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PHARMACEUTICAL ABSTRACTS

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ABSTRACTORS

CONTENTS

PHARMACY

GALENICAL (*Continued*)

Pharmaceuticals—Storage of, Protected from Light. A very extensive study of the storage of light-sensitive chemicals was made. An attempt was made to determine in what way light affects the pharmaceuticals and to what extent the destruction proceeds. Methods of protecting against the deleterious effects of light were also investigated. The photochemical principles necessary to a complete understanding of the transmission of light through containers and of the methods of measurement are reviewed. The early studies on the influence of light on pharmaceuticals, on the protection against light and the types of containers used are also given. The following pharmaceuticals described by the Swiss Pharm. V as light sensitive were investigated: ether for anesthesia, amyl nitrite, cherry laurel water, bromoform solution, chloroform for anesthesia, sterile olive oil, phosphorated oil, paraldehyde, sweet spirits of nitre, concentrated hydrogen peroxide and dilute hydrogen peroxide. The authors measured the absorption of light by the containers by means of a Hilger quartz spectrograph and the photochemical decomposition of the materials by chemical means. A variety of conditions was investigated and the results tabulated and graphed under individual discussions of each compound. The results of the work on each pharmaceutical are separately summarized. Light appears either to initiate or to promote the decomposition of all of the substances investigated. However, light alone was not responsible for the decomposition. In all of the pharmaceuticals studied, the labile substances underwent a change without the influence of light, in that they decomposed spontaneously or were affected by other factors. The energy supplied by the light on the one hand, often resulted in a considerable increase in the rate of these undesirable chemical processes, or on the other hand, favored the tendency of the substances to react with harmful materials simultaneously present, such as solvents, atmospheric oxygen, alkali from the glass, etc. With some of the pharmaceuticals studied (cherry laurel water, bromoform solution, concentrated hydrogen peroxide, sweet spirit of nitre and ether for anesthesia) the promotion of changes by light was so very pronounced, that it must be considered the most harmful factor. For the remainder of the substances, other influences such as air, water, evaporation, etc., act as strongly or stronger than light. In all cases the deterioration of the pharmaceuticals was the greatest when stored in colorless bottles. Light brown glass containers prevented the harmful effects of light to a certain extent and afforded satisfactory light protection for one of the preparations. The dark brown containers used effectively protected 8 out of the 11 pharmaceuticals from the deleterious effects of light. Red glass afforded very good light protection. Storage in black glass containers is not recommended in that on the one hand they transmit a small percentage of the harmful ultraviolet and violet rays and on the other hand are not suitable for practical purposes because of their non-transparency. For 3 of the pharmaceuticals storage with complete protection from light according to Swiss Pharm. directions or in red glass containers is recommended. The following tabulation indicates the proper means of storing the preparations investigated and affords sufficient protection: sterilized neutral olive oil in light brown or dark brown glasses; ether for anesthesia, cherry laurel water, chloroform for anesthesia, concentrated and dilute hydrogen peroxide, phosphorated oil and paraldehyde in dark bottles; amyl nitrite and bromoform solution in dark brown or red bottles wrapped in black paper; and sweet spirits of nitre in dark brown bottles wrapped in black paper. 112 literature references.—J. BÜCHI and V. KURER. *Pharm. Acta Helv.*, 15 (1940), 59–112; 123–141. (M. F. W. D.)

Procaine Hydrochloride—Preparation of Sterile Solutions of. The authors found that solutions of procaine hydrochloride have some bactericidal action on *B. typhosus* and *Streptococcus hemolyticus* Richards. The action seems to increase with increase in concentration. Solutions of procaine hydrochloride with 0.5% of chlorobutol have a distinct lethal action on *B. typhosus* and *Strep. hemolyticus* R. after three hours' exposure. Solutions of procaine hydrochloride 4% with 0.5% of chlorobutol show complete destruction of the same organisms after one hour exposure. The presence of 0.025% of sulfur dioxide assists in killing the organisms, probably due to increased acidity. The combined action of the above three substances is definitely bactericidal to the above two organisms and *S. aureus* but has no apparent lethal action on spore bearing *B. subtilis*. The authors state that sterile solutions of procaine hydrochloride can be prepared without the use of bacteria-proof filters or heat sterilization, provided aseptic methods are used. Solutions prepared with an antiseptic present would not be vulnerable to contaminations likely to occur in a laboratory devoted to the production of sterile preparations. Solutions of procaine hydrochloride prepared with both an antiseptic present and an oxidation-preventing substance such as sulfur dioxide are even less vulnerable to contamination. The antiseptic properties of more concentrated solutions of procaine hydrochloride may be due to increased acidity.—A. M. BRIGGS and D. E. CALLOW. *Quart. J. Pharm. Pharmacol.*, 14 (1941), 127–33. (S. W. G.)

Quinine Solutions. Stable, concentrated solutions, suitable for parenteral use, are obtained by adding quinine monohydrochloride (25) to ascorbic acid (12) in water (75 parts).—N. V. ORGACHEMIA. Brit. pat. 524,319; through *J. Soc. Chem. Ind.*, 59 (1940), 898. (E. G. V.)

Theophylline and Caffeine—Production of Stable, Concentrated, Aqueous Solutions of, Suitable for Injections. Theophylline (I) and Caffeine (II) are more soluble in solutions of salts of methylxanthineacetic acids (III) than in water; in III the $CH_2.CO_2H$ is attached to nitrogen at 1 or 7 and the salts may be organic or inorganic. The solutions have pH 5.4–5.7 and can be sterilized for injection or oral use. Among examples II, the calcium salt of theobromine-1-acetic acid (IV) (1.5) and I (0.25) are dissolved by shaking in water (10 Gm.) at room temperature, or II (1.1) is added to a solution (20 cc.) of the $(CH_2.NH_2)_2$ salt of IV (11 Gm.) and dissolved by shaking. Other solubilizing agents are potassium 8-bromotheobromine-1-acetate, the δ-methylamino-β-methyl-Δ^{β}-hexene and $(CH_2)_6N_4$ salts of I, and sodium theophylline-7-acetate.—KNOLL A.-G. Brit. pat. 521,989; through *J. Soc. Chem. Ind.*, 59 (1940), 642. (E. G. V.)

Tincture of Iodine—Preparation of. Rapid and visible dissolution is effected by placing 35 Gm. of iodine on a plug of, *e. g.*, cotton wool, in the tubular part of a funnel, covering the iodine with 15 Gm. of potassium iodide, and then washing through with 25 cc. of water followed by 95% ethyl alcohol to give a total volume of 500 cc.—V. MACRI. *Boll. chim.-farm.*, 79 (1940), 39–40; through *J. Soc. Chem. Ind.*, 59 (1940), 402. (E. G. V.)

PHARMACOPŒIAS AND FORMULARIES

British Pharmacopœia. Third Addendum. The General Medical Council has published a Third Addendum to the British Pharmacopœia, 1932.

This Addendum became official (in England) on January 1, 1941. A list of the new monographs is given.—*Australasian J. Pharm.*, 22 (1941), 73. (A. C. DeD.)

Finnish Pharmacopœia of 1937. Various notes and comments are given on the monographs of the Finnish Phar., 1937.—F. REIMERS. *Arch. Pharm. Chemi*, 14 (1940), 691. (C. S. L.)

National Formulary—Evaluation of Drugs and Preparations for Admission to the. The items included in the N. F. are classified into 3 groups: (*a*) Those whose use is based on sound scientific and therapeutic evidence; (*b*) those with actions and uses similar to the preparations of (*a*) but represent a second choice in administration; and (*c*) those preparations without clinical or laboratory evidences of usefulness or physiological activity. Fifty-three items in (*c*) are discussed from the standpoint of two recognized commentaries.—J. M. DILLE. *Bull. Natl. Formulary Committee*, 9 (1941), 172–183. (H. M. B.)

Opiums of Iran. The author states that the quality of opium obtained from Iran meets the requirements of the (French) Codex.—A. H. NEZAMIE. *Bull. sci. pharmacol.*, 47 (1940), 29–33. (S. W. G.)

Pharmacopœia Pills—Experiments on. The author describes some experiments carried out on compound pills of rhubarb, pills of aloes and pills of colocynth and hyosyamus of the British Pharmacopœia.—D. H. O. GEMMELL. *Chemist and Druggist*, 134 (1941), 336. (A. C. DeD.)

U. S. P. XII—Articles Not Formerly Pharmacopœial Now Recommended for the. A list is given.—ANON. *Am. J. Pharm.*, 113 (1941), 118. (A. C. DeD.)

U. S. P. XII—Articles Official in the U. S. P. XI Not Admitted to the, Commonly Spoken of as "Deletions." A list is given.—ANON. *Am. J. Pharm.*, 113 (1941), 119. (A. C. DeD.)

U. S. P. Use in Pan-American Countries—Extension of the. The United States Pharmacopœia is being used more frequently in the Pan-American countries. This is but one of the evidences of greater coöperation and friendship between the United States and her neighbor republics. The reasons for the choice of our Pharmacopœia rather than other outstanding books of standards are interestingly described.—A. DE MESA PONCE. *Am. J. Pharm.*, 113 (1941), 103. (A. C. DeD.)

DISPENSING

Ampul Sealing Device for Apothecary Shops. A small ampul sealing device is described and depicted, employing an acetylene tank as source of heat. One ampul is sealed at a time with neck rested in a notched metal bar.—S. KJELLMARK. *Farm. Revy*, 39 (1940), 674. (C. S. L.)

Bleach Ointment. The following method for measuring reactivity of soft paraffin with bleaching powder is given. Weigh accurately equal parts (about 5 Gm.) of bleaching powder and soft paraffin and mix intimately in a mortar. Transfer the ointment to a glass tube of 2.5-cm. diameter, stopper the tube and place in water at 15°. After five minutes remove the tube, wipe and transfer to a glass-fronted steam oven placing the tube on a layer of sand in a bath on a sheet of asbestos 0.7-cm. thick. Maintain the temperature at 95° and immerse the bulb of the thermometer completely in the ointment. When the temperature reaches 23° allow nine minutes to pass and then note the temperature of the ointment. This gives a measure of the liability of the ointment to overheat during manufacturer. Experiments showed that some samples of white soft paraffin are more reactive than certain samples of yellow paraffin. Soft paraffins which would be classed as "artificial" (mixtures of liquid and hard paraffin) by a test previously suggested by Brindle (*Quart. J. Pharm. Pharmacol.*, 12 (1939), 361) are the least reactive.—H. BRINDLE and L. V. ROSSER. *Quart. J. Pharm. Pharmacol.*, 13 (1940), 261–266. (S. W. G.)

Emulsifying Agents, Emulsions and Emulsified Products—Production of. Emulsification with inorganic metallic gelatinous oxides or hydroxides is improved by addition of substances which either are themselves, or produce by reaction with the emulsifiable material, surface tension reducers. The reducer may be an alkali, a soap or soap-like compound, oleic acid (I), or montan wax; when an alkali is used a trace of I may be added to the material to be emulsified.—A. KING. Brit. pat. 519,769; through *J. Soc. Chem. Ind.*, 59 (1940), 506–507. (E. G. V.)

Emulsions—Pharmaceutical. I. A Study of the Continental Method. The importance of various factors in the technique of the English and Continental method has been investigated and these older methods were compared in efficiency with the electric mixer and the hand homogenizer. Measurements were made of the size dispersed globules, appearance and rate of creaming were observed and photomicrographs were taken. The present report deals only with the Continental method. Oils studied were cod liver, castor, heavy mineral and linseed; acacia was the emulsifying agent; and one-tenth per cent of sodium benzoate was added to prevent mold while emulsions were standing for observation. Time of trituration of primary emulsion was found to be very important. Castor and cod liver oils gave good emulsions with the 4:2:1 proportion but more acacia was necessary with the other oils. The principle involved in the proportion 4:2:1 in making the primary emulsion is well founded. A dry mortar and a dry pestle are important. Factors having no effect are the use of dried acacia, rate of dilution of primary emulsion, excessive trituration of the oil and acacia when making the primary emulsion and direction of trituration, whether clockwise, counterclockwise or both directions.—WILLIAM J. HUSA and CHARLES H. BECKER. *Jour. A. Ph. A.*, 30 (1941), 83. (Z. M. C.)

Emulsions—Pharmaceutical. III. Comparative Study of Various Mechanical Stirrers and the Hand Homogenizer. Earlier reports dealt with the Continental and the English methods of emulsification. The present paper reports the efficiency of these older methods as compared with stirring devices and a homogenizer. Stirring devices included a motor stirrer, the Arnold automatic mixer, a hand egg beater. The motor stirrer was found to be inferior to the mortar and pestle method when using cod liver oil, linseed oil and mineral oil. Only castor oil yielded a good product. Stirring the primary emulsion with a hand egg beater produced just as good emulsions as the mortar and pestle method. With the Arnold automatic mixer, using the Continental method, castor oil and mineral oil gave good products; linseed oil and cod liver oil did not emulsify. When the English method was used all the oils made good emulsions, but the one with linseed oil showed separation within three hours. The hand homogenizer produced Grade A products with from four parts to 0.013 part of acacia to four parts of oil in the emulsions of cod liver oil and linseed oil, but the linseed oil one showed creaming within three hours. When using castor oil and mineral oil, the homogenizer permitted lower proportions of acacia. Better emulsions with respect to size of oil globules were produced by the mortar and pestle method when using one or more parts of acacia to four

parts of these oils.—WILLIAM J. HUSA and CHARLES H. BECKER. *Jour. A. Ph. A.*, 30 (1941), 141. (Z. M. C.)

Enteric Coatings for Medicaments. Partly esterified or etherified cellulose is treated with dicarboxylic anhydrides. When used as a coating for tablets, etc., the products dissolve only in the intestine. Cellulose acetate phthalate containing 9–15% of free acid groups is specifically claimed.—KODAK, LTD. Brit. pat. 526,276; through *J. Soc. Chem. Ind.*, 59 (1940), 899. (E. G. V.)

Hydrogenated Castor Oil in Ointments. VI. Sulfated Product in Official Ointments. Early ointment bases were objectionable because they became rancid. Petrolatum is widely employed to-day because it is stable and compatible with most medicaments but being a hydrocarbon it does not absorb even as much moisture as the natural fats. Some types of dermatitis should not be covered with a greasy ointment which prevents evaporation of perspiration. Where there is perspiration or a serous discharge, a hydrophilic ointment base is indicated. When castor oil is catalytically hydrogenated to an iodine number of less than ten it is still capable of sulfation because of the presence of the hydroxyl radical. This sulfated hydrogenated castor oil, "SHCO" has consistency of an ointment, is soluble in water and has a body and color similar to wool fat. The one used in these experiments is slightly acid, having approximately the pH of the skin. Perspiration does not interfere. It incorporates readily with many substances and is not subject to rancidity. Experimental work reported covers formulas for the U. S. P. and N. F. ointments prepared with adhesive base, smooth base and emulsified base. This "SHCO" can be used with substances like balsam of Peru which is incompatible with many bases. The emulsified base is an oil-in-water emulsion; it absorbs perspiration and serous fluid better than a water-in-oil emulsion.—GEORGE W. FIERO. *Jour. A. Ph. A.*, 30 (1941), 145. (Z. M. C.)

Hydrophil Bases and Sulfonated Oils in Ointments and Allied Pharmaceuticals. By the use of new waxes and synthetic wetting agents, the author has improved ointment bases, oil-in-water emulsions, lotions and cleansing creams. Lanolin and petrolatum ointment bases present the disadvantages of inactivating medicinals, interfering with skin metabolism and are difficult to remove. To obviate these disadvantages an improved oil-in-water base is formulated from white wax, tegolan (a synthetic wax + 40% cholesterol), cetyl alcohol and peanut oil. A greaseless ointment base, resistant to strong acids is prepared from Tegacid (acidified glyceryl monostearate). Disadvantages of the usual aqueous lotions such as high surface tension or presence of irritating alcohol and insulating vegetable gums, may be remedied by the use of Aerosol O. T. (dioctyl ester of sodium sulfosuccinate) and diethylene glycol. Aerosol O. T. is also excellent for preparing oil-in-water emulsions. Oral test with rats and application to human wounds have shown Aerosol O. T. to be non-toxic. Soapless detergents and cleansing creams made from sulfonated fixed oils are proving less irritating and generally more useful than the older type with alkali and triethanolamine soaps.—ELMO D. FRENCH. *Southern Med. J.*, 34 (1941), 284–287. (W. T. S.)

Iso-Alcoholic Elixirs of National Formulary VI—Advantages of. A survey of San Francisco and vicinity indicated that N. F. elixirs are purchased and remain on the shelves until they lose much of their potency. It is proposed that they be made extemporaneously, using Iso-Alcoholic Elixirs to obtain desired alcoholic content. Fourteen elixirs were prepared in this way and they were compared with those made according to the N. F. directions. The extemporaneous ones were found to be strictly comparable with the same elixir of the N. F. as to alcoholic content, odor and taste. Amaranth is superior to cudbear as color in some elixirs.—J. W. MILLER, S. J. DEAN and R. A. MARSHALL. *Jour. A. Ph. A.*, 30 (1941), 219. (Z. M. C.)

Lecithin Solutions for Injection—Preparation of. Suitable preparations are given by adding concentrated solutions of lecithin in benzyl alcohol or chloroethanol to glycol.—A. MOSSINI and V. CALIUMI. *Boll. chim.-farm.*, 79 (1940), 177; through *J. Soc. Chem. Ind.*, 59 (1940), 700. (E. G. V.)

Ointments of Mercuric Oxide, Ammoniated Mercury and Mercurous Chloride. The method used in the present work for the assay of the ointments is applicable to all three. It can be carried out in less than an hour, does not involve any difficult or tedious manipulation and provides a method of assay of calomel ointment which does not entail a preliminary mechanical separation of the calomel from the basis. The mercury compound is decomposed and reduced to metallic mercury, which is collected and separated from interfering substances by amalgamation with zinc filings and filtration. The compound is decomposed in acid solution by boiling the ointment under reflux with an aqueous solution of acetic acid and potassium iodide in the presence of zinc filings, with which the mercury amalgamates, and xylol, which dissolves the basis. The amalgam is dissolved in nitric acid and the mercury titrated with thiocyanate. Under such conditions, recovery of the mercury is rapid and complete, and the removal of interfering substances simple. In the absence of potassium iodide, reduction of calomel and ammoniated mercury takes place only slowly, and the presence of xylol has a marked accelerating effect on the reaction between calomel and potassium iodide in dilute acetic acid solution.—G. J. W. FERREY. *Chemist and Druggist*, 134 (1941), 267. (A. C. DeD.)

Ointments Prepared by Emulsification. Improvements and Advantages Gained; Choice of Emulsion Systems; Selection of Vehicles. References are made to the conclusions reached by other workers that emulsified type ointments are superior in many ways. The present work was an attempt to appraise the effect of emulsified and non-emulsified ointments on other than *Staphylococcus aureus*. Organisms used were *Microsporon lanosum* and *Tricophyton gypseum*. The former is common in seborrhoea of the scalp and the latter is one of the fungi responsible for tinea of the feet and hands; both are resistant to chemical agents commonly used in treatment of lesions caused by these fungi. The type of emulsifier used determines type of emulsion formed; for a W/O emulsion a hydrophobic colloid is indicated; in an O/W type the hydrophilic colloid is indicated. A large series of emulsifiers was tried with these objectives: (1) One that would promote O/W emulsions. (2) One that would promote emulsions stable to nearly all medicaments the pharmacists might be called upon to incorporate. (3) The emulsifier must be economical to use. The finished emulsion should compare favorably in price with petrolatum. (4) The emulsifier should permit the use of at least fifty per cent water concentration, otherwise the ointment cream approaches petrolatum in greasy characteristics. (5) The materia lused must lend itself to both extemporaneous and stock preparation of ointment emulsions. (6) The emulsifier to be readily available and its composition known. Results indicate that a mixture of one-half per cent sodium lauryl sulfate and eight per cent cetyl alcohol fulfil the conditions. Varying percentages of the following substances were incorporated with the base: salicy-

lic and benzoic acids, juniper tar and salicylic acid, coal tar, kaolin and sulfur, ammoniated mercury, precipitated sulfur, phenol, sulfathiazole, balsam of Peru and precipitated sulfur, salicylic acid and precipitated sulfur, calamine. The water content in all cases was about 50 per cent.—A. J. GIBSON, H. E. PARKER and ANNE ALMUS. *Jour. A. Ph. A.*, 30 (1941), 196. (Z. M. C.)

Unguentum Hydrargyri Nitratis Forte B. P. It is difficult to prepare satisfactory samples of Unguentum Hydrargyri Nitratis Forte by the B. P. method. A modification of "Squire's Method" for preparing this ointment is given, which consistently yields satisfactory results. Samples prepared by this method are of the same order of acidity as the B. P. preparation.—S. E. WRIGHT. *Australasian J. Pharm.*, 22 (1941), 143. (A. C. DeD.)

PHARMACEUTICAL HISTORY

Aj-Chiman—Shamanism. This is a comparative study of shamanism with special reference to the Ad-Itzel of Guatemala, comparable to the medicine man of the North American Indian. The profession is hereditary and tribal among the Guatemaltecan indians in isolated districts.—RAMON ACENA DURAN. *Escuela Farm.*, 3 (July and Aug. 1940), 14. (G. S. G.)

Alcoholic Fermentation—By-Products of. A historical and critical review.—M. A. JOSLYN. *Comm. Sci. Pract. Brewing*, No. 8 (1940), 30–43; through *J. Soc. Chem. Ind.*, 59 (1940), 560. (E. G. V.)

Balances—Some Famous. The balances described include those of Black, Cavendish, Priestley, Lavoisier, Dalton, Davy, Berzelius, Liebig, Duma, Stas, Mendeleeff, Mosley, Landolt, Rayleigh and Richards.—R. E. OESPER. *J. Chem. Educ.*, 17 (1940), 312–323. (E. G. V.)

Capillary Chemistry—Earliest History of. A historical survey of capillary chemistry, from Traube to Freundlich.—I. TRAUBE. *J. Chem. Educ.*, 17 (1940), 324–328. (E. G. V.)

Chinese Medicine—Beginnings of. A review.—I. N. Lousada. *Australasian J. Pharm.*, 22 (1941), 217. (A. C. DeD.)

Elements—Historical and Industrial Discovery of the. IV. The halogens, boron, silicon, phosphorus, arsenic and antimony. **V.** Bismuth, selenium, tellurium, the alkali and the alkaline earth metals.—J. N. FRIEND. *Chemistry and Industry*, 60 (1941), 64–68; 120–124. (E. G. V.)

Medical Mission Centenary. The Edinburgh Association for Sending Medical Aid to Foreign Countries this year celebrates the centenary of its foundation.—ANON. *Chemist and Druggist*, 134 (1941), 331. (A. C. DeD.)

Pharmaceutical Society of Great Britain. A brief historical survey of the Society's activities, 1841–1941.—H. BAYLES. *Chemist and Druggist*, 134 (1941), 225. (A. C. DeD.)

Pharmacy and Philately. The author gives examples of designs and caricatures carried on envelopes used in the mails during the Civil War which have some pharmaceutical bearing.—G. N. MALPASS. *Am. J. Pharm.*, 113 (1941), 67. (A. C. DeD.)

Pharmacy 100 years ago. A review.—W. KIRKBY. *Chrmist and Druggist*, 134 (1941), 230. (A. C. DeD.)

Robert Boyle, Scientist. A survey of the contributions of Boyle to physical science. Almost every branch of science to-day can trace phases of its origin to Boyle.—M. SCHOFIELD. *Chemistry and Industry*, 59 (1940), 615–619. (E. G. V.)

Swiss Stained Glass Windows and Pharmacists. The author describes the use of colored glass in portraying historical incidents and personages in pharmacy. Ten panes are described in detail.—J. A. HÖFLIGER. *Pharm. Acta Helv.*, 15 (1940), 112–121. (M. F. W. D.)

Wholesale Drug Trade 1841–1941. A review.—ANON. *Chemist and Druggist*, 134 (1941), 232. (A. C. DeD.)

Wormwoods—Fragrant. Bitter Herbs of the Scriptures. A review.—E. COLEMAN. *Australasian J. Pharm.*, 22 (1941), 283. (A. C. DeD.)

PHARMACEUTICAL EDUCATION

Founder's Day Address, Philadelphia College of Pharmacy and Science. The Philadelphia College of Pharmacy and Science was founded in 1821, just three years before the Franklin Institute of Philadelphia. The author draws attention to a quite interesting group of individuals (Bache, Wetherhill, Brown, Morris, Smith, Troth, etc.), men outstanding in early Philadelphia life, who were instrumental in founding both of these scientific organizations. Many of these founders were themselves pharmacists and they were prompted in each instance by the same sincere desire to educate, train and serve in the founding of these sister institutions.—H. B. ALLEN. *Am. J. Pharm.*, 113 (1941), 107. (A. C. DeD.)

Medical Training in U. S. and Canada. The Minister of Health (Ernest Brown) expressed appreciation in the House of Commons, on March 6th, of an offer by the Rockefeller Foundation, New York, to undertake and provide for the clinical training and maintenance of selected British medical students in a number of medical schools in the United States of America and Canada.—ANON. *Chemist and Druggist*, 134 (1941), 186. (A. C. DeD.)

Pharmaceutical Education in India. The author describes in this article the first introduction of a modern Pharmaceutical Education of Benares, its progress and significance.—R. S. RAKSHIT. *Indian and Eastern Chemist*, 21 (1940), 244, 281. (A. C. DeD.)

Scientific Advances in 1940. A review of all the scientific advances which have appeared in *Perfumer and Essent. Oil Record* during the year is given.—ANON. *Perfumer. Essent. Oil Record*, 31 (1940), 380. (A. C. DeD.)

PHARMACEUTICAL LEGISLATION

Central Drugs Act, 1940, As Passed. The third installment is given.—ANON. *Indian and Eastern Chemist*, 21 (1940), 233. (A. C. DeD.)

Coloring Agents in Food and Drinks—Legislation for, in Bolivia. Though aniline and other chemical colors may be proved harmless to health, since they have to be imported it is recommended that Bolivia permit only natural colors which can be produced at home for food coloring. Color products recommended are: saffron, anatto and turmeric, cochineal, chlorophyll and tobacco, and also, of course caramel.—ALFONSO ZALLES. *Esculapio*, 10 (1940–1941), 4. (G. S. G.)

Sulfanilamides under Control in Australia. The sale of sulfanilamides, allied drugs and their derivatives has been brought under control of the Medical Equipment Regulations promulgated under the National Security Act of Australia. Under the regulation the drugs are prohibited sale by retail, except on written prescription or order of a registered medical practitioner, veterinary surgeon or dentist. This restriction previously operated in some of the Australian States under the Poisons Regulations. The control is now made uniform throughout Australia. The necessity of conserving

supplies of these drugs is stated to be one of the principal reasons of promulgation of such order.—ANON. *Indian and Eastern Chemist*, 21 (1940), 260. (A. C. DeD.)

