in Guatemala, with notations of their therapeutic uses.—ANON. *Escuela Farm.*, 3 (Jan. and Feb. 1940), 35. (G. S. G.)

Pyrethrum—Study of Two Types of. *Anacyclus pyrethrum* (L.) De Candolle is often confused with the insecticide pyrethrum, a different plant of which the flowers are the part used. Photomicrographs show the cellular structures differentiating the several roots.—NARCISO SOARES DA CUNHA. *Trib. Farm., Parana*, 7 (1939), 199. (G. S. G.)

Rhubarb. Differentiation of the Official Type from Others. Physical and chemical tests are de-

tailed for distinguishing the various types of rhubarb, the main physical differences being that the official type has a fine powder while the others are granular, and its appearance is homogeneous in contrast to the mixed particles of the others. The chemical test is colorimetric, the official rhubarb gives a brownish red color with a few drops of ammonia. Other products are either colorless or appear reddish orange.—BERTA JIMINEZ and ANTONIO DU TEIL. *Escuela Farm.*, 2 (1939), No. 20, 23. (G. S. G.)

Strophanthus Cumingii—Pharmacognostic Study of. *Strophanthus Kombé* and *hispidis* from Africa have long been known as arrow poisons. There are 28 to 30 species of *Strophanthus* distributed throughout Africa to the Cape, and in Asia from the southern part of India to the Philippines. The only one known in the Philippines is the *Strophanthus cumingii* A. DC. Studies were made by means of microchemical tests to localize the presence of strophanthin, the poisonous glucoside, in the seeds or bark or other parts of the plant. Tests were made on leaves, stems and roots from time to time throughout the year to find at what season they contain the greatest amount of active principle. Seeds from unripe as well as ripe fruit were also tested. A careful pharmacognostic description is given of the "glabrous erect shrub" which attains a height of 20 meters. Leaves, bark, pith, wood, flowers, fruit and seeds were all examined and described and plates illustrating the structures are appended. Clinical tests reveal that the bark, wood, pericarp of immature fruits and seeds contain traces of strophanthin similar to that of the seeds of *Strophanthus Kombé* Oliver and *Strophanthus hispidus* D.C. The bark has been used by the Philippine natives to produce an arrow poison, since before the Conquest.—José K. SANTOS. *Rev. Filipina Med. Farm.*, 30 (1939), 365. (G. S. G.)

PHARMACY

GALENICAL

Herba Ephedra—Galenical Preparations of. Extracts were prepared by percolation of *Ephedra depuratus*, No. 10 powder, which contained 1.60% alkaloids. Effectiveness of extraction with concentrated spirit, dilute spirit and *Spiritus Tenuis*, Swed. Phar. was compared. Five hundred grams of the drug were moistened with 250 Gm. of the menstruum, allowed to stand a day in a stone crock, passed through sieve 5, packed in the percolator and percolated according to the process of the Swed. Phar. X.; 800 cc. of menstruum were applied and after standing 2 days at room temperature, the percolate was collected at 10 drops per minute (20 drops at 20° C. weighed 1.3 Gm.). A first fraction of 100 Gm. was collected, then 2 fractions of 150 Gm. each. Dry residue and alkaloid content were determined. Dilute spirit gave the best yield. Continuing percolation until exhaustion of the drug, the greatest residual alkaloid content was found in the drug percolated with the other two menstrua. Using dilute spirit the combined 1st and 2nd extracts extracted 93.2% of the alkaloid content of the drug. Using concentrated spirit the yield was 89.9%; with *Spiritus Tenuis* it was 91.4%. About 60–70% of the alkaloid extracted appeared in the first fraction and 40–30% in the second. Concentration of the second percolate by evaporation was studied: (1) Evaporating 600 cc. of the second percolate made with dilute spirit to a dry residue of 21.1 Gm., the loss of alkaloid was 16.7%. (2) Acidifying with 10% HCl (15 cc. added to 600 cc. of percolate), the loss of alkaloid on evaporation was 2.8%. (3) Vacuum evaporation (without acid) at 30–40° C., 60–70 mm. Hg, the loss of alkaloid was 9.7%. Hence acidification gave the best result. Stability of the extract was determined after standing for 1 year at room temperature, shielded from light in a glass-stoppered bottle. No significant loss was found. Another preparation after 15 months lost but 0.87%. The repercolation method of Dan. Phar. 1933 was also tried. The alkaloid yield was 70.4%. Tincture preparation was studied and tinctures were made by (1) maceration and (2) percolation (Swed. Phar. methods). Five days' maceration gave 71% alkaloid yield, 10 days' maceration gave 68.5%. Two percolation tinctures gave alkaloid yields of 84.6 and 92.0%, respectively. Infusions and decoctions were made by Swed. Phar. methods and with the addition of 10% HCl. Infusion yields of alkaloid, without acid, were 54.9%, with acid, 66.7%. Decoction yields, without acid, 59.9%; with acid, 73.8%. Acid decoctions were the most effective aqueous preparations.—N. THÖRN. *Farm. Revy*, 39 (1940), 681, 697. (C. S. L.)

Hormone Preparations—Stable Suspensions of. Oily suspensions of pituitary hormone are rendered stable by adding wool fat.—HERMANN FRIEDRICH, assignor to WINTHROP CHEMICAL CO. U. S. pat. 2,190,183, Feb. 13, 1940. (A. P.-C.)

Milk of Magnesia. An alkali metal tripolyphosphate such as that of sodium is used as a dispersing agent and to prevent formation of curds.—RALPH E. HALL, assignor to HALL LABORATORIES, INC. U. S. pat. 2,193,281, March 12, 1940. (A. P.-C.)

Ointment—New Formula for. Balsam of Peru is made in various fatty bases frequently using olive oil or stearin. The unsaturated fatty acids have drying properties but have no great influence on cellular regeneration. The unsaponifiable fraction has antagonistic substances, cholesterin nullifying the curative factors of the vitamins A and D. The following preparation has been proved efficacious in burns, nasal inflammations and some cases of dermatitis: Balsam of Peru (natural), 30 Gm., cod-liver oil 150 Gm., white vaseline 450 Gm.; mix, sterilize, decant and resterilize.—FERNANDO MORELLI SONEYRA and RAFAEL QUESADA. *Rev. Col. Farm. Nac., Rosario*, 6 (1939), 164. (G. S. G.)

Scopolamine Solutions—Stability of. One per cent aqueous solutions of scopolamine gradually form an exceedingly delicate precipitate, noticeable as a thin veil. Frequently a flower-like odor is apparent in old residues, similar to that arising from the action of potassium permanganate on atropine. Addition of 10% of glycerol or alcohol to the solutions prevents these phenomena and ensures their stability for several weeks.—C. STICH. *Pharm. Zentralhalle*, 80 (1939), 293–294; through *Chimie & Industrie*, 43 (1940), 495. (A. P.-C.)

Tablets—Preparing, of Materials Such as Hygroscopic Medicines. A water-insoluble soap, such as magnesium stearate, is used as a lubricant in compressing granular material, such as ammonium mandelate, into tablets.—FERDINAND W. NITARDY and LIONEL T. ANDREWS, assignors to E. R. SQUIBB & SONS. U. S. pat. 2,191,678, Feb. 27, 1940. (A. P.-C.)

Tannic Acid—Stabilizing Effects of Antioxidants upon Solution of. Decomposition of solutions is thought to be partly due to oxidation. The possibility of using antioxidants has been studied and several have been found to be satisfactory stabilizing agents. An assay method which is a modification of the Lowenthal-Proctor method is given for tannin solutions. Many antioxidants were tried and results of these experiments are reported. Most of the well-known chemical antioxidants were found to be ineffective. Sodium sulfite and other sulfite salts are effective in preventing discoloration and loss of tannin in aqueous solutions of tannic acid, at least for four months. Aqueous solutions of tannic acid

show an immediate decrease in strength accompanied by marked discoloration. Apparently atmospheric oxygen contributes to decomposition of solutions.—K. P. DUBOIS and C. O. LEE. *Jour. A. Ph. A.*, 30 (1941), 53. (Z. M. C.)

Vitamin C Salts—Stable Solution of. A stable aqueous solution is prepared containing a cevitamate such as that of sodium, calcium or monoethanolamine, together with a sulfur-containing reducing agent such as sulfur dioxide, a sulfur-containing acid capable of yielding sulfur dioxide, or a soluble salt of such an acid, such as sodium hyposulfite or sodium metabisulfite.—ELMER H. STUART, assignor to ELI LILLY and Co. U. S. pat. 2,187,467, Jan. 16, 1940. (A. P.-C.)

PHARMACOPŒIAS AND FORMULARIES

Brazilian Pharmacopœia—Revision of. It is recommended that the next edition of the Brazilian Pharmacopœia include: (*a*) an official requirement for solutions for hypodermic injection; (*b*) registration of poisons with general instructions concerning their preparation, care, ampuls and distribution; (*c*) methods of sterilization of apparatus, etc.; (*d*) tests for sterility; and (*e*) registration of sterilization and packaging.—HENRIQUE LUIZ LACOMBE. *Trib. Farm., Parana*, 8 (1940), 38. (G. S. G.)

British Pharmacopœia—Alterations to. Certain alterations and amendments to the British Pharmacopœia, 1932, to take effect on a date of which notice will be given in the official "Gazettes," have been announced by the Pharmacopœia Commission. The details are given.—ANON. *Chemist and Druggist*, 134 (1941), 131. (A. C. DeD.)

British Pharmacopœa—Third Addendum to the. The General Medical Council is shortly to publish a Third Addendum to the British Pharmacopœia, 1932, in which certain new monographs, and modifications of existing monographs, will be included. The Addendum has been prepared to deal with conditions arising from the present emergency, and it has not been found possible, therefore, to provide for the preliminary inspection period of three months normally permitted when a new Pharmacopœia or Addendum is published, though arrangements have been made for a limited number of advance proofs to be available to manufacturers of the preparations described. A number of new monographs, with relevant appendices, are listed.—*Chemist and Druggist*, 133 (1940), 306. (A. C. DeD.)

National Formulary. A discussion of the history and functions of the National Formulary.—J. L. POWERS. *Merck Report*, 50 (1941), No. 1, 23–25. (S. W. G.)

U. S. P. XII—Articles Not Official Now but Recommended for Inclusion in. A list is given.—*Am. J. Pharm.*, 113 (1941), 17. (A. C. DeD.)

U. S. P. XII—Official U. S. P. XI Articles to Be Deleted from. A list is given.—*Am. J. Pharm.*, 113 (1941), 28. (A. C. DeD.)

U. S. P. Test for Olive Oil—Suggestion for a, to Eliminate Teaseed Oil. The method is described.—W. H. DICKHART. *Am. J. Pharm.*, 112 (1940), 371. (A. C. DeD.)

DISPENSING

Barbituric Solutions for Injection. Aqueous solutions of sodium phenylethylbarbiturate are very unstable and so far no practicable method has been found for preparing a solution for injection. Though a reduced p_H favors the stability of such a solution it is not the only factor. A formula is proposed using a mixture of propylene glycol and water as excipient. This technique may be applied to other barbiturates.—HAYDEE N. BERASAIN and HECTOR H. VITALI. *Rev. Col. Farm. Nac.*, 7 (1940), 11. (G. S. G.)

Emulsification—Effect of Air Film in. The stability and homogeneity of oil-in-water emulsions of high oil content have been found to be less when an air film adheres to the oil phase than when such a film is absent. This is true both of the two common methods of emulsification studies.—I. S. HALL and E. H. DAWSON. *Ind. Eng. Chem.*, 32 (1940), 415–420. (E. G. V.)

Extracts of Glucoside Drugs of Low Alcoholic Concentrations—Preparations of. Extracts of adonis, digitalis, convallaria and strophanthus containing 40% of ethyl alcohol are comparable in effectiveness with infusions and in part more active than stronger tinctures and are preferable, subject to clinical testing, as they keep well and are readily resorbed. Reduction of the ethyl alcohol content of menstruums for alkaloid extractions is not advisable as the solubility of the alkaloids also rapidly decreases. The 7-day maceration period for the preparation of tinctures is sufficient.—M. N. VARLAKOV, F. V. IVANOV, G. A. KLEIBS and V. I. SKVORTZOV. *Sovet. Farm.*, 5 (1934), No. 10, 14–24; through *J. Soc. Chem. Ind.*, 58 (1939), 1291. (E. G. V.)

Gum Arabic—Preparation of, for Injection. Saline infusions for blood transfusion are not always acceptable. There are occasions when a colloidal liquid is necessary and gums are used in preference to gelatin since they can be sterilized. However, they mold and must frequently be made fresh. Gum solutions require gum arabic and physiological (0.859%) sodium chloride solution in redistilled water, in addition to any other substance to be introduced. The purity of the gum must be such that it contains no foreign gums, no starch or dextrin. Sterilization at 115° for 30 minutes is sufficient for fifteen days' preservation. A 6% solution is most practicable; the solution must be filtered twice and the p_H should be, as near as possible, 6. Principal indications for its use are shock, eclampsia and nephrosis.—F. PABLO REY and ANGEL REBELLO. *Rev. Med. Cienc. Afin.*, 2 (1940), 40. (G. S. G.)

Isotonic Solutions—Preparation of. This article discusses the importance of istonic solutions in hypodermic use. It lists and describes various methods for making isotonic solutions together with fallacies in their practical application in pharmacy. A most practical method is detailed, with tables, which has proved satisfactory.—A. L. REMEZZANO. *Rev. Med. Cienc. Afin.*, 1 (1939), 43; through *An. Farm. Bioq., Sup.*, 11 (1940), 3. (G. S. G.)

Milk of Magnesia. Claim is made for milk of magnesia containing about 0.5% of $(NaPO_3)_6$.—R. E. HALL, assignor to HALL LABS., INC. U. S. pat. 2,087,089; through *J. Soc. Chem. Ind.*, 59 (1940), 129. (E. G. V.)

Pharmaceutical Gelatins—Use of. A summary of the uses of the two forms of pharmaceutical gelatins especially as emulsifying agents. Four formulas are given.—LINWOOD F. TICE. *Amer. Professional Pharm.*, 6 (1940), 289; through *Chem. Abstr.*, 34 (1940), 4860. (F. J. S.)

Prescription Ingredient Survey in Lafayette, Indiana. A report of 689 prescription items found upon 19,242 new and 15,851 refill prescriptions. Three tables.—R. E. HEINE and C. O. LEE. *Bull. Natl. Formulary Committee*, 9 (1941), 130–147. (H. M. B.)

Pyelographic Preparations. Sodium *o*-iodohippurate is used with a urethan or pyrazolone as a solubilizing agent, *e. g.*, with a small proportion of ethyl urethan or 1-phenyl, 2,3-dimethyl-5-pyrazolone, in preparing stable aqueous solutions for injec-

tion into the urinary system for roentgenography.—ARNOLD SALOMON, assignor to N. V. ORGACHEMIA. U. S. pat. 2,191,118, Feb. 20, 1940. (A. P.-C.)

PHARMACEUTICAL HISTORY

Abel Victorino Brandin, Who Introduced Quinine Sulfate into the Americas. Abel Victorino Brandin, a former surgeon of Napoleon's armies, came to Buenos Aires in 1823. He brought with him quinine sulfate. The alkaloid had been isolated from Peruvian bark by Pelletier and Caventou, and was popularly known as Pelletier's powder. Quinine as an infusion had been given to the Count of Chinchon, Viceroy of Peru by the Governor of Loxa on the Peruvian-Ecuador border. It had been carried to Spain by the Jesuits and termed Jesuit's bark, and from thence was taken to France and the rest of Europe. Brandin had used it with the Napoleonic armies and brought the salt to America. He went to the west coast, visiting Chile, Peru and Ecuador, in 1824, finding the greatest field of usefulness in Peru. However he met with some hostility since people were slow to be convinced that the salt quinine sulfate could be as efficacious as the infusion of bark. Brandin was a skillful malariologist who knew how to apply quinine sulfate. He found a Peruvian collaborator in D. Augustine Cruzate, a pharmacist who was the first to manufacture quinine sulfate in Peru, thereby reducing its cost. Brandin also interested himself in the study and treatment of cholera and leprosy.—CARLOS ENRIQUE PAZ SOLDAN. *Reforma Medica*, 25 (1940), 123. (G. S. G.)

Drugs and Doctors in Old Viennese Satire. A group of letters written by Josef Richter (1749–1813).—ANON. *Wien. Pharm. Wochschr.*, 74 (1941), 18–20. (H. M. B.)

Febrifuges in the 17th and 18th Centuries. Ten recipes assembled by Alois Blumauer of Vienna in 1794.—ANON. *Wien. Pharm. Wochschr.*, 74 (1941), 11–12. (H. M. B.)

German Apothecaries. Biographical notes about Basilius Besler, Otto Tachen, Johann Kunckel, Johann Friedrich Boettiger, Andreas Sigismund Marggraf, Johann Christian Wiegleb, Carl Friedrich Wenzel, Carl Wilhelm Scheele, Martin Heinrich Klaproth, Wilhelm August Lampadius, Sigismund Friedrich Hermbstaedt, Paul Traugott Meissner, Valentin Rose, Friedrich Wilhelm Adam Serturner, Johann Johann Döbereiner, Otto Unverdorben, Kahler, Alms, Heinrich Emanuel Merck, Carl Leopold Lohmeyer, Justus v. Liebig, Philipp Lorenz Geiger, Ferdinand Runge, Gottlob Gögel, Heinrich Nestle, Carl Friedrich Mohr, Max v. Pettenkofer, Hermann v. Fehling and Karl Alfred Leverkus.—OTTO ZEKERT. *Wien. Pharm. Wochschr.*, 74 (1941), 9–11. (H. M. B.)

Kitasato Medical Institute—Brief History of. A brief history of the Kitasato Institute in Tokyo written on the occasion of its twenty-fifth anniversary. The Institute is divided into the following seven departments: (1) Scientific Investigation; (2) Clinical; (3) Postgraduate Courses; (4) Testing; (5) Biological Preparation; (6) Veterinary; (7) Administration.—ANON. *Kitasato Arch. Exp. Med.*, 17 (1940), i–iv. (W. T. S.)

Medicinal Chemistry—Fifty Years' Progress in. A review of the development of medicinal chemistry and chemotherapy.—C. R. ADDINALL. *Merck Report*, 50 (1941), No. 1, 13–16. (S. W. G.)

Pharmacy—Fifty Years of Progress in. A review showing the transition from the older apothecary to the druggist augmented by the specialists of to-day.—I. GRIFFITH. *Merck Report*, 50 (1941), No. 1, 4–7. (S. W. G.)

Phosphorus—Alchemical Recipe for the Preparation of. Historical.—ANON. *Wien. Pharm. Wochschr.*, 73 (1940), 424. (H. M. B.)

Public Health Service—History of, in the Spanish Colonial Period. The Codes of the Laws of the Indies and Missionary Chronicles record the medical care given to subjects in the Philippines. The Hospital of San Juan de Dios was founded as a public dispensary in 1577 and that of San Lazaro in 1631. Charles IV of Spain had vaccine sent to the colonies while Europe was still unimpressed by Jenner's discoveries. Segregation of lepers and establishment of a department of vital statistics also date from the colonial period.—José P. BANTUG. *Rev. Filipino Med. Farm.*, 31 (1940), 91. (G. S. G.)

PHARMACEUTICAL LEGISLATION

Coal Tar—Control of. Under the Control of Coal Tar Order, 1941 (H. M. Stationary Office, price 1*d.*), operative on February 1st, the acquisition of crude coal tar by tar distillers will be controlled by license immediately. Control by license of the disposal by tar distillers of any of the primary products of the distillation of crude tar may be instituted at any time. Prices of coal-tar and coal-tar products may also be controlled. Control of the coal-tar distillation industry has been found necessary because of the importance of the war effort of coal-tar products.—ANON. *Chemist and Druggist*, 134 (1941), 59. (A. C. DeD.)

Export Control Order—New. Under a Board of Trade Order which comes into force on February 27th, export licenses will be required for export to certain destinations of gum damar, beryllium ore, bismuth ore, mercury ore and silver ore. Details are given in the Export of Goods Control (No. 4) Order (S. R. & O., 1941, No. 173) which is obtainable from H. M. Stationery Office, Kingsway, London.—ANON. *Chemist and Druggist*, 134 (1941), 105. (A. C. DeD.)

Export Licensing. The Board of Trade has made the Export of Goods (Control) No. 3 Order, 1941 (S. R. & O., 1941, No. 46), which came into force on January 23rd. Under the Order a license is required to export to any destination a range of goods including glass ampuls, phials, bottles and tubular containers made from tubing.—ANON. *Chemist and Druggist*, 134 (1941), 59. (A. C. DeD.)

Import Licensing. The Board of Trade announce that as from February 17th, revised arrangements will operate in respect of the issue of licenses to import oils (other than mineral oils) and oil seeds.—*Chemist and Druggist* 134 (1941), 110. (A. C. DeD.)

Italian Soap Material Distribution. A recent Italian ministerial decree provides that fatty material for soap manufacture shall be distributed as follows: Standard type laundry soap, 85%; tooth pastes, lotion, medicinal soap, antiseptic soap, liquid and powder detergents, 10%; toilet and shaving soap, 5%.—ANON. *Chemist and Druggist*, 133 (1940), 101. (A. C. DeD.)

Sulfanilamide Drugs. The Medical Journal of Australia (August 10, 1940) publishes several important contributions on the sulfanilamide drugs. In these articles special references are made to the toxic effects that may follow the indiscriminate use of these drugs, and the urgent need for care and restraint in administering them is emphasized. In concluding an editorial on the subject a plea is made for the exercise of therapeutic wisdom in prescribing drugs of this class, and satisfaction is expressed that as a result of the recent proclamation under the National Security Act "over the counter sales" of

the sulfanilamides are now restricted to supply on a signed prescription.—*Australasian J. Pharm.*, 21 (1940), 651. (A. C. DeD.)

PHARMACEUTICAL ECONOMICS

Bulgarian Otto and Peppermint. The Bulgarian output of rose oil during 1939 totaled 2800 Kg. as compared with 1690 in 1938, but that of mint oils decreased to 28,000 from 40,000 Kg., according to trade estimates.—ANON. *Perfumer. Essent. Oil Record*, 31 (1940), 182. (A. C. DeD.)

Drug Economies—Further. A classification and discussion of drugs commonly used in dermatological practice has been prepared by the Therapeutic Requirements Committee of the Medical Research Council in view of the desirability of economy in prescribing imported drugs at the present time. The classification is identical with that in the Committee's previous memorandum on economy, that is, drugs which are readily available at the present or regarded as essential; drugs which are essential for certain purposes but the use of which should be restricted; drugs which are not essential and do not justify importation or manufacture in war time. A number of drugs are listed of which restriction is suggested.—*Chemist and Druggist*, 133 (1940), 306. (A. C. DeD.)

Drug Manufacture in India. A lengthy editorial calling attention to the fact that Germany no longer holds a monopoly on senna, thymol and many other drugs as she did prior to 1918. Enemy blockades will, however, limit the exchange of these products between even friendly countries. India's position with respect to this problem is pointed out.—*Indian Med. Gaz.*, 75 (1940), 551–552. (W. T. S.)

Essential Oils, Etc.—Exports of. A table is given.—ANON. *Perfumer. Essent. Oil Record*, 31 (1940), 370. (A. C. DeD.)

India's Drug and Pharmaceutical Industry. In the report of the Medicinal Preparations' Sub-Committee of the Indian Chem. Mfrs. Assoc. to the government of India, it was stated that this country grows three-fourths of the drugs mentioned in the B. P. The other fourth can be cultivated here. Reference is made to India's position with respect to the production of essential and fixed oils, paraffins, alkaloids, glucosides, synthetics, vitamins, biologicals and miscellaneous requirements.—*Indian Med. Gaz.*, 75 (1940), 560–561. (W. T. S.)

Industrial Chemistry—Developments in. Improvements and new products are discussed.—ANON. *Chemistry and Industry*, 59 (1940), 253–255. (E. G. V.)

Italian Chemical Industry. According to the most recent information available the number of chemical concerns operating in Italy at the end of 1939 was 4575, employing 150,419 workers. The construction of a "chemical city" near Rome is an outstanding development in the Italian chemical industry. It is stated that this "city" will occupy an area of 1730 acres, 80 of which will be allotted to industrial plants producing primary and subsidiary materials for the manufacture of chemicals. Experimental laboratories, schools for chemical regiment, a church, social welfare buildings, stores, houses, etc., are all included in the plan. It is stated that the industrial section has been completed.—ANON. *Chemist and Druggist*, 133 (1940), 101. (A. C. DeD.)

Precious Metals in Industry. During the course of the last few years the metals usually termed "precious," *i. e.*, gold, silver and the six platinum group metals, consisting of platinum, palladium, iridium, rhodium, ruthenium and osmium have emerged from the rather limited fields of pure decoration and the research laboratory and are becoming recognized as highly useful materials in the hands of the industrial and chemical engineer. This is particularly true of silver which, on account of its resistance to corrosion, high thermal and electrical conductivity and bactericidal properties, has received very wide application, particularly in the pharmaceutical industries. Much research on the possibility of making use of the bactericidal properties on this metal has been done and methods for the sterilization of water and other liquids have been developed.—D. C. LLOYD. *Chemistry and Industry*, 58 (1939), 1122. (E. G. V.)

