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PHARMACEUTICAL ABSTRACTS

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ABSTRACTORS

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CHEMISTRY

ANALYTICAL (*Continued*)

Pepsin—Assay of. It is recommended that the assay of pepsin be carried out using a single easily obtained protein such as edestin rather than the mixture found in egg albumin. The use of edestin is not new. The method of obtaining edestin from kemp seed is given. The method depends upon the fact that sodium acetate or acetic acid precipitates edestin from solution but not its hydrolytic products. Thus at the end of the digestion, the remaining edestin is precipitated by the addition of sodium acetate and the turbidity compared with that of a carefully prepared standard. Full details for carrying out the assay are given. A preliminary test is run to determine the range of the activity of the pepsin and this is then followed by a carefully controlled series of tests to evaluate the pepsin. The methods of observation and calculation of results are given in detail. The test is simple, rapid, inexpensive and may be performed by any pharmacist. Opalescence and turbidity are defined in terms of readily reproducible mixtures, as for example, one drop of milk in 15 cc. water or a definite amount of silver chloride in 100 cc. water, or in terms of the edestin precipitate with sodium acetate.—R. CORTESI. *Pharm. Acta Helv.*, 14 (1939), 99–108. (M. F. W. D.)

Pharmaceuticals—Use of Spot Tests for the Examination of. IX. For the detection of free chlorine and substances containing chlorine, prepare test paper by moistening filter paper with a solution of 0.1 Gm. fluorescein and 0.5 to 0.8 Gm. of potassium bromide in 100 cc. of dilute potassium hydroxide solution. If the pale yellow paper is held over the vapor to be tested, a violet-red color will be produced if free chlorine is present. As little as 0.004 mg. of chlorine can be detected. The paper does not react appreciably with hydrogen peroxide, nitric and nitrous acids, persalts, chromates and permanganates. Hydrogen peroxide and persalts give a slight coloration after some time. Chlorides treated with manganese dioxide and sulfuric acid will give the test.—O. FREHDEN and C. H. HUANG. *Mikrochemie (Mikrochimie Acta)*, 26 (1939), 41–43; through *Chimie & Industrie*, 42 (1939), 1026. (A. P.-C.)

Phosphate—Colorimetric Determination of. A colorimetric method for phosphate is described which employs a molybdate-hydrochloric acid solution instead of a molybdate-sulfuric acid solution. This method is not affected by chlorides or by ferric ion up to 15 p. p. m. Fading is less rapid than with most methods. The method is applicable for phosphate determinations in soil fusions, hydrochloric acid extracts of soils, water analyses, oceanographic analyses, plant oxidations in which the sample is taken up in hydrochloric acid and biological determinations.—S. R. DICKMAN and R. H. BRAY. *Ind. Eng. Chem., Anal. Ed.*, 12 (1940), 665–668. (E. G. V.)

Phosphoric Acid—Spectrophotometric Determination of, by Means of Denigès' Molybdenum Blue Reaction. The application of the Pulfrich photometer to the method is described. The blue color follows the Lambert-Beer law. Ferric iron interferes by its oxidizing action and must be reduced to the ferrous state by aluminum foil as a preliminary step.—S. R. PEREIRA. *Bull. soc. chim. biol.*, 21 (1939), 827–835; through *Chimie & Industrie*, 43 (1940), 109–110. (A. P.-C.)

Photographic Silver-Gelatin Paper as a Reagent in Spot Analysis. Photographic paper developed to complete blackness becomes more brightly reflecting upon dipping in hot water. This brightening is prevented by all mercaptans and seleno alcohols, by certain heterocyclic substances containing imino groups, by salts of the nobler metals such as silver, by iodides and by substances which easily split off selenium or tellurium. On this reaction is based a microanalytical test for these substances which is here described in detail and theoretically discussed. The reaction is carried out with a drop of the test solution; the limiting concentration is of the order of magnitude of 1 to 100,000. The method has been extended to the detection of other substances and a further increase in the sensitivity of the reaction is possible.—G. SCHWARTZ. *Ind. Eng. Chem., Anal. Ed.*, 12 (1940), 369–372. (E. G. V.)