PHARMACEUTICAL ECONOMICS

Aliphatic Organic Chemical Industry. A review—H. F. ROBERTSON. *Chemistry and Industry*, 59 (1940), 603–607. (E. G. V.)

Chemical Export Control. Under the terms of an Order (S. R. & O., 1941, No. 425), issued by the Board of Trade, licenses will in future be required to export to any destination any of the following classes of goods: benzaldehyde; benzoic acid and its salts and esters; phthalic acid and its salts and esters; phthalic anhydride.—ANON. *Chemist and Druggist*, 134 (1941), 207. (A. C. DeD.)

Chemical Foreign Trade in 1940. Imports of menthol and quinine both showed increases for 1940. Other medicinals and pharmaceuticals showed the effect of the war. In the outgoing trade most of the items showed increases.—O. WILSON. *Ind. Eng. Chem.*, 33 (1941), 546–549. (E. G. V.)

Cod Liver Oil—Indian Substitutes for. On the outbreak of war the cutting off of the main sources of supply of cod liver oil presented India with serious problems. In recent years the high vitamin A content of certain Indian fish liver oils has been demonstrated in several laboratories. The liver oils of shark and saw-fish appear to be capable of immediate commercial exploitation. As the Indian gooseberry, amla, has a very high content of vitamin C, large quantities of amla were purchased and powdered early in 1940. The powder was sold to the Medical Stores Depot, Madras, to be made into tablets and issued to the troops for use in the treatment of, or as a preventive against, scurvy.—ANON. *Indian and Eastern Chemist*, 22 (1941), 39. (A. C. DeD.)

Drug Export Control Extension. The Board of Trade has issued an Order, the Export of Goods (Control) (No. 9) Order, 1941, dated March 12th (No. 308, H. M. Stationery Office, price 1d.), the effect of which is to extend certain groups in the schedule. To Group 1 are added cassava, sago, tapioca and roots and meal or flour of cassava and sago. Candles, tapers, night lights and bougies, carnauba wax and dextrin, mineral waxes, mixtures of waxes, mixtures of waxes with stearine, and starch, are added to Group 3, from which paraffin wax is deleted. Arsenic, cadmium and cobalt are added to the list of ores and concentrates (Group 6). In Group 13 are inserted aluminum sulfate, citric acid, sodium aluminate. Certain other changes are made, chiefly affecting destinations.—ANON. *Chemist and Druggist*, 134 (1941), 181. (A. C. DeD.)

Indian Substitutes—Shortage of Imported Raw Materials and the Use of. The author discusses the possibility and desirability of the drug manufacturers of turning their attention to a few indigenous raw materials capable of replacing some of the crude B. P. drugs, medicinal oils, etc., formerly imported from abroad, the supply of which in the Indian market has become scarce due to the present war.—N. B. DUTT. *Indian and Eastern Chemist*, 21 (1940), 229. (A. C. DeD.)

Medical Supplies in India—Problems Connected with. At a recent meeting of the Medical Stores Supplies Committee, under the chairmanship of Lt. Gen. G. G. Jolly, samples of emetine, apomorphine, acriflavine and blood plasma made in India were shown. Ipecacuanha, a valuable South American plant, was said to grow well in Mungpoo, Bengal. Much progress has been made in other Indian provinces in the production of fish liver oils. Production of still other drugs in India has permitted the removal of 92 items from the import list. Vitamin C tablets made from Indian-grown "Amla" berries are available. Wooden stoppers have been developed to replace expensive cork. Other types of stoppers as metal screw caps and crown corks are being investigated.—*Indian Med Gaz.*, 76 (1941), 59. (W. T. S.)

Planning for the Future. A discussion of the various economic and industrial developments with which the cosmetic industry is nowadays confronted.—S. P. JANNAWAY. *Perfumer. Essent. Oil Record*, 32 (1941), 129. (A. C. DeD.)

MISCELLANEOUS

Alcoholic Solutions—Neutral, Resistance of Glass Bottles to. The extraction of sodium oxide from bottle glasses by water-ethyl alcohol mixtures over the range 60–126° decreased with the increase in ethyl alcohol, but there was no constant relationship for all glasses between sodium oxide extraction and the flake formation, nor between the corrosion resistance to distilled water at 75–121° and ethyl alcohol-water mixtures at room temperature to 75°.—F. R. BACON and O. G. BURCH. *J. Am. Ceram. Soc.*, 23 (1940), 147–151; through *J. Soc. Chem. Ind.*, 59 (1940), 604. (E. G. V.)

Aqua Conservans of the Imperial Formulas. The use of nipagin (methyl *p*-hydroxybenzoate) and nipasol (propyl *p*-hydroxybenzoate) as conservation agents is discussed in connection with their bactericidal properties. Ten references.—GEORG DULTZ. *Deut. Apoth. Ztg.*, 55 (1940), 752–753; through *Chem. Abst.*, 35 (1941), 2674. (H. M. B.)

"Are Soaps Germicidal?" The results obtained with pure soaps allow direct conclusions to be drawn as to the antibacterial action of different soaps, of which they are constituents. Moreover, a number of papers dealing with bacteriological experiments on such soaps, show indisputably their bactericidal efficacy against pathogenic organisms; it is submitted that this experimental evidence lifts the soaps from the class of mere adjuncts to cleanliness and imparts to them a definite hygienic value. Nevertheless, a number of researches demonstrate conclusively that certain important pathogenic microörganisms, or rather the more resistant individuals among them, are not likely to succumb to the antibacterial action of soaps under the customary conditions of use; therefore, soaps cannot and should not take the place of disinfectants and antiseptics.—KLARMANN and SHTERNOV. *Soap*, 23 (1941), 17; through *Am. J. Pharm.*, 113 (1941), 121. (A. C. DeD.)

Boric Acid Ointment—Substitute for. The following ointments are offered as substitutes: (*a*) A cetyl alcohol ointment consisting of Nipagin M 5–25 parts, buffered lactic acid 5 parts, cetyl alcohol 25 parts, water 120 parts and petrolatum *q. s.* to 500 parts and (*b*) an ointment of zinc oxide.—A. FOULON. *Wien. Pharm. Wochschr.*, 74 (1941) 95. (H. M. B.)

Chlorinated Soap—Studies on. Chlorinated soap is composed of 12 parts of finely powdered chlorinated lime, 40 parts cocoa soap powder and 70 parts of water. The mixture forms a pasty mass which is applied to the skin like a salve. The stability of the dry mixture and of the paste was studied. The determination of chlorine was made by the procedure of the Swiss Pharm. V for chlorinated substance, that is, titration of the iodine liberated from potassium iodide. It was found that the soap absorbed a small amount of the sodium thiosulfate and this was corrected for throughout. The results indicated that the loss of active chlorine was slow and that the preparation after 6 days still contained enough chlorine to be effective. The dry mixture of

chlorinated lime and the soap was unexpectedly less stable than the moist preparation whether stored in the light or in the dark. In two days, the active chlorine fell to 13 per cent. Likewise a dilute aqueous suspension also deteriorated more rapidly than the paste. There was no advantage in storing the preparations in the dark. The soap and the chlorinated lime should be kept separately until the preparation is required.—J. THOMANN and K. FEINSTEIN. *Pharm. Acta Helv.*, 15 (1940), 55–58. (M. F. W. D.)

Cold Cream. The history, composition and manufacture are given.—H. S. REDGROVE. *Indian and Eastern Chemist*, 21 (1940), 240. (A. C. DeD.)

Cosmetic Formulas—Wartime. VI. Face Powders. A review.—ANON. *Chemist and Druggist*, 134 (1941), 355. (A. C. DeD.)

Cosmetic Formulas—Wartime. VII. Suntan and Sunburn Cosmetics. Suntan and sunburn preparations form an important group of summer cosmetics and can be conveniently divided into three classes: (1) Those designed to prevent sunburn and promote a tanning of the skin; (2) those which produce an artificial tan; (3) those used for the alleviation of the inflammation and discomfort which follow lengthy exposure to the sun. Each of these classes is discussed.—ANON. *Chemist and Druggist*, 134 (1941), 347. (A. C. DeD.)

Cosmetics and the Laboratory. Observations on the increasing importance of effective collaboration between works and laboratory are given.—S. P. JANNAWAY. *Perfumer. Essent. Oil Record*, 32 (1941), 164. (A. C. DeD.)

Derris—Preparing a Mineral Oil Solution of. A mineral oil (I) solution of extractives of *Deguelia, Lonchocarpus* and *Tephrosia* is prepared by extracting the plants with a suitable solvent (II) (*e. g.*, C_6H_6, $C_2H_4Cl_2$) capable of dissolving ingredients of the plant which are soluble and in some cases insoluble in I and itself miscible with I. The solution obtained is then treated with adsorptive clay, which removes the substances insoluble in I, and the purified extract is incorporated in I before or after removal of II.—N. A. SANKOWSKY, assr. to Stanco, Inc. U. S. pat. 2,096,922; through *J. Soc. Chem. Ind.*, 59 (1940), 392. (E. G. V.)

Disinfectants—Modern. A review.—N. F. RAPPS. *Chemist and Druggist*, 134 (1941), 385. (A. C. DeD.)

Foodstuffs—Containers and Lacquers for. Construction of containers and the types and methods of application of lacquer are discussed.—F. D. FARROW and T. G. GREEN. *Chemistry and Industry*, 60 (1941), 95–103. (E. G. V.)

German Specialties—Review for 1940 with Special Emphasis on the New.—KONRAD SCHULTZE. *Scientia Pharm.*, 12 (1941), 10. (H. M. B.)

Glass—Old and New. The impact of thirty years of research on sixty centuries of tradition. A lecture.—A. E. MARSHALL. *Chemistry and Industry*, 59 (1940), 459–460. (E. G. V.)

Glycerin—Significance of, and Its Equivalents in Skin Culture. The significant cosmetic and pharmacological properties (*e. g.*, water-absorbing and retaining properties, solvent power for fats, toxicity, antiseptic action, etc.) of glycerin and its possible substituents, notably $(CH_2.OH)_2$, $OH.CHMe.CH_2.OH$ and carbitol, are compared and discussed.—C. BAUSCHINGER. *Fette u. Seifen*, 46 (1939), 723–726; through *J. Soc. Chem. Ind.*, 59 (1940), 411. (E. G. V.)

Insecticidal Composition. Dinitrophenols (2,4-dinitro-6-cyclohexylphenol, dinitrocresol) are distributed on a lignocellulosic flour (walnut shell, wood or bark of redwood), ground to pass a 100-mesh sieve.—DOW CHEM. CO. Brit. pat. 521,211; through *J. Soc. Chem. Ind.*, 59 (1940), 633. (E. G. V.)

Insecticide—Use of β-Methallyl Chloride as an. The use of β-methallyl chloride as a fumigant for destroying insects which damage foodstuffs in storage is discussed. The liquid is place in open trays and allowed to evaporate, while heaters and fans are used to control the rate of evaporation and thus the concentration of the vapor in the store. One part of the vapor in 20,000 parts sufficed to kill all insects tested and their larvae within 2 hours.—F. C. HYMAS. *Food*, 9 (1940), 254; through *J. Soc. Chem. Ind.*, 59 (1940), 760. (E. G. V.)

Lac for War Need. A number of inquiries for possible new uses for shellac, especially for war-time needs, have been received at the London Lac Research Laboratory, which is financed by the Indian Lac Cess Committee. The necessary research has been carried out and satisfactory recipes suggested. New uses of the lac for road paints, anti-gas paints, luminous paints, shellac-bitumen spirit paints, quick-setting cements and rapid-drying varnishes for mineral oil and petrol containers have been discovered. The use of lac and modified lac as an adhesive or binder in the electrical industries has been investigated, with promising results. A new and up-to-date laboratory for investigating the electrical properties of lac and lac products has been fitted up in the chemical section of the Indian Lac Research Institute.—ANON. *Indian and Eastern Chemist*, 22 (1941), 39. (A. C. DeD.)

Male Fern—Insecticidal Properties of Extract of. Boehm's filicic acid is an important insecticidal constituent of crude filicin (I) extracted from ferns. I is effective against the mosquito and house fly and harmless to the ten common plants tested.—F. WILCOXON and A. HARTZELL. *Contr. Boyce Thompson Inst.*, 11 (1939), 1–4; through *J. Soc. Chem. Ind.*, 59 (1940), 558. (E. G. V.)

Perfumery Industry and the War. According to the author the whole situation may be very well summed up with the statement that the perfume industry in Great Britain has suffered slight inconvenience through the war, but nothing more fundamental than that.—E. J. PARRY. *Chemist and Druggist*, 134 (1941), 377. (A. C. DeD.)

Perfumes for Home and Export. Some topical observations by a practical perfumer are given.—ANON. *Perfumer. Essent. Oil Record*, 32 (1941), 40. (A. C. DeD.)

Perfumes—Luminescence of, in Filtered Ultraviolet Light. The luminescence effects of 40 alcohols, 26 aldehydes, 18 ketones, 105 esters, 14 ethers, 5 acetals, 8 lactones, 3 phenols, 7 hydrocarbons, 6 acids, 2 halogeno-derivatives and pyridines, quinolines, etc., are tabulated. They are predominantly blue or violet (a few greenish), of varying strength.—A. MULLER. *J. prakt. Chem.*, 154 (1940), 209–218; through *J. Soc. Chem. Ind.*, 59 (1940), 403. (E. G. V.)

Rodents—Manufacture of Material for Destroying. Dried, pulverized sugar beet is mixed with a poison, *e. g.*, a solution of strychnine nitrate or tincture of squills, and the mixture dried to 8–15% of moisture.—J. FREYBERG AND W. FREYBERG. Brit. pat. 516,703; through *J. Soc. Chem. Ind.*, 59 (1940), 574. (E. G. V.)

Sexual Hormone Compounds—Production of. Glycosides of hydroxy-sexual hormones having not less than 3 times the potency of the free hormone are prepared by interaction of an ester (acetate) of the sugar with the hormone in presence of alkali or other condensing agent (zinc chloride). The glucoside, melting point 223° and galactoside of the follicle hormone are claimed.—F. JOHANNESSOHN and RABALD.

U. S. pat. 2,088,792; through *J. Soc. Chem. Ind.*, 59 (1940), 762. (E. G. V.)

Shell Dressings—Effect of Variation in Operating Conditions on Sterilization of. The author concludes that the British Pharmaceutical Codex procedure (15 lb. per sq. in. and thirty minutes) is adequate; a less severe procedure is undesirable. Vacuum matters little but temperature matters much. Packages should be completely wrapped before sterilization.—R. M. SAVAGE. *Quart. J. Pharm. Pharmacol.*, 14 (1941), 157–164. (S. W. G.)

Soaps—Dangers of Perfuming, and Their Eliminations. A discussion.—A. FOULON. *Wien. Pharm. Wochschr.*, 74 (1941), 97. (H. M. B.)

Sterols. LXXXVI. Desoxotestosterone and Its Conversion to Testosterone. Cholestene dibromide was oxidized to $\Delta^{5,6}$-androstenone-17 which was converted to desoxotestosterone acetate and $\Delta^{4,5}$-androstenone-17. These new compounds on oxidation were converted to testosterone acetate and androstenedione. An isomeric 7-keto-$\Delta^{5,6}$-androstenol-17 was also obtained.—R. E. MARKER, E. L. WITTLE and B. F. TULLAR. *J. Am. Chem. Soc.*, 62 (1940), 223–226. (E. B. S.)

Sulfanilamide—Manufacture of. *p*-Sulfonamidobenzamide (from the carboxylic ester and ammonia) is treated with sodium hydroxide and sodium hypochlorite (Hofmann reaction).—J. KAMLET. U. S. pat. 2,111,913; through *J. Soc. Chem. Ind.*, 59 (1940), 897. (E. G. V.)

Ultraviolet Light and Sunlight—Effect of, on Solutions of Some Coloring Agents. Many pharmaceuticals must be artificially colored, using a dye which will remain reasonably permanent under exposure to direct sunlight. The author has investigated the suitability of various dyes when exposed to both sunlight and ultraviolet radiation. Amaranth, naphthol yellow S, panceau 3R with brilliant blue and brilliant blue in alcohol acetone solutions are stable to four weeks of intermittent sunlight and 67 hours of ultraviolet light. The noticeable lack of correlation between the results of ultraviolet light and sunlight in the cases of methylene blue points to the suggestion that ultraviolet light is not fully comparable to sunlight in its deteriorating influence on color.—C. L. HUVCK. *Am. J. Pharm.*, 113 (1941), 149. (A. C. DeD.)

PHARMACOLOGY, TOXICOLOGY AND THERAPEUTICS

PHARMACOLOGY

***p*-Aminobenzoic Acid and Dopa Reaction.** *p*-Aminobenzoic acid modifies the formation of melanin; sulfanilamide has apparently a similar effect. Under identical conditions calcium pantothenate has no influence.—G. J. MARTIN, W. A. WISANSKY and S. ANSBACHER. *Proc. Soc. Exptl. Biol. Med.*, 47 (1941), 26. (A. E. M.)

Anesthetic Solutions. The solution contains triprocaine citrate (0.9%), diprocaine malate (0.9%), adrenaline (13:5,000), monoprocaine tartrate (0.2%) (this stabilizes the diprocaine malate and adrenaline), sodium chloride (0.8–0.9%), and sodium sulfite or sodium bisulfite (about 0.1%).—D. CURTIS. U. S. pat. 2,110,826; through *J. Soc. Chem. Ind.*, 59 (1940), 898. (E. G. V.)

Arsenic—Concentration of, in Tissues and Excretion of Arsenic Following Intravenous Injection of Massive Doses of Mapharsen. The following summary is given: (1) By the continuous intravenous drip method dogs were given doses of mapharsen comparable to those proposed for the treatment of syphilis in man. (2) The concentrations of arsenic obtained in the blood, urine and various tissues are presented and their significance is discussed. (3) Histological examination of the tissues revealed but minimal changes.—H. J. MAGNUSON and B. O. RAULSTON. *Ann. Internal Med.*, 14 (1941), 2199–2209. (S. W. G.)

Atropine, Pilocarpine, Prostigmine, Eserine, Mecholyl and Ephedrine—Effect of, on the Tonus and Contraction Mechanisms of the Urinary Bladder, with Observations on the Clinical Application of These Drugs. Experiments were done on cats and humans. Pilocarpine, prostigmine, eserine and mecholyl increase the tone and contractility of the urinary bladder. Atropine decreases the tone and abolishes rhythmic activity. Ephedrine, even in large doses, does not affect the bladder.—HARRY A. TEITELBAUM and ORTHELLO R. LANGWORTHY. *J. Pharmacol.*, 72 (1941), 152. (H. B. H.)

Avitaminosis—Relation of Dark Adaptation to. The chemical process of dark adaptation involves the synthesis in the rods of the retina of a pigment known as visual purple. This pigment is formed from precursors, one of which is almost certainly vitamin A. Adaptation is required because the reception of light impressions involves the destruction of this pigment. Two opposing processes, the destruction and synthesis of visual purple, are continuously in action. In bright light the rate of destruction so greatly exceeds that of synthesis that virtually the whole pigment may be lost and with it the power of appreciating low light intensities until synthesis has restored sufficient of the pigment. The rate of synthesis of the pigment governs the rate of dark adaptation. With the loss of precursors, such as vitamin A, the synthesis cannot take place. It now seems evident that ascorbic acid plays some direct part in synthesis of the pigment. As metabolism of the retina resembles that of the brain, the B group of vitamins is also thought to be concerned.—C. P. STEWART. *Edinburgh Medical Jour.*, 48 (1941), 217; through *Abbott Abstract Service*, (1941), No. 915. (F. J. S.)

Azotemia Due to Ingestion of Blood Proteins. The concentration of urea nitrogen in the blood increases following the ingestion of whole blood and the magnitude of the increase is proportional to the quantity of blood given. Comparable amounts of protein fed in the form of red cells, plasma, casein or lean meat also cause similar increases in blood urea nitrogen. It is apparent that the elevation of blood urea nitrogen is related to the digestion of these protein materials and absorption of the digestive products from the intestinal tract. The globin in hemoglobin is obviously digested as readily as any other protein. Shock, dehydration, starvation or impaired renal function are not necessary factors in the production of the azotemia observed following hemorrhage into the upper gastrointestinal tract.—C. L. YUILE, W. B. HAWKINS. *J. Am. Med. Sci.*, 201 (1941), 162. (B. H.)

Barium—Fixation and Chemical Determination of. Nine dogs were given an amount of a 20% solution of sodium sulfate at the rate of 1 Gm. per Kg., followed immediately by a solution of barium chloride at the rate of 100 mg. barium per Kg. Doses were injected into the jugular vein. Blood samples were drawn at intervals of 15 seconds up to 2 minutes and examined for barium content. Dogs which did not die during the experiment were sacrificed later and organs of all animals examined for barium. Barium disappeared promptly from the blood by the end of one minute; the greater part of the barium was fixed in the liver, and lesser amounts in the spleen and lungs. None was found in the bones, muscles or kidneys. Dogs diminished in weight and most of them died in less than three months.—ROQUE I. ARNOLT. *Rev. Col. Farm. Nac. (Rosario)*, 7 (1940), 75. (G. S. G.)

Bile Acids and the Pulmonary Tumor Incidence in A Strain Mice. A significant increase in the incidence of pulmonary tumors is recorded in A strain mice following subcutaneous injection of 10 mg. sodium desoxycholate. No such response was observed following similar treatment with cholic acid.—L. W. LAW. *Proc. Soc. Exptl. Biol. Med.*, 47 (1941), 37. (A. E. M.)

Bilirubin on Erythropoiesis—Effect of. An experiment was made on two anemic dogs to discover the effect of repeated intravenous injections of pure bilirubin on the rate of production of hemoglobin, the size of the red cells and the reticulocyte count. It was found that the injections of bilirubin caused an increase in the rate of production of hemoglobin and a prolonged reticulocyte response.—R. C. BOMFORD. *Brit. Med. J.*, 4164 (1940), 549. (W. H. H.)

Blood Pressure—Manufacture from Urine of Substances Which Affect the. The thermostable pressor substance is obtained from urine (man, cattle), previously freed from phosphate, by adding a soluble salt of a heavy metal of groups II, III or IV (in examples, copper sulfate-sodium acetate or lead acetate), and eluting the precipitate with a dilute buffer solution (pH 6–9).—*Soc. Chem. Ind. in Basle.* Brit. pat. 520,392; through *J. Soc. Chem. Ind.*, 59 (1940), and 567. (E. G. V.)

Borneol—Detoxication of, by Glucuronic Acid in Humans. The ingestion of 2 Gm. of borneol by 8 normal subjects resulted in the excretion, within 24 hours, of an average of 94% in the form of glucuronide. The ingestion of 1 Gm. of borneol resulted in 26 subjects in an average excretion of 81% within 24 hours. Fifty per cent of the subjects, on ingesting 1 Gm. of borneol, gave a maximum excretion in 3 to 6 hours and 35% gave it in 6 to 9 hours. The detoxication of 1 Gm. borneol was almost complete in 15 hours, the average at that time being about 96% of that obtained in 24 hours.—HARRY WAGREICH, ABRAHAM BERNSTEIN, MORTON PADER and BENJAMIN HARROW. *Proc. Soc. Exptl. Biol. Med.*, 46 (1941), 582. (A. E. M.)

Calcium as a Local Anesthetic. Calcium gluconate injected parenterally is a useful local anesthetic in correct concentration. It is particularly useful when other injections are to be made, when needle may be left in place for the following substance.—IVAL DAGAMA. *Arq. Biol., Sao Paulo*, 25 (1941), 18. (G. S. G.)

Calcium—Effect of, on Diuresis in Cardiac Decompensation. Calcium gluconate was administered intravenously to ten patients with cardiac edema. It had little immediate effect on the urinary output. In six out of seven patients who had previously been receiving digitalis, the diuretic effect of this drug was increased when given after a course of injections of calcium gluconate. In nine out of ten patients with cardiac edema injections of parathyroid hormone enhanced the diuretic action of mersalyl and digitalis.—N. MORRIS and A. S. ROGEN. *Lancet*, 239 (1940), 545. (W. H. H.)

Cannabis Sativa—On the Preparation of an Extract Having "Marihuana-Like" Activity from the Fruits of. Much research has been done on the resin of *Cannabis sativa*, but little has been reported concerning the fruits. The present report gives positive evidence of the presence in the fruits of a principle or principles having similar action, in the dog, to that produced by the cannabis resin. Though qualitatively similar in pharmacological action quantitatively sometimes only a minimum value was obtained. Further investigation is needed to determine how much of the active principle originally contained in the fruits may be lost either by chemical destruction or insufficient fractionation. Preparation of an extract is described and results of bioassays tabulated.—JOHN R. MACHETT and S. LOEWE. *Jour. A. Ph. A.*, 30 (1941), 130. (Z. M. C.)

Curare and Beta-Erythroidin Hydrochloride—Effect in Vitro of, on Choline Esterase of Human Blood Serum. Very small amounts of curare have a marked inhibiting effect on the choline esterase activity of human serum. The degree of inhibition of enzyme activity up to 60% is approximately proportional to the amount of curare added. The possible application of this finding for assaying curare preparations is indicated. *Beta*-Erythroidin has no influence on the coline esterase.—MEYER M. HARRIS and RUTH S. HARRIS. *Proc. Soc. Exptl. Biol. Med.*, 46 (1941), 619. (A. E. M.)

Curare and Metrazol Administration—Effect in Man of, on Choline Esterase Activity of Blood Serum. The intravenous injection of curare produces a marked inhibition of the choline esterase of human serum. The inhibition of the esterase activity gradually diminishes at a variable rate in different patients, but is still present 5 to 6 hours after the injection of curare.—MEYER M. HARRIS and RUTH S. HARRIS. *Proc. Soc. Exptl. Biol. Med.*, 46, (1941), 623 (A. E. M.)

Desoxycorticosterone—Action of, on Non-Protein Nitrogen Content of Blood During Experimental Uremia. Treatment of rats with desoxycorticosterone acetate not only prolongs the survival time and delays the clinical signs of uremia, but actually inhibits the rise in non-protein nitrogen content of the blood after complete nephrectomy.—HANS SELYE and KAI Nielsen. *Proc. Soc. Exptl. Biol. Med.*, 46 (1941), 541. (A. E. M.)