Quinine. A Four Years' Supply Purchased by the Indian Government. The government of India has arranged with the authorities in the Netherland East Indies to ship from Java within six months an amount of quinine normally used by the Provincial and State governments in India in a four-year period.—ANON. *Indian Med. Gaz.*, 75 (1940), 564. (W. T. S.)

Quinine to Be Made Available in India. The rising price and a scarcity of supplies caused by the war have caused the Advisory Board of the Imperial Council of Agricultural Research to recommend a program to develop cultivation of quinine. Two coöperating research stations and test plots will be set up, one in North India and the other in South India. In addition to a comprehensive research program, plant materials and instructions will be supplied to new concerns.—*Indian Med. Gaz.*, 75 (1940), 490. (W. T. S.)

Soap Industry. An outline of progress in small and large soaperies, on the continent and in the U. S. A.—S. P. JANNAWAY. *Perfumer. Essent. Oil Record*, 32 (1941), 22. (A. C. DeD.)

Vitamin Assays—Standardization of, by the U. S. P. This paper describes the development of the present U. S. P. Vitamin Advisory Board and points out the great service this body has rendered in bringing order to the standards for this tremendous industry.—E. M. NELSON. *Am. J. Pharm.*, 113 (1941), 23. (A. C. DeD.)

MISCELLANEOUS

Cosmetic Emulsions. The review emphasizes suitable properties of raw products and finished products.—ROBERT H. MARRIOTT. *Soap, Perfumery and Cosmetics*, 13 (1940), 307; through *Chem. Abstr.*, 34 (1940), 4863. (F. J. S.)

Cyclohexylamines and Monocyclic Phenols—Addition Compounds of. Germicidal and insecticidal products are formed by the reaction of phenol, cresol, polyphenols and homologs and analogs with primary, secondary or tertiary cyclohexylamines in which the cyclohexyl group or groups may (but need not necessarily) contain additional hydrocarbon radicals such as methyl, ethyl, propyl, butyl, amyl or hexyl radicals.—GEO. L. HOCKENYOS, assignor to MONSANTO CHEM. CO. U. S. pat. 2,189,420, Feb. 6, 1940. (A. P.-C.)

Dentifrice Abrasion—Machine for Testing. This paper describes the design and operation of a machine for running production control tests on the abrasiveness of precipitated calcium carbonates. The machine is also used for testing dentifrices to determine if their abrasiveness is sufficiently low to class them as safe. Numerous test series indicate that the machine is sensitive, dependable and accurate within the limits necessary for its purpose. Its special advantages are described and other uses are suggested.—R. W. SMITH. *Ind. Eng. Chem., Anal. Ed.*, 12 (1940), 419–423. (E. G. V.)

***p*-Dichlorobenzene as a Vapor Fumigant.** The paper details the results of experimentation involving

the determination of the effect of crystal size on the rate of evaporation, a study of methods for estimation of *p*-dichlorobenzene in the atmosphere, and the determination of the vapor pressure of the crystalline solid in the temperature range 10° to 50° C.—F. R. DARKIS, H. E. VERMILLION and P. M. GROSS. *Ind. Eng. Chem.*, 32 (1940), 946–949. (E. G. V.)

Glass. What is Old? What is New? A group of papers covering trends, physical tendencies, optical characteristics, etc.—*Ind. Eng. Chem.*, 32 (1940), 1415–1436. (E. G. V.)

Insecticide—Production of. Free-flowing sodium fluoride, suitable for dusting or spraying, is made by treating the moist precipitated salt, after centrifuging, with 0.15–1 (0.25) weight % of soap in aqueous solution, drying down and grinding the product. Coloring agents may also be added.—N. A. CHESNUTT, JR., assignor to GEN. CHEM. CO. U. S. pat. 2,095,464; through *J. Soc. Chem. Ind.*, 59 (1940), 235. (E. G. V.)

Insecticides. Halogenated compounds such as α,β-dibromoethylbenzene are used.—MILTON S. SCHECHTER and HERBERT L. HALLER, dedicated to the free use of THE PEOPLE OF THE U. S. A. U. S. pat. 2,189,570, Feb. 6, 1940. (A. P.-C.)

Insecticides. The preparation consists of a liquid reaction product formed by heating pinene or turpentine in diphenyloxide together at 175° to 225° C.—FRED W. FLETCHER, GEO. E. LYNN and FRANK B. SMITH, assignors to DOW CHEMICAL CO. U. S. pat. 2,190,656, Feb. 20, 1940. (A. P.-C.)

Nylon. Nylon is practically non-flammable. It is physiologically inert and has found use in the form of surgical sutures. In addition, it is resistant to enzymes, mildew, molds and moths.—G. P. HOFF. *Ind. Eng. Chem.*, 32 (1940), 1560–1564. (E. G. V.)

Perfume Fixation. It is suggested that cholesterol or a similar compound gives to musk, civet, tonquin and ambergris their fixative properties. Research on these products and vegetable sterols is recommended.—JOSEPH CHARRIER. *Soap, Perfumery and Cosmetics*, 13 (1940), 330; through *Chem. Abstr.*, 34 (1940), 4863. (F. J. S.)

Perfumes—Manufacture of. Ketals derived from quinol and ketones of C_{6-9} are useful in admixture with other odorous ingredients in perfumery. Examples are: pyrocatechol diisopropyl (boiling point 95–97°/5–6 mm.) and methyl amyl (boiling point 100–102°/5 mm.) ketals.—I. G. FARBENIND. A.-G. Brit. pat. 514,398; through *J. Soc. Chem. Ind.*, 59 (1940), 171. (E. G. V.)

Remedy Containers for Introduction into Body Cavities. A method of making capsule and pessary remedy containers comprises mixing together urea powder and about 20% by weight of powdered sugar based on the weight of the urea, the sugar being grape or milk sugar, in an aqueous solution, with a small amount of added agar agar and tragacanth as binder, heating to form a moldable mixture and then molding into shape.—KARL W. SCHMIDT. U. S. pat. 2,186,729, Jan. 9, 1940. (A. P.-C.)

Skin Protective Creams. A number of formulas which yield quite a satisfactory product are given.—H. S. REDGROVE. *Perfumer. Essent. Oil Record*, 32 (1941), 16. (A. C. DeD.)

Sunburn—Preparations for Protection against. Menthyl Salicylate as a Protection against Sunburn. The radiation causing sunburn is in the region of λ = 2967 Å.; the erythema formation (inflammation) at λ = 3261 Å. is only 0.3–0.4% of that at λ = 2967 Å., although the pigment formation is considerable. Protection from radiation in the region from λ = 2967 to λ = 3000–3100 Å. thus permits tanning without sunburn. The physical and chemical properties of various films protecting against sunburn were investigated according to the method of Goodman. Such materials as glass and TiO_2 absorb the ultraviolet radiation completely. Chemically protective films consist of substances which do not absorb the ultraviolet radiation completely but rather convert such radiation into other wavelengths which are not injurious. Fluorescent compounds belong to this class of substances; above all, they must be specifically selective to λ = 2967 Å. Salicylic acid and its derivatives are such compounds. Among these, menthyl salicylate has been shown to be especially effective. It is not keratolytic and possesses no unpleasant odor. It is used in concentrations of 8–10% in preparations for protection against sunburn.—J. H. FRYDLENDER. *Arch. droguerie pharm.*, 6 (1938), 4; through *Chem. Abstr.*, 34 (1940), 4863. (F. J. S.)

Surgical Tape. In preparing a surgical tape, a cloth base is impregnated with an emulsion containing deacetylated chitin, the volatile phase is removed and the impregnated cloth is dried. A pressure-sensitive adhesive containing uncured rubber is applied (the emulsion having sufficient solids to produce a discontinuous film of the deacetylated chitin).—RAYMOND E. THOMAS, assignor to E. I. DU PONT DE NEMOURS & CO. U. S. pat. 2,187,563, Jan. 16, 1940. (A. P.-C.)

Triturations from Fresh Plants or Portions of Same—Production of. Fresh plants rich in alkaloids (*e. g.*, belladonna leaves) are triturated with a medium composed of glucose, lactose, fructose, invert sugar, a polysaccharide (*e. g.*, starch, dextrin or amyloses) or an absorptive medium (*e. g.*, colloidal silicon dioxide, loam, kaolin, fuller's earth, aluminum oxide), in presence of an acid (*e. g.*, hydrochloric acid, sulfuric acid or a fruit acid) or an acid buffer substance (*e. g.*, sodium acid phosphate), and dried in a current of air at not greater than 30° (20°) until the dried product passes 6000 mesh. If desired, substances which swell in water (*e. g.*, pectin, swollen starch, tragacanth) may be added during the process, which is carried out in roller mills.—G. G. W., F. J. N. and J. M. T. MADAUS. Brit. pat. 512,090; through *J. Soc. Chem. Ind.*, 58 (1939), 1296. (E. G. V.)

Washing, Cleaning and Polishing Materials. A brief discussion is given of the use and methods of producing softened water; the composition and manufacture of soaps of all types; the composition and preparation of alkaline and miscellaneous detergents (soda, phosphates, etc., alkyl sulfates, sulfonated oils, bleaches, sours, bluings, starch, etc.); dry-cleaning operations, soaps and solvents (including finishing, stain-removal and recovery of solvent, and the elimination of static electricity in the plant); carpet cleaners, etc.; and various polishes, sweeping compounds, floor oils, etc. A list of relevant federal specifications, several literature references and suggested formulas for many of the preparations are given.—F. W. SMITHER. *U. S. Bur. Stand., Circ. C.*, 424 (1939), 63 pp.; through *J. Soc. Chem. Ind.*, 58 (1939), 1260. (E. G. V.)

X-Ray Opaque Surgical Sponges. A surgical gauze sponge has interwoven with it glass threads having incorporated in them radio-opaque substance.—EDWARD F. LEWISON. U. S. pat. 2,190,431, Feb. 13, 1940. (A. P.-C.)

PHARMACOLOGY, TOXICOLOGY AND THERAPEUTICS

PHARMACOLOGY

Acetylcholine—Action of Eucodal (Dihydroxycodinone) and Eserine on Sensitivity of Leech Muscle to. The following conclusions are given:

On increasing the concentration of eucodal there is obtained a gradually progressive augmentation of its sensitizing action on the dorsal anterior muscle of the leach. This is not the case with eserine, which, when used in concentrations going from 1:40,000,000 to 1:20,000,000 may produce reactions five to six times greater than the action first noted. With eucodal the intensity of fixation in concentrations of 1:20,000,000 or 1:40,000,000 is so strong that after a series of washes the response to acetylcholine is at least as intense as that which immediately follows the addition of a similar concentration of eserine, and even after five or six series of washes the initial sensitivity is not restored. The authors suggest that different mechanisms are involved in the production of the sensitivity by eucodal and by eserine.—G. DASTUGUE and M. GANDOUR. *Bull. sci. pharmacol.*, 47 (1940), 75–79. (S. W. G.)

Aconite—Chemical and Pharmacological Study of. The tubercles of *Aconitum napellus lusitanicum* are described in microscopic structure. The predominant alkaloid is aconitine identified by the physical constants of the base, its hydrobromate and the products of its hydrolysis acetic and benzoic acids. This species produces an aconitine as toxic as the strongest aconites. The summer cutting is more potent than that of autumn. The Portuguese Pharmacopœia prescribes precipitation of the alkaloids as silico-tungstates. The process is improved by the French method of washing the precipitate with dilute nitric acid.—ALOISIO FERNANDES COSTA and JOSE VALE. *Notic. Farm.*, 6 (12/39-1/40), 127. (G. S. G.)

Adrenaline—Oxidation of, by Succinic Acid and Its Inhibition by Cocaine and by Sparteine. Succinic and fumaric acid solutions contain peroxide which can be demonstrated by chemiluminescence with 3-aminophthalic hydrazide. This is responsible for the inactivation of adrenaline which occurs in solutions of these acids. Cocaine and sparteine which biologically increase adrenaline action, inhibit the oxidation. The inhibition of oxidation within the organism may explain the augmentation phenomena.—T. WENSE. *Hoppe-Seyler's Z. physiol. Chem.*, 260 (1939), 100–104; through *Chimie & Industrie*, 43 (1940), 231. (A. P.-C.)

***p*-Aminobenzoic Acid—Confirmatory Evidence of the Chromotrichial Activity of.** The experiments as a whole seem to justify the previous conclusions that *p*-aminobenzoic acid is a chromotrichia factor and that hydroquinone achromotrichia is a vitamin deficiency. Administered at a given level, *p*-aminobenzoic acid appears to have a more rapid and more pronounced effect than the rice polish concentrate.—GUSTAV J. MARTIN and S. ANSBACHER. *J. Biol. Chem.*, 138 (1941), 441. (F. J. S.)

Analgesic Hypnotics. A brief classification of hypnotics.—ANON. *Schweiz. Apoth.-Ztg.*, 78 (1940), 209–210. (M. F. W. D.)

Anesthetics—Local. *2,187,597*—A non-precipitating, non-narcotic, non-alkaloidal, self-spraying, liquid synthetic, local anesthetic preparation, capable of being sprayed through a fine capillary orifice of a spray nozzle without deposition of anesthetic and without clogging, is obtained by dissolving in a mixture of a relatively small amount of benzyl alcohol and a relatively large amount of ethyl chloride one of the following local anesthetics: alypine, apothesine, butyn, diothane, larocaine, metycaine, nupercaine, orthoform, phenacaine, procaine, tutocaine, benzocain, butensin, their borates, hydrochlorides or other salts. *2,187,598*—The product is similar to that of the preceding patent, the local anesthetic being of the formula $NH_2C_6H_4COO(CH_2)_2NH(HCl)$.—JAMES G. BLASCO. U. S. pats. 2,187,597 and 2,187,598, Jan. 16, 1940. (A. P. C.)

Angiotonin—Changes of Arterial Blood Pressure and Renal Hemodynamics by Injections of, in Human Beings. Renin, the "renal pressor substance," becomes active only after combining with a pseudoglobulin of the plasma, forming angiotonin. The solutions used were prepared by the method of Helmer and Page (*J. Exp. Med.*, 71(1940), 495). Single intravenous injections of 0.5 to 1 cc. increase systolic and diastolic arterial pressure for 6 to 9 minutes. This is associated with decreased renal blood flow and increased renal filtration.—A. C. CORCORAN, K. G. KOHLSTAEDT and IRVINE H. PAGE. *Proc. Soc. Exptl. Biol. Med.*, 46 (1941), 244. (A. E. M.)

Angiotonin—Effect of, on the Gall Bladder and the Duodenum. Angiotonin was prepared from renin using the method described by Page and Helmer. The substance stimulates contraction of the isolated gall bladder of the guinea pig and of the *in situ* gall bladder and duodenum of the dog.—S. P. HARRISON and A. C. IVY. *Proc. Soc. Exptl. Biol. Med.*, 46 (1941), 112. (A. E. M.)

Aphanin and Aphanicin—Vitamin A Activity of. On a small group of young rats the vitamin A potency of aphanin was shown to be one-half and that of aphanicin one-quarter that of β-carotene.—A. SCHEUNERT and K. H. WAGNER. *Hoppe-Seyler's Z. physiol. Chem.*, 260 (1939), 272–275; through *Chimie & Industrie*, 43 (1940), 320. (A. P.-C.)

Aralkyl Acetic Acids.—Basic Esters of, and Their Spasmolytic Properties. A study was made of the spasmolytic effect of basic esters of bisubstituted acetic acids, of which at least one of the substituents is an aralkyl group, having the general formula $R'CH_2(R'')CH.COOX$ (in which R' is an alkyl group which may be substituted or may be an aralkyl, R'' is an alkyl, cycloalkyl, aryl or aralkyl group, and OX is an amino alcohol residue). Among the N-diethyl-β-aminoethyl esters of bisubstituted acetic acids, the biaralkyl compounds exert on the muscle a spasmolytic action several times greater than that of papaverine. With increase in molecular weight, the (atropine-like) effect of these compounds on the parasympathetic decreases. The compounds exerting a powerful papaverine action usually exert a restricted atropine-like action. A very happy combination of atropine-like effect and strong papaverine action is represented by the ethyl ester of benzoyl phenyl acetic acid and by the diethylaminoethyl esters of benzoyl isopropyl acetic acid.—T. WAGNER-JAUREGG, H. ARNOLD and P. BORN. *Ber. deut. chem. Ges.*, 72 (1939), 1551–1561; through *Chimie & Industrie*, 43 (1940), 411. (A. P.-C.)

Arsenicals—Pharmacodynamics of. Arsenicals are divided into trivalent and pentavalent, organic and inorganic. Trivalent inorganic arsenicals are the most toxic. The chief use of arsenicals is as antiluetics; they act on tryponema, trypanosome and other spirochetes. Pentavalent arsenicals penetrating the cells are modified by cell substance to trivalent and thus have toxic action on tryponemas and trypanosomes. Antiluetics are usually administered intravenously or intramuscularly. These are the benzene series of arsenicals. Those for oral use are administered in cases of amebiases or malaria. Trivalent arsenicals are eliminated less rapidly than pentavalent. They may be retained in liver, muscles, spleen, kidneys, heart, lungs, skin and nervous system. Elimination in urine or feces should be accomplished in 48 hours.—AMALIA TURBAY SUBIZAR. *Quim. Farm.*, 6 (May, 1940), 14. (G. S. G.)

Ascorbic Acid Deficiency and Enzyme Activity in Guinea Pig Tissues. The effect of ascorbic acid deficiency on two hydrolytic and two respiratory enzymes in guinea pigs was studied. Liver esterase

activity decreased progressively with vitamin depletion to −65% in acute scurvy. The properties of the enzyme did not afford evidence that ascorbic acid was present as a part of the enzyme, however, as claimed by one group of authors. The phosphatase activity of intestinal mucosa and kidney cortex was changed only to a moderate degree during scurvy; the change in liver and brain was even less marked. There was a marked drop in succinic dehydrogenase activity of heart and skeletal muscle parallel with ascorbic acid depletion. Cytochrome oxidase showed a moderate decrease in activity in ascorbic acid-deficient heart and skeletal muscle tissue.—CARTER J. HARRER and C. G. KING. *J. Biol. Chem.*, 138 (1941), 111. (F. J. S.)

Atropine and Ergotoxine as Antidotes to Scorpion Toxin. The antagonistic action of atropine and ergotoxine not only proves that scorpion toxin stimulates the autonomic nervous system but also suggests the possibility of employing these drugs alone or in conjunction with the specific antiserum as curative agents against poisoning by this toxin. The result obtained in dogs is encouraging, for it shows that a dog injected with as much as 0.36 mg. of pure toxin can be saved by injections of these drugs. This amount of toxin (0.36 mg.) is definitely large; but, if it can be shown that a scorpion seldom injects so much in one sting, one may be justified in entertaining some hopes about the application of this procedure in man. The dry telons of Egyptian scorpions yield on an average 0.55 mg. of toxin per telon. A fully grown specimen of *B. quinquestriatus*, excited to strike seven times a stretched rubber membrane, gave a few droplets of venom whose content of toxin was 0.5 mg. Another scorpion of the same species and size, excited to strike thrice, gave only about 0.2 mg. of toxin. By electrical stimulation of the junction of the terminal segment with the telon of a living *B. quinquestriatus* 0.6 mg. of pure toxin was obtained. The amount of toxin was determined by simple means. Since the M. L. D. for a rat weighing 100 Gm. is 0.02 mg. of toxin, the toxin content of any solution can easily be obtained by finding the smallest lethal dose and calculating the total amount accordingly. It thus appears that the greatest amount of toxin which this species can inject is not large and its action may be successfully antagonized in man by an appropriate amount of ergotoxine and atropine. Atropine alone or ergotoxine alone may save rats injected with a lethal amount of scorpion toxin. A combination of the two drugs is more effective than one alone. This is also true in the case of dogs which can be saved after receiving even 2 M. L. D. The employment of this procedure in the treatment of scorpion sting in man is suggested.—A. HASSAN and A. H. MOHAMMED. *Lancet*, 238 (1940), 1001. (W. H. H.)

Azo Derivatives of Some Chemotherapeutic Compounds of the Sulfonamide Type with Diuretics of the Purine Group. Attempts were made to prepare sulfonamido compounds possessing a high penetration power toward the hemato-encephalic barrier. The following were obtained by diazotizing *p*-aminobenzenesulfonamide and coupling with the appropriate compound: 8-*p*-azobenzenesulfonamide-theophylline, 8-*p*-azobenzenesulfonamide-theophylline. The activity of these compounds is of the same order as that of *p*-aminobenzenesulfonamide, but they pass into the organism much more rapidly.—F. P. MAZZA and C. MIGLIARDI. *Atti R. Acad. Lincei*, 29 (1939), 80–83; through *Chimie & Industrie*, 42 (1939), 1034. (A. P.-C.)

Barbituric Acid Derivatives—Pharmacological Relationship of. The relationship between pharmacological action and chemical structure has been continued and report is made on several series of isomeric barbituric acid derivatives. Results are tabulated and discussed. It was found that the minimal anesthetic dose, minimal lethal dose and the duration of action of the minimal anesthetic dose vary considerably among isomers. The duration of action is independent of the quantity of the drug administered.—EDWARD E. SWANSON and W. E. FRY. *Jour. A. Ph. A.*, 29 (1940), 509. (Z. M. C.)

3,4-Benzpyrene—Elimination of, from the Animal Body after Subcutaneous Injection. I. Unchanged Benzpyrene. Evidence has been obtained which shows that after the subcutaneous injection of benzypyrene in the rat, a small fraction of the hydrocarbon is eliminated unchanged in the urine and feces. Approximately 1% of 60 mg. benzpyrene injected subcutaneously in three rats was eliminated unchanged in the feces while only a trace was eliminated in the urine. Evidence has also been obtained of the partial elimination of benzpyrene in an unchanged form in fowl bile after intravenous injection and in fowl excreta after subcutaneous injection. The mechanism of elimination of benzpyrene by the liver is discussed.—J. G. CHALMERS and A. H. M. KIRBY. *Biochem. J.*, 34 (1940), 1191. (F. J. S.)

Blood Pressure—Product for Lowering the. A process of obtaining, from urine, a substance capable of lowering the blood pressure, comprises adding a water-soluble sulfate to urine in amount sufficient to produce a precipitate containing the desired substance, allowing the mixture to stand for at least several hours, separating the precipitate from the liquid, thereafter dissolving the substance capable of lowering the blood pressure in water, and at some stage of the process, heating the liquid containing the active substance to about the boiling point.—ERNST WOLLHEIM. U. S. pat. 2,190,248, Feb. 13, 1940. (A. P.-C.)

***p*-Bromophenyl-*d*-Cysteine—Acetylation in Vivo of.** An unequivocal demonstration of the direct acetylation *in vivo* of *p*-bromophenyl-*d*-cysteine has been presented. The excretion of the *d*-mercapturic acid was observed after the feeding of the *p*-bromophenyl-*d*-cysteine. Partial inversion was indicated by the excretion of some *l*-mercapturic acid, the amount depending on the rate of administration of the *p*-bromophenyl-*d*-cysteine.—VINCENT DU VIGNEAUD, JOHN L. WOOD and FRANCIS BINKLEY. *J. Biol. Chem.*, 138 (1941), 369. (F. J. S.)

Colchicine—Use of, in Detecting Hormonal Effects on Vaginal Epithelium of Menstruating Women. Colchicine, by topical application in vaginal pessaries, permits the detection of the growth stimulating effect of estrogens, and progesterone in combination with estrogens, on the vaginal epithelium of menopausal castrates. In menstruating women, this technique demonstrates clearly the proliferative effect of these hormones of endogenous origin during both the follicular and premenstrual phases of the cycle.—EPHRAIM SHORR and EUGENE J. COHEN. *Proc. Soc. Exptl. Biol. Med.*, 46 (1941), 330. (A. E. M.)

Convolvine and Convolamine—Derivatives of, Possessing Anesthetizing Properties. The fixation of various radicals on the nitrogen of convolvine decreases both the toxicity and the anesthetizing power. Introduction of an amino group into the benzoyl group increases the anesthetizing power and decreases the toxicity. On the other hand, compounds containing a free hydroxyl group are very toxic but devoid of anesthetizing power. Similarly compounds containing no ether group do not produce anesthesia.—M. S. RABINOVITCH and R. A. KONOVALOVA. *J. Obchtch. Khim.*, 9 (1939), 41–58; through *Chimie & Industrie*, 42 (1939), 1027. (A. P.-C.)

Creatine—Rate of Formation and Disappearance of Body, in Normal Animals. The rate of creatine

formation in normal rats on a creatine free diet was investigated with the aid of two different isotopic creatine preparations: (I) contained N^{15} in the sarcosine part only and (II) contained N^{15} in the amidine as well as in the sarcosine part of the molecule. These compounds were synthesized from isotopic sarcosine with normal and isotopic cyanamide, respectively. Both compounds were added, in a preliminary period, to the stock diet of rats. The animals were subsequently kept on a creatine free diet and creatinine was isolated from the urine at intervals. From the decrease of isotope concentration it was concluded that the amount of creatine synthesized daily corresponds to about 2% of the total creatine of the animal tissues. This was found to be about the same quanity as is daily excreted as creatinine. Within 29 days, half of the creatine molecules in adult rats on a creatine free diet are replaced by new molecules. By employing creatine (II) it was possible to follow separately the metabolic fate of both groupings of the creatine molecule, the amidine and the sarcosine parts, as the isotope in both groupings can be determined after degradation of the creatine. In contrast to the amidine moiety of arginine, that of creatine is not replaced during metabolism; the linkage between amidine and sarcosine groups remains intact. The creatine of the tissue in a normal animal on a normal diet seems to undergo no major metabolic reaction involving disruption of C—C or C—N linkages.—KONRAD BLOCH, RUDOLF SCHOENHEIMER and D. RITTENBERG. *J. Biol Chem.*, 138 (1941), 155. (F. J. S.)