Polyalcohols—Quantitative Determination of Certain, in the Presence of Each Other. Methods based on the reaction of periodic acid on polyalcohols have been developed for the determination of ethylene glycol and glycerol in the presence of each other. By using an oxidation with acid dichromate in conjunction with a periodic acid oxidation, solutions containing three polyalcohols may be analyzed. A qualitative test for distinguishing between glycerol and ethylene glycol is given and a method for investigating unknown solutions containing polyalcohols is outlined. The methods give good results on synthetic solutions of known composition.—N. ALLEN, H. Y. CHARBONNIER and R. M. COLEMAN. *Ind. Eng. Chem., Anal. Ed.*, 12 (1940), 384–387. (E. G. V.)

Potassium—Determination of Small Amounts of. Potassium is precipitated as potassium silver cobaltinitrite. The method is applicable to biological materials.—B. KLEIN and M. JACOBI. *Ind. Eng. Chem., Anal. Ed.*, 12 (1940), 687–688. (E. G. V.)

Potassium—Photometric Determination of, with Dipicrylamine. A revision of the method of Kolthoff and Bendex and an indirect method are described.—E. AMDUR. *Ind. Eng. Chem., Anal. Ed.*, 12 (1940), 731–734. (E. G. V.)

Protective Devices—Isolating Individual. Apparatus of this nature is of four different types based on the use of: compressed air, compressed oxygen with regeneration (by means of potash-lime) or liquid oxygen, chemically produced oxygen with purification of the exhaled air, and simultaneous production and regeneration of oxygen (granulated peroxides). The use of such apparatus is less common than that of filtering masks; but they are of considerable interest in the case of atmospheres containing massive amounts of aggressive substances.—P. RENAUD. *Gaz de Combat*, 5 (1939), 168–199; through *Chimie & Industrie*, 43 (1940), 470. (A. P.-C.)

Silk—Artificial, Determination of, in Fabrics Mixed with Cotton. The reagent used is made as follows. Put 2 Kg. of dry zinc chloride in a 3-liter conical flask and add 1050 cc. of water. Shake until dissolved and add gradually while still warm 80 Gm. of zinc oxide. Wrap the flask in flannel and place it on a water bath for 4 hours, shaking from time to time. Cool, cork and leave for 24 hours. Filter through glass wool and adjust, if necessary, to sp. gr. 1.835 either by evaporation or dilution. The apparatus used consists of a 200-cc. flask attached by a ground glass joint to a tube 32 mm. in diameter, long enough to contain a thermometer, fixed to a reflux condenser. The thermometer is suspended so that its bulb is immersed in the basic zinc chloride solution and the temperature can be read through the tube. Moisten about 10 Gm. of fabric with water and drop it into a beaker containing 300 cc. of 0.1% w/v sodium carbonate solution which is gently boiling. Continue the boiling for exactly 15 minutes, pour off the liquid, wash two or three times by decantation with hot water and finally with a jet of water, cautiously rubbing the fabric with the finger. Bring 300 cc. of water containing 9 cc. of concentrated hydrochloric acid to a boil, plunge the

fabric in the liquid and stand it on a water bath for 15 minutes, stirring occasionally. Wash two or three times by decantation with hot water, squeeze and immerse for 5 minutes in 200 cc. of a 0.1% solution of sodium carbonate, wash with boiling water, then under a fine stream of water, without rubbing, squeeze well and dry for two hours at 100° to 105°. Expose to the air for 24 hours to reach normal humidity. Separate about 2 Gm. of the washed fabric into threads and weigh. Put 100 cc. of the zinc chloride solution in the flask and bring to a boil, when it is boiling well the thermometer should register about 135°, remove the flask, put the threads into the solution, refit the condenser and replace the flame; the temperature will have fallen to about 130°, allow it to rise to 132°, start a stop-watch and keep boiling for exactly a minute and a half, agitating the flask three or four times. Pour immediately into water acidified with hydrochloric acid, separate the fibers from the liquid by means of a fine meshed sieve, boil twice with water for five minutes, wash with alcohol and ether, dry in an oven for one hour and expose to the air for 24 hours to regain the original humidity. The loss in weight is due to the artificial silk. Pure cotton loses from 0.6% to 1.25%, raw cotton about 3%, ramie about 1%, hemp about 7%, linen about 5% and wool about 0.5% under this treatment. Natural silk is completely dissolved unless it is very heavily loaded.—A. CAPPELLI and R. TUFFI. *Ann. chim. applicata*, 29 (1939), 231; through *Quart. J. Pharm. Pharmacol.*, 12 (1939), 615. (S. W. G.)

Sodium Cacodylate—Assay of. Alkalimetric titration of cacodylate gives results in good agreement with the bromometric method.—A. SIM. *Pharmacia*, 19 (1939), 103–105; through *Chimie & Industrie*, 42 (1939), 1029. (A. P.-C.)