1-Diethylacetyl-5,5-Cyclopentamethylene Biuret, Sodium Diphenyl Hydantoinate and Sodium Pentobarbital—Comparative Anticonvulsant Activity of, in Mice. The anticonvulsant activity of diacetylcyclopentamethylene biuret was compared in inbred mice with that of sodium dilantin and sodium pentobarbital. The biuret and the pentobarbital protected the majority of animals given cocaine but they did not prevent death. All cocaine-treated mice given dilantin died from convulsions. Against surely fatal doses of picrotoxin and strychnine the dialkylacetyl biuret was effective in 19 of 20 animals. Dilantin had no effect against picrotoxin but saved half of the strychnine-treated animals. Sodium pentobarbital prevented convulsions in mice given picrotoxin and saved 5 out of 10. It was anticonvulsant in the majority of the strychnine-treated mice but did not prevent death.—HAMILTON H. ANDERSON and S. Y. P'AN. *Proc. Soc. Exptl. Biol. Med.*, 46 (1941), 611. (A. E. M.)

Digilanid—Therapeutic Effectiveness and Potency of. The following summary is given: (1) The therapeutic efficacy and potency of digilanid, a mixture of pure crystalline glycosides present in *Digitalis lanata*, has been studied in 23 hospitalized and 20 ambulatory patients. (2) The therapeutic and toxic doses of digilanid in terms of cat unit potency were found to be identical with those of *Digitalis purpurea*. (3) The similarity of digilanid and digitalis leaf with regard to fundamental pharmacological and clinical properties is discussed. (4) Digilanid satisfies the established criteria for a reliable potent digitalis preparation.—R. C. BATTERMAN, D. V. HOLMAN and A. C. DEGRAFF. *Ann. Internal Med.*, 14 (1941), 2058–2072. (S. W. G.),

4,4′ -Dihydroxydiphenylmethane Derivatives—Molecular Structure in Relation to Estrogenic Activity. Dodds and Lawson (*Proc. Roy. Soc. B*, 125 (1938), 222) noted that certain diphenylmethane derivatives possessed estrogenic activity when injected into ovariectomized rats. This class of compounds has now been reinvestigated from the same standpoint. Four classes of diphenylmethane de-

rivatives resulting from the direct condensation of phenol or *o*-cresol with aliphatic aldehydes, aliphatic ketones, cyclic ketones and carbonyl compounds containing aryl substituents, respectively, were obtained or prepared for the study. Variation of activity in homologous series has been found and maximum potencies established. The products from aliphatic ketones were in general the most active with the *o*-cresol derivative being superior to that with phenol. The relationship between structure and maximum potency were found parallel to those in other series of synthetic estrogens. Apparently there is a biological connection between the methyl groups in the aromatic ring and the other groups on the central carbon atom, since the effects vary in a marked manner with alterations of the chain length of the central groups.—N. R. CAMPBELL. *Proc. Roy. Soc. B*, 129 (1940), 528–538. (W. T. S.)

Drugs—Effects of Certain, on Temperature Regulation, and Changes in Their Toxicity, in Rats Exposed to Cold. White rats (male) were used as experimental subjects. Morphine, paraldehyde and pentobarbital produced a temporary fall in the rectal temperatures of the animals by exposure to a temperature of 3° C. The doses of the drugs used were not in themselves depressant to the neuromuscular system. Low environmental temperatures increased the toxicity of the three drugs mentioned.—JULIAN B. HERRMANN. *J. Pharmacol.*, 72 (1941), 130. (H. B. H.)

Entada Pursaetha DC. (E. Scandens Benth.)—Chemistry and Pharmacology of. Two saponins have been extracted from the seeds. Both are hemolytic, have depressant effects on the respiratory system and cause a sharp fall in blood pressure, possibly owing partly to dilatation of the vessels of the splanchnic area and partly to depressant effects on the myocardium.—R. N. CHOPRA, J. C. GUPTA, G. CHOPRA and B. K. GHOSH. *Indian J. Med. Research*, 28, No. 2 (1940), 469; through *Quart. J. Pharm. Pharmacol.*, 14 (1941), 197. (S. W. G.)

Estrogens and Synthetics with Estrogenic Activity—Peroral Effects of. In castrate female rats by the Allen-Doisy test the effectiveness of oral administration as compared with that of parenteral administration of estrone, estradiol, stilbestrol and dinestrol (4,4′-dihydroxy-γ,-δ-diphenyl-β,δ-hexadiene) was studied. A trade name, Estilbin "MCO," is noted for stilbestrol and the name, Sexadien "LEO," for dinestrol. Orally, both synthetic substances were relatively more active than the natural estrogens. Ratios of peroral to parenteral dose were: for estrone 198, estradiol 621, stilbestrol 11, dinestrol 3. To study inactivation by the liver, the portal vein dose was compared with the femoral vein dose. The ratio portal dose/femoral dose was: for estrone 10, for estradiol 3.3, for stilbestrol 1.2, for dinestrol 0.5. Hence there was less destruction of the synthetics in the liver.—K. PEDERSEN-BJERGAARD. *Arch. Pharm. Chemi*, 47 (1940), 725. (C. S. L.)

Ethyl Methylphenylpiperidinecarboxylate—Pharmacological Action of. The following summary is given: (1) The action of the hydrochloride of the ethyl ester of 1-methyl-4-phenyl-piperidine-4-carboxylic acid, has been investigated on erythrocytes, paramecium, isolated heart and intestine, striated muscle, on blood pressure, respiration and intestine *in situ* and on the intact animal. (2) It is nonhemolytic and has little action on unicellular organisms. (3) It is a depressant to all forms of muscular tissue, striated, cardiac and non-striated. (4) It antagonizes the action of acetylcholine on the heart and on the intestine, both isolated and *in situ*. Here its action is much weaker than that of atropine. (5) It antagonizes the action of histamine on the intestine, both *in situ* and isolated. Its action is several times as great as that of papaverine. (6) As an antispasmodic drug it might well be found effective, in view of its antagonism to both parasympathetic and plain muscle stimulants. (7) It is relatively non-toxic, though it lowers blood pressure and depresses respiration. It is non-irritant and can be given subcutaneously, intramuscularly or intravenously. It is not narcotic in action but rather the reverse. There is evidence that it lessens sensitivity to pain in the lower animals.—A. M. E. DUGUID and R. ST. A. HEATHCOTE. *Quart. J. Pharm. Pharmacol.*, 13 (1940), 318–331. (S. W. G.)

Galactose Tolerance Test in Liver Necrosis. Liver necrosis has been produced in rabbits by the administration of carbon tetrachloride, and several modifications of the galactose-tolerance test of hepatic function have been studied. A procedure is described in which galactose is administered intravenously and the rate at which galactose disappears from the blood is determined. This has been found to be a convenient and reliable means of testing liver dysfunction.—E. J. KING, C. V. HARRISON and G. E. DELORY. *Lancet*, 239 (1940), 541. (W. H. H.)

Galactose Tolerance Test—Intravenous. A galactose-tolerance test of hepatic dysfunction is described in which 50 cc. of a 50 per cent solution of galactose is injected intravenously and the blood galactose is determined at intervals thereafter. This modification of the galactose-tolerance test is free from theoretical objections, and the results given show that in nearly all cases it distinguishes clearly between jaundice due to liver cell damage and jaundice due to gross obstruction of the biliary tract without liver cell damage. That is its practical value; it is not suggested that it will detect minor grades of liver damage in patients who are not jaundiced.—E. J. KING and R. S. AIKEN. *Lancet*, 239 (1940), 543. (W. H. H.)

Glycosides and Genins—Quantitative Effect of Fifteen Chemically Related, on the Embryonic Chick Heart. A method for comparing the physiological activities of digitaloids is described using the embryonic chick heart. Fifteen chemically related cardiac glycosides and genins were studied and certain tentative deductions made relating chemical configuration to cardiac effect.—ARTHUR C. DEGRAFF, GEORGE H. PAPP and ROBERT A. LEHMAN. *J. Pharmacol.*, 72 (1941), 210. (H. B. H.)

Gold Sodium Thiomalate (Myocrysin)—Influence of, on the Prevention of Hemolytic Streptococcus Arthritis in Rats. Experiments were done on male and female albino rats. Gold sodium thiomalate (myocrysin) prevented arthritis produced by a hemolytic streptococcus. Sulfanilamide and sulfathiazole were more effective. None of the drugs cured the arthritis once it was established. Gold in a dose of 20 mg. per 100 Gm. per rat produced severe renal damage and death.—SIDNEY ROTHBARD, D. MURRAY ANGEVINE and RUSSELL L. CECIL. *J. Pharmacol.*, 72 (1941), 164. (H. B. H.)

Histamine—Constricting Bronchial Reactions by. The authors describe the histophysiologic study of the tracheo-bronchial workings of animals subjected to histamine injections. They analyzed the bronchio-spasm, very accentuated in certain zones, to such a point that the muscular layer of Reissessen formed a tight ring in the interior in which the mucous is reduced to the state of star-like folds in contact with one another. Histamine bronchospasm is often fatal in guinea pigs, but the authors emphasize that this death may be avoided by placing the animal in a stream of oxygen. They have obtained 60 per cent survival in these conditions whereas the animals remaining in the ordinary air showed 16 per cent survivals.—L. BINET, J. VERNE and J. LACORNE. *Soc. de Biol.*, June 1, 1940;

through *Presse méd.*, 54–55 (1940), 610. (W. H. H.)

Ichthyometric Studies on Some Mercurials. Small fish have been found to be useful for testing the toxic effect of drugs on different physiological functions. In the present paper, a quantitative ichthyometric method for the toxicity of a series of mercury compounds is described. The experimental work is given in considerable detail, apparatus described and illustrated, the results shown by means of ichthyograms. The authors have been able to record on the kymograph the neuromuscular activity and general behavior of the fish. In their study of mercurials, there was a striking difference between the effects of the organic and inorganic ones, the organic being less toxic. The method is useful in differentiating between organic and inorganic and in detecting presence of inorganic contaminants in mercurochrome.—DAVID I. MACHT and ELIZABETH C. SPENCER. *Jour. A. Ph. A.*, 30 (1941), 203. (Z. M. C.)

Insulin—Mouse Method for Assay of. The mouse method has been fully described by Hemmin Gsen (*Quart. J. Pharm. Pharmacol.*, 6 (1933), 187) and by Marks and Pak (*Quart. Bull. Health Organization, League of Nations*, Nov. 1936). The latter used two doses of both standard and unknown preparation, the high dose being double the low dose in each case. Recently it has been necessary to assay the insulin content of several related pancreatic extracts, in comparison with each other as well as with a standard preparation, so the test has been modified to comprise eight equal groups of mice instead of four, to enable three unknown preparations instead of one to be assayed in a single test, each preparation still being tested at two dosage levels. In calculating the results of the assay, we may still use the expression given by Marks and Pak, namely:

$$\log \text{potency} = \left(\frac{S \text{ unknown} - S \text{ standard}}{S \text{ large dose} - S \text{ small dose}}\right) \times \log \text{ratio of doses} + \log \text{assumed strength};$$

where S signifies the total number of mice convulsing on (1) unknown or standard, regardless of dose; (2) large or small doses, regardless of preparation injected. In this expression the term (S large dose $-$ S small dose), which determines the slope of the dosage-response curve, may be obtained by taking the sum of the appropriate numbers of mice convulsing, for the standard preparation and for the particular unknown preparation whose potency is being calculated, the figures for the other preparations being ignored. A more accurate estimate of the slope will be obtained, however, if for the figures relating to the unknown preparation we substitute the average figures for the three unknown preparations: (S large dose) then signifies: mice convulsing on large dose of standard $+$

$$\frac{\textit{sum of mice convulsing on large dose of unknown,}}{3}$$

and similarly for (S small dose). This method of calculating the slope is preferable to taking the grand average slope for all the preparations since, in our experience, crude pancreatic preparations of insulin give a distinctly flatter slope than does the standard preparation. Corrections for use in the simple method of calculation are described, so as to conform more closely with statistical theory. The question of weighting is discussed.—H. P. MARKS. *Quart. J. Pharm. Pharmacol*, 13 (1940), 344–348. (S. W. G.)

Intravenous Solutions—Response of Cardiovascular System to. The author believes the indiscriminate use of intravenous solutions should be discouraged; they should be given only when necessary. Their unfavorable effects, especially on the cardiovascular system are attracting more and more attention. Certain rules and tests for the proper use of fluids have been formulated. When a patient is able to drink fluid, intravenous solutions are stated to be unnecessary. When a patient already has a low plasma protein and a rising hematocrit valve, intravenous solutions may do more harm than good. The main guide in the use of intravenous fluids should be the condition of the cardiovascular system. The danger comes when large quantities of fluid are given more rapidly than usual to a patient with an unrecognized cardiac defect. A study of hemocrit, the plasma protein, the venous pressure and the vital capacity are of great importance in determining the kinds and quantities of fluids to be given and the speed of injection.—F. D. MURPHY. *J. Urol.*, 45 (1941), 654; through *Abbott Abstract Service*, (1941), No. 923. (F. J. S.)

Laxative. A substance capable of being taken into the digestive tract is mixed with a mineral lubricant for which it has a greater affinity than it has for water. An example is a mixture of ground, purified kapok fiber (1), petroleum jelly (2), and heavy mineral oil (3 parts).—F. HOELZEL. U. S. pat. 2,111,286; through *J. Soc. Chem. Ind.*, 59 (1940), 899. (E. G. V.)

Liver Histamine During Peptone Shock in Dogs. Peptone shock in the dog is accompanied by a reduction in the liver histamine which is roughly parallel to the degree of shock reaction. The amount of histamine liberated from the liver is substantially adequate to account for the degree of shock as determined by the systemic blood pressure.—CARL A. HOLMES, GAYLORD OJERS and CARL A. DRAGSTEDT. *Proc. Soc. Exptl. Biol. Med.*, 46 (1941), 576. (A. E. M.)

Local Anesthetics—Differentiation of, with Potassium Iodide. The common local anesthetics may be distinguished when one drop of a 1 per cent solution of the drug as the hydrochloride is treated on a microscope slide with a crystal of potassium iodide. The microscopic appearance of the crystals formed with the following drus is given: alypin, cocaine, diocaine, eucaine A, eucaine B, larocaine, novocaine, nycaine, panthesine, pantocaine, percaine, psicaine, stovaine and tropocaine.—L. ROSENTHALER. *Pharm. Acta Helv.*, 15 (1940), 159. (M. F. W. D.)

Local Anesthetics—Heterocyclic. Carbazole, Dibenzofuran and Dibenzothiophene Derivatives. The investigation of a series of alkylaminoalkyl esters of carbazole-, dibenzofuran- and dibenzothiophenecarboxylic acids led to some powerful local anesthetics. The best one of the series is β-diethylaminoethyl 5-ethylcarbazole-3-carboxylate hydrochloride, which is more than thrice as potent as cocaine and only one-fifth as toxic. The activity of these compounds appears to be predominantly a function of the position of the carboxyl group rather than other structural variations. Opening of the carbon-carbon bridge in the dibenzofuran and dibenzothiophene derivatives does not improve the therapeutic efficiency. All of these compounds were more or less irritating to the rabbit's eye and to human skin, so that they cannot be regarded as useful anesthetics.—R. R. BURTNER and G. LEHMANN. *J. Am. Chem. Soc.*, 62 (1940), 527–532. (E. B. S.)

Morphine and Carbon Tetrachloride—Study of the Effects of, on the Rate of Disappearance of Ethyl Isoamyl Barbituric Acid. Experiments were done on rabbits. Premedication with morphine or carbon tetrachloride prolonged the anesthesia of pentobarbital through interference with liver function. In the case of morphine this diminution in hepatic fixation of the barbiturate was due to the morphine decreasing the blood flow through the liver, whereas carbon tetrachloride produced the

same effect by direct injury to the liver cells.—H. J. TATUM, D. E. NELSON and F. L. KOZELKA. *J. Pharmacol.*, 72 (1941), 123. (H. B. H.)

Morphine and Derivatives—Influence of, on Activity of Acetylcholine. The authors state that dihydroxycodeinone synergizes the action of acetylcholine, and that this action is as marked as the sensitizing action of eserine.—G. DASTUGUE and A. BRESSON. *Bull. sci. pharmacol.*, 47 (1940), 25–28. (S. W. G.)

Pancreas and Liver Fat. When rats are fed diets containing choline (marmite) no considerable activity of added choline in preventing fatty infiltration of the livers could be detected, whereas pancreatic extracts with comparatively low choline content exerted a marked effect under these conditions. By injecting minute quantities of ultrafiltered pancreatic preparations, a curing effect on fatty livers was obtained. No such effect could be shown with choline chloride in much greater quantities. Differences between the lipotropic principle of pancreatic extracts and choline were found in their respective behavior toward absorbents, precipitants and especially in their resistance against boiling. No similar curing effect on fatty livers could be detected in extracts of liver and brain.—B. SCHAPIRO and E. WERTHEIMER. *Arch. intern. pharmacodynamie.*, 64 (1940), 265. (W. H. H.)

Pantothenic Acid and Inositol—Relationship of, to Alopecia in Mice. Rats on a diet deficient in both factors develop severe symptoms and finally lose their hair, but it is gradually restored on feeding of pantothenic acid. In mice, both substances have an influence on hair growth but the influence of pantothenic acid exceeds that of inositol.—D. W. WOOLLEY. *Proc. Soc. Exptl. Biol. Med.*, 46 (1941), 565. (A. E. M.)

Peptones—Comparative Study of, by Trypan Blue Reaction. Solutions of peptones (0.05, 0.15, 0.5, 1.0, 2.0, 4.0, 6.0 and 8.0%) were injected in 0.2-cc. quantities intradermally into the flank of white rabbits, followed by an intravenous injection of 10 cc. of a 1% solution of trypan blue. Readings of the spread of the dye round the site of injection were taken after about forty minutes. Large variation has been observed between different brands of peptone and a small one between different batches of the same brand of peptone. The possible application to clinical efficiency and peptone standardization is discussed.—G. E. SHAW and H. G. HIND. *Quart. J. Pharm. Pharmacol.*, 13 (1940), 267–270. (S. W. G.)

Pharmacology—Study and Teaching of. The development of pharmacology from the early herb users to the present is given as an introduction to a discussion of the manner in which information should be presented to students of the subject. The value of the knowledge obtained in the study of pharmacology to the practicing physician is pointed out and the fact that the study of pharmacology does not end with the student's graduation is stressed.—H. A. MCGUIGAN. *Merck Rept.*, 50 (1941), 12–14. (S. W. G.)

Phenacetin to Anaesthesin. A review of the development and pharmacological properties of the products from phenacetin to anesthesin.—EDUARD RITSERT. *Scientia Pharm.*, 12 (1941), 9–10. (H. M. B.)

Penothiazine—Examination of the Urine of Sheep, Dosed with. Animals receiving phenothiazine excrete a red product in the urine which prevents bacterial decomposition of this excretion. Previous workers claim the red product to be thionol, an oxidation product of phenothiazine. Thionol occurs in urine also as the leuco base. No crystalline derivative of thionol has been prepared and it was only characterized by a study of oxidation-reduction potentials. The mode of excretion of phenothiazine has now been studied by these experiments. Four hundred and fifty millileters of urine were collected over a period of twenty-six hours from a sheep which received 10 Gm. of phenothiazine. The urine was acidified and cooled, whereupon 1.1 Gm. of a pink solid crystallized. This proved to be unchanged phenothiazine. A chloroform extract of the urine yielded 0.83 Gm. of a reddish brown solid. Chromatographic adsorption of this solid separated it into two functions which were shown to be thionol and phenothiazone, respectively. Thionol was proved by a comparison of its iron arc absorption spectra with that of pure thionol. Phenothiazone was proved by a mixed melting point determination with an authentic sample. All three compounds occur in the urine in combination with other constituents and the two oxidized materials are eliminated mainly as the leuco base.—M. LIPSON. *Australian J. Exp. Biol. Med. Sci.*, 18 (1940), 269–272. (W. T. S.)

Phenylfurylethylamine—Actions of, and Analogous Bases. The author's findings are summarized as follows: 1. The pharmacology of phenylfurylethylamine (1), phenylthienylethylamine (2), phenylfurifylethylamine (3) and *p*-methoxyphenylthienylethylamine (4) has been investigated. 2. The LD_{55} for intraperitoneal injection in white mice is approximately (1) 0.18 Gm./Kg., (2) 0.31 Gm./Kg., (3) 0.24 Gm./Kg. and (4) 0.48 Gm./Kg. 3. The first two compounds stimulate and the last two depress the central nervous system of mice. All four compounds potentiate the pressor effect of adrenaline in the spinal cat. 4. Phenylfurylethylamine and phenylthienylethylamine counteract the bronchoconstrictor and vasodilator effect of histamine in the spinal cat to a marked extent.—J. D. P. GRAHAM. *Quart. J. Pharm. Pharmacol.*, 13 (1940), 305–311. (S. W. G.)

Pituitary Extract (Posterior Lobe)—Effect of Wide Range of Doses of, on Retention of Body Water in Frogs. The following summary is given: When frogs are kept out of water in the late spring and summer, pituitary (posterior lobe) extract inhibits the loss of normal body water. A maximal inhibitory effect is registered by doses as low as 10^{-5} International Units per 10 Gm. of frog, and doses between 10^{-9} and 10^{-15} International Units have no significant Effect.—E. M. BOYD and A. L. SEGAL. *Quart. J. Pharm. Pharmacol.*, 13 (1940), 301–304. (S. W. G.)

Prontosil—Mode of Action of. After Domagk's discovery in 1935 of the antistreptococcal activity of prontosil, the Tréfouels, Nitti and Bovet postulated that is acted by being reduced *in vivo* to sulfanilamide. This is supported by the fact that sulfanilamide itself is active and also confirmed by the fact that prontosil is reduced *in vitro* to an active substance. Other workers claim that prontosil has some action *per se* since it shows specific curative action in some cases where sulfanilamide fails. The present authors fed 3 therapeutically inactive dyes and 3 therapeutically active dyes to mice and then after three hours estimated the sulfanilamide content of the blood. The active dyes gave concentrations of from 1.6 to 2.2 mg. per cent while the inactive dyes gave only traces. All six dyes were reduced by strong reducing agents but there is no correlation between the activity of the dyes and their behavior, in highly diluted solution, to mild reducing agents. Thus the hypothesis of the Tréfouels is supported.—K. GANAPATHI and R. SANJIVA RAO. *Indian J. Med. Research*, 28 (1940), 327–332. (W. T. S.)

Propylene Glycol—Quantitative Gastrointestinal Absorption and Renal Excretion of. Experiments were carried out on cats, rats and rabbits. Absorp-

tion of propylene glycol occurs from all regions of the gastrointestinal tract, particularly from the jejunum. One-third of the absorbed glycol is excreted by the kidneys, the remaining two-thirds is metabolized in the body.—W. VAN WINKLE, JR. *J. Pharmacol.*, 72 (1941), 344–353. (H. B. H.)

Quinua—Pharmacological Use of. Quinua is an Andean plant of the Chenopodium family, similar to goosefoot. Its small grains are farinaceous and have a bitter saponin covering. As a food it is rich in phosphoric acid, calcium salts, proteins, fats and albuminoids. The white grains are esteemed better than the yellow, red or brown ones. Experiments are being made in crossing varieties to eliminate the bitter taste of the saponin and improve the vitamin content. Its pharmaco-medical uses have been as a lotion, an emetic, a diuretic and emollient. A paste of the grains is used in place of a plaster cast in fractures, and the leaves are prepared as poultices in cases of erysipelas and other skin irritations. The stalks, charred and powdered, are mixed with coca as a diluent for that soothing drug. Modern scientific investigation indicates its value in lactation, infantile rickets and as a tonic in pretuberculous cases because of its calcium and phosphorous content.—E. LAZO DIAZ. *Rev. farm. Peruana*, 9 (1940), 6. (G. S. G.)

Rontgen Contrast Agents—Modern. A chemical and pharmacological review is presented of the means employed in examining the various organs and parts of the body by means of X-rays. Fifty references.—MAGDA STAPPENBECK. *Deut. Apoth. Ztg.*, 55 (1940), 674–675; through *Chem. Abstracts*, 35 (1941), 1932. (H. M. B.)

Saponin—Effect of, on the Osmotic Hemolysis of Chicken Erthrocytes. Chicken erthrocytes exposed to low concentrations of saponin have their membranes altered. By removing the saponin and resuspending the cells in Ringer-Locke, they will remain unhemolyzed for several days, even though the membranes have been altered. These cells are more permeable to both lipoid-soluble and lipoid-insoluble molecules. The penetration of both types of molecules appears to be affected equally. The rate of penetration of a large molecule such as molonamide is increased more by this treatment than the rate of penetration of a smaller molecule such as glycerol. The fragility of these cells is not increased by this treatment.—F. R. HUNTER, S. B. BARBER and A. P. CAPUTI. *Biological Bulletin*, 80 (1941), 68. (A. C. DeD.)

Shock Induced by Hemorrhage—Studies on. I. Effect of Thiamine on Survival Time. Shock was induced in etherized dogs by hemorrhage. Those treated with thiamine had a survival time 2.4 times that of the controls. This prolongation of survival time was accompanied in most instances by a significant sustained rise in blood pressure in the treated animals. **II. Effect of Thiamine on Disturbances of Carbohydrate Metabolism.** Dogs were put into a condition of shock by hemorrhage. Blood studies showed that shock was associated with a hyperglycemia and an increase in keto acids. Thiamine administration lowered these values and prolonged life. Prolongation of life with accompanying sustained rise in blood pressure after thiamine was more marked in those animals locally anesthetized with procaine than in those under ether anesthesia—WM. M. GOVIER and C. M. GREER. *J. Pharmacol.*, 72 (1941), 311–319; 321–330. (H. B. H.)

Sodium Diphenyl Hydantoinate. Sodium diphenyl hydantoinate in dilutions of 1:50,000 to 1:1,000,000 causes a decrease in general tonus and force of the rhythmical contractions of segments of excised rabbit intestine both duodenum and ileum. The degree of loss of tonus and decreased force of contractions is dependent upon the concentration of the drug in the bath. In the dilutions used the depression lasted as long as the drug remained in contact with the tissues. Sodium diphenyl hydantoinate decreases the general tonus of the gut when it is injected intravenously in dogs with Thiry-Vella loops of either the ileum or the jejunum.—C. M. GRUBER, V. G. HAURY and M. E. DRAKE. *Arch. intern. Pharmacodynamic*, 64 (1940), 308. (W. H. H.)

Sombong—Hypotensive Action of. The Sombong (*Blumea balsamifera* DC.) plant is located in the region around Indo-Malay and contains as was found by R. Herskovitz, a camphor, a pyrocatechin tannin and a glucoside. His aqueous extract possessed a triple action, hypotensive, vasodilating and inhibits the excitation of the sympathetics. The author relates two cases of nervous hypertension due to the war which benefited by the use of a daily dose of 1 Gm. Under the influence of this medication digestive troubles and arterial pressure return to normal.—H. LECLERC. *Soc. de Therp.*, May 8, 1940; through *Presse méd.*, 60–61 (1940), 658. (W. H. H.)