Decurvon. A Pectin-Insulin. Experiments with decurvon are reported on. Decurvon is a pectin-insulin, containing neither albumin nor zinc, in which the insulin, in contrast with depot insulin, is dissolved. Absorption of the insulin sets in immediately after the injection and is regular and prolonged. In rabbits four hours after the injection of 1 unit of decurvon the blood sugar level is still 19% lower than it is after injection of 1 unit of ordinary insulin. In healthy fasting man the blood sugar decreases for at least three hours after the injection of 10 units of decurvon and does not begin to rise until after six hours. In contrast with depot insulin decurvon can also be injected intravenously.—B. BRAHN. *Lancet*, 238 (1940), 1078. (W. H. H.)

Dialkylmalonylguanidines—Synthesis of Several, with a Preliminary Note on Their Pharmacology. A series of dialkyl thiobarbiturates have been prepared and found to be hypnotic. Also some members of a third series in which urea oxygen is replaced by an imino group have been prepared. Preliminary investigation showed that the compounds produce death by respiratory failure but evidence is insufficient to classify them as hypnotics. —ORVILLE H. MILLER and LOUIS FISCHER. *Jour. A. Ph. A.*, 30 (1941), 45. (Z. M. C.)

Digitalis—Activity and Assay of. The old comparative standard of potency of digitalis was ouabain, which was changed in the 1936 U. S. P. to a standard powder comparable to the International Standard digitalis powder adopted at Geneva in 1925, 0.1 Gm. being the unit of activity. The units were planned to be equivalent, but actually the unit of the U. S. P. is 25% to 30% more potent. Frogs, turtles, carp, rabbits, guinea pigs, dogs, cats and doves have all been tried as test animals. The U. S. P. prefers the frog as economical and sufficiently reliable. Others prefer the cat as nearer to human reaction. The U. S. P. unit is based on 0.006 cc. tincture of digitalis per Gm. frog, producing systolic stoppage of the frog heart in one hour. The cat unit is the amount necessary to kill 1 Kg. of cat in a specified time. The cat unit is not always equivalent to the U. S. P. unit of 0.1 Gm. and frog units are not readily convertible to cat units.—OSCAR A. ROSSI. *Rev. Col. Farm. Nac.*, 7 (1940), 180. (G. S. G.)

Digitalis—Biological Assay of, by the Over-Night Frog Method. In biological assays which depend on a quantal response, dosage-response curves are being widely used. They offer means of overcoming difficulties in interpretation of results and give necessary data for computing errors. Results from assays by both one-dose and multiple-dose procedures are reported and show that the single-dose checks well with the more laborious three-dose procedure. Tables show data used in computing regression lines for digitalis when powders were extracted by Soxhlet method and also when extracted by various methods as well as data used in computing regression lines for ouabain. Another table shows a comparison of the methods. Results are analyzed and discussed. There is evidence that one dose each of the standard and sample are sufficient for a test. A reason for use of the three-dose method is determination of significant changes in the slope of the dosage-response curve which might occur and this method is recommended for routine assays for this purpose. Relatively large differences in slope cannot be shown to have significance when the determinations are carried out in routine assays. The authors summarize their results as follows: (1) Data for the construction of composite dosage-response curves for digitalis (*Digitalis purpureum*) and ouabain (*Strophanthus gratus*) are presented. (2) The composite curve for digitalis (*Digitalis purpureum*) has been found to differ significantly from the composite curve for ouabain (*Strophanthus gratus*). (3) A comparison of methods shows good agreement between a three-dose method and a one-dose method of assay for digitalis. (4) The maximum errors of the one-dose methods of assay for digitalis and also for ouabain are given. (5) A one-dose method is recommended for routine assays of digitalis and strophanthus preparations.—M. G. ALLMARK and C. A. MORRELL. *Jour. A. Ph. A.*, 30 (1941), 1. (Z. M. C.)

Digitalis—Evaluation of, by Means of Rana Esculenta. *Rana esculenta* gave values identical with those obtain on *Rana temporaria* or *pipiens*, and the curves were similar to the curves shown by English and Danish investigators. The evaluation of digitalis powders may be calculated either on basis of the relative sensitivity test curves or by determining the LD_{55} value according to Møller (*Chem. Abstr.*, 30, 5364) on basis of single investigations. Parallel determinations made during the period 1937–1939 showed deviations not greater than 10% in the values obtained by the two methods.—ARANKA STASIAK. *Magyar Gyógyszerésztud. Társaság Értesítöje*, 15 (1939), 568–579; through *Chem. Abstr.*, 34 (1940), 1128. (F. J. S.)

Drugs and Pharmacological Effect—Botanical Relationship of. Botanical relationship does not determine physiological resemblance. The subject is discussed.—E. DE WILDERMAN. *Bull. acad. méd.*, 122 (1939), 294; through *Chem. Abstr.*, 34 (1940), 4863. (F. J. S.)

α-Estradiol—Buccal Absorption of, in Propylene Glycol. By instilling several drops of a solution of estradiol in propylene glycol in the sublingual space definite morphologic evidence of absorption, demonstrated by estrogenic effect in the histological section of the vaginal mucosa and vaginal smears, was obtained at the end of one week with daily doses of 0.2 and 0.3 mg. If further investigation should prove propylene glycol to be absolutely innocuous this method of estrogenic treatment would serve as a valuable substitute for injections. - UDALL J. SALMON and SAMUEL H. GEIST. *Proc. Soc. Exptl. Biol. Med.*, 45 (1940), 766. (A. E. M.)

Estradiol Benzoate—Production of Azoöspermia in Man from the Use of. The subcutaneous injection of 6000 to 10,000 rat units of estradiol benzoate, 4 to 6 times weekly, for 26 weeks, produced an azoöspermia in a 72-year-old man.—NORRIS J. HECKEL and CHARLES R. STEINMETZ. *Proc. Soc. Exptl. Biol. Med.*, 46 (1941), 174. (A. E. M.)

Estrogen Pellets—Production of Uterine Tumors in the Guinea Pig by Local Implantation of. Small pellets of estradiol benzoate implanted locally into the uterus of guinea pigs produced fibromyomatous tumors in 9 out of 12 animals after 32 to 150 days. Estrone in the same concentration did not cause tumors in two animals. It appears that androgens have a tendency to limit the extent to which the estrogen is able to produce these tumors.—W. H. PERLOFF and R. KURZROK. *Proc. Soc. Exptl. Biol. Med.*, 46 (1941), 262. (A. E. M.)

Estrone Sulfate, a Physiological Excretory Product from Follicular Hormone. The sulfuric ester of estrone behaves differently from the lower fatty acid esters of the hormone, which frequently are more active than estrone itself. On the contrary, estrone sulfate has a very small estrogenic potency.—A. BUTENANDT and H. HOFSTETTER. *Hoppe-Seyler's Z. physiol. Chem.*, 259 (1939), 222-234; through *Chimie & Industrie*, 42 (1939), 1033. (A. P.-C.)

Fluids—Intramuscular Administration of. The technique of continuous-drip intramuscular administration of fluid is described. This route has certain advantages over the intravenous where rapid absorption of fluid is not essential. The needle is more simply and quickly inserted, the body has more control over the amount of fluid absorbed and the risks of infection are less.—B. R. BILLIMORIA and E. E. DUNLOP. *Lancet*, 239 (1940), 65. (W. H. H.)

Glycocyamine—Formation of, in Man and Its Urinary Excretion. The following conclusions are given: (1) When arginine and glycine are ingested together by human subjects, there is a rapid rise in the amount of glycocyamine excreted in the urine. This increase is greater than the sum of the increases which may occur when the same amounts of amino acids are taken separately. (2) A similar increase in glycocyamine excretion is observed after the ingestion of gelatin which is rich in glycine and arginine. The order of magnitude of this increase is the same as that given by the quantity of arginine and glycine contained in the gelatin when these are administered as pure amino acids. (3) These findings indicate that in man glycocyamine is formed by transamidination.—HENRY BORSOOK, JACOB W. DUBNOFF, JOHN C. LILLY and WILLIAM MARRIOTT. *J. Biol. Chem.*, 138 (1941), 405. (F. J. S.)

Heat and Moisture—Sensations of. The authors give the following conclusions: (1) The problem of relating subjective sensations of heat and moisture to the physical characteristics of the atmospheric environment has been considered and subjected to experimental investigation. (2) Scales of graded sensations of heat and moisture have been devised and used in experiments in which the human subject was exposed to air temperatures ranging from 71° to 104° F. dry bulb and 58° to 95° F. wet bulb. (3) The summated indices of sensations of heat and moisture experienced in the environments studied appear to be closely related to the values given for the "total heat of the air" in standard tables used in air conditioning practice.—G. P. CROWDEN and W. Y. LEE. *Chinese J. Physiol.*, 15 (1940), No. 4, 475-484. (F. J. S.)

Heparin Action on Blood Clotting and Platelet Agglutination. A single dose of heparin sufficient to raise the clotting time of the blood of the anesthetized dog to over 6 hours did not prevent the agglutination of platelets in the presence of what appeared to be a maximal stimulus. With larger doses of heparin the effect of platelet agglutination, unlike that on the clotting time, took 15-50 minutes to develop under the conditions of the authors' experiments. This point should be remembered in experimental or clinical studies with heparin. Evidence is presented which suggests that even the most extensive injury to arteries or veins never results in a maximal stimulus to platelet agglutination. The dose of heparin necessary to prevent the formation of platelet thrombi in an injured blood vessel is, for this reason, much smaller than that required to prevent the process in a glass cell. The findings suggest that, in the presence of even a little heparin, an effect on agglutination previously produced by a higher concentration may persist.—D. Y. SOLANDT and C. H. BEST. *Lancet*, 238 (1940), 1042. (W. H. H.)

Honey as a Color Preservative. A report is given of two specimens having a large amount of red and yellow pigments which have been in the honey solution for six months and are retaining their color remarkably well. The method is as follows: the specimen is injected with 10% formaldehyde, cleaned thoroughly and dried externally with tissue paper to remove excess formaldehyde. Clear strained honey is forced into the body cavities and the entire specimen is submerged in the honey. Then the specimen is sealed in a jar.—JEANNE MANGUM. *Turtox News*, 19 (1941), 85. (F. J. S.)

β-Hydroxybutyric Acid—Effect of Concentration on the Rate of Utilization of, in the Rabbit. The utilization rate for β-hydroxybutyric acid in the intact animal is dependent on the concentration of it in the blood. The upper limit of utilization seems to be reached when the oxidation of this substance uses about 90% of the oxygen consumed by the animal.—ARNE N. WICK and D. R. DRURY. *J. Biol. Chem.*, 138 (1941), 129. (F. J. S.)

16-Hydroxytestosterone. Introduction of a hydroxyl group in the 16-position in compounds of the androsterone group very appreciably reduces their male hormone potency. This is particularly true of 16-hydroxytestosterone. But on the other hand this latter compound exhibits a considerably enhanced estrogenic activity as compared with testosterone.—A. BUTENANDT, J. SCHMIDT-THOMÉ and T. WEISS. *Ber. deut. chem. Ges.*, 72 (1939), 417-424; through *Chimie & Industrie*, 42 (1939), 1030. (A. P.-C.)

International Standard Chorionic Gonadotropin—Biological Potency of. International Standard Chorionic Gonadotropin was assayed by five methods. The biological potency of the International Unit, 100γ of this preparation, was determined. The combination of uterine weight and vaginal cornification methods, the absence of estrin having been assured, represents the most desirable method for the use of this material in the assay of gonadotropic substance originating from human pregnancy urine.—FRED E. D'AMOUR and MARIE C. D'AMOUR. *Endocrinology*, 26 (1940), 93-96; through *Chem. Abstr.*, 34 (1940), 1131. (F. J. S.)

Ketosis—Comparison of, in Man and Dog. The ketosis of fasting in dog and man has been compared on the basis of the concentration of acetone bodies in blood and urine, rate of development, proportion of different acetone bodies in blood and response to glucose. Ketonemia develops within 39 hours in man, as compared to 2 or 3 days in the dog and attains considerably higher values in the former species. In other respects human and canine ketosis are comparable, suggesting that there is no fundamental difference in acetone body metabolism between these two species.—LATHAN A. CRANDALL, JR. *J. Biol. Chem.*, 138 (1941), 123. (F. J. S.)

Large Arteries—Prevention of Acute Failure of Circulation Following Injuries to. With a view of using glass cannulae to bridge defects in the arterial system of human beings as a temporary measure a series of experiments have been carried out on dogs. The results have been tabulated. With adequate heparinization, using a pump to provide continuous intravenous administration, glass cannulae of 1.5 to 2 mm. bore and 3.5 cm. length may be kept free from clot for varying periods of time up to seventy-six hours. The danger of oozing from the operative field in overdosage with heparin must be borne in mind.—G. MURRAY and J. M. JANES. *Brit. Med. J.*, 4148 (1940), 6. (W. H. H.)

Lungs—Effect of Venesection on the Capacity of the. In normal subjects the withdrawal of 380 cc. of blood by venesection is accompanied by an increase in vital capacity averaging 153 cc. and an increase of 181 cc. in the total capacity of the lungs. These changes in the capacity of the lungs probably reflect corresponding changes in the volume of blood in the lungs. The vessels of the lungs possibly act as an important blood reservoir.—E. M. GLASER and J. MCMICHAEL. *Lancet*, 239 (1940), 230. (W. H. H.)

N-Methylamino Acids—Oxidation in Vitro of, by Kidney and Liver. The following conclusions are given: (1) Broken cell preparations of rat kidney oxidatively demethylaminate the N-methyl derivatives of *dl*-methionine, *dl*-alanine and *dl*-leucine. (2) The *d*-amino acid oxidase is responsible for these oxidations. (3) Broken cell preparations of rat liver oxidize these methyl amino acids and also *dl*-N-methylhistidine. (4) Neither liver nor kidney preparations oxidize the N-methyl derivatives of *dl*-phenylalanine, *dl*-tryptophane, *dl*-valine, *dl*-lysine, or *l*(−)-histidine at an appreciable rate.—PHILIP HANDLER, FREDERICK BERNHEIM and J. RAYMOND KLEIN. *J. Biol. Chem.*, 138 (1941), 203.(F. J. S.)

2 - Methyl - 1,4 - Naphthoquinone—Antihemorrhagic Activity of, upon the Rabbit and upon the Possibility of K Hypervitaminosis. The authors report that the active group of the antihemorrhagic vitamin (vitamin K) on the chicken is 2-methyl-1,4-naphthoquinone. After confirmation of the antihemorrhagic effect of this quinone upon the chicken the authors have studied the action of this same quinone upon the rabbit. Their conclusions are as follows: 2-methyl-1,4-naphthoquinone which was found capable of correcting the effects of vitamin K deficiency in the chicken, is equally active in elaborating the prothrombin in the rabbit. The intoxication of the rabbit with *para*-toluenediamine constitutes the base of a qualitative and quantitative test of the activity of vitamin K in mammals. 2-Methyl-1,4-naphthoquinone produces in certain doses, after a momentary acceleration, a very marked retardation of coagulation. Thus attention is called to indiscriminate usage of vitamin K in therapeutics. Upon this information the basis for the belief of K hypervitaminosis appears to be well founded.—P. MEUNIER, H. HINGLAIS, D. BOVET and A. DREYFUS. *Acad. des Sci.*, (March 18, 1940); through *Presse méd.*, 44-45 (1940), 499. (W. H. H.)

Monosodium Phosphate—Pharmacological Studies on. The minimum lethal dose for rabbits was 1.4828 Gm. per Kg. given intravenously. Calcium chloride did not prevent death of the animals which had received a lethal dose of the phosphate, but it prolonged the period of survival. The disodium phosphate was three times as toxic as the monosodium phosphate.—S. GAJATTO. *Arch. farmacol. sper.*, 68 (1939), 87-98; through *Chimie & Industrie*, 43 (1940), 231. (A. P.-C.)

Nicotinic Acid—Similarity of, to Histamine When Injected Intradermally. If nicotinic acid is administered orally or by parenteral route there appears a redness of the skin, a sensation of peripheral warmth and a transitory fall in arterial pressure due to peripheral vasodilation; this reaction is similar to histamine. If the sodium salt of nicotinic acid in a strength of 1.5% or the amide of nicotinic acid in a strength of 5% is injected into the skin an analogous reaction is observed to that produced by histamine in a strength of 1%, but much less intense when the amide is employed. The author has treated a certain number of chronic anthropathies by intradermal injection of nicotinic acid. The author states that the acid has an analogous effect to histamine.—G. LAMI. *Rass. di fisiopath. clinica e terap.*, 12 (1940), 43; through *Presse méd.*, 44-45 (1940), 62. (W. H. H.)

Nutritional Encephalomalacia and Some Factors Accelerating Its Onset. While Chinese donkey skin gelatin has a preventive action upon chicken encephalomalacia, its alcohol, ether or petroleum ether extract tended to accelerate an early onset of this disorder. Provitamin A in the form of carotene, or vitamin A in the form of halibut liver oil, in moderately excessive amounts, tended to accelerate an early onset of chicken encephalomalacia.—T. G. NI. *Chinese J. Physiol.*, 15 (1940), No. 2, 181-188. (F. J. S.)

Pregnandiol—Excretion of, in Toxemia of Pregnancy. It has been claimed that the sterol complex pregnandiol glucuronidate which is abundant in the urine in normal pregnancy is excreted in greatly reduced amount in late toxemia of pregnancy. Study of a series of 10 cases of such toxemia, uncomplicated by nephritis, has not confirmed this claim. Pregnandiol was, however, absent in the last week of pregnancy from the urine of a woman with chronic nephritis.—C. L. COPE. *Lancet*, 239 (1940), 158. (W. H. H.)

Preserved Blood—Reactions from Transfusion of. Data have been presented on the incidence and types of reaction occurring in a series of 1458 transfusions of blood stored from one to thirty-eight days and 146 transfusions of fresh blood. No types of reaction were encountered that were distinctive of preserved blood. The incidence of various types of reactions did not increase or decrease with the period of storage of the blood mixtures. A limit of ten days of storage at 3° to 5° C. was found to be safe for citrated blood. Blood stored in the dextrose-citrate mixture described was found to be safe for transfusion after thirty days of storage. A comparison of the incidence of pyrogenic reactions in a series of 951 blood transfusions with that in a series of 7181 parenteral injections of saline and dextrose showed that about 3% of the febrile reactions from the blood transfusions could be attributed to pyrogens in the apparatus or fluids used. This comparison did not exclude the possibility of the introduction of pyrogenic organisms at the time of collection of the blood. The presence of pyrogens should be suspected when the incidence of febrile reactions is high. There were two deaths from transfusions—one from incompatible blood and one from cardiac embarrassment. Neither of these could be attributed to the use of preserved blood in contradistinction to fresh blood.—E. L. DEGOWIN and R. C. HARDIN. *Brit. Med. J.*, 4148 (1940), 1. (W. H. H.)

Procaine Convulsions—Protective Action of Mercury and Lead Salts against. Salyrgan, mercury chloride and lead nitrate protect against procaine convulsions by virtue of their alkaloid precipitating properties. The metal-procaine compounds are probably too slowly absorbed to produce convulsions. Intravenous injections of salyrgan-procaine and lead-procaine mixtures are equally as toxic as pure

procaine solutions.—VICTOR G. HAURY. *Proc. Soc. Exptl. Biol. Med.*, 46 (1941), 309. (A. E. M.)

Protamine Zinc Insulin—Influence of, upon Appetite During Anorexia of Vitamin B_1 Deficiency. The administration of protamine zinc insulin which leads to a marked hyperalimentation in normal rats is without effect upon the depressed appetite of rats suffering from vitamin B_1 deficiency. The deficient rats succumb in hypoglucemia without an increase in their food intake when the insulin is administered. When thiamine chloride is given to the deficient rats their appetitie responds not only to the vitamin therapy but to the insulin as do normal animals.—RICHARD H. BARNES and EATON M. MACKAY. *Proc. Soc. Exptl. Biol. Med.*, 45 (1940), 759. (A. E. M.)

4-Quinolinecarboxylic Acid Series—Local Anesthetics of the. By treating sodium salts of 4-quinolinecarboxylic acids with alkylamine chlorides in xylene solution there are readily obtained the corresponding esters of the acids, which exert a strong local anesthetic action. The intensity of this action increases with the number of carbon atoms in the side chain attached to the carbon of the carboxyl group in 4-position. The toxicity of these esters is greater than that of procain, but lower than that of cocaine. Most of them are irritating to the eye tissues of the rabbit.—S. LOURIÉ. *J. Obchtch. Khim.*, 9 (1939), 287–298; through *Chimie & Industrie*, 43 (1940), 496. (A. P.-C.)

Renin—Reduction in Blood Pressures of Renal Hypertensive Dogs by Hog. Daily intramuscular injections of hog renin for four months produced striking reduction in the blood pressure of renal ischemic hypertensive dogs, whereas heat-inactivated hog renin and active dog renin were without effect. No toxic manifestations resulted from the renin treatment nor from the reduction in blood pressure. The serums of the dogs treated with active hog renin neutralized the acute pressor effect of renin in assay animals. The mechanism of these reductions in blood pressure is not clear. Most probably an immune response to heterologous renin is involved.—G. E. WAKERLIN and C. A. JOHNSON. *Proc. Soc. Exptl. Biol. Med.*, 46 (1941), 104. (A. E. M.)

Sarcosine to Glycine—Oxidative Demethylation of. Broken cell preparations of rat, rabbit and guinea pig liver but not kidney or muscle oxidatively demethylate sarcosine to glycine. One mole of sarcosine reacts with one atom of oxygen with the production of one mole of glycine and one mole of formaldehyde. These preparations also oxidize N-ethyl- and N-dimethylglycine but not betaine or N-methyl-β-alanine. The demethylation can also be accomplished by liver slices although the rate of reaction is quite small.—PHILIP HANDLER, MARY L. C. BERNHEIM and J. RAYMOND KLEIN. *J. Biol. Chem.*, 138 (1941), 211. (F. J. S.)

Secretin—Assay of. The commercial secretion preparation, Pancreotest, has been assayed on dogs and found to be half as potent as standard material.—HARRY GREENGARD and IRVING F. STEIN, JR. *Proc. Soc. Exptl. Biol. Med.*, 46 (1941), 149. (A. E. M.)

Sex Hormones—Activation of. Certain sex hormones, testosterone and estradiol, may be activated by esterification. The value varies in relation to concentration. The female hormones have their potency increased 100 times more than the male by this method. This increase of potency by esterification can be utilized for computing the effect of a preparation.—K. MIESCHER. *An. Farm. Bioq.*, 11 (1940), 26. (G. S. G.)

Sodium Pyruvate—Pharmacological Studies on. The intravenous minimum lethal dose for rabbits was 4.730 Gm. per Kg. Small doses stimulated and large doses depressed the action of isolated frog heart and all doses caused enlargement of frog veins. In rabbits, sodium pyruvate first stimulated then paralyzed the respiratory centers with parallel increase and decrease of arterial pressure.—S. GAJATTO. *Arch. farmacol. sper.*, 68 (1939), 72–86; through *Chimie & Industrie*, 43 (1940), 146. (A. P.-C.)

Spinal Anesthesia. A report on four different anesthetics used in spinal injection lists stovaine 39 cases, 4 failures, or 11.4%; novocaine 1575 cases, 25 failures or 3.5%; tropocaine 1969 cases, 68 failures or 3.5%; and percaine 1652 cases, 35 failures or 1.1%. In the total 5235 cases there were only 4 deaths and 5 cases of shock.—BENVENUTO R. DINO and SALVADOR C. MENEZ. *J. Philippine Isls. Med. Assoc.*, 20 (1940), 411; through *Rev. Filipina Med. Farm.*, 31 (1940), 220. (G. S. G.)

Steroid Hormones—Anesthetic Effect of. Desoxycorticosterone and progesterone produce deep anesthesia in rats and mice if injected into the peritoneum whence they can be rapidly absorbed. No ill effect appears after recovery from anesthesia. Partially hepatectomized rats are more sensitive to the anesthetic effect than intact controls. Males are less sensitive than females of the same size.—HANS SELYE. *Proc. Soc. Exptl. Biol. Med.*, 46 (1941), 116. (A. E. M.)

Strontium—Pharmacology of. Intravenous injection of strontium chloride constantly produced vomiting in dogs when the dose exceeded 0.05 Gm. per Kg. body weight. This seems to be due to an action exerted directly by the strontium on the vomiting center; it is less a stimulation proper than a hyperexcitability of this center, which thus becomes capable of reacting toward products which normally produce no effect.—A. BORIANI and G. BORIANI. *Arch. farmacol. sper.*, 68 (1939), 14–33; through *Chimie & Industrie*, 43 (1940), 145. (A. P.-C.)

Sulfathiazole—Continued Administration of, on Renal and Hepatic Function in the Dog. The continued administration of sulfathiazole to dogs over a period of ten days in doses of 250 mg. per Kg. per day produces slight impairment of renal function, which however is reversible, normal function being reëstablished within 48 hours after withdrawal of the drug. No liver damage was observed after medication with the drug at the given dosage.—DAVID R. CLIMENKO, EVAN W. MCCHESNEY and FREDERICK MESSER. *Proc. Soc. Exptl. Biol. Med.*, 46 (1941), 124. (A. E. M.)

Sulfonamides—Local Effects of, on the Rabbit's Brain. The local application of soluseptasine, solid sulfanilamide and solid sulfapyridine to the rabbit's brain does not cause any appreciable damage to the tissues. Owing to their relative insolubility the quantities of dry substance used should be minimal. Sulfanilamide is preferable to sulfapyridine since it is more soluble. Excess of either substance will excite a foreign-body reaction which, in the brain at any rate, might entail unfortunate consequences. Solutions are preferable from a histological standpoint.—D. S. RUSSELL and M. A. FALCONER. *Lancet*, 239 (1940), 100. (W. H. H.)

Thiamine—Fate of, in the Digestive Secretions. The following conclusions are given: (1) Thiamine is stable in normal gastric juice from p_H 1.5 to 8.0 during a sixteen-hour incubation at 37.5°. (2) In the presence of antacids thiamine added to gastric juice may be absorbed or destroyed during the period of incubation. (3) Thiamine is stable in hemin-containing gastric juice and in gastric juice from patients with achlorhydria. (4) When thiamine is incubated for sixteen hours with bile at its

natural p_H, there is an apparent loss of from 50% to 90% of the vitamin. Subsequent incubation with a yeast enzyme preparation results in the recovery of more thiamine; the true loss then varies from 40% to 55% of the added vitamin. The precursor of the extra thiamine liberated enzymically is not the phosphorylated vitamin. The influence of enzyme inhibitors, p_H and time of incubation upon the conversion of thiamine into this unknown complex is reported. As the reaction of the bile becomes acid, less thiamine is destroyed with complete recoveries obtained from samples incubated at p_H 4.5. (5) The results obtained when thiamine is incubated with pancreatic juice are similar to those noted with bile. (6) The *in vivo* implications of these *in vitro* studies are discussed.—DANIEL MELNICK, WILLIAM D. ROBINSON and HENRY FIELD, JR. *J. Biol. Chem.*, 138 (1941), 49. (F. J. S.)

Thiamine—Observations on the Induced Deficiency of. From studies on induced thiamine deficiency, the authors concluded that the isolated withdrawal of thiamine from the diets does not produce beriberi. In subjects whose diets contained less than 0.15 mg. of thiamine per day, edema, cardiac dilatation and neuritic pain, which are features of beriberi, were absent. Tenderness of the muscles, paresthesia of the feet and legs and diminution of tendon reflexes were observed, although not with any regularity, and pain was not present in any degree. Through these observations it is suggested that deficiency of other factors of the vitamin B complex may be more important in the production of such features than deficiency of thiamine itself. The early stage of the disease induced by restricting thiamine intake closely resembles neurasthenia, the later stage simulates anorexia nervosa. Therefore, the authors propose that states of thiamine deficiency should be looked for chiefly where diagnosis of neurasthenia has been made.—RAY D. WILLIAMS, H. L. MASON, R. M. WILDER and B. F. SMITH. *Arch. internal med.*, 66 (1940), 785; through *Abbott Abstract Service*, (1941), No. 832. (F. J. S.)

Thyrostimulin. This is not an activating hormone of the thyroid gland. Exogenous and endogenous hormones are not analogous for creating refractory states. Thyrostimulin is fundamentally the excretion of the thyroid hormone, not its circulation. Pharmacodynamic tests prove that it possesses properties antagonistic to the thyroid hormone.—A. C. BARANAS. *Semana méd.*, (Jan. 1940), 321; through *Rev. Col. Farm. Nac.*, 7 (1940), 32. (G. S. G.)

Thyrotropic Hormone—Rapid Response of Guinea Pig Thyroid to a Single Injection of. A single subcutaneous injection of thyrotropic hormone will result in a significant increase in mean acinar cell height within 8 to 16 hours, which is comparable to that heretofore reported in 72 hours following a series of daily injections. This measured response persists at least 48 hours following injection.—PAUL STARR and JACK METCOFF. *Proc. Soc. Exptl. Biol. Med.*, 46 (1941), 306. (A. E. M.)

Trivalent Arsenic—Relation between Electrical Conductivity and Physiological Assay of Solutions of. The determination of the curves of electrolytic dissociation does not offer a substitute for bioassay.—GEORGES ANTOINE and MARIE-THERESE REGNIER *Bull. Acad. méd.*, 122 (1939), 208; through *Chem. Abstr.*, 34 (1940), 4863. (F. J. S.)

Vinesthene Anesthesia—Convulsions after. Recently there has appeared in the literature references to the convulsive action of certain patients following the administration of vinesthene. The author reports another case following the usage of a 3-cc. ampul prepared especially for usage in an inhalator (Goldman). Since all of the material had been utilized it was impossible to analyze the same for impurities, however the other ampuls packed in the same container were used and no untoward reaction was obtained.—F. K. BOSTON. *Brit. Med. J.*, 4144 (1940), 929. (W. H. H.)

Viper Venom—Role of Infinitesimal Quantities of Copper in the Attenuation of, by Hydrogen Peroxide. The venom dissolved in distilled water is gradually inactivated by very dilute hydrogen peroxide. If the water is distilled in a Pyrex apparatus the action is extremely slow, but if the water is distilled in a copper apparatus, or if a trace of copper is added, the reaction is rapid, which shows that the copper acts as a catalyst.—P. BOQUET. *Compt. rend. soc. biol.*, 131 (1939), 7-10; through *Chimie & Industrie*, 43 (1940), 497. (A. P.-C.)

Vitamin E and Habitual Abortions. Claims for the successful use of wheat germ, wheat germ oil and concentrates prepared from wheat germ oil have been criticized because of the absence of adequate controls. It has been shown that for mice and rats the vitamin is essential to normal reproduction. In its absence certain species (rat, guinea pig, rabbit and dog) have been shown to develop a characteristic muscular dystrophy. Its successful use in the veterinary treatment of cows and sows has been claimed, particularly by Voft-Möller. There seems little doubt that it is needed for normal production and hatching of hen's eggs. Certain American workers claim, however, that its absence does not prevent normal pregnancy in the goat, the sheep and the rabbit. There can therefore be no conclusion on general grounds as to the indispensability to the human species, but it is suggested that the analysis given in this paper affords at least presumptive evidence that it is needed for normal pregnancy in women.—A. L. BACHARACH. *Brit. Med. J.*, 4143 (1940), 890. (W. H. H.)

Vitamin E Deficiency—Effect of, on the Vitamin A Reserves of the Rat. The vitamin A reserves of rats kept for prolonged periods on a diet deficient in vitamin E in which vitamin A was supplied as halibut liver oil were always much lower than those of control animals receiving supplements of vitamin E. After dosing with carotene, the differences between the amounts of vitamin A formed by rats treated and not treated with vitamin E were relatively slight. This may have been due in part to the particular experimental conditions adopted, which resulted in the differentiation between adequacy and deficiency of vitamin E being less clear cut than in the experiments on the storage of preformed vitamin A.—THOMAS MOORE. *Biochem. J.*, 34 (1940), 1321. (F. J. S.)

Vitamin E—Pharmacology of. Synthetic vitamin E (*dl*-α-tocopherol) and its acetate apparently exerted no toxic action. Mice tolerated well a dose of 50 Gm. per Kg. of body weight administered by mouth. Rats, dogs and cats exhibited absolutely no symptoms of poisoning when given total doses of several Gm. during a period of 1 to 2 months. No abnormalities developed in the intestinal, renal, neurological, muscular and sexual functions.—V. DEMOLE. *Z. Vitaminforsch.*, 8 (1938-1939), 338-341; through *Chimie & Industrie*, 42 (1939), 1033. (A. P.-C.)

***l*-Xylulose—Metabolism of.** *l*-Xylulose is not metabolized by the rat. No significant rise in the glycogen content of the liver and muscle nor in the lactic acid content of liver, muscle and blood was observed after its administration. Non-fermentable reducing substances in the liver, muscle, kidney and blood were increased. A significant increase in the fermentable sugar of the blood occurred.—HARDY W. LARSON, N. R. BLATHERWICK, PHOEBE J. BRADSHAW, MARY E. EWING and SUSAN D. SAWYER. *J. Biol. Chem.*, 138 (1941), 353. (F. J. S.)

TOXICOLOGY

Acetanilid Poisoning—Chronic. The cyanosis can be entirely explained by the existence of sulfhemoglobinemia, and it is unnecessary to assume the existence of a colored derivative of aniline. It is known that aniline derivatives are oxidized to phenyl hydroxylamine and *p*-amino phenol in the blood stream and that both these substances, when added to blood *in vitro*, alter hemoglobin to methemoglobin; if, however, a trace of hydrogen sulfide is present in the blood the addition of phenyl hydroxylamine or *p*-amino phenol rapidly forms sulfhemoglobin. By measuring the absorption of light by a sample of laked blood at given intervals after the addition of suitable reagents it is possible to represent graphically the velocity of alteration in the hemoglobin to sulfhemoglobin or methemoglobin. A case of cyanosis (the result of acetanilid poisoning) is recorded. The mechanism of formation of sulfhemoglobin from aniline is discussed.—T. N. MORGAN and A. G. ANDERSON. *Brit. Med. J.*, 4153 (1940), 187. (W. H. H.)

Adrenaline Derivatives with Nuclear-Combined Amino Group. An amino group in *o*-position relative to a side chain produces a marked decrease in toxicity, but at the same time almost completely destroys the therapeutic properties of the compound. —C. MANNICH and G. BERGER. *Arch. Pharmazie*, 277 (1939), 117–127; through *Chimie & Industrie*, 42 (1939), 1024. (A. P.-C.)

Antisyphilitic Therapy—Capillary Resistance in Toxic Manifestations of. All the cases of toxic erythema and dermatitis investigated show an associated low (or decreased) capillary resistance. The observation of Scarborough and Stewart (1938) that vitamin P is a factor in increasing the capillary resistance has been confirmed in one case of toxic purpura and in one case of toxic erythema.—G. HORNE and H. SCARBOROUGH. *Lancet*, 239 (1940), 66. (W. H. H.)

Argemone Oil. A Dangerous Adulterant in Mustard Oil. Poisonous argemone oil is often found in mustard oil used for cooking and is responsible for the outbreaks of epidemic dropsy in individuals who eat this oil. Several previous investigations of this matter have been reported. The quantitative aspects of the problem have now been studied comprehensively. Since many mustard oil stocks are contaminated and since small amounts of argemone oil are not dangerously toxic, it was deemed advisable to permit the sale of mustard oil provided it contained less than 0.5% of the adulterant. A colorimetric method for estimating the percentage of adulterant has been devised since the usual nitric acid test is positive with amounts too little to produce clinical symptoms. Air and light reduced the reacting substance in contaminated oils.—R. B. LAL, S. P. MUKHERJI, A. C. DAS GUPTA and S. R. CHATTERJI. *Indian J. Med. Research*, 28 (1940), 163–195. (W. T. S.)

Arsine—Poisoning by, During Solution of Zinc-Bearing Ashes in Sulfuric Acid High in Arsenic. The ashes were free from arsenic but contained lead. During solution considerable quantities of hydrogen sulfide were formed. No signs of lead or sulfide poisoning were observed. After 7 weeks there were symptoms of arsine poisoning. Production of this gas was due to solution of the ashes in acid containing 594 mg. of arsenic per liter.—K. HUMPERDINCK. *Arbeitsschutz*, (1939), 345–346; through *Chimie & Industrie*, 43 (1940), 652. (A. P.-C.)

Bee Venom—Action of Some Sulfhydryl Compounds on. Sulfhydryl compounds such as glutathione and sodium thiolactate can decrease the toxicity of bee venom *in vivo* (tests on mice), probably through the reducing action of the disulfide groups on the venom. The activity depends to a considerable extent on the p_H; *e. g.*, glutathione does not prevent the death of the animal at p_H 6.8, but permits survival between p_H's 7.2 and 8.4. The limits of activity of sodium thiolactate are p_H 6.8 and 7.2.—L. BINET, G. WELLER and E. ROBILLARD. *Compt. rend. soc. biol.*, 131 (1939), 1120–1122; through *Chimie & Industrie*, 43 (1940), 496. (A. P.-C.)

Chemical Hygiene—Use of Chloropicrin in. The use of chloropicrin for the destruction of rats, insects and bugs is described. Concentrations of gas necessary are given.—J. DES CILLEULS. *Ann. hyg. publ. ind. sociale*, 17 (1939), 426–427; through *J. Soc. Chem. Ind.*, 59 (1940), 329. (E. G. V.)

Chemical Warfare Poisons—Toxicological Range of. The toxicological range of various poisons depends upon a wide variety of factors. The effective range of several poison gases under stated conditions is given.—THOMANN. *Schweiz. Apoth.-Ztg.*, 78 (1940), 269. (M. F. W. D.)

Chlorinated Naphthalenes in Industrial Hygiene. The harmfulness of these compounds increases with the degree of chlorination. Subcutaneous injection is fatal to the rabbit and guinea pig and produces hepatic lesions of the same type as yellow atrophy of the liver. Small doses repeated over a long period produce the same troubles as large doses. Workmen can be protected by adequate ventilation with forced draught to remove the vapors.—F. B. FLYNN. *Arch. Malad. Profess.*, 2 (1939), 433–439; through *Chimie & Industrie*, 43 (1940), 122. (A. P.-C.)

Cobra Venom—Role of Infinitesimal Quantities of Copper in the Attenuation of, by Hydrogen Peroxide. Cobra venom, like viper venom, is detoxified by dilute hydrogen peroxide in presence of traces of copper, but less rapidly. The rate of detoxification increases with the amount of copper present, at least up to 0.005 mg. per cc. of hydrogen peroxide solution. In complete absence of copper, the mixture of venom and of 0.5 to 1% hydrogen peroxide solution is still toxic after standing 4 days in the oven.—P. BOQUET. *Compt. rend. soc. biol.*, 131 (1939), 1207–1209; through *Chimie & Industrie*, 43 (1940), 496–497. (A. P.-C.)

Cyanide Poisoning—Action of Copper in. Injection of cupric chloride into rabbits does not affect an intoxication due to inhalation of hydrocyanic acid. If the cupric chloride is injected before the inhalation, the intoxication is delayed but there is no improvement in recovery. The same is also true when copper glycocollate is used. It is therefore concluded that cupric chloride has no practical value in the treatment of poisoning due to inhaling hydrocyanic acid.—R. WALTHER and K. BEYER. *Biochem. Z.*, 301 (1939), 315–320; through *Chimie & Industrie*, 43 (1940), 318. (A. P.-C.)

Drug Extracts Used for Combating Insects—Increasing the Activity of. Extraction with solvents is carried out in the presence of acids (phosphoric and/or formic acids).—PHYTOCHIMIE, SOC. ANON. Belg. pat. 435,012, July 31, 1939. (A. P.-C.)

Halogens—Effect of Introduction of the, into the Phenol Molecule on Toxicity to Goldfish. III. Monoiodophenols. A study was made of the toxicity of the three monoiodophenols with respect to concentration and survival time at 27°, and the results were compared with each other and with those for phenol, rotenone, the monochlorophenols and the monobromphenols. Goldfish of the same lot, weighing between 2 and 4 Gm. each, were used as the test animals. The introduction of the iodine atom into the phenol molecule, like that of the chlorine and that of the bromine atom, results in compounds having a mode of toxic action markedly different from that of phenol. Toxicity is affected

with respect to both concentration and survival time. According to the minimal product of concentration and survival time, which measures toxicity in the range of most powerful action, the relative toxicity of the iodophenols as compared with that of phenol is as follows: *meta*, 1.61; *ortho*, 2.01; and *para*, 7.78. Due essentially to a shift in the concentration factor alone, the most pronounced differences between the iodophenols and the chloro- and bromophenols are: (1) Each iodophenol is more toxic than the corresponding compound containing chlorine or bromine. (2) The *ortho* and *meta* compounds have changed places, however, in the order of toxicity so that the latter is the least toxic of the iodophenols. (3) The *para* compound has a pronouncedly greater toxicity than its least toxic isomer, it being five times as toxic in the case of the iodophenols as compared with one and one-half times for the bromo- and chlorophenols.—W. A. GERSDORFF and L. E. SMITH. *Am. J. Pharm.*, 112 (1940), 389. (A. C. DeD.)

Hydrocarbons—Hematological Control of Poisoning by Volatile. Chronic benzene poisoning results in characteristic hemograms. Examination of these hemograms in the case of the breathing of gasoline containing benzene (20 cases) showed that they are identical with those of benzenism and that automobile gasolines and denatured or so-called "cleaning" gasolines are dangerous blood poisons. Users should be made aware that danger exists as soon as the characteristic odor of gasoline, benzene or benzine is perceptible.—A. LANGELEZ, G. PEREMANS and H. BASTENIER. *Bruxelles-Méd.*, 20 (1940), 430-441; through *Chimie & Industrie*, 43 (1940), 841. (A. P.-C.)

Hydrocarbons—Production of Cancer by. Tests for carcinogenic activity have been carried out with about seventy compounds, mostly new substances specially synthesized for the purpose and related to known carcinogenic compounds. The results support the view that there is a definite association between molecular structure and carcinogenic action; thus in the 3,4-benzphenanthrene series, which has not hitherto been investigated extensively, positions 1 and 2 seem to be the favorable points for substitution. The capacity to produce epithelioma does not always run parallel with the capacity to produce sarcoma. Some preliminary observations are given upon the occurrence of multiple tumors in animals receiving some classes of these compounds; this subject requires much further investigation with animals in which the spontaneous incidence of such tumors is known.—G. M. BADGER, J. W. COOK, C. L. HEWETT, E. L. KENNAWAY, N. M. KENNAWAY, R. H. MARTIN and A. M. ROBINSON. *Proc. Roy. Soc.*, 129 (1940), 439-467. (W. T. S.)

Hydrogen Sulfide—Poisoning by, During the Cleaning of Sulfuric Acid Tanks. The action of hydrogen sulfide is superimposed on that of arsine and carbon dioxide. Formation of this gas is explained as follows: the wall of the tank is always covered with a layer of iron sulfate which, in contact with organic matter (oil entrained by compressed air, sawdust used for cleaning) is converted into iron sulfide; the latter then reacts with the acid sludge in the tank to give hydrogen sulfide. It is necessary: (1) to avoid the use of organic matter for cleaning; (2) after removal of the acids, to neutralize the contents of the tank completely with an alkaline solution and wash twice with water; and (3) when cleaning these tanks, to always wear a respirator.—T. BAUER. *Arbeitsschutz*, 7 (1939), 241-244; through *Chimie & Industrie*, 43 (1940), 122. (A. P.-C.)

3-Indoleacetic Acid and Some Related Acids—Toxicity of. The lethal intraperitoneal dose for white mice, in mg. per Kg., is 187 to 200 for 3-indoleacetic acid, 250 to 400 for 3-indolepropionic acid, 100 to 150 for phenylacetic acid and 100 to 200 for α-naphthylacetic acid. Anderson, Shimkin and Leake (*Proc. Soc. Exptl. Biol. Med.*, 34 (1936), 138-139) found 3-indoleacetic acid much more toxic than above stated, probably because they use a toxic solvent, diethylene glycol.—A. BERTHELOT and J. DIERYCK. *Compt. rend. soc. biol.*, 130 (1939), 1524-1526; through *Chimie & Industrie*, 42 (1939), 1029. (A. P.-C.)

Intoxications During Acetylene Welding—Fatal. Analysis of the gases given off during acetylene welding showed the presence of carbon dioxide, water vapor and, in the case of incomplete combustion, of carbon monoxide, iron pentacarbonyl, cyanogen, hydrocyanic acid, nitrogen oxides and even phosphine and arsine. In the welding of a tank of 10-cu. m. capacity, an acetylene blast lamp burning 30 minutes consumes 600 liters of acetylene requiring for complete combustion half the air available in the tank and producing 1800 liters of combustion gases which can contain up to 2 liters of carbon monoxide and 7 liters of nitrous gases. All the cases of intoxication studied had the character of poisoning by nitrous gases activated by carbon monoxide. In the welding of tanks efficient ventilation must be assured, or the workmen should wear masks connected to a source of fresh air.—H. KIENITZ. *Z. Krimprim. Flüss. Gase*, 34 (1939), 97-103, 113-117; through *Chimie & Industrie*, 43 (1940), 469. (A. P.-C.)

Lead Nitrate Solutions—Variations in the Toxicity of, on Aging. Fresh solutions of lead nitrate appeared to be more toxic than older solutions.—I. SIMON. *Bol. soc. ital. biol. Sper.*, 14 (1939), 130-131; through *Chemie & Industrie*, 42 (1939), 1023. (A. P.-C.)

Lead Poisoning—Experimental, Tests on the Treatment of. Sodium thiosulfate suitably administered protected minnows and guinea pigs from lethal doses of lead subacetate.—L. BINET and L. PEREL. *Compt. rend. soc. biol.*, 131 (1939), 956-957; through *Chimie & Industrie*, 43 (1940), 122. (A. P.-C.)

Lead Poisoning—Two Cases of, by Lead Arsenate. A description of two serious accidents which occurred in a lead arsenate manufacturing plant. It is suggested that for agricultural purposes aluminum arsenate be used instead of lead arsenate.—R. DUPÉRIÉ, P. DERVILLÉE and H. MONMAYOU. *Méd. Usine*, 2 (1939), 503-508; through *Chimie & Industrie*, 43 (1940), 561. (A. P.-C.)

Medicinal Solvents—Toxicology of Some Organic. The toxic action of glycerol is due to its dehydrating properties; but it is practically harmless when administered in dilute solution (not over 30%). Of the glycols, those which are most used as solvents, such as propylene glycol, are only very slightly toxic. Ethylene and diethylene glycols are more toxic. The toxicity of these compounds also is due to their dehydrating action. Aromatic esters such as benzyl acetate are more toxic than the glycols.—J. SCHOLZ. *Arch. Pharmazie*, 277 (1939), 145-163; through *Chimie & Industrie*, 43 (1940), 495. (A. P.-C.)

Mesityl Oxide—Toxicity of. The maximum safe concentration of mesityl oxide is approximately 0.24%. In the mouse, it produces serious symptoms (gasping, convulsions, narcosis) if inhaled for 30 minutes at a concentration of 1.3% (saturation at a temperature of 23° C.), and may produce death at this concentration if inhaled for 1 hour, or for 30 minutes daily on several successive days; it may also produce serious symptoms and death by skin absorption. In the rabbit, repeated daily inhalation for 1 hour of air saturated with the oxide at ordinary room temperature produces in a few days

spastic paralysis and eventual death. Lethal doses produce congestion of lung, liver and brain and renal degeneration. With adequate ventilation, a concentration of 0.1% need never be reached, and, at this concentration, which is safe, the odor and irritating properties of the compound to the eye and nose give adequate warning of its presence.—E. R. HART, J. A. SCHICK and C. D. LEAKE. *Univ. Calif. Pub. Pharm.*, 1 (1939), 161-173; through *Chimie & Industrie*, 43 (1940), 469. (A. P.-C.)

Monacetin, Diacetin and Triacetin—Acute Toxicity of. The subcutaneous LD_{50} for monacetin is approximately 5.5 cc. per Kg. for inbred albino rats and 3.5 cc. for white mice. The LD_{50} for diacetin is 4.0 cc. and 2.5 cc. per Kg., respectively, and for triacetin 2.8 and 2.3, respectively. Slight irritation to mucous membranes and occasionally to cutaneous tissues was noted with monacetin. Monacetin did not hemolyze blood corpuscles in dilutions of 1:500 or greater. Blood serum and monacetin are compatible with a resulting p_H of 7.45. Diacetin and triacetin are more irritating to the tissues, are slightly hemolytic and relatively incompatible with blood serum.—RICHARD C. LI, PETER P. T. SAH and HAMILTON H. ANDERSON. *Proc. Soc. Exptl. Biol. Med.*, 46 (1941), 26. (A. E. M.)

Neoarsphenamine—Toxicity and Trypanocidal Activity of Commercial. Report is made on approximately two hundred routine assays of neoarsphenamine for toxicity and seventy-six tests for trypanocidal activity on products offered for sale in Canada. Details concerning materials and methods are given and findings are tabulated. Products from nine manufacturers averaged from eighty to one hundred fifteen per cent of the international standard. Some manufacturers do not seem to produce neoarsphenamine of uniform toxicity. Low toxicity does not necessarily mean low trypanocidal activity. Most brands showing a low toxicity had a high trypanocidal potency and the most toxic were usually the least active. Single-dose and multiple-dose variations of the methods for toxicity and trypanocidal activity were employed. The merits of these methods and some other considerations relative to them are discussed. Toxicity and trypanocidal activity are expressed in terms of International Standard Neoarsphenamine. The toxicity of four lots of Canadian Standard Neoarsphenamine and the trypanocidal activity of two lots are reported. A one-dose method of assay using curve numbers in calculating results was found satisfactory for the rats used. The effect of inbreeding on the slope of the dosage response curve is demonstrated.—C. A. MORRELL and M. G. ALLMARK. *Jour. A. Ph. A.*, 30 (1941), 33. (Z. M. C.)

Parasites—Destruction of. Halogenated nitriles, and more particularly chromium nitriles, are used.—DEUTSCHE GESELLSCHAFT FÜR SCHADLINGSBEKAMPFUNG M. B. H. Belg. pat. 434,422, Aug. 31, 1939. (A. P.-C.)