Sulfadiazine—Absorption, Excretion and Distribution of. Data are presented concerning the absorption and excretion of sulfadiazine after single and repeated doses. Higher blood levels are reached and these are more sustained than with any of the other sulfonamides (sulfanilamide, sulfapyridine and sulfathiazole). Conjugation of sulfadiazine in the blood is usually slight and there is no tendency for the conjugated drug to be retained. The distribution of sulfadiazine in various tissues and between red blood cells and plasma is similar to that of sulfathiazole. In its penetration into the spinal fluid, sulfadiazine resembles sulfanilamide and sulfapyridine. Sulfadiazine is not absorbed to any appreciable extent after rectal administration, and the sodium salt is only slightly absorbed from that route. Preliminary clinical experience indicates that nausea, vomiting and mental depression are notably absent in patients treated with sulfadiazine and other serious toxic effects have not been encountered thus far. The therapeutic results in patients with pneumonia and a variety of other infectious diseases suggest that the drug has considerable efficacy. These findings indicate further clinical trials with this drug are justified.—O. L. PETERSON, E. STRAUSS F. H. L. TAYLOR and M. FINLAND. *Am. J. Med. Sci.*, 201 (1941), 357. (B. H.)

Sodium Diphenyl Hydantoinate (Dilantin)—Effects of, on the Blood Ascorbic Acid Level in Guinea Pigs. Dilantin produced a rapid and progressive fall in the blood ascorbic acid level of guinea pigs on a vitamin C free diet supplemented with 5 mg. ascorbic acid daily. Three weeks were necessary after cessation of dilantin treatment for the blood levels to reach normal.—MILES E. DRAKE, CHARLES M. GRUBER, VICTOR G. HAURY and E. ROSS HART. *J. Pharmacol*, 72 (1941), 383–385. (H. B. H.)

Sodium Sulfapyridine—Intravenous Use of, in the Treatment of Pneumonia and Pneumococcus Infections. No severe toxic reactions were seen during or following 115 intravenous injections of sodium sulfapyridine. Response to treatment is more immediate with intravenous sodium sulfapyridine than with oral sulfapyridine. Repeated at 12-hour intervals a dose of 0.06 Gm. per kilo maintains a level of from 6 to 15 mg. per 100 cc. The concentration of sulfapyridine in the stomach contents probably produces sufficient gastric irritation to play an important part in the production of nausea and vomiting. Intravenous sodium sulfapyridine is a valuable agent in critical patients when an immediate effective blood level is desired. Fear of reactions following the intravenous administration

of sodium sulfapyridine seems unwarranted and should not limit its more general application.—W. WINTERS, W. W. FOX and R. ROSI. *J. Am. Med. Sci.*, 201 (1941), 216. (B. H.)

Sulfanilamide, Sulfapyridine, Sulfathiazole and Sulfamethylthiazole—Absorption, Excretion and Distribution of. The following summary is given. Data are presented concerning the blood concentrations and urinary excretion of sulfanilamide (I), sulfapyridine (II), sulfathiazole (III) and sulfamethylthiazole (IV) and of the sodium salts of the latter three drugs after the administration to human subjects of a single 5-Gm. dose by various routes. In general, the sodium salts given intravenously or orally yielded higher blood levels and these levels were attained more rapidly than when the corresponding drugs were given by mouth. The highest levels were obtained with sodium III. Sulfathiazole and its sodium salt were excreted more rapidly into the urine than either I or II. All the drugs, with the exception of IV, were excreted more or less quantitatively after intravenous or subcutaneous injection, and almost all of the administered drugs were recovered from the urine after their oral administration. Only about 60% of administered IV was recovered from the urine, regardless of the route by which it was given. Sulfathiazole showed the least amount of conjugation and II showed the most. After oral administration of sodium II, the percentage of acetylated drug in the blood and urine was considerably lower than that found after II itself was given by mouth. Different subjects varied with respect to their absorption, excretion and conjugation of the different drugs. There were apparently fewer variations with sulfathiazole than with any of the other compounds. Sulfanilamide was fairly well absorbed from the rectum. All the other drugs were poorly absorbed after rectal administration and this absorption was only slightly better when the sodium salts were used. The para-acetyl derivatives of I, II and III were poorly absorbed after oral administration. The acetylsulfanilamide was absorbed somewhat better than the others. Only a small percentage of these drugs was deacetylated in the human body. The four compounds were found to distribute themselves differently between the blood plasma and the red blood cells. Sulfanilamide was found in the red blood cells in greater concentrations than in the plasma, II was about equally distributed, III was present in somewhat greater concentrations in the plasma and IV was found mostly in the plasma. Sulfathiazole was cleared from the blood at a rate which was greater, and IV at a rate which was lower than either I or II. The clearance rates of these drugs indicated varying degrees of tubular reabsorption which was greatest for IV and least for III. Data are also presented concerning the concentration of I, II and III in body fluids and organs of 19 patients who died during treatment with these drugs. There were considerable variations among the different cases. The concentrations of the drugs were higher in the bile and lower in the spinal fluids than in the blood. Sulfathiazole was present regularly in the spinal fluid in about one-third the concentration found in the blood. Sulfapyridine and III were found in the kidney in considerably higher concentrations than in the blood and other organs. The concentrations of I were about the same in the various organs studied, including the kidney. In the liver, the amounts of acetylated drug were always less, although the concentrations of free drug were frequently higher than in the blood. This was true of I, II and III.—E. STRAUSS, F. C. LOWELL, F. H. L. TAYLOR and M. FINLAND. *Ann. Internal Med.*, 14 (1941), 1360–1382. (S. W. G.)

2-Sulfanilamido Pyrimidine—Absorption, Distribution and Excretion of, in Man. The behavior of 2-sulfanilamido pyrimidine (sulfapyrimidine, sulfadiazine) when administered as a single dose by mouth or as multiple doses by mouth to humans resembles that of sulfapyridine more nearly than that of sulfathiazole. Sulfapyrimidine is readily absorbed from the gastrointestinal tract of most individuals. Sulfapyrimidine is not excreted as readily as sulfathiazole and disappears from the blood slowly. Smaller quantities of the former are required to maintain a given level in blood. Concentrations of acetylated drug found in blood did not differ from those previously observed in studies of sulfathiazole. Sulfapyrimidine is present in peritoneal and pleural fluids in concentrations approximating those in blood. In cerebrospinal fluid, concentrations averaging 50% of the blood concentration have been found. As regards toxicity, limited experience has revealed evidence that in man it is at least no greater than that of other drugs of this group now used in the treatment of pneumonia.—J. G. REINHOLD, H. F. FLIPPIN, L. SCHWARTZ, A. H. DOMM. *J. Am. Med. Sci.*, 201 (1941), 106. (B. H.)

Sulfapyridine—Inhibition of, by Procaine in Chest Fluids after Procaine Anesthesia. The average concentration of procaine in pleural fluid removed with this anesthetic was 0.0002%. Sulfapyridine in concentrations as high as 0.005% was inhibited by procaine *in vitro*. Concentrations of uretane as high as 0.05% do not inhibit the action of sulfapyridine *in vitro*.—DANIEL A. BOROFF, ANITA COOPER and JESSE G. M. BULLOWA. *Proc. Soc. Exptl. Biol. Med.*, 47 (1941), 182. (A. E. M.)

Sulfapyridine Sodium (Soludagenan)—Levels of, in the Blood of Patients Suffering from Lobar Pneumonia. A study of 14 cases revealed that the optimal levels of this drug for patients suffering from pneumonia is 8–10 mg. of free sulfapyridine per 100 cc. of blood for serious cases, 4–6 mg. per cent for moderately severe cases, and 3–4 mg. for late or mild cases.—P. T. KUO, HANS ROTTENSTEIN and Y. C. HO. *Chinese Med. J.*, 58 (1940), 534–544. (W. T. S.)

Sulfathiazole—Excretion of, in Tears. Conjunctivitis is observed as an occasional by-effect during treatment with sulfathiazole. The amount of sulfathiazole excreted in the tears is not proportional to the concentration in the blood. It does not seem that the quantity present can be responsible for the development of conjunctivitis.—JACOB TURKELL and SEYMOUR F. WILHELM. *Proc. Soc. Exptl. Biol. Med.*, 47 (1941), 97. (A. E. M.)

Therapeutic Substances—Chemistry of. I. Sympatheticomimetic Amines. The pharmacological action and chemical structure of the sympatheticomimetic amines is discussed.—F. PRESCOTT. *Chemist and Druggist*, 134 (1941), 214. (A. C. DeD.)

Thiamine—Diphosphoric Ester of, Importance of. Proper functioning of the brain is dependent on a carbohydrate substrate and an adequate supply of oxygen. Various enzyme and coenzyme systems are necessary for the complete breakdown of carbohydrate for utilization by the brain. Cocarboxylase, which is the diphosphoric ester of thiamine, is necessary for the breakdown of pyruvic acid, one of the normal intermediary products of carbohydrate catabolism. In diseases due to vitamin B_1 deficiency, pyruvic acid accumulates in the body fluids. Since thiamine is needed by all the cells of the body to insure the adequate oxidation of carbohydrates and is specifically valuable for the proper functioning of nerve tissue, the authors believe that vitamin B_1 therapy is important as a safeguard to the child. They have determined the amounts of cocarboxylase in the blood of infants and children, and conclude that a young child should

have a value for cocarboxylase of 10.0 micrograms or more per 100 cc. of blood.—F. W. SCHULTZ and E. M. KNOTT. *Am. J. Dis. Child.*, 61 (1941), 231; through *Abbott Abstract Service*, (1941), No. 914. (F. J. S.)

Thyroxin—Subcutaneous Implantation of. During the last year or two experiments with several different hormones have shown that subcutaneous implantation of the solid material is followed by a gradual absorption of the active principle at a much slower rate than with other methods of administration, but little attention has been paid to the effect of implantation of thyroxin. The author therefore records the results of experiments carried out to determine this effect. The animals employed were male guinea pigs weighing from 300 to 600 Gm. the action of the thyroid powder and of the thyroxin was measured by the increase produced in the basal metabolism of the guinea pigs. After the guinea pigs had become accustomed to remaining in the metabolism apparatus for two or three hours, their normal basal metabolism was determined at 25° C. A series of experiments was carried out on each animal and the mean result calculated. The response of each animal was next determined to a given dose of thyroid powder containing a known amount of thyroxin. This was administered through a pipette in the form of a suspension prepared with compound powder of tragacanth. After several weeks' rest to ensure that their metabolism had returned to normal before implantation of thyroxin, two sizes of thyroxin tablets were employed, one containing 25 and the other 50 mg. Determinations of the basal metabolism were then made at different intervals from three to nineteen days after implantation. The effect of the implanted thyroxin only lasted about three weeks and, since effects of this duration can readily be obtained by oral doses of thyroid, the author concludes that there is no obvious advantage in implanting tablets. The fact that the thyroxin caused the animals to lose a considerable amount of weight showed that there was a danger of toxic effects, and it is suggested that great caution be employed in the implantation of thyroxin tablets in human subjects, and that preference be given to the oral administration of thyroid, which appears to be much safer and more effective.—F. WOKES. *Chemist and Druggist*, 134 (1941), 267. (A. C. DeD.)

Tincture of Ipecac—Biological Studies on. The action of tincture of ipecac on the pendular motion of the isolated rabbit intestine is not strictly proportional to that of a corresponding amount of emetine and cepheline, but is stronger. With the same alkaloid contents, the same action is observed, irrespective of the temperature at which the tincture was prepared. Products prepared at 35° and 50° C. exert the same physiological activity on the isolated rabbit intestine; this indicates that there does not seem to be any hydrolysis of the active principle of ipecac. At the doses of tincture of ipecac required to arrest the pendular movement of the rabbit intestine, and under the experimental conditions used, 70% alcohol exerts a negligible action. A dealcoholized tincture made back to its original volume with Tyrode's solution is slightly less active toward the isolated intestine than normal tincture.—A. ASTRUC, J. GIRUX and S. BARRAU. *J. pharm. chim.*, [9], 1 (1940), 185–201. (A. P.-C.)

Ursolic Acid—Non-Toxic Character of. Introduction and Review of Literature. Ursolic acid is a monohydroxytriterpene which is widely distributed in nature. It is being introduced as an emulsifying agent in pharmaceutical and food preparations. That used in the present study was prepared from cranberry skins. Rats, guinea pigs, chickens and rabbits were fed orally at levels of from 1 Gm. to 5 Gm. per Kg. of body weight. It was found to be non-toxic.—J. A. LUBITZ and C. R. FELLERS. *Jour. A. Ph. A.*, 30 (1941), 207. (Z. M. C.)

Virgin and Parous Animals—Criterion for Distinguishing between. A criterion is outlined for distinguishing between virgin and parous rats and mice. It consists of an examination of the uteri of the animals, noting the appearance of the mesometrial border of the uteri. In parous animals brown spots persist, each indicating the site of a former placental attachment. These spots consist of groups of hemosiderin-laden macrophages and persist for at least a year. They thus demonstrate the blockage of at least part of the reticulo-endothelial cells of the uterus throughout this period. Rabbits and guinea pigs do not show the hemosiderotic areas.—R. A. DENO. *Pharm. Arch.*, 12 (1941), 12. (A. C. DeD.)

Vitamin D Therapy—Mode of Activity of, in Rickets. The concentration of phosphorus in the serum is usually reduced in rickets and the amount of parathyroid hormone has been found to be increased. Under normal conditions there is a limiting maximal rate of reabsorption of phosphate by the renal tubules and the phosphate filtered through the glomeruli, which is in excess of the maximum that can be reabsorbed by the renal tubules, is excreted in the urine. In experiments by the authors, the prompt increase in the tubular reabsorption of phosphate observed following the administration of vitamin D suggests that the vitamin exerts a direct effect upon the renal tubule cells. Following injections of parathyroid extract, there was a considerable decrease in the rate of reabsorption of phosphate. The low serum phosphorus found in rickets may be due to the secondary hyperparathyroidism present, which is explained as a compensatory response to calcium deficiency resulting from the failure of the intestinal tract to absorb calcium.—H. E. HARRISON and H. C. HARRISON. *Jour. Clin. Invest.*, 20 (1941), 47; through *Abbott Abstract Service*, (1941), No. 912. (F. J. S.)

Vitamin K and Hypoprothrombinemia in Nutritional Deficiency States. Elimination of vitamin K from the diet does not readily produce dangerous symptoms but in man a moderate deficiency may frequently exist. To investigate this possibility, the Quick's method was used to make a study of the plasma prothrombin in 48 hospital patients suffering from diseases associated with a lack of the vitamin B complex. The findings in this series were compared to those in another of the same age group in a different part of the country. All but six patients had prothrombin values above 80% of the normal and only one below 60%. Complications, as diarrhea, do result in a serious deficiency of this vitamin and chronically debilitated patients show a moderate hypoprothrombinemia.—E. D. WARNER, TOM D. SPIES and C. A. OWEN. *Southern Med. J.*, 34 (1941), 161–163. (W. T. S.)

Vitamin K—Routes of Administration of Materials Capable of Acting as. The percutaneous route affords a means of conveniently administering slightly soluble material possessing vitamin K activity. Doses as small as 1γ per chick successfully cured approximately 50% of a series of depleted chicks. Larger doses afforded protection for relatively long time.—EDWIN J. DE BEER, LEON DREKTAR and BERTRAND FLUSSER. *Proc. Soc. Exptl. Biol. Med.*, 46 (1941), 535. (A. E. M.)

TOXICOLOGY

Acetanilid Studies. II. Chronic Toxicity. Following oral administration it appears that cats and humans are most susceptible, followed by rabbits, monkeys, guinea pigs and dogs, in the order given. Rats and mice appear to be the least susceptible. Cyanosis appears to develop following chronic ad-

ministration and the cause of this has not been definitely established. The fatal dose by chronic administrations is excessively high; for man the dose to cause death appears to be more than 65 mg./Kg. per day for a period of three years. It is concluded that acetanilid should not be included among those poisons responsible for death. Sixty-three references.—JAMES C. MUNCH, LILIAN M. PHILLIPS and STEVENSON P. GARRETT. *Pharm. Arch.*, 12 (1941), 33–48. (H. M. B.)

Atropine Poisoning—Unusual Case of. A case of accidental poisoning in a man aged 73 is described and the unusual features briefly discussed. Recovery occurred after 5 drachms of *linimentum belladonnæ* (the equivalent of 1.2 grains of atropine alkaloid) had been taken and no treatment given until ten hours afterward. Certain unusual symptoms are mentioned. Treatment comprised morphine, physostigmine and spinal drainage.—A. B. CARTER. *Brit. Med. J.*, 4167 (1940), 664. (W. H. H.)

Barbiturate Intoxication—Treatment of, with Special Reference to Picrotoxin. Of the twenty cases reported fifteen patients recovered and five died. Serious poisoning was noted only when approximately twelve times the usual dose of the drug is ingested. Ordinary stimulants are ineffective, except in mild cases. Picrotoxin is effective in the treatment of this condition, and no ill effects have been observed following its use. It must be administered in dosages sufficient to keep the patient in a slightly restless condition. Prompt lavage of the stomach, followed by the injection of glucose and sodium chloride solutions, for diuresis, is an important part of the treatment. In a number of cases skin lesions resembling giant bullæ occurred in pressure areas.—J. P. ANDERSON. *Ann. Internal Med.*, 14 (1941), 2037–2046. (S. W. G.)

Bile Peritonitis—Rapid Death in. A case of postoperative bile peritonitis is presented in which the outstanding feature was the rapidity of death. The various factors involved in the high mortality of the condition are discussed.—D. M. DOUGLAS and G. G. TURNER. *Brit. Med. J.*, 4156 (1940), 280. (W. H. H.)

Cobra Venom—Plant Antidotes for. In India large numbers of plants are used empirically, especially those used as antidotes for snake venom. The present article discusses those used in the Portuguese districts of Goa, Damao and Diu. There is a long list of venomous serpents including *Cobra capelo, C. cuspideira,* Viper, Boa, *C. Sancollo, C. Alcatifa,* Erbello, Manilha, etc. Numerous plants are used to treat domestic animals attacked by cobras, some of which are specifics used only in limited districts. Roots, bark or leaves are extracted in water and used both internally and locally. Among these plants listed and described are: *Strychnos colubrina* or Panri, *Glycosmio pentaphylla* or Meniqui, *Abrus precatorius* or Alcacuz, *Tinospora cordifolia* which is an excellent antipyretic and whose common name is "root of 21 Cobras;" and numerous others. Sera are also used in treatment of cobra wounds, but since many cobras have specific poisons, a general or mixed anti-venom is not always efficacious. Anti-venom serum C, a specific for certain Indian cobras is prepared from sera of guinea pigs immunized against several different species of cobra and serpent. British India has several laboratories to combat these poisons. However the majority of the inhabitants depend on their various plant antidotes, which save at least 60% to 70% of the cases injured.—ANTONIO DA PIEDADE NORONHA. *Noticias farm.*, 6 (1940), 332. (G. S. G.)

Lead Poisoning among Hindu Women and Children. The hair, urine and excreta of Hindu women have been found abnormally rich in lead due to the use of hair oils containing red lead. This prolonged and slow absorption of lead has not resulted in the classical type of lead poisoning but many of the women show symptoms of insidious lead poisoning as: anemia, menstrual disturbances, abortion, dyspepsia, high blood pressure, etc. It is difficult to always trace these symptoms to lead poisoning and for the sake of protection the author discusses the advisability of prohibiting the sale of all hair oils containing red lead. The whole question of lead poisoning is opened but there is little evidence that lead poisoning from other sources is widespread in India.—RAI BAHADUR. *Indian Med. Gaz.*, 76 (1941), 23–29. (W. T. S.)

Organic Solvents—Pharmacology and Toxicology of. The present report considers the pharmacodynamic action and, in particular, the influence upon the cardiovascular system of certain industrial organic solvents appearing in different chemical families. In the first part the experimental considerations were made upon the posterior vascular territory of the rat, the isolated loop of rabbit intestine, the frog heart and the vasomotor system of the dog. Benzene occupies first place in the scale of toxicity of the organic solvents studied. Toluene and xylol are somewhat less toxic. The chloride compounds studied showed toxic characteristics which are closely related to those of benzene. In this respect the author has observed a particular manifestation of this toxicity: adrenalo-dichlorethylene and adrenalo-ethylenechloride are essentially comparable to adrenalo-chloroformic, adrenalo-benzene and adrenalo-petroleum ether. Ethylene chloride is the least toxic of the three solvents studied while trichlorethylene is more toxic than dichlorethylene. The second part shows a study by a cardiometric method of the influence upon the myocardiac fiber by inhalations of the particularly toxic solvents; the chloride compounds were compared with those obtained under the same experimental conditions with inhalations of commercial benzene, pure benzene, petroleum ether and amyl acetate vapors. Commercial and pure benzene was found to be grave cardio-depressant; sometimes the commercial form was found to be more toxic and capable of producing ventricular fibrillation. Petroleum ether and the chloride compounds, of the same titer as benzene, depress the contractions, dilate the heart and diminish cardiac debt. Ethylene chloride which is less toxic than dichlor or trichlorethylene has not manifested a depressive action even after the inhalation temperature was raised. Pure amyl acetate has no action upon the heart even at 30°, around the ordinary temperature. In all the cases it may be said that the raising of the inhalation temperature of the solvent vapors accelerates and intensifies the toxic effects upon the myocardiac and vasomotor systems.—J. BARZIN. *Arch. intern. pharmacodynamic*, 64 (1940), 313. (W. H. H.)

Pamaquin—Comparison of the Biological Action of, with That of Plasmoquine. To determine whether pamaquin HCl, recently synthesized by Imperial Chem. Ind. Ltd., is chemically identical with plasmoquine HCl (Bayer), toxicity and activity tests have been carried on these chemicals. Toxicity tests in canaries, hens, mice and monkeys; and activity tests against canary, fowl, monkey and human malaria confirm the view that pamaquin and plasmoquine are chemically identical.—ANON. *Ann. Trop. Med. Paras.*, 34 (1940), 233–228. (W. T. S.)

Petroleum Cresylic Acids. A study of the toxicity of cresylic disinfectants by: (1) vapor inhalation, (2) *per os* administration, (3) skin irritation, (4) tissue toxicity (safety margin between concen-

trations having bactericidal properties and concentrations causing tissue damage) was conducted. No essential differences in toxicity of vapors of cresylic acids of various types were observed. However, the higher boiling petroleum cresylic materials were less toxic when ingested, and less irritating to the skin, than low boiling cresylic materials. Furthermore, a disinfectant prepared from a high boiling petroleum cresylic acid was bactericidal at concentrations non-injurious to living chick heart tissue. This was not the case with similar disinfectants made from lower boiling cresylic acid.—J. CAMPBELL. *Soap*, 17 (1941), 103; through *Am. J. Pharm.*, 113 (1941), 164. (A. C. DeD.)

Poisonous Substances—Small Detector Tube for Detection of. Construction of end caps and means for retaining the gauze screens are described.—J. SIGMUND. Brit. pat. 519,957; through *J. Soc. Chem. Ind.*, 59 (1940), 646. (E. G. V.)

Pyrrolidines—Insecticidal Action of Some Substituted. No general relation exists between the toxicity and the dissociation constants of these bases. Hydrogenation to the corresponding pyrrolines lowers the toxicity. *l*- and *d-cyclo* hexylpyrrolidine have identical toxicities. The racemic form is much the less toxic.—J. G. KIRCHNER. *Iowa State Coll. J. Sci.*, 14 (1939), 53–54; through *J. Soc. Chem. Ind.*, 59 (1940), 477. (E. G. V.)

Selenium-Containing Organic Compound from Plant Material—Isolation of Crystalline. In connection with a study of the diseases of farm animals apparently caused by selenium in grain, it has been shown definitely that the selenium is present in an organic form intimately associated or combined with protein. Analytical results correspond to the empirical formula $C_{21}H_{44}N_6Se_2SO_{12}$. The compound appears to be an amino acid and work on it is being continued.—M. J. HORN and D. B. JONES. *J. Am. Chem. Soc.*, 62 (1940), 234. (E. B. S.)

Sulfamethylthiazole (Ultraseptyl). This drug has a low toxicity in mice, is four times as active as sulfapyridine *in vitro* and is highly effective in experimental infections with streptococci, staphylococci and pneumococci. A high concentration is rapidly attained in the blood and only a small proportion is converted into the inactive acetyl derivative. The drug should be satisfactory in the treatment of pneumonia, epidemic meningitis and gonorrhea. Toxic effects are slight and infrequent.—A. FISCHER *Schweiz. med. Wochschr.*, 70 (1940), 666; through *Quart. J. Pharm. Pharmacol.*, 13 (1940), 368. (S. W. G.)

Tryparsamide and Neocryl—Toxicity of. A series of 570 unselected cases were treated either with tryparsamide or neocryl. The drugs were given in equal amounts, and 256 received tryparsamide and 314 neocryl. About twelve months after the work had been completed a survey was made of the records with a view of comparing the therapeutic effects and toxic manifestations of the two compounds. This survey confirmed the earlier impression that neocryl is not in any way inferior to tryparsamide as a therapeutic agent and that the toxic effects from its use are much less common than are those caused by tryparsamide. Of 256 cases treated with tryparsamide 78 exhibited toxic manifestations, whereas of 314 cases treated with neocryl only 27 showed toxic signs. Both compounds may cause jaundice, dermatitis and other undesirable reactions that are seen after the administration of trivalent arsenicals; but it is chiefly in its relative innocuity to the optic nerve that the advantages of neocryl become apparent. Visual disturbance occurred in 47 of the 78 cases which reacted unfavorably to tryparsamide: in 36 of these the signs were subjective, but in 11 they were objective, 3 of the latter patients becoming totally blind. Neocryl could, however, be held accountable for only one case of visual damage. It would appear from this analysis that neocryl is to be preferred in all cases of neurosyphilis in which the administration of pentavalent arsenicals is necessary.—A. O. F. ROSS. *Brit. Med. J.*, 4156 (1940), 283. (W. H. H.)

War Gases and Medical Supplies. Precautions to be taken against gas contamination of medical supplies are given in a circular (No. 2385) issued recently by the Ministry of Health. Precautions for dressings, medicines in metal containers, rubber materials and furniture and instruments are given.—*Chemist and Druggist*, 134 (1941), 348. (A. C. DeD.)

THERAPEUTICS

Addison's Disease—Treatment of, with Pellets of Synthetic Desoxycorticosterone Acetate Implanted Subcutaneously. Two patients with Addison's disease who had been treated from 2 to 3 years with cortical extract injections and salt by mouth were placed on desoxycorticosterone acetate in oil. After the daily quantity of this substance necessary for satisfactory maintenance had been determined, these patients were subsequently implanted with pellets of crystalline desoxycorticosterone acetate. The implantation of pellets of the synthetic hormone resulted in a gain of body weight, an increase in blood pressure, general physical improvement and return to normal activity. Clinical improvement was associated with a normalization of the blood electrolyte relationship during 10 months of observation. One patient with Addison's disease was treated over a period of 8 years with cortical extract injections and large doses of salt by mouth. No change of treatment was attempted in this case since this patient's symptoms were adequately controlled in this way.—G. SEGALL. *J. Am. Med. Sci.*, 201 (1941), 202. (B. H.)

Anemias in Infancy and Childhood. Recent contributions in hematology have thrown a great deal of light upon the interplay of forces which maintain blood equilibrium. The diverse blood pictures outlined in this presentation indicate that certain essential hematopoietic factors are still unknown and await discovery. The detection of blood disturbances and discernment of the finer diagnostic morphologic details of reacting blood cells lie within the province of every practitioner by the painstaking use of simple instruments and techniques. In infancy and childhood the observations must, however, be interpreted with reference to the changing blood levels accompanying normal growth. With the guiding principle that anemia represents a symptom rather than a disease, and by a diligent search for a deficiency or other causative factor, rational treatment can then be substituted by the judicious administration of the few but reliable antianemic agents.—C. H. SMITH. *Bull. N. Y. Acad. Med.*, 16 (1940), 525. (A. C. DeD.)

Beriberi in Ancient Chinese Medical Literature. Beriberi has been known in China since time immemorial. The disease was first noted under the name "Chueh" in one of the earliest Chinese writings, the "Su Wen" (c. 2697 B. C.). Later, in the "Tso Chuan" (344 B. C.), the disease was described as "Ch'en Ni'Chung T'ui," meaning edematous and heavy legs. The "Shih Hsiao Ya," written about the same time, made mention of this disease under the title, "Wei-chung," meaning leg sickness and swollen feet. Subsequent writings assigned various names to the disease from the symptoms produced. Beriberi was not so prevalent until after the Chin dynasty. At first, various authors attributed the disease to internal disorders and dampness of the ground. Chen Ts'ang Ch'i was the first

to note that continued eating of highly polished rice gives rise to the various symptoms now known to constitute this disease. The treatment of beriberi in ancient Chinese medicine may be divided into a number of categories, namely, by medication, by cupping, by active exercise, by hot fomentation, by vapor bath, by rubbing and application of ointment and by prevention. Some of the drugs recommended in early Chinese writings for the treatment of beriberi were ipomea, poke root, ephedra, black soybean, tiger lily, camphor mint, pig's liver, morning glory and mulberry leaf. The fact that several of the above mentioned drugs were valuable in the treatment of the disease has been proved by the isolation of vitamin B_1 from these.—H. C. HOU. *Chinese Med. J.*, 58 (1940), 302–313. (N. L.)

Bismuth Therapy for Syphilis—Erythema Following. This observer reports that three cases have been recorded of ninth day erythema following bismuth therapy for syphilis. While this erythema is benign and limited in course it must be recognized that bismuth therapy may also produce complications in those cases in which arsenicals are contraindicated.—J. L. GRUND. *Arch. Dermatol. Syphilol.*, 41, No. 6, June 1940; through *J. Trop. Med. Hyg.*, 44 (1941), 9. (W. T. S.)

Calcium Gluconate and Iodine—Role of, in Whooping Cough. As a last resort, intramuscular injections of calcium gluconate and iodine were given four children who were unable to retain medicine or food because of whooping cough. Marked improvement led to five other injections, each given four days apart. Recovery followed.—R. N. MISRA. *Indian Med. Gaz.*, 76 (1941), 63. (W. T. S.)

Calcium Salts—Use of, in Uterine Inertia. A study of the effects of intravenous administration of calcium salts in labor was made on twenty-six patients to discover whether calcium might relieve the pain of uterine contractions and to determine the effect of calcium on the contractility of the human uterus during labor. On the basis of observations made during this study it was concluded that the administration of calcium gluconate will not relieve labor pains; that it will increase the intensity of uterine contractions, will decrease the interval between them but will not increase the duration of contractions. Calcium gluconate apparently has no ill effects on newborn babies whose mothers received it during labor. The effects of calcium were not manifested when the patient was not in labor. Therefore, the ideal case in which to use calcium would be one in which labor has been established, in which uterine contractions are weak, and in which there is no obstruction on the passage of the fetus.—G. D. PATTON and R. D. MUSSEY. *Am. J. Obstet. Gynecol.*, 41 (1941), 948; through *Abbott Abstract Service*, (1941), No. 925. (F. J. S.)

Calcium Therapy in Heart Failure. The intravenous injection of 10 cc. of 10 per cent calcium gluconate does not lead to toxic manifestations provided at least two minutes are allowed for the administration. Literature is summarized indicating the additive effects of digitalis and calcium on the heart. Two cases are described showing the danger of giving calcium gluconate intravenously to digitalized patients. It is recommended that when patients are receiving digitalis this drug should be stopped for four days before calcium is administered.—A. S. ROGEN. *Lancet*, 239 (1940), 452. (W. H. H.)

Chemotherapy in Bubonic Plague. Sulfapyridine has been previously used against bubonic plague infections in mice. The use of sulfapyridine, sulfathiazole and antiplague serum in human cases is now reported. In the experiments the cases were not separated into septicemic and non-septicemic types. Of 70 patients receiving the serum, 20 died; of 53 receiving small doses of sulfapyridine, 13 died; of 32 receiving small doses of sulfathiazole, 5 died; of 82 controls (treated with iodine intravenously) 43 died. Even in severe cases, with septicemia present at the outset, all three forms of treatment reduced the mortality rate to 50% as compared to 95% in the controls. It was thought that larger doses of the sulfanilamide drugs would reduce the mortality still further. Six cases of primary pneumonic plague are reported.—P. M. WAGLE, S. S. SOKHEY, B. B. DIKSHIT and K. GANAPATHY. *Indian Med. Gaz.*, 76 (1941), 29–32. (W. T. S.)

Chinese Medicine—Insects Used in. The first mention of the use of insects in Chinese medicine was described in the Pen Ching (2838 B. C.), which listed 29 kinds of insects. The herbal, Pen-t'sao Kang-mu by Li Shih-chen (1597 A. D.) contained 107 headings classed as insects. The old mythology and comparative therapeutic uses of various insects are also reviewed.—BERNARD E. READ. *Journal of the North China Branch of the Royal Asiatic Society*, 71 (1940), 22–32. (N. L.)

Citrin and Ascorbic Acid—Treatment of Psoriasis with. The capillary dilatation which occurs in psoriasis and the hypothesis that psoriasis may be an expression of altered capillary permeability, made it of interest to the author to investigate the effect of vitamin P on this disease. Since the source material of vitamin P (citrin) is lemon and since one of the preparations used was a modified lemonade, it was thought advisable to include in the study a control group of patients treated by ascorbic acid. Of 9 patients treated with lemon citrin in doses up to 267 mg. of the Szent-Györgyi eriodictin equivalent daily, 4 showed improvement and 5 showed no change. Of 22 patients treated with citrin lemonade containing approximately 300 mg. of eriodictin (vitamin P) and 70 mg. of ascorbic acid daily, 19 showed improvement and 3 showed no change. Of 10 patients treated with 100 mg. of ascorbic acid daily, the condition became worse in 5, 3 showed no change and 2 showed improvement. Further investigation is in progress in which larger doses of lemon citrin and eriodictin are being administered.—A. E. GOLDFARB. *Arch. Dermatol. Syphilol.*, 43 (1941), 536; through *Abbott Abstract Service*, (1941), No. 937. (F. J. S.)

Corpus Luteum and Thiamine—Role of, in Toxemia of Pregnancy. The toxemia of pregnancy is considered to be due to a disturbed endocrine balance, with the master gland of pregnancy, the corpus luteum and the trophoblast of the placenta playing the major roles. Hypersecretion of these elements in toxemia produces an uncompensated endocrine imbalance. This has been advanced as the basic cause of excessive relaxation of all smooth muscle of the body which in turn leads to edema in organs of great vascularity, such as the liver, kidneys, uterus and brain. From very recent work it has been found that vitamin B_1 is an efficient agent not only in overcoming primary uterine inertia, but also in toning up the relaxed smooth muscle of the postpartum bladder and urethra. The author has found that certain cases of preëclampsia respond with rapid fall in blood pressure and decrease in albinuria when thiamine is given orally in daily doses of 4500 units. Cardiovascular disturbances arising in pregnancy toxemia also are found to respond well to parenteral administration of thiamine.—J. E. AYRE. *Can. Med. Assoc. J.*, 44 (1941), 575; through *Abbott Abstract Service*, (1941), No. 934. (F. J. S.)

Dakin's Solution—Use of, in the Treatment of Wounds. During the first World War, the Carrel-

Dakin method for the treatment of wounds was used very extensively. It was acknowledged by many as the most outstanding method of wound treatment since Lister. Results hitherto unequaled were reported. In recent years there has been little literature about its use. The author, however, has used the method in the treatment of 26,289 open wounds with only three infections in those cases seen within the first six hours. A number of surgeons are recorded who never discontinued the use of the Carrel method of wound preparation and treatment. The author believes that the most important part of wound treatment is the thorough preparation of the wound itself. As a standard procedure, he thoroughly scrubs the surrounding surface with soap and water, washes the wound with soap and water, and removes all bruised and dirty tissue thoroughly. He then applies a 0.5% solution of sodium hypochlorite to the wound in the form of moist dressings or with Carrel Tubes.—P. H. KREUSCHER. *Am. J. Surgery*, 51 (1941), 573; through *Abbott Abstract Service*, (1941), No. 895. (F. J. S.)

4,4'-Diamidino Stilbene—Action of, on Various Piroplasms. Using splenectomized animals, it was shown that 4,4'-diamidino stilbene, in doses of 2–4 mg. per kilo, is effective in treating infections of *Babesiella ovis* in goats and *Babesia bigemina* in calves. The same drug, in doses up to 10 mg. per kilo, was without effect on two other piroplasms. Protocols on 6 goats and 9 calves are given.—S. ADLER and I. TCHERNOMORETZ. *Ann. Trop. Med. Paras.*, 34 (1940), 199–206. (W. T. S.)

4,4'-Diamidino Stilbene in the Treatment of Human Sleeping Sickness. A tabulation of 52 cases of sleeping sickness treated with intravenous injections of 4,4'-diamidino stilbene (1 mg. per kilo) revealed that this drug safely, quickly and effectively ameliorated the symptoms of the disease, especially in early and intermediate stages. Marked stimulation of the autonomic system was observed but no Albuminuria nor eye-symptoms appeared.—C. BOWESMAN. *Ann. Trop. Med. Paras.*, 34 (1940), 217–222. (W. T. S.)

Diphtheritic Croup—Diagnosis and Treatment of. Diagnosis is made by culture and identification of Loeffler's bacillus. Treatment consists in relief of the characteristic asphyxia by intubation, tracheatomy and extraction of membranes. If the disease is accompanied by suprarenal insufficiency, suprarenal cortex and pituitrin are administered. But the base of all treatment is diphtheria antitoxin. The patient may be made more comfortable by inhaling vaporized eucalyptol and in extreme cases oxygen. Paralytic sequelæ may be prevented by administration of vitamin B_1, and serum sickness may be alleviated by calcium chloride and adrenaline.—TEODORO SEMINARIO VERA. *Reforma Medica*, 26 (1940), 435. (G. S. G.)

Estrogen Therapy—Relation of, to Carcinoma in Human Females. A conclusion, drawn from the results of studies carried out on 206 women by the authors, is that within the limits of the dosage used in the investigation (up to 53,400,000 I. U.), there appears no evidence to justify the fear that carcinoma of the genital tract may result from the therapeutic use of estrogens. The administration of estrogens to women suffering from an estrogen deficiency results in regenerative changes in both the vaginal and uterine mucosa. The regeneration resembles the histologic cyclical pattern of the adult female with normal estrogen production. Continued administration leads to increased desquamation of the superficial epithelial layers without producing any signs of excessive or abnormal epithelial proliferation. The atrophic endometrium responds to adequate therapy with an orderly regeneration of the epithelial, glandular and stromal elements and in no case was there any evidence of abnormal proliferation noted.—S. H. GEIST and U. J. SALMON, *Am. J. Obstet. Gynecol.*, 41 (1941), 29; through *Abbott Abstract Service*, (1941), No. 906. (F. J. S.)

Estrogenic Suppositories—Preparation and Use of. The author tabulates the work on the estrogenic treatment of gonococcal vulvovaginitis from 1934 to 1939 with respect to: author, year, preparation used, route, dosage, duration of treatment, number of cases and results obtained. A table is also used to summarize 21 cases of gonococcal vulvovaginitis which were satisfactorily treated by the writer with estrogen suppositories ranging in potency from 75 to 150 rat units. To reduce the cost of medication, the suppositories were prepared from estrogens extracted by the writer from the urine collected in the maternity ward of the hospital in which the vulvovaginitis was being treated. The vaginal smear of one case before and after treatment is pictured.—HAZEL AI-CH'UN LIN. *Chinese Med. J.*, 58 (1940), 527–533. (W. T. S.)

Estrogens in Uterine Bleeding. Uterine bleeding in women responds better to the use of stilbestrol or progynon-β than by any other method used by the author. Corpus luteum is not necessary. From 10 to 25 mg. of stilbestrol or 20,000 to 30,000 to 50,000 R. U. of progynon-β intramuscularly or into the anterior lip of the cervix, followed by 5 mg. of stilbestrol every night for twenty nights or by 10,000 R. U. of progynon-β intramuscularly every day for 6 to 10 days, stopped functional uterine bleeding more quickly than dilation and curettage of the uterus.—KARL S. KARNAKY. *Texas State J. Med.*, 36 (1940), 376; through *Chinese Med. J.*, 58 (1940), 492. (W. T. S.)

Gum Arabic—Use of, in Injection Fluids. The article begins with a brief history of the use of gum arabic. Various compounds of gum fluids are listed and the qualities of different gums are discussed. Redistilled water must be used. Various formulas are described; the authors prefer a 6% solution in 8.5 to 9 per 1000 physiological saline. The chief indications for the use of gum injections are shock, eclampsia and nephrosis.—F. PABLO REY and ANGEL REBELLO. *Rev. Col. Farm. Nac. (Rosario)*, 7 (1940), 106. (G. S. G.)

Hormone Therapy—Effect of, on Ovarian Function. The function of the ovary is controlled by two distinct hormones elaborated by the anterior pituitary: the follicle-stimulating and the corpus luteum-stimulating. The follicle in turn forms the estrogenic hormone which causes regeneration of the endometrium and its growth into the so-called proliferative state of development. After the follicle ruptures and ovulation takes place, the corpus luteum forms, which elaborates progesterone, a hormone needed to bring the endometrium to the secretory phase, preparatory to receiving the ovum. Theoretically, the follicle-stimulating gonadotropic hormones obtained from animal glands should stimulate ovulation and rupture of the follicle; the corpus luteum-stimulating hormone obtained from the urine of pregnant women should be used in functional bleedings in an attempt to stimulate corpus luteum formation in the patient. The two ovarian hormones, estrone and progesterone, however, have no effect whatsoever on the ovary itself but are purely substitutional.—J. R. MANLEY. *Minnesota Medicine*, 24 (1941), 219; through *Abbott Abstract Service*, (1941), No. 908. (F. J. S.)

Infantile Diarrhea—Food Product for Treatment of. The product comprises a mixture of pectin and agar-agar in powdered form, preferably with

addition of "Dextri-Maltose," which does not melt at body temperature and forms a self-supporting gel when boiled with water.—C. A. TOMPKINS. Brit. pat. 520,294; through *J. Soc. Chem. Ind.*, 59 (1940), 567. (E. G. V.)

Influenza—Diagnosis and Treatment of. Epidemic influenza is a virus disease of the respiratory tract. In acute pharyngitis, tonsillitis or sinusitis caused by the hemolytic streptococcus, pneumococcus, staphylococcus or Pfeiffer's bacillus, the organism can be identified if the effort is made; these are not epidemic influenza. While a certain number of patients with influenza have gastro-intestinal disturbances, there is little justification for the term "intestinal flu" in the opinion of the author. Chemotherapeutic agents have given no indication of exerting any curative or prophylactic effect upon virus disease in experimental animals. However, since the fatalities in epidemic influenza are to a great extent dependent upon the bacterial complications, the author believes that sulfonamide therapy will be of tremendous value in controlling mortality in this disease. Up to the present time at least, rest, isolation and aids to respiratory comfort have not been supplanted in the treatment of influenza.—T. FRANCIS, JR. *Bull. New York Acad. Medicine*, 17 (1941), 268; through *Abbott Abstract Service*, (1941), No. 893. (F. J. S.)

Kala-Azar Successfully Treated with Certain Aromatic Diamidines. In cases of Sudan kala-azar, intravenous injections (1–2.6 mg. per kilo) of 4,4′-diamidino stilbene gave an 86% recovery rate (28 cases), and 4,4′-diamidino diphenoxy propane gave a 50% recovery rate (2 cases). A follow up of 25% of the cases cured with 4,4′-diamidino stilbene showed no relapse after 4 to 7 months. The toxicity of these compounds was comparatively low. One antimony-resistant case rapidly responded to 4,4′-diamidino stilbene.—K. KIRK and MOHAMMED HAMAD SATI. *Ann. Trop. Med. Paras.*, 34 (1940), 181–197. (W. T. S.)

Magnesium Trisilicate—Position of, as Antacid in Peptic Ulcer. Sippy showed that regardless of the cause of peptic ulcer, constant neutralization of the gastric contents resulted in ulcer healing. There have been few advances in ulcer therapy since his day, but the antacids he used have numerous disadvantages. An ideal antacid should possess the following properties: it should be of low cost; be tasteless and not astringent to the mouth mucosa; a small amount should neutralize a large amount of acid; it should absorb pepsin; it should be neither constipating nor laxative; it should be insoluble so as not to leave the stomach too quickly; it should have a prolonged action and not stimulate a secondary acid rise; the cation should be unabsorbable so that alkalosis cannot occur and no distressing gases should evolve after the interaction of the cation with hydrochloric acid. The substance, magnesium trisilicate, is thought to approach this theoretical ideal as closely as any antacid which the author has investigated.—M. KRAEMER. *Am. J. Digestive Diseases Nutrition*, 8 (1941), 56; through *Abbott Abstract Service*, (1941), No. 901. (F. J. S.)

M. & B. 693 in Pneumococcal Meningitis. M. & B. 693 has reduced the case mortality of pneumococcal meningitis from close on 100 per cent to 35 per cent. To be effective M. & B. 693 must be given in large doses at the outset; at least 6 Gm. per day should be given to an adult for the first four or five days, after which the dose can gradually be decreased. There is no reliable clinical evidence that antipneumococcal serum is of any value in a straightforward case. Frequent lumbar puncture should be avoided, except where it is indicated for the relief of the patient. M. & B. 693 should be continued in decreasing doses for at least a week after the temperature has returned to normal. A patient who is going to recover will nearly always show some signs of clinical improvement within the first three or four days; and, if improvement is noticed at all, the patient almost always makes a complete recovery in the end. Providing that dosage has been adequate, cases proving resistant to treatment are due either to a strain of pneumococci insensitive to M. & B. 693, or to a strain that has become tolerant to the drug.—F. H. COLEMAN. *Lancet*, 239 (1940), 615. (W. H. H.)

Morphine—Influence of Intravenous Injection of, in Treatment of Shock. The author reports that in a recent case observation where an amputation of a portion of the leg was necessary an intravenous injection of 1 cg. of morphine was employed. It was found that the intravenous injection of morphine other than easing the pain, aggravated the factor of shock.—P. FUNCK-BRENTANO. *Acad. de Chirurgie*, June 5, 1940; through *Presse méd.*, 56–57 (1940), 624. (W. H. H.)

Neostibosan in the Treatment of Kala-Azar in Chinese Hamsters—Further Observations on. The authors considered hamsters cured of kala-azar only when innoculation by the spleen of the treated animal failed to infect normal animals. Ten grams per kilo of neostibosan, given in 400 mg. doses twice weekly, produce 33% cures in 56 definitely infected hamsters; similarly 15 Gm. per kilo gave 38% cures and 20 Gm. per kilo gave 47% cures. This shows that kala-azar is more difficult to cure in hamsters than in man, probably due to a rapid excretion of antimony by the former. Reinoculation of 13 treated hamsters with large doses of *Leishmania donovani* showed that 4 possessed true acquired immunity and 6 partial immunity.—C. W. WANG and HUEI-HAN CHUNG. *Chinese Med. J.*, 58 (1940), 601–611. (W. T. S.)

Nicotinic Acid—Part Played by, in Avitaminosis. The nutritional significance of nicotinic acid depends on the part it plays as a component of the coenzymes, diphosphopyridine nucleotide and triphosphopyridine nucleotide. Though experimentally the coenzymes can be reduced and regenerated many times, in the living cell it seems probable that they are eventually exhausted or rendered inactive unless there is adequate replacement. When energy is derived almost exclusively from carbohydrate, the phosphopyridine nucleotides apparently are used up at a greatly increased rate. The various morbid states resulting from nicotinic acid deficiency may thus be thought of as chemical disturbances of cellular meabolism due to the failure of the coenzymes to function. Since compounds of nicotinic acid are essential for the nutrition of every living cell, it seems highly probable that the variety of manifestations of deficiency depends on the sensitiveness of different tissues to varying grades of metabolic disturbance.—V. P. SYDENSTRICKER. *Arch. Internal Med.*, 67 (1941), 746; through *Abbott Abstract Service*, (1941), No. 935. (F. J. S.)

Pentothal Sodium—Use of, in Urogenital Surgery. The choice of anesthesia for operations upon the urogenital tract is of great importance since one must consider particularly the pharmacological action of the anesthetic drug upon the cardiovascular system and the kidneys. A great many urological patients belong to the older age groups and suffer from cardiovascular disease. The short-acting barbiturates, such as sodium pentothal, are being used in this type of procedure by many operators with good results. The drugs are almost entirely destroyed in the body, and have little effect on renal function unless very large doses are given. Ruth,

Tovell and associates reported a series of 598 patients anesthetized with intravenous sodium pentothal, and Carraway used it with great satisfaction for 240 major and minor genito-urological procedures. Resistant patients in the authors' series received nembutal as premedication before ethylene-oxygen inhalation anesthesia.—R. ENGEL, E. CUSHNIE, H. LIVINGSTON and I. SHANK. *J. Urol.*, 45 (1941), 124; through *Abbott Abstract Service*, (1941), No. 905. (F. J. S.)

Polyhydroxyestrane—Therapeutic Esters of Unsaturated. Details are given of the preparation of the following estradiol esters: dipropionate, dibutyrate, di-isobutyrate, divalerate, di-isovalerate, dicaprate, dipalmitate, diethylcarbonate, 3-monocaprate, monopalmitate, 3-monostearate, 3-stearate-17-propionate, 3-stearate-17-acetate, 3-stearate-17-formate, 3-stearate-17-methylcarbonate, 17-monoisobutyrate, 17-monovalerate, 3-17-divalerate, 3-acetate-17-valerate, 17-monocaprate.—KARL MIESCHER and CAESAR SCHOLZ, assignors to Société pour l'Industrie Chimiquea Bâle. U. S. pat. 2,205,627, June 25, 1940. (A. P.-C.)

Procaine—Intramuscular Injection of, in the Treatment of Lumbago. The treatment of lumbago and other myalgias is often discouraging. The author of the present paper describes rheumatic myalgia, including lumbago, and emphasizes the presence of so-called myalgic spots which are characteristic of the disease. These spots are very tender to touch but are associated with referred pain and consequently do not correspond to the pain complained of by the patient. They are found along the edge of the affected muscle or near it along the course of a nerve and apparently are not difficult to locate by palpation. When they are found, the author suggests that they be mapped out on the skin and painted with iodine. If 1 or 2 cc. of 1% procaine are then injected intramuscularly into each myalgic area, dramatic results are said to follow, pain being relieved almost at once and the patient enabled to perform movements he could not carry out before. A salt-poor vegetarian diet and infrared treatment applied to the spots are valuable adjuvants.—M. G. GOOD. *The Practitioner*, 146 (1941), 167; through *Abbott Abstract Service*, (1941), No. 894. (F. J. S.)

Protamine Zinc Insulin—Constancy of Action of. In 7 of 8 diabetic patients treated with protamine zinc insulin under carefully controlled conditions in the hospital, the behavior of the blood sugar through the daytime and evening hours was found to be essentially the same, whether the insulin was given in the morning or at night. Studies in the eighth case were vitiated by infection. It is concluded that the action of protamine zinc insulin when injected once every 24 hours is relatively constant. The practical and theoretical implications of this conclusion are discussed.—H. T. RICKETTS. *J. Am. Med. Sci.*, 201 (1941), 51. (B. H.)

Pruritis. A discussion of the various forms of this disorder and methods of treatment including fifteen formulas. Fifteen references.—M. A. LESSER. *Drug and Cosmetic Ind.*, 48 (1941), 653–655, 665, 667. (H. M. B.)

Quinine Sulfate—Use of, as Prophylactic against Influenza. For a number of years writers on the subject have reported the efficiency of various quinine preparations as prophylactics during epidemics of influenza. Most of the reports dealt with the vasodilating effect of the drug. However, there was never a large enough series of cases studied together with controls to lend weight to these ideas. Showalter recently has shown that quinine causes a definite leucocyte response. This is exactly what is needed to increase the body defenses during the initial stages of influenza when leukopenia exists. In the present study, 6500 workers in a powder plant were given 5 gr. of quinine sulfate each morning for a period of two weeks; 6500 others were given sodium bicarbonate tablets. There was a definite decrease in the total number of cases within 48 hours after quinine was started; a gradual rise in the number of cases when quinine was discontinued; and only a fourth as many cases of influenza in the quininized group.—A. G. SCHNURMAN. *Virginia Medical Monthly*, 68 (1941), 341; through *Abbott Abstract Service*, (1941), No. 922. (F. J. S.)

Riboflavin Deficiency. This is the first report from China of the use of riboflavin (6,7-dimethyl-9-(*d,l*,ribityl) iso-alloxanzine) in ocular manifestations. The symptoms in some 40 cases were described and the results of a riboflavin treatment, which was generally satisfactory, are outlined.—H. C. HOU. *Chinese Med. J.*, 58 (1940), 616–628. (W. T. S.)