Parasites, Eggs and Nits—Product for Destroying Cold-Blooded. The product is composed of carbon tetrachloride and terpilene oxide.—A. DEVILLEZ and R. BONTEMPS. Belg. pat. 434,621, June 30, 1939. (A. P.-C.)

Poison Gases—Chemical Detectors for. Tests for halogens, nitrogen and sulfur and Pringsheim's test permit of classifying poison gases into different groups according as they contain chlorine, chlorine and sulfur, chlorine and nitrogen, chlorine and arsenic, or eventually a metal. Xylyl bromide is identified by the formation of fluorescein. Phosgene is detected as diphenylurea, or by means of paper impregnated with a mixture of dimethylamine, benzaldehyde and diphenylamine or by means of nitrosodimethylaminophenol. Yperite is detected by means of chloride of lime, sodium iodoplatinate paper, the gold chloride or selenium dioxide test, Grignard's reagent, the sodium sulfide or platinized asbestos test; chloropicrin by the Labat test, by reduction to nitrous acid or by formation of potassium nitrite. Trichloroacetaldoxime is decomposed by hydrochloric acid into hydrocyanic acid which is then identified.—M. NORIEGA DEL AGUILA. *Prim. Congr. Peruano Quim. (Acts y Trav.)*, (1938), 1001-1005; through *Chimie & Industrie*, 43 (1940), 470. (A. P.-C.)

Poison Gases—Toxicology and Therapy of. The preparation, properties, toxic effects and antidotal measures of various asphyxiating, lachrymatory, vesicatory, sternutatory and directly toxic gases are discussed.—FERRARI. *Boll. chim.-farm.*, 78 (1939), 432-436, 439, 521-522, 577-581; 79 (1940), 40-42, 45, 138-141; through *J. Soc. Chem. Ind.*, 59 (1940), 570. (E. G. V.)

Pyruvic Acid—Toxicity of. The toxicity diminishes progressively with the time elapsed since preparation. It is suggested this may be due to a molecular transposition from the ketonic to the less toxic enolic form.—V. ZAMBOTTI and A. FERRANTE. *Bol. soc. ital. biol. Sper.*, 14 (1939), 370-371; through *Chimie & Industrie*, 43 (1940), 146. (A. P.-C.)

Scilliroside. Toxic Principle for Rodents from Red Squill. The following procedure is given for the isolation of the glucoside from *Urginea maritima* Baker. The cut bulbs were dried below 80°, powdered and then extracted with hot absolute alcohol. The alcohol was evaporated, the residue freed from fats with ether and taken up in water. The deep red solution was shaken with chloroform containing 20% of normal butyl alcohol to extract the cardioactive glucosides and scilliroside. Evaporate the organic solvent under reduced pressure, dissolve the residue in 50% alcohol and precipitate with lead hydroxide. Filter, concentrate the filtrate *in vacuo*. To remove other impurities the aqueous solution is shaken with chloroform and then with chloroform containing 5% of butyl alcohol. The chloroform-butyl alcohol extracts give, on evaporation, a slightly colored residue, which is dissolved in a small quantity of methanol. The addition of water enables the crystallization of scilliroside. Yield 350 mg. from 1 Kg. of fresh bulbs. Scilliroside is readily soluble in the lower alcohols, ethylene glycol, dioxane, glacial acetic acid; more difficultly in acetone; very slightly soluble in water, hydrocarbons, chloroform, ether and ethyl acetate. With acetic anhydride and sulfuric acid a violet color forms and changes to blue and then to blue-green. It does not give Legal's sodium nitroprusside reaction nor that of Baljet with picric acid. It melts with decomposition at 168-170°. $[\alpha]_D^{20}$ equals −59°. Formula $C_{32}H_{46}O_{12}$. Scilliroside acts on the frog heart in a manner qualitatively and quantitatively similar to the action of scillarene A; showing about 1200 U. G. per mg. Scilliroside evidently bears a chemical and pharmacodynamic relationship to scillarene A. It is a convulsant poison of high toxicity for rodents.—A. STOLL and J. RENZ. *Bull. sci. pharmacol.*, 47 (1940), 65-69. (S. W. G.)

Selenium—Toxicity of. The author has previously reported on the cyanic group and fluorine as inhibitors of respiratory and other metabolic activities of living cells. Selenium oddly belongs to the *a*-series of the 6th periodic group (most inhibitors of respiration belong to *b*-series of the 5th group; fluorine to *b*-series of the 7th group) and is found in the soil of the Great Plains and Rocky Mountain areas of the United States. Selenium is found often associated with sulfur in other parts of the world. A description is given of the action of selenium on man, farm stock, rats, poultry, fish and plants.

Selenium is an irritant and an inhibitant, causing a deficiency of organic sulfur in the tissues of animals ingesting it. It replaced sulfur and cystine and keratin thus producing useless substances to the animal economy. Many symptoms of selenium toxicity are a result of disturbed sulfur metabolism. The symptoms of selenium and cyanic toxicities are similar to those of pellagra. All are ameliorated by use of organic sulfur compounds. The relation of fluorine toxicity is also pointed out. Certain plants show selective absorption for selenium, thereby producing a selenium contamination in the top soil in which they grow. The variation of the resistance of animals to selenium toxicity is a definite factor concerning the toxicology of this chemical.—ALFRED CLARK. *J. Trop. Med. Hyg.*, 43 (1940), 250–252. (W. T. S.)

Sulfanilamide and Sulfapyridine—Clinical Toxicity of. This reports the results on 100 clinical cases receiving sulfanilamide and 100 receiving sulfapyridine. Vomiting caused by administration of sulfapyridine can be combated by a mucilage of tragacanth and nicotinic acid. Methemoglobinemia occurs in some cases but not sulfhemoglobinemia. Oliguria, hematuria, pain and anuria are common complications of sulfapyridine therapy, due to the insolubility of acetylsulfapyridine; hence the liquid intake should be at least 3000 cc. and urine output should fall below 1000 cc. in twenty-four hours. Leukopenia occurs in both series but more frequently with sulfapyridine. Acute hemolytic anemia with icterus was encountered only with sulfanilamide. Intensive doses produce high incidence of serious toxic reactions, drug rashes and fevers being useful signs of such toxicity. Sulfapyridine is essentially more toxic than sulfanilamide.—W. HURST BROWN, *et al. J. Am. Med. Assoc.*, 114 (1940), 1606. (G. S. G.)

Sulfanilamide—Toxicity of, Influenced by Protein Intake. Experiments on four groups of rats indicated that the toxicity of sulfanilamide is influenced by dietary protein. There was greater mortality among the animals on 7% protein diet as compared with those on 30% protein; this is believed to indicate a lowered resistance of the central nervous system. The high incidence of anemia in all the groups on the low protein diet and its complete absence in the group receiving 30% protein clearly indicate the value of liberal protein in preventing excessive blood destruction in prolonged treatment with sulfanilamide. The occurrence of renal concretions and abnormal fat accumulation in the liver in many of the experimental animals is apparently not related to sulfanilamide but to the low protein diet *per se*. The somewhat higher concentration of blood sulfanilamide in the animals on the low protein diets 24 hours after the last dose suggests greater retention. This may account for the greater toxicity.—M. I. SMITH, R. D. LILLE and E. F. STOHLMAN. *Pub. Health Reports*, 56 (1941), 24; through *Abbott Abstract Service*, (1941), No. 836. (F. J. S.)

Theophyllinated Scillaridin—Toxicity and Fate of the Lethal Effect of, in the Cat. The substitution of xanthine for carbohydrate in the squill glucoside molecule lowers the toxicity but does not remove the so-called "cumulative" property.—ARTHUR C. DE GRAFF and ROBERT A. LEHMAN. *Proc. Soc. Exptl. biol. Med.*, 46 (1941), 36. (A. E. M.)

Toxicological Investigation—Electrodialysis Applied to. I. Separation of Copper. Tests carried out on beef muscles to which had been added copper sulfate and pepsin showed that the copper can be separated completely in 3 hours by electrodialysis. The accuracy of the results is comparable to that of normal toxicological methods.—LUIGI CALLEGARI. *Bol. soc. ital. biol. Sper.*, 14 (1939), 696–697; through *Chimie & Industrie*, 43 (1940), 552. (A. P.-C.)

Toxicology—Practical Clinical. Treatment and antidotes for various types of poisoning are listed as follows: For potassium cyanide intravenous injections of sodium nitrate are given first, then sodium hyposulfite; later glucose is added as an adjuvant. Stimulants such as strong coffee, alcohol, ether and injections of camphor, strychnine and tincture of musk may be necessary. For poisoning by carbon monoxide and hydrogen sulfide the patient should receive inhalations of oxygen, and the above mentioned stimulants. For mercury poisoning the patient should be given albumen water and colonic irrigation with sodium sulfoxylate. In some cases intramuscular injection of colloidal sulfur is useful. Chloroform and morphine may be necessary to relieve pain. Finally calcium glycerophosphate may be needed to protect the bones from loss of calcium. Cases of morphine poisoning, if acute, require first, respiratory stimulants, injection of coramine with inhalations of carbon dioxide, then as an enema strong hot coffee. Lavage with potassium permanganate oxidizes the morphine; atropine injections counteract the effects of morphine. In chronic intoxication of any opiate the drug must be withdrawn gradually, purgatives, baths and douches are useful and pilocarpine is an efficacious stimulant. Gastric distress is alleviated by sodium bicarbonate and insomnia by bromides or salicylates. Caffeine or ammonia will counteract depressive states.—ROGELIO CARRATALA. *Notic. Med. Mund.*, 4 (1939), 62, 116, 171. (G. S. G.)

War Gases—Portable Detector for. The apparatus contains a cartridge with two ampuls which are broken at the time of use to bring the water and sulfuric acid contained therein in contact with silver nitrate; the color of the solution gives an indication of the amount of war gases contained in the air which is pumped into the apparatus.—G. RICARD. Belg. pat. 434,473, Aug. 31, 1939. (A. P.-C.)

Yohimbine, Corynanthine and Corynantheine—Relative Toxicity of. The 50% lethal dose for the guinea pig treated intraperitoneally is 42.75 mg./Kg. for yohimbine hydrochloride, 162.5 mg./Kg. for corynanthine hydrochloride, and 78 mg./Kg. for corynantheine hydrochloride. The mean lethal dose according to Kärber's formula is, respectively, 42 mg./Kg., 170 mg./Kg. and 89 mg./Kg. In the frog the 50% lethal dose is 26.6 micrograms/Gm. for yohimbine hydrochloride and 200 micrograms/Gm. for corynanthine hydrochloride. The mean lethal dose by Kärber's formula is, respectively, 31 micrograms/Gm., and 207 micrograms/Gm.—RAYMOND-HAMET. *Bull. sci. pharmacol.*, 47 (1940), 33–43. (S. W. G.)

THERAPEUTICS

***p*-Aminobenzenesulfonamide — Water-Soluble Derivatives of.** Salts of *p*-aminobenzenesulfonamide with phenolsulfonic acid, benzenesulfonic acid and sulfosalicyclic acid are produced, suitable for therapeutic use in treating infections caused by cocci. Details of their production are given.—JOSEPH EBERT, assignor to FARASTAN CO. U. S. pat. 2,182,075, Dec. 5, 1939. (A. P.-C.)

Ancient Medicine—Use of Precious Stones in. I. Some Inherent Properties Underlying Their Use in the Occident. Some of the many hypotheses gleaned from various sources are briefly enumerated on the probable relationship between the use of precious stones in ancient Occidental medicine and their inherent physical and chemical properties. Each phase of the subject can be greatly amplified by many other equally interesting and fantastic examples and theories but their use is based more on autosuggestion and the psychological reaction of

susceptible patients to these properties than on any direct pharmacological or therapeutic effect attributable to these stones. This is more apparent when one considers the many mythological, magical, talismanic and astrological properties associated with gems. The use of gemstones in any system of medicine probably cannot be scientifically rationalized, except perhaps from a psychological point of view.—PETER G. MAR. *China J.*, 34 (1941), No. 2, 79–88. (F. J. S.)

Anesthesin and Calcidin—Use of, Following Gastroscopy. Interest in gastroscopy is growing, judging from the increasing number of articles appearing in the literature on the subject. The flexible gastroscope makes it possible to obtain a satisfactory view of the interior of the stomach in almost every case. A recent correspondence from Rudolf Schindler, who is one of the foremost workers in this field, inspires more interest in the procedure because he says that gastroscopy, when properly carried out, does not cause any serious discomfort and may be repeated many times if necessary. However, if the patient is very tense and is unable to relax satisfactorily, soreness of the throat may develop after the examination and persist for from one to four days. Schindler found that the use of tablets containing anesthesin and calcidin effectively prevents the development of this condition. The anesthesin, in particular, relieves the soreness almost instantly. He usually prescribes three of these tablets, to be dissolved slowly in the mouth during the twenty-four-hour period following gastroscopy. —R. SCHINDLER. *Am. J. Digestive Diseases Nutrition*, 7 (1940), 542; through *Abbott Abstract Service*, (1941), No. 838. (F. J. S.)

Anterior Lobe of the Pituitary and the Vitamin B Complex—Interrelation between. The author describes several cases in which an extract of the anterior lobe of the pituitary gland caused a recovery of the pellagra lesions which had failed to respond to ideal vitamin therapy. This suggests the hormonic substance is necessary to the proper utilization of the pellagra-preventative factor in the vitamin B complex. Such a treatment should not be considered routine.—DON C. SUTTON. *Southern Med. J.*, 34 (1941), 47–51. (W. T. S.)

Ariboflavinosis—Ocular Conditions Associated with. There has been a recent report indicating that interstitial keratitis may not be directly caused by syphilis, but may be associated with a vitamin deficiency. Spies and his associates are quoted to show that they noticed ocular symptoms in pellagrins as early as 1939. With these things in mind the authors tried to produce keratitis in syphilitic rabbits by placing them on a diet deficient in riboflavin but were unsuccessful in the attempt. About this time one of their patients with congenital syphilis, who had had interstitial keratitis in one eye and who had been receiving 6 mg. of riboflavin daily for over three months, developed a more severe keratitis in the opposite eye. The picture seen with the slit lamp, in ariboflavinosis, shows a type of corneal disease with which the authors are not familiar and which is not typical of syphilitic keratitis. The inference drawn from this is that ariboflavinosis and syphilis produce different types of corneal disease.—L. V. JOHNSON and R. E. ECKHARDT. *Arch. Ophthalmol.*, 24 (1940), 1001; through *Abbot Abstract Service*, (1941), No. 814. (F. J. S.)

Bismuth Compound Solutions—Therapeutic. A solution of stable character, being free from decomposition products after normal periods of storage, and relatively stable against light, adapted for intramuscular injection in the treatment of syphilis, comprises an aqueous solution of an alkali metal bismuth saccharate and sugar in amount sufficient to render the solution substantially hypertonic.—CLARENCE W. SONDERN and GEO. O. DOAK, assignors to GEO. A. BREON & CO. U. S. pat. 2,178,126, Oct. 31, 1939. (A. P.-C.)

Blenorrhagia—New Treatments of. Efficient treatment is early treatment and best results are obtained within 12 to 24 hours after first appearance of pus from the lesions. Three recommendations are suggested: (1) Use a polyvalent vaccine to stimulate the formation of antibodies. (2) Strong therapy with "Dagenan" a compound of sulfanilamide and pyridine; 12 grams in 5 days is effective. (3) Use a local treatment with some non-irritant substance such as the following: 1 Gm. zinc phenosulfate, 2 Gm. bismuth subnitrate and 100 cc. distilled water. Indications for such treatment are blenorrhagias of 12 to 24 hours' irritation, subacute blenorrhagias with no surface lesions and anterior urethritis. Clinical application to 64 patients produced 58 complete cures.—LUIS ARIAS SCHREIBER. *Reforma Medica*, 25 (1940), 279. (G. S. G.)

Blood Transfusion with Arsphenamine in Puerperal Infection. Six cases of puerperal infection were successfully transfused with blood containing arsphenamine. They had been resistant to sulfanilamide and to immunotransfusion. 1.5 Gm. of arsphenamine dissolved in dextrose solution is added to 200 to 300 cc. of weakly citrated blood and administered by the drip method at the rate of 0.01 Gm. of the drug a minute. The temperature must be kept constant. At the end of the transfusion 50 to 80 cc. of hypertonic dextrose solution is run in, and an intramuscular injection of 0.1 Gm. vitamin C and extract of total liver is given. Treatment is repeated the second day.—A. PERALTA RAMOS and A. A. MONTES. *Prensa Medica Argentina*, 26 (1939), 2419; through *J. Am. Med. Assoc.*, 114 (1940), 626. (G. S. G.)

Burns—New Treatment of. A new preparation for treating burns, said to be more effective than tannic acid, which heals without the formation of scars, has been discovered. The new medicinal is an extract obtained from artery and vein tissue of beef cattle. When applied to burns it forms a flexible, transparent film through which the physician can observe the progress of healing.—C. H. CHASE. *Science Digest;* through *Indian and Eastern Chemist*, 21 (1940), 23. (A. C. DeD.)

Calcium Lactobionate-Calcium Bromide—Crystalline. A therapeutic double salt, of the formula $Ca(C_{12}H_{21}O_{12})_2.CaBr_2.6H_2O$, is produced by oxidizing lactose by the combined action of bromine water and an electric current in the presence of calcium carbonate to give a solution of calcium lactobionate and calcium bromide in approximate equimolecular proportions, and effecting crystallization. Various operative details are described.—HORACE S. ISBELL, assignor to THE GOVT. OF THE U. S., represented by the Secretary of Commerce. U. S. pat. 2,186,975, Jan. 16, 1940. (A. P.-C.)

Calcium Therapeutic Composition. Calcium gluconate and calcium hypophosphite, in the ratio of 10 to 3.8 parts, are used together in water.—RUDOLF SEIDEN. U. S. pat. 2,183,268, Dec. 12, 1939. (A. P.-C.)

Cancer—Experiments on the Chemotherapy of. IV. Further Experiments with Aldehydes and Their Derivatives. The work is summarized as follows: (1) An attempt has been made to express quantitatively and statistically the effect of substances which inhibit tumor growth. (2) Heptaldehyde given to mice has some inhibitory action on the growth of spontaneous carcinomata and grafted sarcomata. A similar effect is produced by dicarboxylic acids (particularly malonic acid) which are possible metabolic products of heptaldehyde. (3) Citral has more

inhibitory action on tumor growth than heptaldehyde but the monocarboxylic and dicarboxylic acids derived from citral have only slight effect.—ERIC BOYLAND. *Biochem. J.*, 34 (1940), 1196.
(F. J. S.)

Carbinolamines and Polyamines—Chemical Constitution and Antiplasmodial Action of. In a previous paper (*J. Chem. Soc.*, (1940), 1307–1315) it was shown that the "quinuclidine portion" of quinine-related molecules is not entirely necessary to antimalarial activity. Now a wide series of carbinolamines and polyamines lacking the quinoline nucleus have been prepared and found inactive against *Plasmodium relictum* in canaries. This emphasizes the importance of the quinoline nuclei in antiplasmodial drugs.—THOMAS S. WORK. *J. Chem. Soc.*, (1940), 1315–1320. (W. T. S.)

Cardiazol in Psychasthenias. Twelve cases of psychasthenias with varying morbid manifestations had anxiety as a common factor. Their ages ranged from 14 to 22. All have been treated with injections of cardiazol for a year's time, the average dose being 4 cc. Results have been most favorable in cases of hysteria. There have been no complete remissions but the general physical tone was much improved. Those whose illness was of shorter duration (three years as against twelve or more) showed greatest improvement, particularly to intermittent rather than continuous treatment. Obsessions and phobias are most resistant to convulsive treatment. There have been neither accidents nor aggravation of the morbid state from this treatment.—FEDERICO SAL. Y ROSAS. *Reforma Medica*, 25 (1940), 46.
(G. S. G.)

Cinnamic Ester Preparations for Therapeutic Uses. A preparation comprising benzyl cinnamate (20), $CH_2Ph.OH$ (10–15), and an (ethyl) ester of cinnamic acid (2 parts) as a 3.2% solution in olive oil is claimed.—J. JACOBSON. U. S. pat. 2,081,934; through *J. Soc. Chem. Ind.*, 58 (1939), 1293.
(E. G. V.)

Circulatory Ailments—Medication of. Treatment of cardiovascular defects is classified in five groups: (1) Drugs which have myocardial action or in cases of dilatation, such as digitalis, strophanthus, squill, convallaria and oleander. (2) Drugs which act on the coronary system, such as caffeine, theobromine, nitrites, muscular extracts, glucose and calcium salts. (3) Drugs with peripheral action particularly on the splanchnic area are epinephrine, ephedrine and their derivatives. (4) Central analeptics which are camphor, caffeine and strychnine. (5) Drugs which are frankly metabolic among which is methylene blue.—G. ARGIL. *Med. Rev. Mex.*, 307 (Jan. 10, 1938); through *Notic. Med. Mund.*, 4 (1939), 8. (G. S. G.)

Coffee. Is it a Remedy against Diabetes, Epilepsy and Insomina? There have been reports of diabetes improved by the use of an extract of green coffee in place of insulin. It has also been tried to alleviate nervous symptoms in epilepsy, chorea and insomnia. Details of two cases of diabetes are given, in each of which an extract of green coffee produced encouraging results in diminishing diuresis without diminishing the loss of sugar. Another case received trial diets and check tests with glucose, and the green coffee extract proved effective. This is suggested as a subject for chemical research as to what principle in the green coffee extract substitutes for insulin and also if it has genuine therapeutic value in epilepsy and chorea.—EDUARDO SARAVIA. *Escuela Farm.*, 2 (Oct. 1939), 9. (G. S. G.)

Corticosterone, Etc.—Derivatives of. Therapeutic compounds are produced by esterifying suprarenal cortical hormones such as corticosterone with reagents such as acetic anhydride, butyryl chloride, palmitic acid chloride, succinic anhydride, phthalic anhydride, chlorosulfonic acid, bromopropionic acid, nitrobenzoic acid, etc. Various examples with details are given.—TADEUS REICHSTEIN and EMIL SCHLITTLER, assignors to ROCHE-ORGANON, INC., U. S. pat. 2,183,589, Dec. 19, 1939. (A. P.-C.)

4,4′-Diamidino Diphenoxy Pentane—Use of, in an Unusual Case of Leishmaniasis. At different times neostibosan and 4:4′-diamidino diphenoxy pentane were used in treating a case of leishmaniasis the unusual features of which were: (*a*) a rapid reaction to antimony therapy; (*b*) development of peripheral neuritis of the anterior tibial nerve, presumably due to antimony toxicity; (*c*) a dermal condition developing as the visceral disease subsided; (*d*) a satisfactory response to the new diamidino derivatives; and (*e*) concomitant development of dermal leishmaniasis and an ulcerative condition in the nose. The patient's condition is described and his picture shown before and after each of the treatments.—R. KIRK and D. R. MACDONALD. *Am. J. Trop. Med.*, 34 (1940), 131–134.
(W. T. S.)

4,4′-Diamidino Stilbene Tried in the Treatment of Sleeping Sickness. Sleeping sickness is declining in Northern Nigeria. Symptoms of the disease in this locality are: (*a*) enlarged cervical glands in 71% of the cases; (*b*) trypanasomes in the gland-juice in 62%; and (*c*) blood films positive in 22%, and pathological spinal fluid in 94%. The majority suffered from nerve lesions, and in 28% of the cases the disease is manifested in a pituitary-thyroid syndrome, as evidenced by adiposity, myxodema, sexual disturbances and bradycardia. In 13 sleeping sickness cases showing these symptoms, 50 to 100 mg. doses of diamidino stilbene on alternate days gave cures in three cases, improvement in one, and worsening in eight. The results are not encouraging although the experiments constituted a severe test for the new drug, which was found to give better response in the milder cases. Strict and prolonged medication with antrypol and tryparsamide is required to produce permanent cures of this infection in Northern Nigeria. The results obtained in the 13 cases treated with the diamidino stilbene are tabulated.—R. D. HARDING. *Ann. Trop. Med. Paras.*, 34 (1940), 101–105. (W. T. S.)

4,4′-Diamidino Stilbene Used to Treat Indian Kala Azar. Case histories are given of eight cases of this disease treated with 4:4′-diamidino stilbene. Doses of 1 to 2.6 mg./Kg. intravenously gave cures in six out of eight cases with no tendency to relapse during the observation period of four months. Two moribund patients died after receiving, respectively, three and five average doses of the drug. No dangerous reactions were observed in the dosage employed but the total amount required to produce apparent recoveries varied widely with different patients.—R. KIRK and MOHAMMED HAMOD SATI. *Ann. Trop. Med. Paras.*, 34 (1940), 83–92.
(W. T. S.)

Diethylstilbestrol—Use of, in the Treatment of the Menopausal Syndrome. Due to certain drawbacks of estrogenic hormones, the authors have investigated the effects of diethylstilbestrol in 32 patients exhibiting menopausal symptoms. Daily doses of 0.1 mg. often gave relief and no more than 1 mg. was usually required. The drug was also effective by subcutaneous injections of its oil solution or as crystalline pellets. All cases showed an elevation in urinary estrogen level indicating absorption of the diethylstilbestrol. A study of the vaginal smears in 17 cases showed them to be consistently of the squamous or the estrogenic type during the therapy. Recurrence of uterine bleeding occurred in 16 of the 32 cases. The only toxic effect was nausea.—HOUSTON S. EVERETT and HENRY G.

BENNETT. *Southern Med. J.*, 33 (1940), 1290–1292. (W. T. S.)