Rotenone in the Treatment of Chiggers. Rotenone lotion is effective in the treatment of dermatitis produced by chigger infestation which includes larvæ of various species of mites belonging to the family *Trombidii*. The 2% lotion of rotenone was tried in 22 cases and all patients reported some relief from the pruritus within 30 minutes and, invariably, complete relief within twelve hours after the first application. The treatment was limited to two applications, the first given as soon as the condition was noted and the second twelve hours later. Involution of the lesions became apparent in 24 to 48 hours. In two cases a mild burning sensation was felt at the site of application, but it passed away in a few minutes. No other by-effects were noticed or complained of. The authors consider rotenone lotion superior to other insecticidal preparations because of its effectiveness, tolerability and freedom from objectionable properties.—P. L. WILLIAMS, S. W. BAREFOOT and J. L. CALLAWAY. *So. Med. and Surg.*, 103 (1941), 199; through *Abbott Abstract Service*, (1941), No. 916. (F. J. S.)

Schistosomiasis Japonica—Treatment of, with Fuadin. A total of 19 cases were given a complete course of treatment with fuadin. Ten were apparently cured. Of the nine persons who were not cured, one had a relapse and two were very advanced cases. The suggestion of Khalil that the dose be calculated not according to the age and weight of the patient, but according to his ability to retain the drug in the body during a reasonable length of time, should be given a trial in order to see whether by so doing the percentage of cures can be increased.—MARCOS A. TUBANGUI and PANTALEON J. AGUILA. *Philippine J. Sci.*, 75 (1941), 69. (P. A. F.)

Sex Hormone—Absorption from Skin. The male or female hormones, applied to the skin of man or animal in the form of an ointment or in alcoholic or oil solution, are absorbed and produce their characteristic actions. When the sexual hormones are applied to the sensitive part of the skin they react locally after cutaneous absorption of the hormone. In the case of facial hypertrichone, the intradermal injection of folliculin produced an improvement of the treated area.—J. C. NUSSIO-FOURNIER and A. ALBRIEUX. *Presse méd.*, 51–52 (1940), 569. (W. H. H.)

Silver Nitrate, Tannic Acid and Gentian Violet—Treatment of Burns by. In five cases of extensive superficial burns the immediate coagulation method proved completely successful; and the absence of sepsis and pulmonary complications, despite the variety of anesthetics used, is noteworthy. This method is a definite advance on the treatment of burns, especially in war surgery. First aid dressing

for burns is still primitive in many places. Gentle cleansing, especially of all loose epithelium, is essential before applying the solutions. The opinion expressed by Cohen (1940) that no case is too late for full treatment in the theatre is emphatically agreed with. Splinting the burnt limbs in the early stages to ensure rest, Cohen (1940), and to prevent contractions is essential. No dressings otherwise are required. The exacting routine of repeated applications of gentian violet, silver nitrate and tannic acid solutions to produce a dry smooth coagulum is well justified by results.—J. A. Ross and K. F. HULBERT. *Brit. Med. J.*, 4168 (1940), 702. (W. H. H.)

Sodium Sulfapyridine—Intravenous Use of, in Treatment of Lobar Pneumonia. The following conclusions are given. (1) The intravenous administration of a solution of sodium sulfapyridine monohydrate is a safe procedure. (2) Sodium sulfapyridine should be used intravenously only when there is a special indication. (3) The concentration of free sulfapyridine in the blood after intravenous administration is usually higher than after oral ingestion but: (*a*) Unusually high concentrations seem no more effective than those of 3 to 4 mg. per cent. (*b*) There is no added constancy of the blood level of free sulfapyridine after intravenous administration. (*c*) The mortality rate of 14.8 per cent after the routine administration of sodium sulfapyridine intravenously is not lower than the reported mortality rate after oral administration of sulfapyridine. (*d*) Complications of lobar pneumonia are not prevented by the intravenous injection of sodium sulfapyridine. (*e*) Toxic reactions in this series are of about the same or of slightly greater frequency than in reported groups receiving the drug orally.—C. W. STRICKLER, JR., A. P. MCGINTY and J. B. PESCHAU, JR. *Ann. Internal Med.*, 14 (1941), 1595–1606. (S. W. G.)

Sodium Veronal—Treatment of Acute Intoxication of. In the present work the authors have comparatively examined the influence of a series of pharmacological substances for the treatment of acute intoxication by sodium veronal. They have examined from this point of view: Strychnine, mixture C or cardioton (adoverne, ephedrine, dioxyphenylamine, prostigmine), the same mixture C with addition of coramine, a mixture of CO_2 (5%) and oxygen (95%), mixture C with CO_2 and O_2 mixture, a mixture of lobeline and sympathol, cardiazol, veritol, a mixture of cardiazol-veritol, icoral, benzedrine and picrotoxine. It has been found that veritol, picrotoxine and benzedrine seemed to be the most efficacious substances. The following appear in the order of their effectiveness: mixture C, cardiazol, mixture C combined with 5% CO_2 and 95% O_2, CO_2 5% plus O_2 95%, icoral and cardiazol and veritol. The lobeline-sympathol and mixture C with coramine are less effective and the usage of strychnine is very undesirable. These results have been determined from a study of the per cent mortality encountered in the treatment of sodium veronal intoxication.—J. J. BOUCKAERT and R. MARRI. *Arch. intern. Pharmacodynamic*, 64 (1940), 461. (W. H. H.)

Stilbenes and Diphenylbutadienes—Remarks on Some, as Chemotherapeuticals. By combining an aromatically substituted unsaturated chain and a polar group (amino) some substituted stilbenes and diphenylbutadienes have been prepared. Such compounds have possible use as estrogens or lipophilic trypanocides. 1-(*p*-Nitrophenyl)-2-(α-naphthyl) ethylene (I) was prepared by condensing α-naphthaldehyde and *p*-nitrophenylacetic acid in pyridine. By using the lead salt of the acid a better yield resulted and at the same time α-(*p*-nitrophenyl)-β-(1-naphthyl) acrylic acid (II) was obtained. The acid II gave an ester with diazomethane which melted at 140° C. Reduction of I by ferrous sulfate and ammonia gave the corresponding amine isolated as the HCl salt. 1-Styryl-4-nitronaphthalene (III) was prepared by dropping diazotized 4-nitro-1-naphthylamine into cinnamic acid. The dibromide of III was prepared. Boiling *p*-nitrophenylacetic acid, cinnamic aldehyde and PbO in acetic anhydride gave *p*-nitrophenylphenylbutadiene (IV) and 1-*p*-nitrophenyl-4-phenyl-1,3-butadiene-1-carboxylic acid (V). Reactions of IV with maleic anhydride, bromine and hydrogen gave, respectively, the diene, the addition product and the amine. The ester of V was obtained with diazomethane and the bromine derivative of V was also prepared. Reduction of V gave the amine. The possible stereochemical mechanism of these compounds is discussed.—FELIX BERGMANN and ZIPORAH WEINBERG. *J. Org. Chem.*, 6 (1941), 134–139. (W. T. S.)

Sulfanilamide Class—New Therapeutic Product of the. By heating sulfanilamide with an aqueous solution of sodium acetaldehyde-bisulfite the N-ethyl-sulfonate derivative ("Sulfonamide E.O.S.") is readily obtained. The drug is far less toxic than other sulfanilamide derivatives, is largely free from unpleasant by-effects of administration and is soluble up to 40%; it is suggested as a general safe prophylactic, for common colds, etc.—A. G. GREEN and M. COPLANS. *Chemistry and Industry*, 59 (1940), 793–794. (E. G. V.)

Sulfanilamide Derivatives—Manufacture of, of Therapeutic Value. Addition of acetaldehyde and then of sulfanilamide to 39% aqueous sodium bisulfite, heating at about 80°, and evaporation (vacuum) gives $p\text{-}SO_3Na.(CH_2)_2.NH.C_6H_4.SO_2.NH_2$. This and other alkali salts are claimed. They are potent internal bactericides of low toxicity. The product obtained by formaldehyde is readily hydrolyzed and is inactive.—A. G. GREEN and M. COPLANS. Brit. pat. 524,011; through *J. Soc. Chem. Ind.*, 59 (1940), 762. (E. G. V.)

Sulfanilamide—Local Use of, in Peritonitis. One hundred and seventy-five cases of peritonitis have been treated by placing sulfanilamide in the peritoneal cavity. Sixty-five of these cases followed severe infections of the appendix and there were no deaths in this group. In all cases the hospital stay was shortened, the wounds healed more quickly and the complications were lessened in number and severity. When the drug is used locally in the peritoneal cavity, local concentrations may be reached which are 75 to 100 times the level which it is safe to maintain in the blood. The drug was found to have low toxicity for tissue and high killing power for organisms. The usual amount used in the peritoneal cavity was about 12 Gm., and no more than 18 Gm. has ever been used in one case. Spink believes that 4 Gm. is not dangerous, but warns that larger amounts may injure the liver. Absorption occurs rapidly. The peak blood level occurs 10–18 hours after administration and averages 7 mg. per 100 cc.—R. S. MUELLER. *Jackson Clinic Bull.*, 3 (1941), 66; through *Abbott Abstract Service*, (1941), No. 896. (F. J. S.)

Sulfapyridine and Serum in Pneumonia. Of 217 cases of infection due to pneumococci types I, II and III, 197 were treated with sulfapyridine alone and 20 with sulfapyridine and serum. Of 47 cases of type I infection treated with sulfapyridine there was 1 death; of 112 cases of type II infection, similarly treated, 14 died; of 38 cases of type III infection 11 died. Resolution appears to be prolonged by the use of sulfapyridine. In all the patients treated with combined drug and serum, there was striking clinical improvement within 12 hours,

but one died later of pericarditis. No toxic effects due to sulfapyridine were seen, but 8 patients showed delayed serum sickness. The relative virulence of the various types was not disturbed by sulfapyridine therapy: type III remained the most, and type I the least, fatal. The age of the patients affects prognosis. In type II infections the death rate was 3.8 per cent in patients under 40 and 22.2 per cent in patients over 40; in type III infections the corresponding rates were 14.3 and 32.2 per cent. The death rate in bacteremic cases was at least double that in nonbacteremic cases due to the same type.—T. ANDERSON and J. G. CAIRNS. *Lancet*, 239 (1940), 449. (W. H. H.)

Sulfapyridine—Hematuria Resulting from. Twelve tablets of sulfapyridine given over a period of three days to a malarial female child, previously medicated with quinine and hexamine, produced severe hematuria. Withdrawal of the sulfapyridine and pallative treatment resulted in recovery.—KRISHNA GOPAL KARMAKAR. *Indian Med. Gaz.*, 75 (1940), 743–744. (W. T. S.)

Sulfapyridine in Pneumonia Therapy. A review of the literature involving 378 cases revealed that sulfapyridine constitutes the best therapy for pneumonia in children. An effective blood level of over 4 mg. per cent may be maintained for 72 hr. by giving parenterally 1.5–2 Gm. for children under 30 lb. and 3 Gm. for those over 30 lb.—L. K. TSANG and MARY E. MCCRACKEN. *Chinese Med. J.*, 58 (1940), 629–648. (W. T. S.)

Sulfapyridine—Review of 274 Cases of Lobar Pneumonia Treated with. Evaluation of any drug requires a knowledge of its failures as well as its successes in controlling a given disease. The author has reviewed 274 cases of lobar pneumonia treated with sulfapyridine in the Kalar Gold Fields Hospital with particular reference to the less successful responses. The mortality rate was 3.2%. Forty cases (15.5%) did not respond within 48 hours and the drug appeared ineffective in 6% of the cases. Of the latter, other factors may have influenced the response. The forty cases involving a delayed response have been analyzed with reference to causative factors. The posology of sulfapyridine in pneumonia was discussed and the use of adequate dosage in delayed responses emphasized.—ANTHONY CAPLAN. *Indian Med. Gaz.*, 76 (1941), 16–23. (W. T. S.)

Sulfapyridine, Sulfathiazole and Serum—Treatment of Pneumococcic Pneumonias with. The following summary is given. The essential data concerning 911 cases of pneumococcic pneumonia have been presented and analyzed. Specific therapy, consisting essentially of sulfapyridine or sulfathiazole supplemented in some of the cases by type-specific antipneumococcic serums, was used in 76% of the cases, and the gross mortality in these cases was 16.4%. Sulfapyridine and sulfathiazole were used in the same manner. The results of treatment with these two drugs were essentially the same when due allowance was made for the difference in incidence of patients over 60 years of age. The administration of both sulfapyridine and sulfathiazole is accompanied by untoward effects which vary somewhat in frequency and severity. Anemia, leukopenia and relapses were more frequent among the sulfapyridine treated cases. Drug rashes were more frequent among the sulfathiazole recipients, while hematuria was noted about equally with both drugs. The most common toxic effect of both drugs, however, was the nausea and vomiting, and this symptom was considerably less frequent and less severe among the cases treated with sulfathiazole.—M. FINLAND, F. C. LOWELL and E. STRAUSS. *Ann. Internal Med.*, 14 (1941), 1184–1198. (S. W. G.)

Sulfapyridine—Treatment of Pneumonia in Infants with. In the infants with pneumonia in the Cook County Children's Hospital the mortality has always been high. With the advent of specific chemotherapy there is a distinct change in the outlook for babies with pneumonia. Prior to the use of chemotherapy, the mortality rates for the years 1937 and 1938 were thirty-two and thirty-one per cent, respectively. In a series of two hundred infants treated in 1940 with sulfapyridine there was a mortality of ten per cent. Of the twenty infants who died, three showed no response to considerable amounts of the drug. Of a series of eighty-nine patients of whom forty-six received sulfapyridine and forty-three served as controls, those receiving the drug had a definitely shorter febrile period and stay in the hospital. Serum therapy never was of outstanding value for patients under one year of age because of the difficulty in obtaining material for typing the organisms. Toxic effects in infants from the use of sulfapyridine are rare.—W. B. RAYCRAFT, W. MOTEL and J. GREENGARD. *Chicago Pediatric Society Report, Am. J. Dis. Child.*, 61 (1941), 898; through *Abbott Abstract Service*, (1941), No. 927. (F. J. S.)

Sulfapyridine Used Per-Rectum in a Case of Pneumonia. The per-rectal use of sulfapyridine (in milk) with a semiconscious pneumonia patient, showing signs of meningism, produced an uneventful recovery. Previous to this mode of medication the patient was unable to retain sulfapyridine alone or in combination with milk or nicotinic acid.—S. R. LOKRE. *Indian Med. Gaz.*, 75 (1940), 748. (W. T. S.)

Sulfathiazole and Sulfamethylthiazole—Treatment of Staphylococcal Septicemia with. The following summary is given. (1) Twelve consecutive cases of staphylococcal septicemia were treated with thiazole derivatives of sulfanilamide. Eight recovered. (2) In all the fatal cases, endocarditis was present at autopsy. (3) A skin rash and an instance of peripheral neuritis were probably attributable to sulfamethylthiazole. Conjunctivitis and chills and fever were observed as examples of sulfathiazole toxicity. (4) Between the years 1933–1939, twenty-seven cases of staphylococcal septicemia were recorded at the Cincinnati General Hospital, with only four recoveries.—M. HAMBURGER and J. M. RUEGSEGGER. *Ann. Internal Med.*, 14 (1941), 1137–1154. (S. G. W.)

Sulfathiazole in Pneumonia. This preliminary trial of sulfathiazole in ten cases of pneumococcal lobar pneumonia has shown that the drug is of value and acts similarly to sulfapyridine, though producing a less prompt fall in temperature. With this temperature lag there is a correspondingly longer period of acute illness. This renders sulfapyridine the drug of choice in severe cases. The chief point in favor of sulfathiazole is that it does not cause vomiting. It is possible that a combination of sulfapyridine and sulfathiazole may come to be a valuable routine in the treatment of pneumonia, the first large doses given being sulfapyridine (*e. g.* the first 8 tablets) and the following ones sulfathiazole. In this way vomiting can be obviated entirely. An alternative is the use of a mixture of the two drugs from the outset—*e. g.*, 2 tablets of sulfapyridine given with two tablets of sulfathiazole four-hourly for the first three doses, and then 1 tablet of each. The first method has already been used since these investigations were undertaken with very satisfactory results.—W. F. GAISFORD and W. WHITELAW. *Lancet*, 239 (1940), 451. (W. H. H.)

Sulfathiazole Therapy of Infantile Diarrhea. Every second patient of 27 children admitted to a hospital because of diarrhea or bacillary dysentery

was treated with sulfathiazole in initial oral doses of 1 Gm. per year of age up to a maximum of 3 Gm., followed by the same daily amount divided into 6 doses. The alternate cases were controls. The average time required for the stools to reach four a day of normal color and consistency was 3.2 days in the sulfathiazole-treated group and 15.6 days in the control group. In the control group, recovery was later in those who had had prolonged diarrhea prior to admission, but recovery was not altered by this condition in those patients who received sulfathiazole. Among them, the only reaction which was observed was a slight increase in jaundice in one patient shortly after sulfathiazole was given, but the drug could not be definitely blamed for this reaction. The author concludes that sulfathiazole is effective in the treatment of children with bacillary dysentery or diarrhea.—G. TAYLOR. *J. Pediatrics* 18 (1941), 469; through *Abbott Abstract Service*, (1941), No. 932. (F. J. S.)

Sulfathiazole—Use of, in Urinary Tract Infections Caused by the Staphylococcus. In staphylococcus infections, the typical abscess formation with cavitation is a result of the unique ability of the staphylococcus to necrose tissue, including bone, and to destroy red blood cells and leucocytes. Sulfathiazole interferes with this process and consequently has been found to be an effective drug in the treatment of staphylococcus infections of the urinary tract. It is readily absorbed when taken by mouth and is eliminated rapidly, mainly through the kidneys. Patients receiving the drug should be observed by the physician at least every 48 hours, and the skin, the sclera of the eye and the gross voided urine should be examined carefully for signs of toxicity. Cloudy urine, oliguria and decreasing renal function should be recognized as serious warnings of temporary renal damage due to the drug. Where indicated, surgical drainage is of importance in addition to the chemotherapy. The most serious side effect produced by the drug is the deposition of concretions in the urinary tract.—G. CARROLL, L. KAPPEL and B. LEWIS. *J. Urology*, 45 (1941), 770; through *Abbott Abstract Service*, (1941), No. 919. (F. J. S.)

Therapeutic Substances—Chemistry of. II. The parasympatheticomimetic drugs are discussed. **III. The Sulfonamides.** The mode of action and derivatives are discussed. **IV. General Anesthetics.** The following are discussed: inhalation anesthetics, aliphatic anesthetics, halogen compounds, ethers and barbiturate anesthetics.—F. PRESCOTT. *Chemist and Druggist*, 134 (1941), 279, 341, 382. (A. C. DeD.)

Therapeutics—Recent Developments in. Drugs used in mental diseases are discussed.—F. PRESCOTT. *Chemist and Druggist*, 134 (1941), 63. (A. C. DeD.)

Therapeutics—Recent Developments in. III. Vitamins. Vitamins A, B complex, C, D, E, K and P are discussed.—F. PRESCOTT. *Chemist and Druggist*, 132 (1940), 390. (A. C. DeD.)

Thrombocytopenic Purpura—Different Treatments of. Various kinds of therapeutic measures (except snake venom, X-ray and splenectomy) were tried and it seems that blood transfusion was the most effective.—M. SHINDO. *Tôhoku J. Exp. Med.*, 38 (1940), 513. (A. C. DeD.)

Tuberculosis—Chemotherapy of. The author explains the rationale of treating tuberculosis with calcium salts, vitamin D, cod liver oil, sulfonamide drugs, chaulmoogric acid and the salts of certain heavy metals with especial reference to gold compounds. The gold compounds used for this purpose may be divided into three groups: (1) water soluble; (2) oil soluble and (3) oil insoluble. The chemical constitution, proprietary name and gold content of ten popular organic gold compounds is given in tabular form. The consensus is that gold salts act in tuberculosis not antibacterially but by stimulating the reticulo-endothelial system.—G. M. FINDLAY. *Indian Med. Gaz.*, 75 (1940), 632–634. (W. T. S.)

Vitamin B Complex—Seborrheic Eruptions Due to Deficiency of. Extensive and localized eruptions of the skin are reported which respond to treatment with liver extract. In the majority of cases the condition is based on a constitutional predisposition which may be identified with the so-called seborrheic diathesis. The diathesis consists of an abnormal function of the skin described usually as seborrheic and associated frequently with digestive disorders, especially gastric hypoacidity and anacidity, interfering with the proper utilization of vitamins. As result of treatment with the vitamin B complex, in the form of injectable liver extract, not only the dermatosis but also the underlying disorder of digestion and assimilation is influenced, so the recurrences may in some cases be prevented for an indefinite period. Particularly, certain types of arsphenamine poisoning respond to liver therapy because they are cases of vitamin B complex deficiency caused by direct effect of the drug on specific functions of the liver, the author believes.—P. GROSS. *Arch. Dermatol. and Syphilol.*, 43 (1941), 504; through *Abbott Abstract Service*, (1941), No. 911 (F. J. S.)

Vitamin B_1—Use of, in a Case of Acute Heart Failure. The author of the present report was called in the night to see a child two-and-a-half years of age who was in an acute, severe attack of dyspnea. In other respects the child appeared normal, but the history revealed that for the past eight months she had been subject to similar attacks in increasing frequency and severity. In an effort to relieve the condition, the tonsils had been removed four months previously, following which the attacks of dyspnea had occurred more often and more severely. In the present attack, the physician administered 10 mg. of thiamine hydrochloride solution hypodermically which apparently relieved the condition at once. Because of the dramatic results achieved in this severe case, the author urges that vitamin B_1 solution parenterally be tried unhesitatingly in cases of acute heart failure and that vitamin B complex or thiamine be used prophylactically before operations when there is evidence of cardiac weakness.—O. J. MOREHEAD. *Northwest Medicine*, 40 (1941), 57; through *Abbott Abstract Service*, (1941) No. 913. (F. J. S.)

Vitamin C and Vitamin P—Deficiency of, in Man. The administration of vitamin P does not control the large subcutaneous hemorrhages characteristic of the scorbutic state. The hemorrhages are arrested within twenty-four hours by a large dose (500 mg.) of ascorbic acid. The administration of vitamin P has no effect on other important manifestations of the scorbutic state—tissue hydration, anemia, knee flexion and general clinical conditions. The administration of vitamin P can produce an increased capillary resistance in the scorbutic subject either before or after treatment with ascorbic acid. The capillary resistance of such subjects is not controlled by the administration of ascorbic acid or of vitamins A, B_1 or D. A deficiency of vitamin P may exist in man even when he has been talking large doses of ascorbic acid for prolonged periods. Its clinical manifestations include pains in the legs on exertion, pain across the shoulders, weakness, lassitude and fatigue. It is invariably associated with a much-decreased capillary resistance and may be characterized by the development of spontaneous petechial hemorrhages, especially in areas exposed

to pressure. It has not been found to be accompanied by any hematological abnormality. It responds to treatment with vitamin P. The precise chemical nature of the vitamin remains to be determined.—H. SCARBOROUGH. *Lancet*, 239 (1940) 644. (W. H. H.)

Vitamin C Found in "Pot Liquor." The water in which vegetables have been boiled has long been used in non-scientific baby feeding. This by-product of cooking, commonly termed pot-liquor, has now been shown by clinical and chemical tests to be rich in vitamin C.—MARGARET L. KELLER and A. S. MINOT. *Southern Med. J.*, 34 (1941), 163–164. (W. T. S.)

Vitamin E and Myatrophy. A review of 25 reports (1850–1939) on vitamin E with especial reference to its use in neural myatrophy.—W. DE GUTIERREZ-MAHONEY. *Southern Med. J.*, 34 (1941), 389–394. (W. T. S.)

Vitamin E Deficiency—Experimental Results of, on Endocrine Glands. After large groups of normal and castrate male and female rats were kept on a vitamin E-deficient diet for varied periods of time and then sacrificed, the size and weight of the endocrine glands were carefully studied. In the males there was marked decrease in the weight of the testes with a degeneration of the germinal epithelium; after 3 months of the deficiency diet there was an increase in the accessory gland weight followed by a decrease after longer periods. Supplementing the diet with wheat germ oil produced the heaviest accessory glands in any of the animals; there was hypertrophy of the adrenal cortex, involution of the thymus was delayed, and the thyroids were increased in weight, but this increase could be prevented by supplementing wheat germ oil with iodine; the weight of the pituitaries increased after 3 to 6 months of an E-deficient diet. In the females there were no changes in any of the endocrine glands.—C. BIDDULPH and R. K. MEYER. *Am. J. Physiol.*, 132 (1941), 259; through *Abbott Abstract Service*, (1941), No. 898. (F. J. S.)

Vitamin E in the Treatment of Fibrositis. Vitamin E is of value in the treatment of primary fibrositis. Some of the more severe cases may require the more concentrated preparation of vitamin E to obtain a complete result. Vitamin E is of little value in the treatment of secondary fibrositis. These studies tend to indicate that primary fibrositis may be a metabolic rather than an infectious process.—C. L. STEINBERG. *J. Am. Med. Sci.*, 201 (1941), 347. (B. H.)

Vitamin K—Effect of, on Retinal Hemorrhage in the Newborn. Retinal examinations were made in a large series of newborn infants in an effort to correlate the incidence of retinal hemorrhage with hypoprothrombinemia. Comparing the examinations of a series of infants whose mothers had received vitamin K with a control group in whom the mothers had not had the vitamin, the results gave further evidence that the hemorrhagic tendency in the newborn can be controlled by the prenatal administration of vitamin K. Infants with retinal hemorrhage showed lower prothrombin levels than normal infants, and the incidence of retinal hemorrhage could be slightly reduced through the administration of vitamin K to mothers during labor. Vitamin K given to mothers prior to the onset of labor almost entirely eliminated retinal hemorrhage in their infants. The prothrombin levels were not significantly elevated in infants with retinal hemorrhage born to mothers treated during labor.—A. E. MAUMENEE, L. M. HELLMAN and L. B. SHETTLES. *Bull. Johns Hopkins Hospital*, 68 (1941), 158; through *Abbott Abstract Service*, (1941), No. 929. (F. J. S.)

Vitamin K—Relation of Hemorrhage to, in Infants with Neonata Disturbances. Quick has reported a high prothrombin level at birth, followed by a drop in the next 48 to 72 hours, and a subsequent rise toward the normal adult level during the ensuing week. The present author performed plasma-prothrombin titrations on bloods of 27 infants between the ages of 3 hours and 25 days, most of whom had suffered some neonatal disturbance such as asphyxia or intracranial bleeding. In this study no correlation could be observed between the plasma-prothrombin level and birth weight or duration of labor. It was noted that the infants with titers below 15% tended to bleed severely; that infants with intermediate levels (15 to 30%) might or might not bleed; and that infants with titers above 30% exhibited no severe bleeding tendency. The author believes neonatal disturbances alter the normal sequence of events in prothrombin fluctuation and advocated giving vitamin K orally to newborn infants or to mothers before delivery.—G. EDSALL. *New Engl. J. Med.*, 224 (1941), 762; through *Abbott Abstract Service*, (1941), No. 930. (F. J. S.)