Dilantin Sodium in Treatment of Epilepsy. A report on 48 cases of epilepsy including all ages, with unknown etiology, is recorded. All of these had received phenobarbital or bromide, or both, but convulsions continued. Hyperplasia of the gums was seen in 30, paralleling a deficiency in ascorbic acid. Phenobarbital and bromide were withdrawn gradually and dilantin sodium 0.1 Gm. three times daily with meals was started. Unless it is taken with meals the patient complains of nausea. Dilantin sodium proved an effective anticonvulsant without producing sedative effect and the personality of the epileptic improved.—S. I. FRANKEL. *J. Am. Med. Assoc.*, 114 (1940), 1320. (G. S. G.)

Dilantin Sodium Therapy in Epilepsy. Dilantin sodium (sodium diphenyl hydantoinate) was used in twenty-eight cases in the epileptic clinic. It has remarkable anticonvulsant value, and its therapeutic benefit was excellent in ten of these cases. In others its benefit was doubtful due to unpleasant side reactions, such as nervous and psychic disturbances. There was also slight dermatitis, swelling of the gums and some gastrointestinal distress. As an anticonvulsant it is superior to phenobarbital and sodium bromide. If phenobarbital has been used, replacement should be gradual. Patients should not be allowed to take dilantin sodium indiscriminately and therapy should always be under careful supervision.—JOSEPH L. FETTERMAN. *J. Am. Med. Assoc.*, 114 (1940), 396. (G. S. G.)

Duodenal Mucosa—Therapeutic Extract of. An extract which is suitable for the treatment of diabetes mellitus is obtained by extracting duodenal mucosa with an acidified alcoholic solvent, removing the solvent, extracting the residue with aqueous acid, adding calcium acid phosphate to the solution and precipitating the calcium acid phosphate, as by the use of sodium carbonate.—ARCHIBALD B. MACALLUM and NELLES B. LAUGHTON. U. S. pat. 2,180,905, Nov. 21, 1939. (A. P.-C.)

Furfuryltrimethylammonium Iodide and Similar Therapeutic Compounds. Various examples and details are given of the production of medicinal agents capable of producing effects simulating those of stimulation of neuromuscular mechanisms under control of the parasympathetic nervous system, and producing physiological effects qualitatively cholinergic or muscarinic in character and physiological effects resulting therefrom, the agent comprising as the essential and therapeutically active ingredient thereof a compound from the group consisting of alkyldimethylammonium salts having the formula $RCH_2N(CH_3)_2R'X$, in which R is furfuryl or tetrahydrofurfuryl, R' is an alkyl group having 1 to 5 carbon atoms, and X is a radical of an acid producing non-toxic ions.—FRED P. N. BENHAUER, assignor to SMITH, KLINE & FRENCH LABS. U. S. pat. 2,185,220, Jan. 2, 1940. (A. P.-C.)

Gentian Violet—Efficacy of, in Pinworm Infestation. Gentian violet in repeated oral doses was administered to 224 individuals infested with pinworms. A few suffered nausea and diarrhea but reactions were temporary and relieved by reduction in dosage. Contraindications are concomitant infestation with *Ascaris lumbricoides*, cardiac, hepatic or renal disease, alcoholism and diseases of the gastrointestinal tract. Gentian violet was found superior to all other methods of therapy for the treatment of pinworm infestation in family groups.—WILLARD H. WRIGHT and FREDERICK J. BRADY. *J. Am. Med. Assoc.*, 114 (1940), 861. (G. S. G.)

Gonococcic Urethritis—Chemotherapy in. The most efficient treatment is in cases of acute or subacute blenorrhagic urethritis recently acquired and uncomplicated. Sulfapyridine has proved the best therapy. It has proved advisable to give urethral irrigations of adequate solutions of rivanol or potassium permanganate in addition to local treatment. Failures may be due to faulty technique in administration, to anatomic anomalies, to urethral or glandular complications or to inefficient defense mechanism. If sulfamide compounds are carefully administered there should be no side effects such as exanthemas, nervous disturbance or hematic disorders. Extreme vigilance is necessary to prevent toxicity. Sulfamide therapy in acute gonococcic infections is a valuable contribution to the chemotherapy of venereal disease and thus to the family and society.—GUILLERMO IACAPRARO. *Rev. Med. Cienc. Afin.*, 2 (1940), 70. (G. S. G.)

Hay Fever—Oral vs. Parenteral Therapy of. The oral administration of pollen extract for the treatment of hay fever has aroused widespread interest and its drawbacks have to some extent been balanced by good results. The method gave satisfactory clinical relief in some ragweed sensitive patients who had been treated in prior season; those who had had the parenteral form of therapy in previous seasons benefited much more from the oral form than those who had never been treated before. Unpredictable reactions of three types, gastro-intestinal, respiratory and systemic, occurred with the oral method. It is inadvisable to allow patients to treat themselves by the oral method because of these unpredictable reactions. The parenteral method gave a greater percentage of satisfactory relief as well as a smaller percentage of complete failures than did the oral method. Therefore, the oral method is not recommended, it having no particular advantage over the parenteral, and successful results are fewer.—B. B. ALPERSTEIN. *Jour. Allergy*, 11 (1940), 498; through *Abbott Abstract Service*, (1941), No. 809. (F. J. S.)

Histaminase in the Treatment of Allergy. The theory that the liberation of histamine in the tissues causes allergy has led to the use of the enzyme histaminase for prevention and alleviation of these phenomena. This is a clinical report on forty-two cases of allergy, twenty-eight of whom had urticaria and were treated with histaminase. This series failed to give unequivocal evidence that this enzyme was responsible for the relief of allergic symptoms.—HYMAN MILLER and GEORGE PINESS. *J. Am. Med. Assoc.*, 114 (1940), 1742. (G. S. G.)

Histaminase in Treatment of Cold Allergy. Systemic reactions to cold are similar to symptoms of persons who have received injections of histamine hydrochloride. Cold probably causes increased permeability of tissue cells with the release of histamine. Since histamine is destroyed in the body by an enzyme histaminase, this was the logical therapy for cold allergy. Two cases are described which show excellent results from the oral use of histaminase.—THOMAS W. BAKER. *J. Am. Med. Assoc.*, 114 (1940), 1057. (G. S. G.)

Insulin—Preparation of Crystalline. Insulin for the treatment of diabetes mellitus can be made from crystalline or non-crystalline preparations containing the active antidiabetic principle. The protein obtained by the hydrochloric acid-alcohol extraction of pancreas can be fractionally precipitated by suitable concentrations of acetone and zinc. From the physiologically active fraction, zinc-insulin crystals can be readily prepared. The process described has had trial of about a year and a half and has enabled the Connaught Laboratories at the University of Toronto regularly to supply insulin of crystalline, rather than non-crystalline, origin for general clinical use in the treatment of diabetes.—R. G. ROMANS, D. A. SCOTT and A. M. FISHER. *Ind. Eng. Chem.*, 32 (1940), 908–910. (E. G. V.)

Insulin—Therepeutic Composition Containing. A composition containing insulin, protamine and zinc is suitable for blood-sugar-lowering action. Cadmium, nickel or cobalt also may be used.—DAVID A. SCOTT and ALBERT M. FISHER, assignors to GOVERNORS OF THE UNIVERSITY OF TORONTO. U. S. pat. 2,179,384, Nov. 7, 1939. (A. P.-C.)

Lipins—Clear Aqueous Therapeutic Solutions of. Various details and examples are given of the preparation of clear solutions suitable for injection, as by a process involving heating 1 part of cholesterol and 3 parts of cholesterol oleate in a physiological salt solution containing 6 parts of polyethylene glycol oleyl ether and a small quantity of chloroform and subsequently eliminating substantially all the chloroform, or by a process which comprises heating to about 60° C. in a closed vessel 1 part of vitamin D, 1 part of triolein, 6 parts of polyethylene glycol oleyl ether, 0.4 part of methylene chloride and 90 parts of physiological salt solution and subsequently eliminating substantially all the methylene chloride. —HERMANN E. SCHULTZE, assignor to WINTHROP CHEMICAL CO. U. S. pat. 2,185,969, Jan. 2, 1940. (A. P.-C.)

Maggots—Therapeutic Composition from. A product suitable for treating wounds, etc., comprises a stable composition of maggots ground uniformly to such minute degree of comminution as to exhibit Brownian movement in solution, and an acid antiseptic medium such as boric acid, oxyquinoline sulfate, calcium gluconate, chlorobutanol and salt solution.—CHARLES C. WHITTIER, assignor to STANDARD CHEMICAL AND MINERAL CORP. U. S. pat. 2,187,766, Jan. 23, 1940. (A. P.-C.)

M. & B. 693 in Pyelitis and in Septic Skin Conditions—Few Case Notes on the Use of. M. &. B. 693, used in conjunction with local treatments, produced rapid healing in three cases of impetigo and in two cases of dermatitis. The same drug controlled the temperature and toxemia in two cases of pyelitis. All cases are described.—R. K. DE. *Indian Med. Gaz.*, 75 (1940), 549–550. (W. T. S.)

Meniere's Syndrome—Treatment of, with Potassium Chloride. Symptoms of Meniere's syndrome are vertigo, tinnitis, deafness, nausea and vomiting, all involved in disturbance of the endolymph system. Observations were made on forty-eight patients with determinations of the acid-base constituents of the blood including total fixed base, sodium, potassium, calcium, chloride, total carbon dioxide, phosphate, protein and nonprotein nitrogen. It is possible that Meniere's symptom complex is associated with disturbance of water and salt metabolism. also a disturbance of conduction of nerve impulses is usually accompanied by a change in concentration of serum potassium. There was no significant alteration in the acid-base constituents of the blood in these patients, which suggests that gross retention of water and salt is not the inciting agent in acute attacks. All the patients have been treated with a high potassium intake added to a normal diet for 18 months, and though there are no complete cures, clinical improvement has been impressive.—JOHN H. TALBOTT and MADELAINE R. BROWN. *J. Am. Med. Assoc.*, 114 (1940), 125. (G. S. G.)

2-Methyl-1,4-Naphthoquinone—Use of. This is a synthetic vitamin K substitute which has been assayed on chicks and applied to the clinical treatment of prothrombin deficiency. Ten patients with demonstrated prothrombin deficiency were treated with 2-methyl-1,4-naphthoquinone and all but one responded satisfactorily to doses of from 1 to 4 mg. a day orally. It appears to be the most potent agent for the treatment of prothrombin deficiency so far employed clinically. No toxic effects were observed in this group of patients.—JONATHAN E. RHOADS and MAURICE T. FLIEGELMAN. *J. Am. Med. Assoc.*, 114 (1940), 400. (G. S. G.)

Nembutal—Use of, in Analgesia in Labor. Recent studies in obstetrics by independent observers would seem to indicate definitely that certain forms of analgesia benefit the infant as well as the mother. Apnea is the one ill effect common to all pain relief, escept spinal and local anesthesia. In comparing the progress of babies born to unmedicated mothers, as to daily temperature curve, amount of weight loss and rate of weight recovery, with that of babies born to mothers having received pain relief, the latter are found to have a more favorable progress. In a modified Gwathmey method used at the Indiana University Clinic, pentobarbital sodium by oral administration is used in place of magnesium sulfate intramuscularly. In addition to the more simplified administration of pentobarbital, its increased amnesic and hypnotic effects advantageously replace the purported synergistic action of magnesium sulfate and morphine. The degree to which the patient is suffering rather than the degree of cervical dilation is used as a criterion for the administration of sedatives.—C. O. MCCORMICK. *Anesthesia and Analgesia*, 19 (1940), 229; through *Abbott Abstract Service*, (1941), No. 817. (F. J. S.)

Nicotinic Acid Deficiency. A report on 150 cases of an encephalophatic syndrome which has always been fatal, describes it as a deficiency disease which may occur alone or in association with pellagra, polyneuritis, due to vitamin B_1 deficiency, the oculomotor disturbances of a central neuritis or scurvy. It is characterized by clouding of consciousness, rigidity of extremities and sucking reflexes. It occurs most frequently in alcoholic patients, but is also observed in endemic pellagrins. Patients manifesting this syndrome treated by hydration plus thiamine chloride almost invariably die; patients treated by hydration plus substances rich in vitamin B complex show a moderate drop in mortality, but when these patients are treated by hydration and nicotinic acid a marked drop in their mortality results. There is a probability that this syndrome represents a complete deficiency of nicotinic acid.—NORMAN JOLLIFFE, *et al. J. Am. Med. Assoc.*, 114 (1940), 307. (G. S. G.)

Ointment of Aluminum Subacetate. Clinical investigation indicates that 1% aluminum subacetate in hydrophile petrolatum is of value in subacute dermatoses and a formula is presented.—H. A. DYNIEWICZ. *Bull. Natl. Formulary Committee*, 9 (1940), 64–65. (H. M. B.)

Opium Addiction—Rationale of the Treatment with Lecithin and Glucose. The authors have studied the withdrawal symptoms in 200 male morphine addicts who were otherwise generally healthy. These patients received daily injections of lecithin and glucose beginning on the day of withdrawal and continued for 7 to 12 days, the period of treatment. The glucose was given intravenously and the lecithin intramuscularly or orally. During the treatment supplementary glucose and fluids were taken by mouth. The commonest withdrawal symptoms were: general malaise, depression, lassitude, yawning and heaviness in the head. These appeared usually within twenty-four hours after withdrawal and disappeared under the treatment toward the end of the second week. Fifty per cent of the patients complained of headache; 80% of pains and cramps in the limbs; 15% of paraesthesias; 15% of phychical disturbance and a few of insomnia. Of digestive disturbances, 80% complained of anorexia and distaste for food; 18% of epigastric pain and disturbances; 45% of diarrhea, as contrasted to constipation during addiction; 38% of nausea and vomiting. Body secre-

tions in general were increased. The central nervous system and the gastric system bear the brunt of the withdrawal effects. The treatment is designed to restore fluid equilibrium in the body.—R. N. CHOPRA and G. S. CHOPRA. *Indian J. Med. Research*, 28 (1940), 225–233. (W. T. S.)

Phenobarbital and Dilantin Sodium—Comparative effects of, in Epilepsy. Studies were made on a group of 100 hospitalized patients, all of whom had been receiving phenobarbital, 3 grains or less daily. The study was divided into three phases, treatment with each drug alone, and with a combination of the two. Therapeutic response was graded on (1) complete control of seizures, (2) moderate reduction, (3) no appreciable reduction and (4) no effect, favorable or unfavorable. It was found the $11^1/_4$ grains of phenobarbital could be given daily with beneficial results. Dilantin sodium is beneficial when phenobarbital fails and produces no sedative effect. A combination of phenobarbital and dilantin sodium is often successful where each alone gives little benefit or is ineffectual.—LEON J. ROBINSON and RUDOLF OSGOOD. *J. Am. Med. Assoc.*, 114 (1940), 1334. (G. S. G.)

Phenobarbital, Dilantin Sodium and Other Drugs—Synergism of. An epileptic attack is a symptom complex and there is more than one pharmacologic road to its control. Hence the justification for combinations of drugs in treating such attacks. Dilantin sodium alone is insufficient but gives excellent results in combination with phenobarbital. Amphetamine sulfate dissipates effects of idiosyncrasy, or excessive doses of phenobarbital, or of dilantin sodium.—BENJAMIN COHEN, *et al. J. Am. Med. Assoc.*, 114 (1940), 480. (G. S. G.)

Plasmoquine and Praequine—Comparison of Their Gametocidal Activity. The German drug plasmoquine and the French drug praequine are identical 6-methoxy quinoline derivatives with a long open chain system in the 8N position. A comparison has been made of the action of these drugs on the gametocytes of *Plasmodium gallinaceum* Brumpt, and the *Aëdes aegypti* (L). The several known methods of testing the efficacy of gametocidal drugs are discussed. In their experiments the authors have attempted to determine in the case of *Plasmodium gallinaceum* how soon a fowl may be rendered non-infective to mosquitoes feeding upon it and whether viable gametocytes again appear in the circulation after dosage. Plasmoquine, 15 mg./Kg. orally, produces rapid diminution of the general infection; no mosquitoes are infected forty-six hours to six days after the dosage. Though the level of parasitization is low, parasites are present in the blood for at least five days after the dosage. Plasmoquine, 2.6 mg./Kg. orally, produces no obvious effect on the general infection, but no mosquitoes are infected between 4 and 22 hours after the dose. Plasmoquine or praequine, 1.4 mg./Kg. orally, produce no obvious effect on the general infection, and, though a fall in the average oöcyst count occurs, complete sterilization is not produced in twelve hours. No difference can be detected between the actions of the two drugs. Plasmoquine or praequine, 0.14 mg./Kg. orally, produce no obvious effect on the general infection; neither are they able to prevent massive infection of mosquitoes up to sixteen hours after dosage.—W. H. R. LUMSDEN and D. S. BERTRAM. *Ann. Trop. Med. Paras.*, 34 (1940), 161–171. (W. T. S.)

Poison Ivy Dermatitis—Ointment for the Prevention of. Of 9116 cases of occupational dermatitis, 10.7% were caused by plants. Many curative measures for rhus poisoning exist but few means of prevention have been discovered. Desensitizing injections of rhus toxin have been successfully used but are not always practicable. Urushiol, a mixture of *o*-dihydroxy benzenes with a normal 15-carbon chain in position 3, is the active principle of rhus toxin. A reagent capable of splitting this radical was deemed a possible preventative for the poison. As a result of various tests to find such a chemical, it was shown that an alkaline vanishing cream containing sodium perborate or potassium periodate was effective. This cream should be rubbed well into the arms and face, and used before each exposure. The cream may be removed by soap and water. It should be freshly prepared.—L. SCHWARTZ, L. H. WARREN and F. H. GOLDMAN. *Pub. Health Reports*, 30 (July 26, 1940), 1v; through *J. Trop. Med. Hyg.*, 43 (1940), 267. (W. T. S.)

Procaine Hydrochloride—Use of, as a Therapeutic Agent. Procaine hydrochloride has been used as a successor to cocaine in local anesthesia. It acts by paralyzing sensory nerve fibrils without preceding stimulation. In high concentrations it paralyzes all protoplasm. It also causes local vasoconstriction. It has proved valuable in certain traumatic syndromes. It restores normal vasomotor tone by abolishing pain impulses, and overcomes hyperemia due to vasodilation. It eliminates spasm in arthritides and neuralgias. Procaine therapy is of definite value in fractures not requiring accurate reduction or immobilization. It is also very useful in ligamentous sprains, muscle contusions, acute traumatic synovitis, and it has given encouraging results in certain cases of arthritis and sciatica.—TOM OUTLAND and C. R. HANLON. *J. Am. Med. Assoc.*, 114 (1940), 1330. (G. S. G.)

Pruritis—Therapy of. Pruritis is generally defined as itching without cutaneous manifestations of disease. Local causes may be due to parasites or various irritants in contact with the skin. General causes are deficient nutrition, endocrine disturbances, sensitization to toxins, foods or drugs, dermatoses or nervous disease. Local relief is of first importance with dusting powder and soothing lotions, containing boric acid, zinc oxide, calamine or glycerin. Rest and relief of nervous symptoms are next, using phenobarbital or sodium bromide. Specific forms may be relieved by cresol or coal tar ointments and by injection of alcohol into skin areas. Psychological relief is frequently excellent therapy. ARTHUR W. STILLIANS. *J. Am. Med. Assoc.*, 114 (1940), 1627. (G. S. G.)

Pyrazinecarboxylic Acid—Therapeutic Derivatives of. Therapeutic compounds of relatively high stability and low toxicity are prepared by the condensation of pyrazinecarboxylic acid hydrazide with aldehydes and ketones.—OTTO DALMER, CLAUS DIEHL and EUGEN WALTER, assignors to MERCK & CO. U. S. pat. 2,176,063, Oct. 17, 1939. (A. P.-C.)

Rheumatic Fever—Therapy of. Rheumatic fever is still classified as of unknown origin. It is infectious, is closely associated with streptococcic infection and with infections of the upper respiratory tract. In children, it is more likely to attack undernourished and insufficiently clothed children. Nonspecific therapy such as vaccines and sulfanilamide have not been very effective. Salicylates are still the most useful palliatives. Aminopyrine is also useful. Morphine and codeine may be administered for the immediate relief of severe pain. Rest, sunlight and adequate diet are the main factors in convalescence. Preventive measures include treatment of possible foci of infection in nose and throat.—RUSSEL L. CECIL. *J. Am. Med. Assoc.*, 114 (1940), 1443. (G. S. G.)

Rheumatism in Scarlet Fever. Observations were made on 1550 children with scarlet fever. Sixty-eight developed rheumatism, 63 of them having simple acute polyarthritis, three had serious arthritis and one had primary suppurative arthritis.

The severity of rheumatic attacks depended on the time at which it occurred in the course of scarlet fever. The treatment consisted of sodium salicylate or acetylsalicylic acid. Sodium salicylate is given in daily doses of 0.5 Gm. for each year of age, usually 2 to 6 Gm. for children. It is well tolerated, has no toxic action on the kidney, and benefits the heart. Acetylsalicylic acid is given in daily doses of from 0.25 to 1 Gm. in children under eight years, and 1 to 3 Gm. between the ages of 8 and 14. Suppurative forms call for surgical intervention.—F. BRAZAN and R. MAGGI. *Arch. Arg. Ped.*, 12 (1939), 376; through *J. Am. Med. Assoc.*, 114 (1940), 198. (G. S. G.)

Rheumatoid Arthritis—Treatment of. A summary of methods of therapy obtained by questionnaire is presented. Sulfur therapy (injections of colloid sulfur) is both without rationale and without effect. Success of vaccines is due rather to psychologic effect of the injection than to any specific benefit from the vaccine itself. Fever therapy is too dangerous for any transitory benefit obtained. Sulfanilamide is unanimously condemned for rheumatoid arthritis, medical management plus clinical judgment is the only therapy so far successful.—H. M. MARGOLIS and V. W. EISENSTEIN. *J. Am. Med. Assoc.*, 114 (1940), 1429. (G. S. G.)

Riboflavin Deficiency among Chinese. I. Ocular Manifestations. Forty cases of ocular manifestation of riboflavin deficiency have been observed and treated over a period of three months. The ocular lesions in order of their frequency among the forty cases were pericorneal injection, bulbar conjunctivitis, photophobia, vascularization of cornea, blurring of vision, phlyctenules, corneal opacity, corneal ulcer, blepharitis and iritis. A satisfactory course of riboflavin therapy was found to consist of 15 mg. administered in three separate doses for the first day or two, then 10 mg. daily for 3 to 10 days depending upon the severity of the case, and finally 5 mg. daily for another week. The first symptom to disappear following the riboflavin treatment was usually photophobia. In less than 48 hours the bulbar conjunctivitis began to subside, and the phlyctenules, corneal vascularization and pericorneal congestion began to resolve. Other symptoms then rapidly subsided and usually disappeared completely in 4 to 5 days. Cornea ulcers healed more slowly and usually left a trace of corneal opacity. The relation of phlyctenules to ariboflavinosis and the physiological reaction of the cornea, pericorneal and conjunctival vascularization to riboflavin deficiency are briefly discussed.—H. C. HOU. *Chinese Med. J.*, 58 (Dec. 1940), 616–628. (F. J. S.)

Serum (Concentrated) in Treatment of Shock. Shock in experimental animals was produced by histamine administration, by trauma with excessive hemorrhage, and trauma by little or no hemorrhage. These three types of shock were successfully treated by the intravenous administration of pituitrin and concentrated blood serum. The possible clinical application of these results is pointed out.—C. H. BEST and D. Y. SOLANDT. *Brit. Med. J.*, 4141 (1940), 799. (W. H. H.)

Sex Hormones in Calcium Metabolism. Lack of calcium due to loss of, or defective, parathyroids may be remedied by feeding calcium and phosphorous. It also responds to some sex hormones. Folliculin stimulates fixing and equilibrium of calcium in such cases due probably to an antagonism between sex hormones and parathyroid. Testosterone seems to be ineffective. The mechanism of action is still undetermined. These studies also suggest that disturbance of endocrine function is usually of polyglandular origin.—PABLO HEREDIA. *Rev. Med. Cienc. Afin.*, 2 (1940), 149. (G. S. G.)

Skin Treatment—Preparation for. A triethanolamine base cream is mixed with flower extracts, glycerol, glycol adipate, castor oil, almond oil and tincture of benzoin.—G. AHMET. Belg. pat. 435,-336, July 31, 1939. (A. P.-C.)

Sodium Tetrachlorophenoxide as an Etiologic Agent in Dermatitis. This phenolic derivative is used as a chemical treatment to control fungi which destroy green lumber in warm, humid, atmospheres. Sodium tetrachlorophenoxide has been found to be an etiologic agent in a severe dermatitis suffered by workers in the lumber industry. It was thought that a fungus infection underlay the chronicity of the dermatitis. The eruptions in several cases are described and pictured.—KARL O. STINGILY. *Southern Med. J.*, 33 (1940), 1268–1272. (W. T. S.)

Steroids—Therapeutic and Intermediate Compounds of. By condensing a compound of the steroid series containing the group —CH_2CO—, such as Δ^5-pregnen-3-ol-20-one, with a nitroso compound or nitric acid ester and converting the product so obtained into one containing the group —COCO—, products are obtained such as Δ^5-20,21-dioxopregnen-3-ol. Various details of procedure are described.—KARL MIESCHER, ALBERT WETTSTEIN and WERNER FISCHER, assignors to SOCIÈTÈ POUR L'INDUSTRIE CHIMIQUE À BÂLE. U. S. pat. 2,188,914, Feb. 6, 1940. (A. P.-C.)

Sulfanilamide—Concentration of, in the Aqueous Humor of Human Eyes, with Special Reference to Local Application. Since sulfanilamide is known to enter various tissues and body fluids after oral adminstration, and since it is used in eye infections it seemed desirable to study its distribution in ocular fluid after various modes of application and administration. Experiments were carried out on patients with greatly impaired vision and the drug was administered by three routes: (*a*) orally; (*b*) local instillation of a 1% solution; and (*c*) local application of sulfanilamide powder after local anesthesia. The aqueous humor was withdrawn from the anterior chamber at hour intervals for three hours and assayed for sulfanilamide colorimetrically. In all cases the drug was found in the first, second and third specimens of the aqueous humor. The highest concentration was obtained following application of the sulfanilamide powder. No reaction was observed in the eye following these methods of application. The procedures are outlined fully and their results discussed.—T. H. LUO and S. Y. P'AN. *Chinese Med. J.*, 58 (1940), 167–176. (W. T. S.)

Sulfanilamide Cyanosis Relieved by Nicotinic Acid. Cyanosis and the other toxic symptoms such as nausea and vomiting which sometimes accompany sulfanilamide therapy may be relieved by nicotinic acid. Twenty milligrams three times a day is sufficient for relief and to permit adequate application of sulfanilamide. This has been used satisfactorily in cases of erysipelas, gonorrhea, streptococcic throat and streptococcic pneumonia.—J. FRANK DOUGHTY. *J. Am. Med. Assoc.*, 114 (1940), 756. (G. S. G.)

Sulfanilamide in Smallpox. Sulfanilamide was used in seven cases of subacute, acute and confluent smallpox. Treatment was begun in the vesiculopustular stage. The general condition of the patients improved promptly. The pustules attenuated and crusts dropped off in 5 to 6 days, leaving temporary pigmented spots but no scars. Compared to control group not treated with sulfanilamide, vesiculo-pustular evoluation desiccation and peeling were accomplished in half the time. It is possible that sulfanilamide attenuates the smallpox

virus.—S. PIERNA. *Rev. Espan. Med. Cir. de Guerra*, 3 (1939), 279; through *J. Am. Med. Assoc.*, 114 (1940), 931. (G. S. G.)

Sulfanilamide in the Treatment of Sore Throat Due to Hemolytic Streptococci. Thirty-one cases of tonsillitis caused by *beta*-hemolytic streptococcus were treated with sulfanilamide and thirty-six cases were treated as controls, other therapy being the same. In these cases the drug was not found to reduce the severity of symptoms, shorten the period of incapacity, reduce the incidence of complications or reduce the duration of the carrier state. Toxic manifestations occurred in one-half the cases receiving sulfanilamide. This series is small for generalization but it is felt that the average uncomplicated case of pharyngitis or tonsillitis due to hemolytic streptococci does not need sulfanilamide. —PAUL S. RHOADS and M. L. AFREMOW. *J. Am. Med. Assoc.*, 114 (1940), 942. (G. S. G.)

Sulfanilamide in Treatment of Chancroid. Thirty-seven cases of chancroid were treated with sulfanilamide and compared with sixty similar cases treated by other measures. All cases were hospitalized. The sulfanilamide treated group showed healing in less time than the control group. Chancroid ulcers elsewhere than on the glans penis respond best to treatment. A high maintenance dose is of utmost importance. The drug is efficient even in resistant cases but should be carefully controlled.—W. F. SCHWARTZ and HAL E. FREEMAN. *J. Am. Med. Assoc.*, 114 (1940), 946. (G. S. G.)

Sulfanilamide—Influence of Proteolytic Products on the Effectiveness of. Investigations on the effect of sulfanilamide in human hemolytic streptococcus infections indicate the importance of proteolytic products as a rich source of food for bacteria. Such products are proteoses, peptones, polypeptids and amino acids which when added to serum in culture media cause bacteria to fluorish and inhibit the bacteriostatic action of sulfanilamide. Effective sulfanilamide action depends on the exclusion of added peptone. The drug acts through interference with the ability of the bacteria to utilize traces of assimilable nitrogen in whole blood, serum, urine or other body fluids. It is possible that sulfanilamide combines in some way with the free amino nitrogen of protein degradation products and renders them unsuitable for bacterial utilization. This point is still under investigation.—JOHN S. LOCKWOOD and HELEN M. LYNCH. *J. Am. Med. Assoc.*, 114 (1940), 935. (G. S. G.)

Sulfanilamide Therapy in Peritonitis. Sulfanilamide therapy, begun forty-eight hours after the onset of the symptoms and continued for only three days, quickly reduced the leucocyte count and gave fairly rapid recovery in a patient suffering from peritonitis following abortion. In view of the recovery after excretion of the drug, it was thought that the prolonged sulfanilamide therapy usually used would have been adverse. The advisability of frequent blood counts during this therapy was stressed. No information was obtained concerning the infecting organism but presumably it was one of those generally known to be inhibited by sulfanilamide.—D. A. ANDERSON. *Indian Med. Gaz.*, 75 (1940), 475–477. (W. T. S.)

Sulfanilamide—Use of, in Obstetrics and Gynecology. These authors review their experiences with the use of sulfanilamide in obstetrics and gynecology. They believe that since the prognosis of severe puerperal infection is grave, and that the use of sulfanilamide involves no abandonment of any specific form of treatment, chemotherapy is indicated and need not depend entirely upon the identification of the *Streptococcus hemolyticus*. Its hazards are definite but none of them needs to be serious if control is adequate. In mastitis that does not respond to ordinary treatment, chemotherapy should be tried. In pyelitis it is at least as effective as other methods of drug treatment. Sulfanilamide should be used in gynecologic infections if they are primary gonococcal, if the smear or culture is positive with exacerbation or reinfection of old gonococcal infection, and when the *Streptococcus hemolyticus* is the infective agent. Evidence is accumulating that sulfanilamide should not be given to ambulatory patients.—C. A. GORDON and A. H. ROSENTHAL. *Am. J. Obstet. Gynecol.*, 40 (1940), 211; through *Abbott Abstract Service*, (1941), No. 810. (F. J. S.)

Sulfanilamide—Use of, in the Treatment of Endocarditis. The series of cases of subacute infectious endocarditis reported by the author, while small, shows a much higher percentage of recovery than that reported by most other authors. Seven case reports are given of patients who were believed to have endocarditis and who were treated with sulfanilamide or sulfapyridine. From this group there were three apparent recoveries. The blood sedimentation rate has been of great value in determining the activity of endocarditis. In patients who apparently recovered, the blood sedimentation rate has become normal. The response to the drug varied in different patients. In some cases, the very prompt fall of temperature, appearance of negative blood cultures, disappearance of the enlarged spleen, and markedly improved well-being of the patient observed after this therapy was instituted, suggested very strongly to the author of this report that the drug may prove to be valuable for endocarditis when properly used.—R. H. MAJOR. *Am. J. Med. Sci.*, 199 (1940), 759; through *Abbott Abstract Service*, (1941), No. 812. (F. J. S.)

Sulfapyridine—Intravenous and Rectal Administration of. Ninety-two patients with pneumococcic pneumonia were treated with sulfapyridine and its sodium salt with a mortality of 7.6%. Fourteen were treated intrarectally and eighteen intravenously. The rest had oral administration. Rectal administration almost eliminated nausea but response to therapy was slower. Intravenous administration also generally avoids nausea and its response is more rapid. This series is too small for generalization but it indicates rectal or intravenous therapy initially for the very ill patient, to be followed by oral dosage. When there is no initially favorable reaction to sulfapyridine serum should be used in full doses.—W. L. WHITTEMORE, *et al. J. Am. Med. Assoc.*, 114 (1940), 940. (G. S. G.)

Sulfapyridine—Mechanism of the Action of, in Gonorrhea. Most observers believe that the curative action of sulfonamide drugs in gonorrheal infections takes place within the tissues of the body. However, the presence of these agents in the urine has suggested that their site of action might be partly or perhaps wholly within the lumen of the urinary passages, and some investigators have recommended that high urine concentrations be maintained for treating genitourinary infections to effect cure. A patient who had gonorrheal urethritis had previously had an implantation of both ureters into the colon. The patient was apparently cured by the administration of 23 Gm. of sulfapyridine in an eight-day period. The urethral discharge cleared up completely after the third day on this drug. Checkup examinations for three months have shown no evidence of gonorrhea. Since no urine passed through the urethra, this is considered strong proof that the action of these drugs is within the tissues and not in the urethral canal.—R. M. NESBIT. *J. Urol.*, 44 (1940), 242; through *Abbott Abstract Service*, (1941), No. 819. (F. J. S.)

Sulfapyridine –Renal Calculi Produced by. Renal

calculi appeared in two patients after sulfapyridine treatment. These cases together with other experimental studies indicate that hematuria and other urinary symptoms occurring after sulfapyridine therapy are caused by the deposition of sulfapyridine crystals in concretions in the kidneys and ureters. The drug should be withheld or given cautiously if hematuria occurs in connection with decreased kidney function.—NORMAN PLUMMER and FREDERICK MCLELLAN. *J. Am. Med. Assoc.*, 114 (1940), 943. (G. S. G.)

Sulfapyridine—Use of a Single Large Dose of, in the Treatment of Pneumonia. In the forty-one cases included in the present study, a single dose method of administering sulfapyridine gave satisfactory levels in the blood in most cases, and the clinical results were as good as, if not better than, those in a group that received multiple doses. If the results are as good, it would seem desirable to adopt a single dose method, for the following reasons: It is simpler, interferes less with the child's rest and sleep during the time he is most ill and so he is less demanding on the nursing staff; it decreases the incidence of the most common toxic effect, nausea and vomiting. For the ordinary case of uncomplicated pneumonia it would appear that 0.3 Gm. of sulfapyridine per Kg. of body weight administered in one dose will give satisfactory results. Smaller doses are not so consistent in giving levels in the blood above 4 mg. per 100 cc. In some cases the highest levels occur after 24 hours following administration of the drug, indicating that absorption from the gastro-intestinal tract may continue for that length of time.—L. PLATT. *Am. J. Dis. Child.*, 60 (1940), 1019; through *Abbott Abstract Service*, (1941), No. 830. (F. J. S.)

Sulfathiazole—Observations on the Absorption, Excretion, Diffusion and Acetylation of. Observations on the absorption, excretion, diffusion and acetylation of sulfathiazole in man have been presented. They show (1) the sulfathiazole is readily absorbed and excreted; (2) that there is considerable individual variation in capacity to absorb the drug, though not enough to interfere with the use of a standard dosage in the great majority of patients; (3) that sulfathiazole readily diffuses into pleural and ascitic fluids but very poorly into non-inflammatory spinal fluids; and (4) that acetylation of sulfathiazole is not excessive, only rarely exceeding 30% in the blood and urine, but because of its high insolubility, precipitation of crystals of acetyl sulfathiazole may, nevertheless, occur in the urine. Finally, some of the clinical implications of these observations on the pharmacological properties of sulfathiazole have been briefly discussed.—JOSEPH F. SADUSK, JR., FRANCIS G. BLAKE and ANNE SEYMOUR. *Yale J. Biol. Med.*, 12 (1940), 681; through *Chinese Med. J.*, 58 (1940), 374. (W. T. S.)

Sulfathiazole—Use of, in the Treatment of Gonorrhea. Many clinicians are investigating the use of sulfathiazole and its methyl derivative. In the present study, one hundred patients with gonorrhea were treated with sulfathiazole and 92% were cured; twenty-five were treated with methylsulfathiazole and 95% were cured. More toxic symptoms appeared with the methylsulfathiazole but there was no mention made of neuritis. When using sulfathiazole the authors gave an initial dose of 4 or 5 Gm. and continued with 1 Gm. every 4 hours for 14 days, attaining an average blood concentration of 6 mg. per 100 cc., ranging between the limits of 2 and 18. The methyl derivative was given in 1-Gm. doses at the beginning of the treatment, followed by 0.5 Gm. every 4 hours, maintaining an average blood level of 4.8 mg. per 100 cc. The results of these experiments seem to be further proof that the use of sulfathiazole in the treatment of gonorrheal urethritis is effective and not harmful if properly controlled.—T. M. BURKHOLDER and F. BANG. *J. Urol.*, 44 (1940), 541; through *Abbott Abstract Service*, (1941), No. 815. (F. J. S.)

Sulfathiazole—Use of, in Urologic Operations. Owing to the difficulty of sterilizing the genitalia and adjacent regions, it is often impossible to get per primam healing throughout lengthy sutured wounds in these areas. Even with most meticulous preoperative disinfection and the use of antiseptic applications, minute points of suppuration have been prone to occur. Recently, after demonstration that sulfathiazole was particularly effective against the pus-forming cocci, the drug was administered before and after operation in a series of urologic cases. The usual dose used was 1 or 2 Gm. daily one or two days before operation and 2 or 3 Gm. daily for about ten days after. Although some of the patients were very young children, no serious reactions were encountered, and the drug was given as long as it seemed necessary. The results obtained demonstrated that with sulfathiazole it is possible to obtain much better healing in a large proportion of cases than previously.—H. H. YOUNG, J. H. HILL and J. H. SEMANS. *J. Urol.*, 44 (1940), 714; through *Abbott Abstract Service*, (1941), No. 818. (F. J. S.)

Syphilis—Control of. Syphilis, a problem of social importance, is easily controlled by therapeutic means. The private physician should be conscious of his responsibility in its eradication. Its treatment is standardized as is the serologic reaction. Examination of spinal fluid is indispensable to know if the syphilitic is cured. Arsenic with bismuth is most effective, bismuth alone being insufficient. Twenty injections of arsenic and forty of bismuth should be adequate. Confidence between patient and doctor is an important factor.—SALVADOR G. AGUILAR. *Bol. Ofic. Sanit. Panamericana*, 19 (1940), 228. (G. S. G.)

Therapeutics—Recent Developments in Anesthetics. The advances made during the last few years can be summarized as follows: (1) premedication or induction of anesthesia; (2) increased use of gas and oxygen; (3) use of closed and semiclosed methods; (4) new anesthetic agents. A detailed consideration of these groups is given.—F. PRESCOTT. *Chemist and Druggist*, 133 (1940), 45. (A. C. DeD.)

Thiamine—Influence of, on Diabetes. Several authors have shown a beneficial action of vitamin B_1 in diabetic patients, but in most of these experiments the vitamin was given intravenously, and the blood sugar levels were determined for a period of only two or three hours. This does not mean that the vitamin is indicated for diabetic patients unless it can be shown that the medication, given regularly for a long period, will improve the status of diabetic persons. In a further study of this problem, the author of the present paper gave thiamine in daily dosage of 1000 International Units in addition to the amount in the food, orally for periods of from 5 to 8 weeks to 10 well-controlled diabetic patients. Four of these showed an elevation of the average level of blood sugar while taking the vitamin, 4 showed no change and 2 showed a lowering. Since no improvement in the average level of hyperglycemia was noted, the author concludes that thiamine is not indicated routinely for diabetic patients.—R. E. KAUFMAN. *Arch. Internal Med.*, 66 (1940), 1079; through *Abbott Abstract Service*, (1941), No. 834. (F. J. S.)

Urea—Use of, to Treat Wounds. Muldavin and Holtzmann (*Lancet*, (1938), 549) introduced the urea treatment of wounds. The author outlines the method by which he applies urea to open wounds,

infected burns, abscesses, etc., and describes the results generally obtained. This treatment proved its value in fifty cases.—F. V. STONHAM. *Indian Med. Gaz.*, 75 (1940), 575. (W. T. S.)

Urinary Antiseptic. The use is claimed of dihalogenodihydroxybenzoic acids, particularly of 3,5-diiodo-2,4-dihydroxybenzoic acid, prepared by iodination (hydrochloric acid-iodine-potassium iodate in water at not more than 15°) of β-resorcylic acid.—W. C. HARDEN, assignor to HYNSON, WESTCOTT, & DUNNING, INC. U. S. pat. 2,080,863; through *Soc. Chem. Ind.*, 59 (1940), 172. (E. G. V.)

Verminoses—Treatment of. Numerous anthelmintics are listed for intestinal parasites. Castor oil is used as a purgative to protect the tissues from the action of a strong vermifuge in small children. Lavage should follow if this is ineffective after four hours. Anthelmintics in common use are oil of chenopodium, carbon tetrachloride, tetrachlorethylene, hexylresorcinol, thymol, syrup of figs, beta-naphthol, santonin, male fern, pyrethrum and chloroform. Patients should receive antianemics, iron, liver extract, also fruits, green vegetables, milk, etc., to compensate poor nutrition. Vermifuges should be prepared specifically for the intestine to prevent vomiting.—CELESTINO BOURROUL. *Bol. Ofic. Sanit. Panamericana*, 19 (1940), 441. (G. S. G.)

Vitamin Adsorbates. A stable therapeutic composition is prepared by a process which involves extracting water soluble constituents including vitamins B and G from a cereal such as wheat germ or rice bran, treating the extract with an adsorbent such as Fuller's earth to adsorb these vitamins and a vitamin A antioxidant, and then adding a vitamin A-containing material such as fish liver oil.—GUSTAV E. SIMERS, assignor of 50% each to MCKESSON & ROBBINS, INC., and to THE VITAB CORP. U. S. pat. 2,188,319, Jan. 30, 1940. (A. P.-C.)

Vitamin A Deficiency—Cutaneous Manifestations of. These observations were made on nine children from families on relief. The lesions were symmetrical and located chiefly on the extremities, and consisted of horny papules formed by keratitic plugs projecting from hair follicles. It is accompanied by roughness and dryness of skin, or xeroderma. Improvement of all, and complete cutaneous recovery in most of them, followed a daily dose of 100,000 to 300,000 International Units of vitamin A in the form of oleum percomorphum, with no local treatment, no change in diet and with the children still in their home environment. Treatment has been continued for a year, because diminishing or stopping it causes a relapse. Cases always improve in summer. Keratosis pilaris, lichen pilaris, lichen spinulosus, icthyosis follicularis are all merely descriptive terms for the cutaneous manifestations of vitamin A deficiency.—EDWARD LEHMAN and HOWARD G. RAPAPORT. *J. Am. Med. Assoc.*, 114 (1940), 386. (G. S. G.)

Vitamin B—Role of, in Psychoses. In a paper on the psychological aspect of medicine, this author gives his view of the use of vitamin B in psychoses. He says that the understanding of vitamin deficiency has led to remarkable improvement in the treatment of certain psychoses, not only in those associated with pellagra, but in alcoholic psychoses and in the senile type with failure of attention and memory. Here especially nicotinic acid is a real advance and will produce marked improvement in cases in which the practioner may be too ready to make a diagnosis of senility and arteriosclerosis. The usual dose used was three to six 30-mg. tablets daily. The role of vitamin B_1 in the neurotic aspect of these illnesses is of equal importance. Old people with muscular weakness, mild personality disorders and anorexia may have only an easily cured vitamin deficiency. However, careful diagnosis is necessary, for only those disorders specifically caused by vitamin lack will be helped by vitamin therapy.—T. M. LING. *Practitioner*, 145 (1940), 269; through *Abbott Abstract Service*, (1941), No. 811. (F. J. S.)

Vitamin B_1 and Liver Extract—Relief of Neuralgia by. A year's study of the treatment of fifty-eight cases of trigeminal neuralgia, four cases of sphenopalatine neuralgia and nine cases of atypical facial neuralgia with massive vitamin therapy. Surgical intervention is not always possible, the patient may become habituated to inhalants and alcohol injections are not always palliative. Vitamin therapy is simple of application and readily available. The treatment included active therapy by 10 mg. thiamine chloride daily and modification of diet. In some slow cases concentrated liver extract, 0.5 cc. three times weekly was added. Thirty-seven of the first group were improved. The patients with spheno-palatine neuralgia showed no improvement.—HENRY BORSOOK, *et al. J. Am. Med. Assoc.*, 114 (1940), 1421. (G. S. G.)

Vitamin K—Need of, in Jaundice and Biliary Fistula. From studies on two groups of surgery patients it was found that no significant reduction of plasma prothrombin could be demonstrated in the early postoperative periods of patients whose initial preoperative prothrombin concentrations were normal. However, patients who had an initial prothrombin deficiency showed a postoperative fall, even though naphthoquinone has been given during the preoperative period. It is thought that the patient with initial deficiency might have no reserve of potential prothrombin. Evidence seems to show that the prothrombin fall following surgery is not dependent upon the employment of a general anesthetic agent. It has been determined that a close correlation exists between the amount of preoperative naphthoquinone given and the rapidity with which the postoperative falls in prothrombin occurred. Therefore, this early fall in prothrombin is caused primarily by inadequate administration of vitamin K before operation.—J. G. ALLEN and H. LIVINGSTON. *Anesthesiology*, 1 (1940), 89; through *Abbott Abstract Service*, (1941), No. 805. (F. J. S.)

Vitamin K—Therapeutic Value of, in Prothrombinemia. Recent researches have resulted in the important finding that calcium probably exists combined with prothrombin and that the remainder of the calcium of the blood does not directly participate in the clotting mechanism. A serious depletion of prothrombin can occur from inadequate intake of vitamin K, faulty absorption due to lack of bile salts in the intestines and impaired hepatic function resulting in a decrease of prothrombin synthesis. The transient hypoprothrombinemia of the newborn probably comes about purely from the lack of vitamin K. It is the bacteria which gain entrance to the intestinal tract soon after birth which furnish the first supply of vitamin K. Bleeding in the newborn is exceedingly dangerous and any loss of blood means further loss of prothrombin. It is clearly the duty of the physician to prescribe vitamin K immediately if even an insignificant sign of bleeding occurs. The vitamin should be promptly administered to the baby after any difficult delivery.—A. J. QUICK. *Nebraska State Med. Jour.*, 26 (1941), 1; through *Abbott Abstract Service*, (1941), No. 839. (F. J. S.)

Vitamin K—Treatment of Hemorrhage in the Newborn with. The intravenous administration of synthetic vitamin K will lower the prothrombin clotting time and arrest bleeding in hemorrhagic disease of the newborn. The author states that

natural vitamin K may be given by mouth, and the synthetic vitamin may be given intravenously as well, with no ill effects to persons of all ages. The prothrombin clotting time of cord blood is prolonged in a large number of newborn infants, although many of these do not show any clinical bleeding. Daily administration of synthetic vitamin K to mothers for from 2 to 16 days before delivery did not affect the prothrombin clotting time of the mother's blood but resulted in a shorter prothrombin clotting time of the cord blood. The author recommends this administration as a preventive measure against hemorrhagic disease, and states that it is not safe to depend upon the orally administered vitamin K as the sole means of treatment of hemorrhagic disease of the newborn.—C. E. SNELLING. *Am. J. Dis. Children*, 60 (1940), 1003; through *Abbott Abstract Service*, (1941), No. 831. (F. J. S.)

Vitamins—Role of, in the Treatment of Peptic Ulcer. Peptic ulcers have been produced experimentally in animals by deficiencies in vitamins B_1 and C. It might be suspected, therefore, that vitamin C nutrition may be a factor in the healing of peptic ulcer. Evidence of vitamin C deficiency in a large proportion of peptic ulcer patients has been reported by a number of investigators. Most ulcer diets are very deficient in vitamin C and the amounts of it required by patients receiving alkali therapy are greater than those in normal persons. Some ulcer patients, taking less than the allowed amount of meat and vegetables, have developed pellagrous symptoms. Thiamine is easily destroyed in an alkaline medium. Some patients have had the chronic skin changes, some the glossitis and some the abdominal symptoms which were relieved by nicotinic acid. Correction of these vitamin deficiencies is important in peptic ulcer treatment.—H. FIELD, JR., W. D. ROBINSON and D. MELNICK. *Am. Int. Med.*, 14 (1940), 588; through *Abbott Abstract Service*, (1941), No. 835. (F. J. S.)

Wounds—Treatment of, by Urine. Peruvian aborigines had treated wounds with fresh urine for centuries. This practice considered filthy was discouraged by the colonial doctors. But it still persists to-day in isolated districts and is reported very successful in the treatment of cuts and prolonged suppurations. There is a clinical report of a case of stubborn ulcers failing to respond to the usual antiseptics phenol and iodoform. The local pharmacist offered crystalline urea which he had found efficacious in a similar case and the patient was cured. More recently other reports have confirmed the value of crystalline urea powdered and applied directly to a wound. It has no irritant nor toxic properties nor is the wound aggravated by its use. The mechanism of action is due to the property of dissolving the proteins of decomposition by urea, preventing further bacterial growth. Technique may be modified to washing the wound or ulcer with a concentrated solution of urea and then covering thickly with the powdered crystals. The edges of the wound are sometimes coated with zinc oxide ointment to speed healing. One hundred and seventy cases have been treated successfully by this method. Peru has produced several therapeutic agents, quinine, coca (cocaine) and now this primitive application of urea.—EDUARDO BELLO. *Reforma Medica*, 25 (1940), 6. (G. S. G.)

MODERN REMEDIES

SYNTHETICS

Alumevan (Evans, Sons, Lescher and Webb Ltd., Liverpool and London) is a preparation of aluminum acetate. It is used for rheumatoid arthritis and fibrocystic and allied bone diseases. The dose is one dram four times daily after food. It is marketed in bottles of 4, 16, 40 and 80 fl. oz.—*Australasian J. Pharm.*, 22 (1941), 106. (A. C. DeD.)