Whale Oil as a Local Application in Tropical Ulcers. In Trinidad it was found that whale oil mixed with vaseline is superior to cod liver oil for healing and controlling the odor of tropical ulcers. Four case histories.—K. VIGORS EARLE. *J. Trop. Med. Hyg.*, 44 (1941), 1–2. (W. T. S.)

MODERN REMEDIES

SYNTHETICS

Allisatin (Sandoz Products, London) is a concentrated preparation of fresh garlic rendered odorless and tasteless by fixation on highly activated charcoal, which latter ensures gradual liberation of the active principles in the digestive tract, and acts as absorbent of intestinal toxins. Each tablet represents 1 Gm. of 1 fresh drug. It is used in cases of diarrhea. The dose is 2 to 4 tablets three times daily (children once a day). Special doses are given for anorexia, dyspepsias, oxyuris, arteriosclerosis, etc. It is marketed in bottles of 30, 100 and 250 tablets.—*Australasian J. Pharm.*, 22 (1941), 548. (A. C. DeD.)

Antipeol (Vaccine Filtrate) (Continental Laboratories, London) contains the antivirus corresponding to the three principal microbes of cutaneous infections—staphylococcus, streptococcus and pyocyaneus—in liquid and ointment forms. It is used for abscesses, furuncles, acne, eczema, burns, impetigo, sycosis and skin affections generally. Clean frequently with the liquid form and then apply ointment, spread over gauze. Change dressing every 12 hours. It is marketed as ointment: 20-Gm., 40-Gm. and 4-oz. tubes; liquid: bottles of 40 cc.—*Australasian J. Pharm.*, 22 (1941), 477. (A. C. DeD.)

Biseptol Simplex (Dr. Winzer, chem.-pharmaz. Fabrik, Konstanz) is an oily solution containing as its active ingredients ethoxydiaminoacridine 1% and ethyl hydrocupreine 5%. It is recommended as an antiseptic in washing the eyes.—*Pharm. Zentralhalle*, 81 (1940), 210. (N. L.)

Carovit (Continental Laboratories Ltd., London) are chlorophyll tablets. They are used in cases of general fatigue and debility, hypertension, infective conditions and night blindness. The dose is two or three tablets twice daily before meals; children, one tablet. It is marketed in tins of 80, 100 and 250 tablets.—*Australasian J. Pharm.*, 22 (1941), 625. (A. C. DeD.)

Celin is ascorbic acid in the form of 50-mg. tablets and in solution in ampuls each containing 100 mg. in 1 cc. Infant celin tablets contain 5 mg. of ascorbic

acid. The prophylactic dose of the standard tablets for young children is up to 1 tablet daily, and for older children and adults, up to 2 tablets daily; during pregnancy 2 to 3, and in lactation, 3 to 4 tablets daily are suggested. The therapeutic dose is 1 to 10 tablets a day, but up to 20 tablets may be given. The recommended initial therapeutic dose of celin in solution is 1000 mg. or more, followed, when saturation is achieved, by 50 to 100 mg. daily. Infant celin should be given in doses of 1 to 4 tablets daily in prophylaxis of infants up to one year. Celin tablets are issued in bottles of 25, 100, 500 and 1000, and the ampuls in boxes of 6, 12 and 50. Infant celin is issued in bottles of 50 and 1000 tablets.—ANON. *Quart. J. Pharm. Pharmacol.*, 14 (1941), 207. (S. W. G.)

Chinisan (Chemosan-Hellco A.G., Prag II) is a preparation in the form of dragees, each containing 0.25 Gm. of quinine hydrochloride. It is indicated in feveral conditions, malaria, etc.—*Pharm. Zentralhalle*, 81 (1940), 185. (N. L.)

Cycliton (Roche Products Ltd., Welwyn Garden City, Herts, England) is a respiratory and circulatory stimulant with a wide safety margin and prolonged action. Suitable for oral and parenteral use. The dose is one to two cc. solution, or two to five tablets orally; two to six cc. or more, by injection. It is marketed as ampuls, 2 cc., 6's; solution, 15 cc.; rubber-capped phials; oral solution, bottles of 15 cc.; oral tablets (0.1 Gm.), 20's; tubunic amp-syringe, 2 cc., 1's and 6's.—*Australasian J. Pharm.*, 22 (1941), 548. (A. C. DeD.)

Bibromol (H. Trommsdorff, chem. Fabrik, Aaschen) is a colorless or colored alcoholic solution of a specially prepared salt of a brominated isocyclic sulfonic acid. It is recommended as a scalp antiseptic.—*Pharm. Zentralhalle*, 81 (1940), 210. (N. L.)

Dodonal Dragees (J. D. Riedel-E. de Haen, A.G., Berlin) contain as their active ingredients urea β-bromoallyl-sec.-butylmalonylica, amidopyrine and dioxycholanic acid. The preparation is recommended as a soporific.—*Pharm. Zentralhalle*, 81 (1940), 185. (N. L.)

Ephynal (Roche Products Ltd., Welwyn Garden City, Herts, England) is a synthetic vitamin E, α-tocopherol acetate. The first synthetic vitamin E, standardized, more stable and reliable than wheat germ oil. It is indicated in habitual or threatened abortion and certain neuromuscular conditions. It is marketed in tablets: 30's and 250's.—*Australasian J. Pharm.*, 22 (1941), 548. (A. C. DeD.)

Epileptasid (Anhaltisches Seruminstitut, Berlin) contains in each cc., 1 mg. of rattlesnake (crotalus) toxin. It is recommended as an antiepileptic.—*Pharm. Zentralhalle*, 81 (1940), 234. (N. L.)

Hexavibex Kapseals and Ampoules (Parke, Davis & Co., Detroit, Mich.) contain in each kapseal 10 milligrams of pyridoxine hydrochloride (vitamin B_6 hydrochloride); and in each 1-cc. ampul, 50 mg. of vitamin B_6 hydrochloride in sterile solution. It is of value in treating certain cases of pellagra, beriberi, polyneuritis and cheilosis; and is given to supplement treatment with the corresponding specific vitamin factors (nicotinic acid, thiamine hydrochloride and riboflavin). The kapseals are supplied in bottles of 20 and 100; the ampuls in boxes of 6 and 25.—*Modern Pharmacy*, 25 (September 1941), 12. (F. J. S.)

Kapilon is the name applied to two substances which possess vitamin K activity, 2-methyl-1,4-dihydroxynaphthalene diacetate for oral administration and 2-methyl-1,4-naphthaquinone for intramuscular injection. Kapilon liquid contains 10 mg. of 2-methyl-1,4-dihydroxynaphthalene diacetate in 1 cc. of arachis oil and kapilon tablets contain 10 mg. of this substance. The dosage in the prophylaxis of neonatal hemorrhage is 18 minims of the liquid on the first day of life, repeated if necessary three to five days later. In ante-natal prophylaxis, 5 tablets or 5 cc. of the liquid should be given twelve to four hours before delivery. In other conditions a dosage of 1 to 5 tablets or 1 to 5 cc. of the liquid is suggested. The liquid is obtainable in half-ounce bottles with a half-minim dropper, and the tablets in bottles of 25 and 100. Kapilon ampuls each contain 5 mg. of 2-methyl-1,4-naphthoquinone in 1 cc. of oil. The dose suggested in obstructive jaundice is 1 to 2 ampuls daily by intramuscular injection for three days prior to operation, and 1 ampul daily for two to three days after. In critical cases the dose may be increased two to four times. In neo-natal hemorrhage 1 ampul intramuscularly repeated after two days is suggested. Kapilon ampuls are issued in boxes containing six.—ANON. *Quart. J. Pharm. Pharmacol.*, 14 (1941), 207. (S. W. G.)

Kapseals Desicol (Parke, Davis & Co., Detroit, Mich.) contain in each kapseal 0.325 Gm. (5 grains) of Desicol, desiccated whole bile, which is equivalent to approximately 2.5 cc. of whole fresh bile; and the kapseals represent desiccated whole bile in a form which is readily soluble and essentially similar to whole natural bile in therapeutic activity. They are used as a cholagogue, choleretic or replacement therapy in biliary deficiencies. The kapseals are supplied in bottles of 100, 500 and 1000 (5-grains).—*Modern Pharmacy*, 25 (May 1941), 12. (F. J. S.)

Kapseals Dilantin Sodium (Parke, Davis & Co., Detroit, Mich.) contain the sodium salt of 5,5-diphenyl hydantoin which is an odorless, white or cream-colored powder, with a bitter taste, soluble in water and slightly soluble in alcohol. Dilantin Sodium is an anticonvulsant with relatively little hypnotic effect. It is intended for the treatment of epilepsy including both grand mal and petit mal types of seizures, particularly in patients not responsive to other medication. It should be employed only under the supervision of a physician. They are supplied as 0.1-Gm. ($1^1/_2$-grains), and 0.03-Gm. ($^1/_2$-grain) kapseals in bottles of 100, 500 and 1000.—*Modern Pharmacy*, 25 (May 1941), 12. (F. J. S.)

Kapseals Synkamin (Water-soluble Vitamin K) (Parke, Davis & Co., Detroit, Mich.) contain in each kapseal 2 mg. of Synkamin (4-amino-2-methyl-1-naphthol) as the hydrochloride. They are used as a prophylaxis of hypothrombinemia (vitamin K deficiency) and are administered to pregnant women several days preceding delivery, and in cases of obstructive jaundice, biliary fistula, blood dyscrasias and acute and chronic diseases of the liver. The kapseals are supplied in bottles of 100, 500 and 1000.—*Modern Pharmacy*, 25 (May 1941), 12. (F. J. S.)

Lipo-Lutin Ampoules (Parke, Davis & Co., Detroit, Mich.) is a protein-free oil solution of the hormone secreted by the corpus luteum. It is standardized by physiologic assay and is available in solutions of three strengths, containing 1 International Unit, 2 International Units and 5 International Units per cubic centimeter, respectively. It is used in the treatment of deficiencies of progestin (corpus luteum hormone). The ampuls are supplied as follows: ampuls, 1 International Unit and 2 International Units, in boxes of 6, 25 and 100 1-cc. ampuls; also 5 International Units, in boxes of 6 and 25 1-cc. ampuls.—*Modern Pharmacy*, 25 (September 1941), 13. (F. J. S.)

Lubisan (Bayer, I.G. Farbenindustrie A.G., Leverkusen a. Rh.) is resorcinol monobutyl ether-diethyl carbamate, a pale yellow liquid marketed in the form of pearls, each containing 0.15 Gm. of the active

ingredient. Lubisan Granulate contains 7.5% of lubisan; 2 Gm. of the granulate is equivalent to one pearl.—*Pharm. Zentralhalle*, 81 (1940), 186. (N. L.)

Mixed Tocopherols, Natural (Vitamin E Concentrate) (Parke, Davis & Co., Detroit, Mich.) represents in each sealed gelatin capsule 50 mg. of mixed tocopherols, natural (a distillate of vegetable oils containing alpha, beta and gamma tocopherols). It is indicated in cases where the administration of vitamin E in medicinal form is needed. It is supplied in boxes of 25 and 100 capsules (50 mg.).—*Modern Pharmacy*, 25 (July 1941), 13. (F. J. S.)

Narconumal (Roche Products Ltd., Welwyn Garden City, Herts, England) is a new intravenous anesthetic, the sodium salt of 1-methyl-5,5-allyl-isopropylbarbituric acid. Suitable for short or prolonged anesthesia (up to three and a half hours). It is issued in ampuls of 1 Gm. of dry substance, which is dissolved in 10 cc. of sterile water before use. It is marketed in ampuls: 3's, with 3 ampuls of aq. dest.—*Australasian J. Pharm.*, 22 (1941), 477. (A. C. DeD.)

Native-Insulin (Bayer, I. G. Farbenindustrie A.G., Leverkusen, a. Ph.) is an insulin complex isolated from the pancreas. It is intended for intramuscular or subcutaneous injection in the treatment of diabetes.—*Pharm. Zentralhalle*, 81 (1940), 186. (N. L.)

Neo-Uliron Tablets (Bayer, I. G. Farbenindustrie A. G., Leverkusen, A. Rh.) contain, in each tablet 0.5 Gm. of 4-(4'-aminobenzenesulfonamido)-benzenesulfon-monomethylamide and are recommended in the treatment of all stages of gonorrhea.—*Pharm. Zentralhalle*, 81 (1940), 186. (N. L.)

Orex (Continental Laboratories Ltd., London) is a standardized total orchitic extract. It is used for cases of ovarian insufficiency which have failed to respond to homologous opotherapy. It is supplied as liquid, 16 cc.; bottles of 100 dragees; boxes of 6 x 1 cc. ampuls (subcutaneous injection).—*Australasian J. Pharm.*, 22 (1941), 549. (A. C. DeD.)

Permidin Tablets contain in each 150 mg. of natural hesperidin. The dose by mouth is 1 to 6 tablets daily. Permidin is issued in bottles of 50 tablets.—ANON. *Quart. J. Pharm. Pharmacol.*, 14 (1941), 208. (S. W. G.)

Pitoxylin is a sterile extract of the posterior lobe of the pituitary gland containing both the oxytocic and pressor hormones, and is stated to be free from protein. It is indicated in labor, for diabetes insipidus and for surgical shock. Pitoxylin is supplied in strengths of 5, 10 and 20 units per cc., in ampuls of 0.5 cc. and 1 cc. and in bottles of 10 cc. and 20 cc.—ANON. *Quart J. Pharm. Pharmacol.*, 14 (1941), 208. (S. W. G.)

Pitressin Tannate in Oil (Parke, Davis & Co., Detroit, Mich.) is a suspension of beta-hypophamine tannate in peanut oil and each 1-cc. ampul is equivalent to 5 pressor units as determined by physiologic test. It is used by physicians as a long-acting antidiuretic in the treatment of diabetes insipidus and is administered by intramuscular injection. It is supplied as 1-cc. ampuls each containing five units, in packages of 6 and 25 ampuls.—*Modern Pharmacy*, 25 (July 1941), 12. (F. J. S.)

Sajodin (Bayer Products Ltd., London) is the calcium salt of monoiodo-behenic acid (25 per cent I and 4 per cent Ca). Tasteless lipotropic preparation of iodine, useful for prolonged administration. It is used in cases of secondary and tertiary syphilis, including tabes; arteriosclerosis, bronchial asthma, emphysema, chloroiditis, iritis, aortic aneurism. The dose is 1–2 tablets ($7^1/_2$–15 gr.) 2 to 4 times daily. The powder is marketed in bottles of 1 oz. and tablets, gr. $7^1/_2$ in tubes of 20 each.—*Australasian J. Pharm.*, 22 (1941), 549. (A. C. DeD.)

Sodium *d*-Pantothenate Capsules (Parke, Davis & Co., Detroit, Mich.) contain in each capsule 10 milligrams of sodium *d*-pantothenate (pantothenic acid), which has been shown to be an essential constituent of the vitamin B complex. It is a part of the so-called filtrate factor. It is used in the treatment of certain disturbances due to vitamin B complex deficiency. The capsules are supplied in bottles containing 100 ten-milligram capsules.—*Modern Pharmacy*, 25 (December 1941), 12. (F. J. S.)

Steri-Vial Adrenalin Chloride Solution (Parke, Davis & Co., Detroit, Mich.) is a sterile solution for hypodermic use and each fluidounce contains Adrenalin (Epinephrine, P. D. & Co.) $^9/_{20}$ gr. as the hydrochloride, dissolved in physiological salt solution. Because of its vasoconstrictor action adrenalin is indicated for use as a heart stimulant; to relieve the paroxysm of asthma; in the treatment of urticaria and other allergic disturbances causing local or general reaction, such as serum sickness and anaphylaxis; and with local anesthetics. It is supplied as a 1:1000 solution in 1-oz. rubber-diaphragm-capped vials, finished with dust cap.—*Modern Pharmacy*, 25 (September 1941), 13. (F. J. S.)

Stipolac (Burroughs Wellcome and Co., London and Sydney) is tetraiodophenolphthalein and "Stipolac" acid mixture. It is a contrast medium for the radiographic examination of the gallbladder. It consists of two tubes—one of "Stipolac" sodium tetraiodophenolphthalein (Iodophthalein, B. P.), and one of the acid mixture, of each 3.5 Gm. It is given for oral administration. It is marketed in cartons containing one tube of each, and in boxes of 25 pairs.—*Australasian J. Pharm.*, 22 (1941), 549. (A. C. DeD.)

Synapoidin (Parke, Davis & Co., Detroit, Mich.) consists of a combination of chorionic gonadotropin (luteinizing hormone) from human pregnancy urine and the follicle stimulating hormone (gonadal synergist) from the anterior pituitary. It is indicated in pathologic conditions attributable to deficiency of pituitary gonadotropins. Patients receiving Synapoidin should be under careful medical supervision. It is supplied in 10-cc. rubber-diaphragm-capped vials; each cc. of solution contains 15 synergy rat units.—*Modern Pharmacy*, 25 (December 1941), 12. (F. J. S.)

Thio-Bismol (Parke, Davis & Co., Detroit, Mich.) is a water-soluble bismuth compound (sodium bismuth thio-glycollate) containing about 38 per cent of metallic bismuth. It is a yellow crystalline powder, readily soluble in water, giving a clear solution of a yellowish color. It does not precipitate serum, nor does it form insoluble albuminate compounds at the site of injection. It is used in the treatment of those cases of syphilis in which it is desirable to quickly saturate the patient with bismuth and it is intended primarily for intramuscular use. It is supplied in packages of 12 and 50 ampuls, each ampul containing 0.2 Gm., which represents 76 milligrams ($1^1/_5$ gr.) of metallic bismuth. Also in ten-dose ampuls containing 2 Gm. Thio-Bismol.—*Modern Pharmacy*, 25 (May 1941), 13. (F. J. S.)

Trichinella Extract, Diagnostic (Parke, Davis & Co., Detroit, Mich.) is prepared by extracting dried and powdered larvæ of *Trichinella spiralis* with normal physiologic salt solution and the final product represents a dilution of approximately 1:8000, with 0.3 phenol added as a preservative. It is used for skin testing persons suspected of having trichinosis, for use in routine testing of persons with undiagnosed febrile disturbances, and as a tool for epidemio-

logical survey to determine the incidence of trichinae infection. It is supplied in 1-cc. vials in a package containing one vial of diagnostic agent and one vial of diluent for control tests.—*Modern Pharmacy*, 25 (December 1941), 13. (F. J. S.)

Veramon B Tablets (Schering A.G., Berlin) contain amidopyrine, and a tributylamine derivative of β-naphthol-disulfonic acid.—*Pharm. Zentralhalle*, 81 (1940), 211. (N. L.)

SPECIALTIES

Adbol Improved Vitamin Capsules (Parke, Davis & Co., Detroit, Mich.) contain in each capsule 10,000 U. S. P. units of vitamin A, 1000 U. S. P. units of vitamin D, 500 International Units of vitamin B_1 (thiamine hydrochloride) and 200 mg. of vitamin B_2 (G) (riboflavin). It is used for the prophylaxis and treatment of deficiencies of vitamins A, B_1, B_2 and D. The capsules are supplied in boxes of 25, 50, 100 and 250.—*Modern Pharmacy*, 25 (September 1941), 13. (F. J. S.)

"Ampuliques" (C. J. Hewlett and Son Ltd., London) contains mersalyl 10 per cent, with theophylline 5 per cent. A non-toxic mercurial injection with a powerful diuretic action. It is used in cardiac edema, nephrosis, congestion of portal system, adiposity and syphilis. The dose is a 0.5 cc. to 2 cc. intramuscularly or intravenously. Packing: 1 cc. and 2 cc. "Ampuliques" in boxes of 6, 12, 50 and 100. To increase the diuretic action ammonium chloride 10 to 60 gr. may be given orally before the injection. The ammonium chloride is issued in 15-gr. cachets, 12 and 36 in a box.—*Australasian J. Pharm.*, 22 (1941), 397. (A. C. DeD.)

Arhama-Bio (Bombastus-Werke, Freital-Zauckerode b. Dresden) is an extract consisting of the flowers, root and leaves of salvia. It is recommended in the treatment of various organic disturbances of the gall, liver, etc.—*Pharm. Zentralhalle*, 81 (1940), 185. (N. L.)

Arhama-Terno (Bombastus-Werke, Freital-Zauckerode b. Dresden) is a liquid preparation prepared from the flowers and leaves of salvia.—*Pharm. Zentralhalle*, 81 (1940), 185. (N. L.)

Binaemon (Organon Laboratories, London) are tablets containing freshly mixed liver, pyloroduodenal material (from which a proportion of the inert material has been removed), and bouillon. It is used in oral therapy for pernicious anemia and allied conditions. The dose is four to ten tablets daily.—*Australasian J. Pharm.*, 22 (1941), 477. (A. C. DeD.)

Burnoel (A. de St. Dalmas and Co. Ltd., Leicester) contains copper guaiacol sulfonate, with acriflavine and benzamine borate in a water-soluble, non-greasy jelly. It is used in the treatment of burns. Spread with spatula over the burn, or applied to the affected area on lint. It is marketed in 1-oz. jars and 1-lb. jars.—*Australasian J. Pharm.*, 22 (1941), 477. (A. C. DeD.)

Caldeferrum Tablets (Glaxo Ltd., Greenford, Middlesex) contains in each tablet iron (ferrous), 6.25 mg.; calcium (metallic), 0.125 Gm. and vitamin D, 500 I. U. It is used in dietary deficiencies, especially during pregnancy and lactation; also in debility and convalescence. The dose is four tablets daily with meals. It is marketed in bottles of 50, 100, 500 and 1000.—*Australasian J. Pharm.*, 22 (1941), 477. (A. C. DeD.)

Cholera Vaccine "Schering" Polyvalent (Schering A.-G., Berlin) contains in each cc. about one million of the various species of the cholera bacillus. It is indicated as a prophylactic against cholera.—*Pharm. Zentralhalle*, 81 (1940), 210. (N. L.)

Codoforme Botol (Continental Laboratories Ltd., London) contains in each tablet codeine $^1/_{10}$ gr., bromoform 4 m., tincture bellondina 1 m., tincture aconite 1 m., sodium benzoate $^1/_5$ gr., terpin $^3/_{10}$ gr. It is used in dry, spasmodic, whooping and tuberculous cough. The dose is 5 tablets per day; 8 in obstinate cases. Swallowed whole with a liquid before or midway between meals. It is marketed in tins of 20, 100 and 250 tablets.—*Australasian J. Pharm.*, 22 (1941), 397. (A. C. DeD.)

Colact (Glaxo Laboratories Ltd., Greenford, Middlesex) is a preparation of bacterially pure milk, cocoa and guaranteed amounts of vitamins A and D (350 and 65 I. U., respectively, per oz. of powder). It is used as a beverage, especially for expectant and nursing mothers. It is prepared with hot water. It is marketed in 1-lb. tins.—*Australasian J. Pharm.*, 22 (1941), 625. (A. C. DeD.)

Contreumin Liniment (Pharmaz. Fabrik Franz Grieshaber, Solingen) is an extract (alcoholic) of capsium together with salicylic acid, camphor, methyl salicylate, oils of rosemary and melissa and ammonia water. It is recommended in the treatment of rheumatism and neuralgia.—*Pharm. Zentralhalle*, 81 (1940), 210. (N. L.)

Cosanyl (Parke, Davis & Co., Detroit, Mich.) contains in each fluidounce $^1/_4$ gr. ethyl morphine hydrochloride, 120 minims tincture euphorbia pilulifera, 120 minims syrup wild lettuce, 40 minims tincture cocillana, 24 minims syrup squill compound, 8 gr. cascarin (bitterless), $^2/_{25}$ gr. menthol and 6 per cent alcohol. It is used as a sedative expectorant for the relief of cough associated with scanty secretion and expectoration. Cosanyl is supplied in 4-oz., 16-oz. and 1-gal. bottles.—*Modern Pharmacy*, 25 (December 1941), 13. (F. J. S.)

Crinex (Continental Laboratories Ltd., London) contains all the natural ovarian hormones. It is used in cases of all dysovarisms due to homologous hormonal insufficiency. The dose is 15-30 drops daily between meals in 3 divided doses. May be increased to 45–60 drops or decreased to 10–15, or even 5 drops daily. It is marketed in bottles of 8 cc. and 50 cc.; dragees (bottles of 80); and ampuls for sucutaneous injection (boxes of 6 x 1 cc.).—*Australasian J. Pharm.*, 22 (1941), 548. (A. C. DeD.)

Curtrosa Salve with Cignolin (Curta & Co., G. m. b. H., Berlin-Britz) contains as its active ingredients, salicylic acid 3%, and cignolin 5%. It is recommended in the treatment of psoriasis.—*Pharm. Zentralhalle*, 81 (1940), 185. (N. L.)

Diphtheria-Tetanus Toxoid (Combined) (Parke, Davis & Co., Detroit, Mich.) is a mixture of equal parts of non-toxic modifications of diphtheria toxin and tetanus toxin, so treated as to retain their immunizing (antigenic) properties. Standardized as specified by the United States Government. It is intended for prophylactic immunization against diphtheria and tetanus. Immunizing treatment consists of three 2-cc. injections given subcutaneously at intervals of three weeks between injections. It is supplied in a package of 3 rubber-diaphragm-capped vials of 2 cc. each; also in package of 30 cc. rubber-diaphragm-capped vial.—*Modern Pharmacy*, 25 (July 1941), 12. (F. J. S.)

Dobal Salve (Apotheker L. Pistorius & Co., Wiesbaden) contains resorcinol, active oxygen (special form), phenol, oil of thymol, eucalyptol, resin and an ointment base of a special formula.—*Pharm. Zentralhalle*, 81 (1940), 210. (N. L.)

Elixir Crysto-Vibex Complex (Parke, Davis & Co., Detroit, Mich.) is a palatable combination containing, in each fluidounce, 1000 International Units of vitamin B_1 (thiamine hydrochloride); 1.2 mg. of vitamin B_2 (G) (riboflavin); 12 mg. of nicotinic acid; 1.2 mg. of vitamin B_6 (pyridoxine hydrochloride); and 1.2 mg. pantothenic acid (as the hydro-

chloride). It is indicated in the treatment of vitamin B deficiencies and is supplied in 1-pt. and 1-gal. bottles.—*Modern Pharmacy*, 25 (September 1941), 12. (F. J. S.)

Entfettungs Dragees, Vegetable "Schmöger" (Chem.-pharmaz. Labor. P. Felgenauer & Co., Inh. C. A. Schmöger, Hochheim/Erfurt) contain extracts of fucus, frangula and cascara sagrada.—*Pharm. Zentralhalle*, 81 (1940), 210. (N. L.)

"Haku" Ei-Lecithin-Cod Liver Oil Emulsion (H. Adler, Kuppenheim b. Baden-Baden) contains as its active ingredients, vitamins A and D, calcium and sodium hypophosphites and aromatic oils. It is indicated in the treatment of rachitis and recommended as a blood tonic.—*Pharm. Zentralhalle*, 81 (1940), 211. (N. L.)

Heart Pantaplex (Pantaplex-Vertrieb, Fabrik pharmaz. Präparate, Berlin) contains crataegus, leonurus, valerian, adonis, convallaria, maydis, lupulus, arnica and camphor. It is a homopathic preparation and is indicated in various nervous and cardiac conditions.—*Pharm. Zentralhalle*, 81 (1940), 211. (N. L.)

Helefer ("Degewop" A.-G., Berlin-Spandau) is a preparation in the form of granules containing vitamin B complex, liver and iron.—*Pharm. Zentralhalle*, 81 (1940), 211. (N. L.)

Hochheimer Healing Salve (Chem.-pharmaz. Labor. P. Felgenauer & Co., Hocheim/Erfurt) contains diiodo-*para*-phenolsulfonic acid salts in a base consisting of wool fat and vaseline. It is indicated in the treatment of wounds and hemorrhoids.—*Pharm. Zentralhalle*, 81 (1940), 211. (N. L.)

Infant Celin (Glaxo Laboratories Ltd., Greenford, Middlesex) contains in each tablet 5 mg. of ascorbic acid. It is used as a supplementary use in infant feeding where fresh fruit juice is uncertain or reduced in supply. The dose is 1 to 2 tablets, as to age, in milk. It is marketed in bottles of 50 and 1000.—*Australasian J. Pharm.*, 22 (1941), 397. (A. C. DeD.)

Kapseals Combex (Kapseals Vitamin B Complex) (Parke, Davis & Co., Detroit, Mich.) contain in each kapseal vitamin B_1 (thiamine hydrochloride), 1.5 mg. (500 units); vitamin B_2 (G) (riboflavin), 500 mg. (200 Sherman units); vitamin B_6 (pyridoxine hydrochloride), 250 mg.; pantothenic acid 300 mg.; nicotinic acid (P-P factor), 5 mg.; with other components of the vitamin B complex from liver. It is indicated in vitamin B deficiencies. It is supplied in bottles of 100, 500 and 1000 kapseals.—*Modern Pharmacy*, 25 (July 1941), 13. (F. J. S.)

Kapseals Ferro-Desicol (Parke, Davis & Co., Detroit, Mich.) contain in each kapseal 2 gr. of ferrous sulfate, exsiccated, and 4 gr. of desicol and represent approximately 2 cc. of whole fresh bile in a readily soluble form, with ferrous sulfate exsiccated equivalent to 3 gr. of ferrous sulfate U. S. P. The kapseals are indicated for the treatment of iron deficiency anemia, particularly when associated with biliary dysfunction; and they are supplied in bottles of 100, 500 and 1000.—*Modern Pharmacy*, 25 (September 1941), 12. (F. J. S.)

Kapseals Respiratory Vaccine (Parke, Davis & Co., Detroit, Mich.) is a bacterial vaccine, in powdered form, made from pneumococcus (seven types), 30 billion; micrococcus catarrhalis, 2.5 billion; streptococcus (hemolytic and non-hemolytic), 15 billion; influenza bacillus (Pfeiffer), 2.5 billion. It is used for oral administration to induce immunity against the more important bacterial invaders encountered in the common cold. Kapseals Respiratory Vaccine (For Oral Use), 50 billion, are supplied in bottles of 20, 50, 500 and 1000.—*Modern Pharmacy*, 25 (December 1941), 13. (F. J. S.)

Kapseals Taka-Combex (Parke, Davis & Co., Detroit, Mich.) contain in each kapseal 2 1/2 gr. Taka-Diastase, 1.5 mg. vitamin B_1, 500 mg. vitamin B_2, 250 mg. vitamin B_6, 300 mg. pantothenic acid, 5 mg. nicotinic acid, with other components of the vitamin B complex. They are indicated where there is need for vitamin B complex therapy, especially in the presence of lack of appetite, digestive disturbances, convalescence or other conditions which might disturb digestion and prevent absorption of the vitamin B factors. The kapseals are supplied in bottles of 100, 500 and 1000.—*Modern Pharmacy*, 25 (December 1941), 12. (F. J. S.)

Liquid Taka-Diastase (Parke, Davis & Co., Detroit, Mich.) is a palatable liquid (15% alcohol) containing 20 gr. of Taka-Diastase in each fluidounce. Taka-Diastase is a potent starch-liquefying enzyme produced by special strains of *Aspergillus oryzae* (Takamine); and under standard test conditions Taka-Diastase will liquefy 450 times its own weight of starch in ten minutes. It is used as a digestant of starchy foods, with an action similar to that of ptyalin in normal saliva; and also serves as a satisfactory vehicle for masking the disagreeable taste of such drugs as iodides, bromides, salicylates, digitalis or belladonna. Liquid Taka-Diastase is supplied in 8-fluidoz., 16-fluidoz. and 1-gal. bottles.—*Modern Pharmacy*, 25 (May 1941), 13. (F. J. S.)

Neo-Silvol (Parke, Davis & Co., Detroit, Mich.) is a compound of silver iodide with a soluble gelatin base, containing 18% to 22% of silver iodide in colloidal form; and it occurs as cream-colored granules which are soluble in water up to 50%. It is intended for the prophylaxis and treatment of infections of accessible mucous membrane, especially of the genito-urinary tract and of the eye, ear, nose and throat. Its solutions are non-irritating to mucous membranes, do not coagulate albumin and are practically non-staining. It is supplied as follows: Neo-Silvol (granules), in 1-oz. and 1/4-lb. bottles; as 6-gr. capsules in bottles of 50 and 500; vaginal suppositories (5%) in boxes of 12; and as ointment (5%) in 1-drachm collapsible tubes.—*Modern Pharmacy*, 12 (May 1941), 13. (F. J. S.)

Posterisan (Chas. Zimmermann and Co. Ltd., London), suppositories: *B. coli* (steril.), about 33,300 millions; Aq. dest., steril., *ad* 16.0 Gm.; ac. carbol. liq., 0.2 Gm.; ol. cacao, *ad* 100:0 Gm. Ft. suppositor., 50. Ointment: *B. coli* (steril.), about 66,600 millions; adeps lanae anhyd., 16.6 Gm.; vaseline flav., 66.6 grams; acid carbol. liq., 0.5 Gm.; Aq. dest. steril., 16.3 Gm. It is used in all cases where *B. coli* plays a role in the occurrence of aggravation of hemorrhoids. Applicable to both internal and external piles, early, late, acute or chronic, pruritus ani, fissures, eczema and rhagades. Pruritus in vulvae, rectal tenesmus eczema of other parts. It is marketed in boxes of 10 suppositories, ointment (with rectal tube), 1-oz. tube.—*Australasian J. Pharm.*, 22 (1941), 397. (A. C. DeD.)

Prepalin is a highly concentrated preparation of vitamin A free from fishy oil. It is issued in liquid form, in ampuls and in capsules. The liquid contains 72,000 units of vitamin A per cc., prepalin ampuls each contain 100,000 units per cc. and each 3-minim capsule contains 24,000 units. The dosage by intramuscular injection is one to two doses of 1 cc., the second being administered after three to seven days. In severe cases 1 cc. weekly for six to ten weeks is suggested. The dose by mouth in severe infections is 3 capsules, or 1 cc. of liquid, daily. In prophylaxis 1 to 3 capsules daily are used. The liquid is issued in 8-cc. phials, the ampuls in boxes of 6 and 12 and the capsules in boxes of 25, 100 and 1000.—ANON. *Quart. J. Pharm. Pharmacol.*, 14 (1941), 208. (S. W. G.)

Psycho-Neuryl (Bengue and Co. Ltd., Alperton, Middlesex) contains bone marrow, orchitine, pituitary anterior lobe, suprarenal, manganese, nucleinate, ammonium bromide. It is used in organic deficiencies, depression, debility, nervous spasms, asthenia, disturbances of the circulation. The dose is two to four tablets daily, as the physician directs. It is supplied in a tin of 40 tablets.—*Australasian J. Pharm.*, 22 (1941), 397. (A. C. DeD.)

Siblin (Parke, Davis & Co., Detroit, Mich.) is a palatable granular preparation of a highly water-absorbent material derived from certain species of plantago, combined with Crysto-Vibex (crystalline vitamin B_1—thiamine hydrochloride). Each rounded teaspoonful (about 4.5 Gm.) contains approximately 150 International Units of vitamin B_1. It is indicated in the systematic treatment of constipation of atomic or spastic type. Silbin is supplied in 4-oz. and 1-lb. friction top tins.—*Modern Pharmacy*, 25 (July 1941), 12. (F. J. S.)

Siccolam is a paste containing titanium dioxide, zinc oxide and small quantities of purified silicates in a fat-free base. It is claimed to have more efficient dehydrating properties than lotions of the calamine type. It is recommended in exudatory dermatoses in which fatty preparations are contraindicated. The affected area is thinly covered with the paste and dressed with dry cotton or linen. Fresh applications should be made twice daily over the previous application. Siccolam is supplied in collapsible tubes of 2 oz. and 4 oz.—ANON. *Quart. J. Pharm. Pharmacol.*, 14 (1941), 208. (S. W. G.)

T. C. 6 (Schering A.-G., Berlin) are ampuls of 10 cc. containing a 10% stable aqueous solution of potassium thiosulfate. They are recommended in the treatment of allergic conditions.—*Pharm. Zentralhalle*, 81 (1940), 186. (N. L.)

Tissot Charcoal Granules (Bengue and Co. Ltd., Alperton, Middlesex) is pure medicinal charcoal, prepared from the wood of the poplar tree, flavored with aniseed; also containing naphthol or magnesium. It is used in cases of dyspepsia, flatulence, intestinal atony, enteritis, constipation, toxemias. The dose is one to two teaspoonfuls three times a day, after meals. May be used with any other form of special treatment. It is marketed as granules in about 3-oz. tins.—*Australasian J. Pharm.*, 22 (1941), 549. (A. C. DeD.)

Ulcatren (Behringwerke, Marburg) is an yatren vaccine containing the various forms of the Unna Ducrey bacillus suspended in a 3% solution of yatren.—*Pharm. Zentralhalle*, 81 (1940), 186. (N. L.)

Vaso-Neurine (Bengue and Co. Ltd., Alperton, Middlesex) is an extract of jaborandi, magnesium chloride, alcohol and an excipient (a liquid). It is used in circulatory disorders, glandular affections, bronchopulmonary congestion, hemoptysis, neurosensitive troubles. The dose is 8 to 15 drops two or three times daily in a little water, after meals. Treatment to be taken 15 to 20 days each month. It is marketed in bottles of approximately 1 oz.—*Australasian J. Pharm.*, 22 (1941), 478. (A. C. DeD.)

Viteolin Capsules are standardized to contain in each 3-minim capsule the vitamin E activity of 6 mg. of *alpha*-tocopherol. This is equivalent in activity to ½ to 1 drachm of wheat germ oil. The dose for the treatment of repeated abortion is 1 capsule daily, beginning when pregnancy is diagnosed; for threatened abortion the initial dose is 5 capsules, followed by 1 capsule daily for the remainder of pregnancy. Viteolin is obtainable in boxes of 25, 100 and 500 capsules.—ANON. *Quart. J. Pharm. Pharmacol.*, 14 (1941), 208. (S. W. G.)

Zentra-Lecithin Pearls (P. Knufinke, chem.-pharmaz. Präparate, Wuppertal-Barmen) contain in each pearl, 0.05 Gm. of lecithin and are indicated in nervous conditions.—*Pharm. Zentralhalle* 81 (1940), 186. (N. L.)

BACTERIOLOGY

Acriflavine—Components of. The following conclusions are given: While mixtures containing about 30% of 2,8-diaminoacridine (I) exhibit a slightly greater solubility than those of each component or other mixtures of each, the enhancement of solubility is not great. Again, the solubility of the pure components or of any mixture of the two is less than that of commercial acriflavine. The physical data obtained afford little evidence of the formation of any definite eutectic or compound. The bacteriological evidence is in accordance with the physical data in that no mixture of the two components possesses greater bacteriostatic power than either component. Against streptococci the methochloride appears to be more active than the diaminoacridine. The bacteriostatic values obtained for the two components and their mixtures are of the same order as those recorded for acriflavine, which values were confirmed during this study. These facts point to the presence in acriflavine of one or more unknown constituents which, while not affecting the bacteriostatic value, do appreciably enhance the solubility. There would appear to be no reason, as far as bacteriostatic activity is concerned to alter the monograph on acriflavine in the First Addendum (B. P.) by insisting on exact proportions of the two active components. These results, however, taken in conjunction with the evidence of the greater toxicity of acriflavine, suggest that there is no logical basis for the continued use of acriflavine in preference to proflavine. Proflavine is the sulfate of I and is less soluble than both acriflavine and the neutral hydrochloride of the base. Its bacteriostatic value is of the same order as acriflavine. The best derivative of I to use would be the neutral hydrochloride but proflavine has obtained the sanction of time, and even though its solubility is small (about 1 in 300) it is sufficient to permit the preparation of solutions more concentrated than those used in practice.—H. BERRY. *Quart. J. Pharm. Pharmacol.*, 14 (1941), 149–156. (S. W. G.)

Aminosulfonic Acid Analogs of Natural Aminocarboxylic Acids as Inhibitors of Pathogenic Bacteria. Certain compounds inhibit the growth of microörganisms by interfering with substances essential to reactions involved in their growth. This may occur in some cases because the inhibitor is structurally similar to the essential substance to such a degree that the inhibitor blocks enzymes whose normal substrate is the essential metabolite in question. Sulfanilamide interferes with *p*-aminobenzoic acid in this way as does pyridine-3-sulfonic acid and its amide with nicotinic acid and derivatives thereof. To obtain other inhibitors for pathogenic bacteria, the author has synthesized a series of aminosulfonic acids analogous to certain aminocarboxylic acids (*e. g.*, α-aminoacids and β-alanine) which are known to be essential to pathogenic bacteria. α-Aminomethane-, ethane-, isobutane-, isopentane-, phenyl-methane sulfonic acids and an aminosulfonic acid derivative of citronellal have been prepared by acting aqueous ammonia on the corresponding aldehyde bisulfite compounds. These compounds show promise. The sulfonamide corresponding to taurine was also prepared in view of the importance of β-alanine to bacterial nutrition.—HENRY MCILWAIN, *J. Chem. Soc.* (1941), 75–77. (W. T. S.)

Anerobic Bacteria—Factors in the Cultivation of. A discussion of the main factors which affect the

anerobic conditions necessary for the cultivation of some bacteria, including the exclusion of the ubiquitous oxygen of the air, the provision of a medium of sufficient reducing intensity and capacity, and the condition of the inoculum.—C. J. G. KNIGHT. *Chemistry and Industry*, 60 (1941), 369–371. (E. G. V.)

Antiseptic and Germicidal Paints. Addition of antiseptics in practicable amounts to paints has met with little success. Exceptions are chlorophenols and oxyquinoline sulfate which offer some promise. Halogenated vehicles, such as one containing 4 per cent chlorine, added to linseed oil give the best results obtained to date. Techniques for examination are discussed in detail and modifications suggested. At best, however, antiseptic and germicidal paints are not actually so under all practical conditions of use, and further research is needed.—S. S. EPSTEIN and F. D. SNELL. *Ind. Eng. Chem.*, 33 (1941), 398–401. (E. G. V.)

Antitoxins—Storage of, During Wartime. *Desiccation:* The apparatus consists essentially of a still for the removal of water by distillation at an effective working temperature of 36°. During this work plasma from horses hyperimmunized against various agents was dried, using the titer of biological potency as a method of estimating any loss occurring during drying. It was found that antitoxic serum can be successfully reduced to powder in this apparatus with full retention of potency even after the dried material has been kept at room temperature for long periods. The addition of 0.4% of sodium citrate prior to drying gives a more readily soluble product and the presence of 0.1% of *p*-chloro-*m*-cresol in the liquid serum does not affect either the solubility or the potency of the final powder. Since approximately 75% of the bactericide originally present appears in the final product, the sterility of this is insured. The following sera have been successfully dried: diphtheria, vibrion septique, oedematiens, lamb dysentery, ovitoxicus, perfringens, tetanus and both antitoxic and antibacterial dysentery. A polyvalent antibacterial dysentery serum prepared against Flexner V, W, X, Y and Z antigens showed the same ratio of potency against each antigen present before and after drying. The stability of the dried powders is such that for about six months serum dried in this manner has been used as a substandard in the routine assay of certain antitoxic sera. Frequent comparison against International Standards has failed to show any loss of potency. *Dry ammonium sulfate precipitate:* Certain biologically active materials such as toxins are very much more stable in the form of dried ammonium sulfate precipitates than when in a liquid form. During the purification and concentration of most antitoxic sera potent globulins are precipitated by the addition of ammonium sulfate. This precipitate has been dried in air at a temperature of 35° and potency has been found to be retained in the dry material. A sample of dried precipitate from one batch of diphtheria antitoxin concentrated by an enzyme digest process has been stored both at 37° and 50° for six months without losing any potency. Digest material was chosen for this test because the flocculating time of this material is very short. The samples were tested in the form of a 10% aqueous solution of the powder. Storage experiments are in progress using various types of serum and serum subjected to various methods of concentration. The results to date indicate that this method is of general applicability to all sera, the normal concentration of which includes a final ammonium sulfate precipitation stage. Normally, for issue, the required weight of powder is dissolved in the required volume of sterile water. Sodium chloride and preservative are added as necessary, to adjust to normal proportions. The pH is adjusted and the solution filtered through a Seitz filter. It is then subjected to tests for potency and sterility. In the event of an emergency occurring the Seitz filtrate can be distributed immediately, performing the potency assay at the same time as the sterility test. In a more serious emergency a solution could be made up with aseptic precautions and used as such at once.—G. E. SHAW and H. G. HIND. *Quart. J. Pharm. Pharmacol.*, 14 (1941), 123–126. (S. W. G.)

Bactericides—Perfusion Technique for the Evaluation of, by the Tissue Culture Method. A simple perfusion technique as an accurate method for evaluating the toxicity of bactericides is presented. This was compared with the plasma-clot technique employing eleven commonly used antiseptics. From the results obtained it is reasonable to conclude that the perfusion technique findings are in harmony with those obtained by the plasma-clot methods reported by other workers. The perfusion technique is to be preferred on account of the ease in performing it and its comparative low cost.—B. WITLIN. *Am. J. Pharm.*, 113 (1941), 203. (A. C. DeD.)

Bovine Tubercle Bacilli in Rabbits by Anthracite Dust—Adsorption of the Early Products of. The addition of a small quantity of anthracite dust to quanta of living bovine tubercle bacilli has led, in five animals, to their survival of considerably longer periods than the five control rabbits receiving bovine bacilli alone, and, in one, to complete recovery up to six months. This appears to be due to the absorption by anthracite dust of a proportion of the toxic products of living tubercle bacilli in the tissues.—S. L. CUMMINS. *Brit. Med. J.*, 4166 (1940), 623. (W. H. H.)

Chemotherapy—Antibacterial. A review of the literature on chemotherapy from July to December 1940 provides the following conclusions: New biologic researches clarify the mechanism of the mode of action of the sulfonamide drugs, proving a relationship between sulfapyridine and the vitamin B complex, particularly nicotinic acid; and between sulfapyridine and the antipneumococcic serum in pneumococcus pneumonia. Of the other derivatives sulfaguanidine is of proved value in intestinal infections; sulfathiazole has been beneficial in tuberculosis and may be substituted for sulfapyridine in pneumonia. Experimental work is being done in transfusion with human serum fortified with 0.05% sulfanilamide.—QUINTINO MINGOJA. *Arq. Biol., Sao Paulo*, 25 (1941), 77. (G. S. G.)

Coarse Particles—Use of Charred Lens-Paper for Filtration of. The author suggests the use of charred lens-paper for filtering coarse particles, *e. g.*, stools for the demonstration of tubercle bacilli. Lens-paper is cheap, more uniform and when charred is acidfast to Ziehl-Neelsen staining. Texture of the charred paper is pictured under magnifications of 13× and 155×.—BENJAMIN H. Y. T'ANG. *Chinese Med. J.*, 59 (1941), 182–183. (W. T. S.)

Dysenteric Bacteria—Identification of. Bacteria may be identified microscopically, serologically or biochemically. The biochemical tests depend on their activity with various carbohydrates and are tabulated as follows: (*a*) Exotoxic dysenteric acidifies glucose producing indol and secreting exotoxin; the sole example is *Shiga dysenteriæ*. (*b*) Paradysenterics acidify glucose and mannitose but not lactose; their classification in conflicting. (*c*) Metadysenterics acidify glucose, mannitose and lactose; the principal types being *Shiga ceylonensis* A and B and *Shiga madampensis*. Serologically the exotoxic dysenteric and the metadysenteric are homogenous and produce specific diagnostic and therapeutic sera. But the paradysenterics constitute

serologic varieties difficult to classify, hence a polyvalent serum must be used for them.—ETTORE BIOCCA. *Arq. Biol., Sao Paulo,* 25 (1941), 172. (G. S. G.)

Fungistatic Properties of Antiseptics and Related Compounds. The pH of the medium has no appreciable effect on the fungistatic properties of mercuric chloride, formaldehyde, phenol, copper sulfate and iodine which are apparently due to the inherently poisonous nature of the materials. In the case of sodium thiosulfate, sodium sulfite and hexamine, the decomposition of the molecule at certain pH values, with the consequent liberation of toxic products, indicates an indirect effect of pH on fungistatic properties. The pH of the medium has a significant effect on the fungistatic properties of benzoic acid, salicylic acid, acetylsalicylic acid, propionylsalicylic acid, catechol (to some extent), resorcinol and hydroquinone. The pH of the medium also has an effect on the fungistatic properties of boric acid. A suggested relation of structure of fungistatic power is made.—C. HOFFMAN, T. R. SCHWEITZER and G. DALBY, *Ind. Eng. Chem.*, 33 (1941), 749–751. (E. G. V.)

Germicidal Power of Certain Chemicals. This gives a comprehensive review of literature on germicides, with specific emphasis on alcohol. Comparisons were made *in vitro,* on both broth cultures and agar plates of varying organisms. Distilled water, hot and cold, and with chlorine was used as a comparative germicide. Different dilutions of alcohol, both propyl and ethyl, were used. Propyl alcohol was found as efficacious as ethyl and more economical. The method used was to impregnate silk threads, both wet and dry and fine metal wires with the organisms either suspended in the tubes or laid on the agar plates. The types of organisms used were *M. tetragenous, B. pyoceaneus, M. prodigiosus, Staphylococcus p. a., B. subtilis, B. antracis* and *B. coli.* Tabulations were made of results with various dilutions of alcohol, 25, 50, 70, 80 and 99%, and curves were plotted. Eighty per cent alcohol was found most active. The antiseptic potency of a solution bears direct relation to the coefficient of its surface tension.—JOSE·RAMOS BANDEIRA and LUIS DUARTE RODRIGUES. *Noticias Farm.*, 7 (1940-1941), 74, 141 and 229. (G. S. G.)

Histamine and Adenyl Compounds—Liberation of, by Cl. Welchii Type D. The frequent occurrence of hemorrhage and hemorrhagic edema in the organs of certain animals receiving intravenous injections of the toxin of *Cl. Welchii* (type D), indicates that it severely injures the tissues and likely causes liberation of histamine. The authors have described some experiments which showed that this toxin does cause liberation of histamine from the perfused lungs of cats and of adenyl compounds, and of an inactivating enzyme from the perfused liver of the rabbit and heart of the cat. The role of these substances in producing toxemias is described.—C. H. KELLAWAY, E. R. TRETHEWIE and A. W. TURNER. *Australian J. Exp. Biol. Med. Sci.*, 18 (1940), 253-264. (W. T. S.)

Human Serum in Shock. A method is described of preparing serum from stored blood. The advantages of this process are that the serum is sterile, of a satisfactorily high protein content and can be given to patients irrespective of their blood groups. The solution seems to remain free of particulate matter. The process utilizes blood which has been in the bank too long to be used for whole-blood transfusion, thus effecting a big economy.—J. W. CLEGG and J. H. DIBLE. *Lancet,* 239 (1940), 294. (W. H. H.)

Lecithin—Enzymic Hydrolysis of, by Cl. Welchii Toxin. Samples of *Cl. welchii* (type A) toxin hydrolyze the lecithin fraction of egg yolk quantitatively into a water-soluble phosphorus compound and a neutral fat. The phosphorus compound was hydrolyzed by a bone phosphotase preparation free from diesterase, and was therefore a monophosphoric ester; it was slowly hydrolyzed in *N*-hydrochloric acid at 100° $k = 0.15 \times 10^{-3}$, with liberation of choline. Seventy per cent of the original lecithin phosphorus was recovered as the crystalline calcium compound of phosphorylcholine. The neutral fat, saponification value 179, contained one equivalent of glycerol to approximately one equivalent of saturated fatty acid (calculated as oleic acid), the fatty acids being separated by the solubility of the lead salts in 95% alcohol. The products of the hydrolysis are therefore consistent with the conversion of a typical lecithin into phosphorylcholine and stearyloleylglyceride. It seems probable that the lecithase present in the toxin is responsible for the development of opalescence in human serum and egg yolk emulsion, an activity which has been shown to run parallel with the lethal power of the toxin.—M. G. MACFARLANE. *Chemistry and Industry,* 60 (1941), 220. (E. G. V.)

Pectin—Role of the Intestinal Bacteria in the Decomposition of. The results show that pectin is decomposed by bacteria present in feces obtained from humans and dogs on a normal diet and after pectin had been added.—S. C. WERCH, A. A. DAY, R. W. JUNG and A. C. IVY. *Proc. Soc. Exptl. Biol. Med.*, 46 (1941), 569. (A. E. M.)

Pertussis Vaccine—Control of Whooping Cough with. Data have steadily been accumulated to show that among children who have been vaccinated for whooping cough, fewer cases occur. Often the cases are less serious than those who have received no immunization. The authors believe that parents should be encouraged to have their children immunized against pertussis just as they are usually against smallpox and diphtheria. They believe it is fully possible with a combination of vaccination and public health control eventually to abolish the disease completely. Most workers feel that immunization should be done shortly after the sixth month of life. The original strength of vaccine described by Sauer was 10 billion organisms to one cubic centimeter. In small children, 1 cc. of this strength is given in the deltoid region of each arm as the initial dose, followed a week later by similar injections in another location on each arm. A week later 2 cc. doses are given in each arm. A majority of investigators agree that the total dosage should be not less than 80 billion organisms.—J. D. LEMAR and J. G. MARKLE. *Rocky Mountain Med. J.*, 38 (1941), 297; through *Abbott Abstract Service,* (1941), No. 928. (F. J. S.)