Antuitrin-S (Apoidin) is a standardized, highly purified extract of pregnancy urine; and it contains the "anterior pituitary-like sex hormone" which consists of luteinizing hormone and, to a lesser extent, follicle-stimulating hormone. It is indicated in functional uterine bleeding, amenorrhea or oligomenorrhea, cryptorchidism and delayed sexual development in male or female. Antuitrin-S (Apoidin) comes in two strengths—100 rat units per cc. and 500 rat units per cc. The former (100 units per cc.) is supplied in 10-cc. and 50-cc. rubber-diaphragm-capped vials; the latter (500 units per cc.) in 10-cc. rubber-diaphragm-capped vials.—*Modern Pharmacy*, 25 (March 1941), 13. (F. J. S.)

Delvinal Sodium (Sharp & Dohme, Philadelphia, Pa.) is sodium 5-ethyl-5-(1-methyl, 1-butenyl) barbiturate, a hypnotic and sedative characterized by high safety factor, moderate duration of action, absence of "drugged" sensation, low incidence of side reactions and freedom from after effects. It is used as a general sedative, in insomnia as a hypnotic, in psychiatry, as a preoperative sedative, as a hypnotic and sedative in obstetrics; also as a sedative in dentistry. Delvinal Sodium is supplied in brown-colored $^1/_2$-gr. capsules in bottles of 100 and 500; also in organge $1^1/_2$-gr. capsules in bottles of 25, 100 and 500.—*Amer. Professional Pharm.*, 6 (1940), 790. (F. J. S.)

Eye Lex (Union Drug Company, Ltd., 285 Bowbazar St., Calcutta) is a 5% ointment of urea sulfazide which is said to be a bland preparation suitable for all infective conditions of the eye. It is conveniently packaged.—*Indian Med. Gaz.*, 75 (1940), 512. (W. T. S.)

Histamine Diphosphate (Abbott Laboratories, North Chicago, Ill.) is used in the treatment of erythromelalgia of the head, Meniere's disease, hypersensitiveness to cold, allergic reactions to insulin and chronic urticaria. Histamine Diphosphate is supplied in 1-cc. ampuls (0.275 mg. or 2.75 mg.), in boxes of 6 and 25 ampuls.—*Amer. Professional Pharm.*, 6 (1940), 722. (F. J. S.)

Maxitate (R. J. Strasenburgh Co., Rochester, N. Y.) is mannitol hexanitrate, a derivative of mannitol, a naturally occurring sugar, chief constituent of manna and a normal constituent of urine. It is indicated where gradual and prolonged vascular dilation is desired, such as angina pectoris and essential hypertension; and it does not act until fifteen minutes after administration but persists for several hours. The dosage is two to four $^1/_4$-gr. tablets, or 1 to $2^1/_2$-gr. tablets every 4 to 6 hours. Maxitate is supplied in bottles of 100 $^1/_4$- or $^1/_2$-gr. tablets.—*Amer. Professional Pharm.*, 6 (1940), 722. (F. J. S.)

Menaquinone (Drug Products Co., Inc., 26–32 Skillman Ave., Long Island City, N. Y.) consists of synthetic 2-methyl-1,4-naphthoquinone, having high degree of activity of natural vitamin K. It is indicated where vitamin K has been shown to be of benefit particularly where bile is excluded from the intestinal tract, or enters the tract in insufficient amount or concentration. The dose should not exceed 2 mg. daily and should not extend over a period longer than four weeks. Menaquinone is supplied in 2-cc. ampuls (each cc. contains 2 mg. synthetic vitamin K) in boxes of 12, 25 and 100 ampuls; also obtainable in 30-cc. vials with serum caps.—*Amer. Professional Pharm.*, 6 (1940), 723. (F. J. S.)

Oxoid Vitamins A and D Capsules (Oxo Ltd., London) is a prophylactic against infection and the common cold; also for rapid adaptation of vision

in semidarkness. It is marketed in boxes of 25.—*Australasian J. Pharm.*, 22 (1941), 53.
(A. C. DeD.)

Proklot (Eli Lilly & Company, Indianapolis, Ind.) is synthetic 2-methyl-1,4-naphthoquinone, having high degree of activity of natural vitamin K. It is indicated where vitamin K has been shown to be of benefit particularly where bile is excluded from the intestinal tract, or enters the tract in insufficient amount or concentration. Obstructive jaundice of moderate severity employs initial dose of 1 mg. accompanied as always by bile salts in doses of 5 to $7^1/_2$ gr. It is not of value in hemorrhages where blood prothrombin is normal. May be administered prophylactically to pregnant mothers in 1-mg. doses every other day during the last week of pregnancy. Proklot is supplied in 1-mg. tablets in bottles of 40 and 500; and 2-mg. tablets in bottles of 40 and 500.—*Amer. Professional Pharm.*, 6 (1940), 727. (F. J. S.)

Pyridoxine Hydrochloride (E. R. Squibb & Sons, 745 Fifth Ave., New York, N. Y.) contains pure synthetic pyridoxine hydrochloride (vitamin B_6 hydrochloride) and is indicated in vitamin B_6 deficiencies, certain pellagric conditions which do not respond to nicotinic acid, riboflavin or thiamine therapy. It is of considerable value in the treatment of muscular dystrophies and is usually given subcutaneously but it has been administered intravenously. The dosage is regulated by the physician to meet the requirements of the particular case; orally or parenterally; prophylactic, 1 to 5 mg. daily, therapeutic, 10 to 50 mg. daily. Pyridoxine Hydrochloride is supplied as follows: 1-mg. capsules in boxes of 50; 10-mg. capsules in boxes of 20; and as an aqueous solution for parenteral use in 5-cc. rubber-capped vials (1 cc. equivalent to 25 mg.).—*Amer. Professional Pharm.*, 6 (1940), 723. (F. J. S.)

Stibophen (Glaxo) (Glaxo Ltd., Greenford, Middlesex) is an organic trivalent antimony compound, consisting of a sterile isotonic (0.5%) solution of pentasodium-antimonyl-bis (catechol-2,4-di-sulfonate). Contains 8.6 mg. antimony per cc. It is used in cases of schistosomiasis (bilharziasis). The dose is an intravenous or intramuscular injection, daily for 3–5 days, then 10–15 injections on alternate days. The initial dose: Adults, 1.5 to 3.5 cc.; children 0.5–2 cc. Maximum dose: Adults, 5 cc.; children, 1 cc. per 10 kilo body weight.—*Australasian J. Pharm.*, 22 (1941), 106.
(A. C. DeD.)

Sulfapyridine Enseals (Eli Lilly and Co., Indianapolis, Ind.) contain sulfapyridine 2-(*p*-aminobenzenesulfonamido) pyridine and it is indicated in all pneumococcic infections. The enseals enable administration without common side effects following sulfapyridine, as enteric sealing allows passage for a period of time. Disintegration is delayed from 4 to 8 hours. They are supplied in bottles of 100, 500 and 1000 tablets (5 gr.).—*Amer. Professional Pharm.*, 6 (1940), 589. (F. J. S.)

Sulfathiazole (Sharp & Dohme, Philadelphia, Pa.) is 2-sulfanilylaminothiazole, a sulfanilamide derivative of the thiazole series. It is indicated in the treatment of pneumococcic pneumonia, focal pneumococcic infections, large boils, carbuncles, staphylococci cellulitis, bacteremia, lymphangitis and acute osteomyelitis. Sulfathiazole is supplied as 0.5-Gm. tablets in bottles of 50, 100 and 1000.—*Amer. Professional Pharm.*, 6 (1940), 655. (F. J. S.)

Synkamin Ampoules (Parke, Davis & Company, Detroit, Mich.) contain in each cc. Synkamin (4-amino-2-methyl-1-naphthol), 1 mg., as the hydrochloride. It is indicated in the treatment or prophylaxis of hypoprothrombinemia associated with obstructive jaundice, biliary fistula, acute and chronic diseases of the liver, certain blood dyscrasias and other conditions preventing absorption and utilization of vitamin K. Synkamin Ampoules (1 cc.) are supplied in boxes of 6 and 25.—*Modern Pharmacy*, 24 (Dec. 1940), 13. (F. J. S.)

Thiazamide (Pharmaceutical Specialities (May and Baker) Ltd., Dagenham, Eng.) is 2-(*para*-aminobenzenesulfonamido)thiazole, known officially by the Council on Pharmacy and Chemistry of the American Medical Association as sulfathiazol. It is used in cases of pneumococcal, gonococcal and miningococcal infections. The dose as the physician directs. It is supplied in containers of 25 and 100 0.50-Gm. tablets; boxes of 6 ampuls, each containing the equivalent of 1 Gm. thiazamide in the form of the sodium salt.—*Australasian J. Pharm.*, 22 (1941), 106. (A. C. DeD.)

Treparsol (Bengue and Co. Ltd., Alperton, Middlesex) is formyl-*meta*-aminophenylarsinic acid. It is used in cases of syphilis, frombesia and all spirilloses-spirochaetoses, amebiasis, intestinal protozooses, malaria. The dose for adults: 1 to 3 (maximum 4) tablets of 25 cgms. daily; children: 1 to 2 cgms. (maximum 2) per kilo body weight. Both tablets to be taken for four days, followed by three days' interval. The total duration of treatment is 8 to 10 weeks. It is marketed for adults, in tins of 30 tablets of 25 cgms.; for children, tin of 40 tablets of 10 cgms.; for infants, tin of 60 tablets of 2 cgms.—*Australasian J. Pharm.*, 22 (1941), 106.
(A. C. DeD.)

Vermedical Suppositories (Chem. Fabrik "Bavaria," Apoth. Martin Reinhard, Würzburg) consist of aluminum acetate, a bismuth oxyiodide-subgallate derivative and cacao butter.—*Pharm. Zentralhalle*, 80 (1939), 659. (N. L.)

SPECIALTIES

Adrenutol (Evans, Sons, Lescher and Webb Ltd., Liverpool and London) contains adrenaline, 2 mg., chlorbutol, 15 mg., glycerin, 0.7 cc., distilled water to 1 cc. (A weaker solution is issued, containing 1 mg. adrenaline.) It is used for asthma and associated states. The dose is 1 cc. of the 2 mg. strength; for mild cases 1 cc. of the 1 mg. strength, by subcutaneous or intramuscular injection. It is marketed in boxes of 6 and 50 ampuls of 1 cc.—*Australasian J. Pharm.*, 22 (1941), 106.
(A. C. DeD.)

Catarrhal Vaccine (Respiratory) (Parke, Davis & Company, Detroit, Mich.) is a bacterial vaccine containing 1200 million killed bacteria per cc., made from *M. catarrhalis*, Friedlander bacillus, each 50 million; pneumococcus (seven types), streptococcus (hemolytic and nonhemolytic), pseudo-diphtheria bacillus and influenza bacillus (Pfeiffer) each 100 million; *Staphylococcus albus* and *aureus*, each 350 million. The vaccine is used for the prophylaxis and treatment of catarrhal infections involving the respiratory passages and accessory sinuses, both acute and chronic. Catarrhal Vaccine (Respiratory) is supplied in packages of four 1-cc. bulbs; in 5-cc. vials; and 20-cc. vials.—*Modern Pharmacy*, 24 (Dec. 1940), 13. (F. J. S.)

Cosadein (Parke, Davis & Company, Detroit, Mich.) contains in each fluidounce codeine phosphate, 1 gr.; white pine, 32 gr.; wild cherry, 32 gr.; eriodictyon, 16 gr.; poplar bud, 4 gr.; chloroform, 2 gr.; glycerin, 120 min.; alcohol 20%. It is used as a sedative-expectorant and is indicated for treatment of cough associated with scanty secretion and expectoration. Cosadein is supplied as a narcotic-exempt preparation in 16-oz. and 1-gal. bottles.—*Modern Pharmacy*, 24 (Dec. 1940), 12.
(F. J. S.)

Emodella Dragees (Wybert G. m. b. H., Tumringen) contain as their active ingredient, a concentrated form of the principles obtainecd by extraction and hydrolysis of the root of *Rhamnus frangula*. They are recommended as a purgative.—*Pharm. Zentralhalle*, 80 (1939), 695. (N. L.)

Gastro-Delmin (J. H. Schaub, Delmenhorst) is an extract of anise, fennel seed, chamomile, calamus and menthol. It is recommended as a tonic.—*Pharm. Zentralhalle*, 80 (1939), 648. (N. L.)

Irradol-A (Parke, Davis & Co., Detroit, Mich.) is a palatable syrup-like liquid containing vitamin A (from halibut and fish liver oils); vitamin B_1 (thiamine hydrochloride); vitamin B_2 or G (riboflavin); vitamin D; iron and ammonium citrate; and malt extract (non-diastatic). It is used as a comprehensive source of vitamins, supplying vitamins A, B_1, B_2 (G) and D, plus iron and malt extract. Irradol-A is supplied in 11-oz. wide-mouth bottles and in 16-oz. and 44-oz. cylindrical glass jars.—*Modern Pharmacy*, 25 (March 1941), 12. (F. J. S.)

Ischiolyth Ampuls (Rödler & Co., K.-G., Worms) consists chiefly of belladonna, berberis, chamomile, quinine, arsenic, colocynth, gelsemium, merzereum and spigelia.—*Pharm. Zentralhalle*, 80 (1939), 648. (N. L.)

Karsodrine (E. Griffiths Hughes Ltd., Salford) is an inhalant containing β-phenyl-isopropylamine, cineol, ol. citronella, methyl-*o*-oxybenzoate, ol. cedri. liq. and menthol. It is a volatile vasoconstrictor. It is used for congested nasal mucosa with local analgesic action. It is marketed in plastic inhaler.—*Australasian J. Pharm.*, 22 (1941), 52. (A. C. DeD.)

Liquid Citralka (Parke, Davis & Co., Detroit, Mich.) is a clear light yellow, citrus-flavored solution containing 120 grains of disodium hydrogen citrate in each fluidounce. It is used wherever a systemic and urinary alkalizer is indicated and aids in maintaining physiological alkalinity of the blood and urine. Liquid Citralka is supplied in 8-fluidounce and 1-gallon bottles.—*Modern Pharmacy*, 25 (March 1941), 13. (F. J. S.)

Natola Liquid and Capsules (Parke, Davis & Company, Detroit, Mich.) contain not less than 55,000 U. S. P. units of vitamin A and 5500 U. S. P. units of vitamin D per Gm., or 9400 units of vitamin A and 940 units of vitamin D per capsule (ten drops); and the vitamin A and D activity is entirely of natural origin and is derived from fish liver oils of high vitamin content. Natola is used for the administration of vitamins A and D in the prevention and treatment of deficiencies of these factors. It is supplied as Natola Liquid in 10-cc. vials and 50-cc. bottles, both with dropper; also as Natola Capsules in boxes of 25, 50, 100 and 250 capsules.—*Modern Pharmacy*, 24 (Dec. 1940), 12. (F. J. S.)

Neuro-Therapin (Dr. Theinhardts Nahrmittelges. K. G., Stuttgart-Bad Cannstatt) is a percolate prepared from valerian root, peppermint leaves, juniper, melissa leaves and oxya-canthine. It is indicated in the treatment of neuroses and neurasthenia.—*Pharm. Zentralhalle*, 80 (1939), 634. (N. L.)

Niblasan (Apoth. A. Brenner, Stuttgart) is a preparation marketed in the form of drops and contains triticum, pareira, squill and benzoic acid. It is recommended in the treatment of kidney and bladder disturbances.—*Pharm. Zentralhalle*, 80 (1939), 649. (N. L.)

Oko-Teer Drops (Okro-Präparate, H. F. Krohss, Berlin) consists chiefly of tincture of castanea, potassium sulfate, menthol, bromo-isovalerianyl-urea and volatile oils. It is recommended in the treatment of coughs, bronchial catarrh, etc.—*Pharm. Zentralhalle*, 80 (1939), 659. (N. L.)

Otosclerol (Coates and Copper Ltd., London) contains cimicifugin 6.66%, bromide 36.3% and phosphorus 52%. It is used in cases of tinnitus aurinon and other ear symptoms having their origin in nervous or sclerotic conditions or due to autointoxication, also middle ear affections and nervous insomnia. The dose is one tablet, 3–4 times daily, after meals; commence with one-tablet dose, increasing up to five-tablet doses. It is marketed in boxes of 50, 500 and 1000 tablets.—*Australasian J. Pharm.*, 22 (1941), 53. (A. C. DeD.)

Pancurmen (Temmler-Werke, Berlin-Johannisthal) is a dragee preparation, each dragee containing desiccated pancreas 0.25 Gm., diastase (1:100) 0.10 Gm. and tumeric 0.10 Gm. It is recommended in the treatment of angina pectoris, duodenitis and enteritis, etc.—*Pharm. Zentralhalle*, 80 (1939), 635. (N. L.)

Paragen (Bayer Products Ltd., London) is a polypeptide and quinoline urca compound, with protein breakdown products. It is uscd for strengthening active and passive immunity. Nonspecific in action containing antibacterial and antitoxic components. It is used in cases of acute infective arthritis, infectious arthritis, infectious discases and septic conditions. The dose is 2 cc. once or twice daily, intramuscularly; in infective arthritis, 2 cc. daily for 8–14 days. It is supplied in boxes of 5.—*Australasian J. Pharm.*, 22 (1941), 53. (A. C. DeD.)

Proscabin (Bayer Products Ltd., London) is benzyl benzoate emulsion. It is used in cases of scabies. The dose is two external applications at intervals of 10 or 15 minutes after a hot bath; *i. e.*, 2 to 4 oz. for each, according to the area to be covered. It is marketed in bottles of 4 and 40 ounces.—*Australasian J. Pharm.*, 22 (1941), 106. (A. C. DeD.)

Sarevan (Evans, Sons, Lescher and Webb Ltd., Liverpool and London) contains rotenone (an active principle of *D. elliptica* and *D. malaccensis*), 2%, in mucilage of quince seed and Irish moss. It is used in cases of scabies and dermatitis of parasitic origin. Directions: First night: Bathe with hot water and soap; scrub all over. Dry, rub lotion in all over the body, except face and scalp. Next morning: Rub the lotion in, without bathing. Next evening: Ditto. Second morning: Ditto. Following evening: Bathe thoroughly, put on fresh underwear; change all bedding and send to the laundry. (Warn patient not to apply any more lotion without medical advice.) It is marketed in bottles of 4 and 20 fl. oz.—*Australasian J. Pharm.*, 22 (1941), 106. (A. C. DeD.)

Vana Tonic (Burroughs Wellcome and Co., Sydney and London) contains in each fl. oz. calcium glycerophosphate gr. 1 and cinchona alkaloids gr. 1/6. This tonic promotes appetite and digestion; restorative in convalescence, general debility and malnutrition. The dose is half a wineglassful three or four times daily. It is supplied in bottles of 16 fl. oz.—*Australasian J. Pharm.*, 22 (1941), 53. (A. C. DeD.)

Ventrex with Iron and Vitamin B Kapseals (Parke, Davis & Company, Detroit, Mich.) contain in each kapseal ventrex (concentrated antianemic extract of stomach tissue, P. D. & Co.), 5 gr.; iron and sodium citrate, neutral, 2 gr.; vitamin B_1, 100 International Units; vitamin B_2, 35 Sherman Units. The kapseals are employed in the treatment of secondary anemias, and they are supplied in bottles of 100, 500 and 1000 kapseals.—*Modern Pharmacy*, 24 (Dec. 1940), 13. (F. J. S.)

Vitamin B Extract Standardized (Parke, Davis & Company, Detroit, Mich.) is a palatable extract of wheat germ fortified with thiamine chloride (crystalline vitamin B_1) and it is physiologically standardized to contain 1500 International Units of vitamin B_1 per fluidounce. It also supplies vitamins B_2, B_5, B_6 and the P-P (pellagra preventive) factor as they occur in wheat germ extract. It is useful as a dietary supplement for the prevention and correction of deficiencies of the vitamin B complex (particularly vitamin B_1). Vitamin B Extract Standardized is supplied in 4-oz. bottles.—*Modern Pharmacy*, 24 (Dec. 1940), 12. (F. J. S.)

BACTERIOLOGY

Acetone Butanol Organism, Cl. Acetobutylicum—Growth Factor and Other Nutritional Requirements of the. Two growth factors are required by *Cl. acetobutylicum, viz.* biotin and another factor, present in yeast extract which is not identical with any known growth factor for microörganisms and which has been obtained in a highly concentrated form. In the presence of these two factors the organism will grow normally and also produce solvents from glucose with ammonium phosphate as the sole source of nitrogen. There is no strict correlation between growth and fermentation and the presence of other factors may be necessary in order that normal solvent production may take place concurrently with normal growth. Certain other sugars are also fermented in the simple ammonium phosphate medium containing the two growth factors.—A. E. OXFORD, J. O. LAMPEN and W. H. PETERSON. *Biochem. J.*, 34 (1940), 1588. (F. J. S.)

Aerial Disinfection—Use of Hypochlorites for. The crowding of large numbers of persons into confined spaces at the present time makes it a matter of urgency to collect all available information of the possibility of aerial disinfection by the use of "aerosols." The technique used in the experiments now described was to atomize equal amounts of bacterial suspension in two identical chambers and to add germicidal mist to one of these. The percentage kill was obtained from the counts on agar plates exposed in the two chambers. The primary purpose of the present inquiry was to study the method of action of hypochlorite solutions, a proprietary antiseptic containing one per cent of NaOCl being used as antiseptic and *Bact. coli* and a white coccus as test organisms. Better initial results were obtained with an "Aerograph Brush" gun than with an "Atmozon" nebulizer which gives a mist of much smaller particle size. This led to a series of tests to discover whether effective action was due to liberation of HOCl gas or to retention of active principle in the mist droplets until these make contact with the suspended organisms. The facts that the rapidly evaporating small droplets were less effective than the larger drops, and that a maximum effect was found at a specific dilution of antiseptic, were part of the evidence supporting the conclusion that it is the hypochlorite in the mist, not the gaseous form, which is most active.—A. H. BAKER, S. R. FINN and C. C. TWORT. *J. Hyg.*, 40 (1940), 560; through *Bull. Hyg.*, 16 (1941), 37. (T. C. G.)

Anesthetics of the Pyridine Series. Details are given of the production of anesthetic compounds such as the hydrochlorides of diethylaminoethyl 6-isopropoxynicotinate, diethylaminoethyl 6-butoxynicotinate and dibutylaminopropyl 6-butoxynicotinate, and mention is made of the production of various other related compounds.—RAEMER R. RENSHAW and PAUL E. DREISBACH, assignors to PYRIDUM CORP. U. S. pat. 2,189,404, Feb. 6, 1940. (A. P.-C.)

Antirabic Vaccination—Present Status of. Knowledge of the incidence of rabies has been furthered through the use of the author's mouse diagnostic test. Many workers report that approximately 11% of the specimens sent in for laboratory diagnosis are negative for Negri bodies but positive with the mouse inoculation test. In Alabama, 477 dogs found dead in the streets and not suspected of having rabies were examined and 5.2% harbored the rabies virus. A quantitative test for measuring the immunizing potency of rabies vaccines has been developed by the author and his co-workers. This test involves the testing of the virulence of the vaccine by intracerebral inoculation into mice, and measuring the immunizing value by vaccinating mice and injecting them three weeks later with active virus. With this test it was found that commercial vaccines containing virulent virus conferred considerable immunity, but those containing non-virulent virus did not immunize. Study has revealed the fact that the immunizing potency of a vaccine is not related to the degree of removal from the street virus, nor to the resistance of the virus to glycerol, nor to the species of animal in which it is carried. Mouse brain culture virus is virulent for mice when injected intracerebrally through the 10^{-3} dilution. When injected intraperitoneally as a vaccine, doses as large as 1 cc. prove harmless; and when doses as small as 0.02 cc. are given, they protect against 1000 intracerebral doses. Commercial phenolized vaccines have thus far shown little protection, while the chloroformized vaccines give considerable protection but are more difficult to prepare and test. In the author's laboratory it has been found that proper exposure of the virus to ultraviolet light destroys the virulence of the virus without affecting its immunizing potency. Repeated tests have shown that for mice 1 cc. of the virus containing 50,000 intracerebral mouse doses properly irradiated gave good protection. Attempts to increase the virulence of the culture virus have thus far failed, but by concentrating it tenfold in a freezing and drying apparatus, 0.15 cc. gave mice as much protection as 1.5 cc. of the unconcentrated vaccine.—L. T. WEBSTER. *Am. J. Pub. Health*, 31 (1941), 57. (T. C. G.)

Antiseptic and Disinfectant Compositions. α-Phenylphenol is used with a solvent comprising ethanol in which benzyl alcohol about 3% to 20% is dissolved (suitable for dilution with water with colloidal dispersion of the benzyl alcohol).—HOWARD WORNE, assignor to SAMUEL BRASS. U. S. pat. 2,190,749, Feb. 20, 1940. (A. P.-C.)

Antiseptic Suitable for Use on Wounds, Etc. A composition adapted to be used in the treatment of wounds and as a disinfectant contains as an active ingredient a reaction product of an aqueous, at least approximately 0.2% of a cresol-containing solution and of an aqueous, at least 2.5% tannin-containing solution, the composition when measured polarographically in an approximately decinormal sodium hydroxide solution containing glycerol showing a reduction potential of about -0.7 volt with an error limit of ± 0.1 volt.—HELENE GOLDHAMMER, assignor to ARNOLD FRENKEL. U. S. pat. 2,189,564, Feb. 6, 1940. (A. P.-C.)