Sulfamides—New Reaction of. Paracresol-Tyrosinase Reagent. The reaction of the functional NH_2 group with paracresol-tyrosinase reagent is positive if the group is free or weakly substituted, *e. g.*, sulfamide; but it is negative if the amino group is strongly substituted, the amido group remaining free—the latter never enters into reaction.—F. WYSS-CHODAT and R. POLLARD. *Arch. sci. phys. nat.*, 21 (1939), 50–53; through *Chimie & Industrie*, 43 (1940), 757. (A. P.-C.)

Sulfur—Color Test for. Pyridine is an excellent solvent for crystalline and amorphous sulfur. On addition of a small amount of aqueous alkali to a solution of sulfur in pyridine, colors are obtained which allow a roughly quantitative estimation of the amount of sulfur present. As little as 2γ in 1 cc. may be detected by a light blue color.—H. SOMMER. *Ind. Eng. Chem., Anal. Ed.*, 12 (1940), 368–369. (E. G. V.)

Sulfur—Microdetermination of, in Organic Compounds. Two forms of an absorber which can be used for the determination of sulfur by the method of combustion are described. One meets the needs of the average laboratory and allows more rapid burning of the sample. It is designed so that the products of combustion can be washed from the absorber without removing the tube from the furnace. Sulfur trioxide mist, which once formed cannot be absorbed, is eliminated with this type of absorber except in those infrequent cases where the compound burns very rapidly. The other absorber meets the needs of routine laboratories where a large number of sulfur compounds must be analyzed. An electroprecipitator positively dissipates the sulfur trioxide mist and any lower oxides of sulfur are oxidized to sulfur trioxide because of the formation of ozone. This absorber retains the advantages of the one above but allows slightly more rapid burning, uses water as an absorbent and allows the titration of the sulfate using the indicator tetrahydroxyquinone as soon as it is washed from the absorber.—L. T. HALLETT and J. W. KUIPERS. *Ind. Eng. Chem., Anal. Ed.*, 12 (1940), 357–359. (E. G. V.)

Sulfur—Semimicrodetermination of, in Organic Materials. The method is based on Sanchez' method (*J. Pharm. Chim.*, 27 (1938), 5–18) for the semimicrodetermination of halogens in organic compounds. The sulfur is oxidized in a sealed tube with potassium permanganate, the sulfate formed is precipitated with barium chloride in slight excess and this excess is precipitated in turn with potassium chromate in slight excess. The excess of chromate finally is titrated iodometrically. A blank determination on potassium sulfate should be carried out as a check.—A. ANGELETTI. *Ann. chim. applicata*, 29 (1939), 356–359; through *Chimie & Industrie*, 43 (1940), 108. (A. P.-C.)

Tartrate—Detection of. (1) To 3 cc. of aqueous sodium carbonate extract add 1 drop of 10% lead nitrate, heat and make ammoniacal. If tartrate is present lead ions will remain in solution and can be detected by adding acetic acid with potassium dichromate. This test has little value because even ammonia alone may give a positive test and out of twenty-eight other organic compounds tested twenty-four gave similar results. (2) To 3 cc. of sodium carbonate extract add 2 drops of ferric chloride solution and 5 drops of ammonia solution. Heat to boiling and filter. If tartrate is present the filtrate will be yellow or brownish yellow. This test is sensitive but there is interference by common ions and fourteen out of twenty-eight other organic acids were found to react in the same manner.—K. G. BERGNER. *Z. anal. Chem.*, 120 (1940), 1–6. (S. W. G.)

Tea Tannin—Methods for the Volumetric Estimation of, in Green Leaf and Black Leaf. A New Alkaline Permanganate Method. Current methods for the volumetric estimation of tannins are reviewed. Errors in such determinations are mainly due to the arbitrary nature of the end-point which corresponds with no definite end product of oxidation. For unoxidized tannins these methods give fairly accurate results but they are completely unreliable when oxidized tannins are being estimated, as the titration is carried to a different end-point owing to decreases in the rate of oxidation of the tannin bodies as a result of condensations following oxidation. The Stamm alkaline $KMnO_4$ method gives a much more accurate result for oxidized tannins, as in this method the tannins are oxidized completely to carbon dioxide.—D. N. BARUA and E. A. HOUGHTON ROBERTS. *Biochem. J.*, 34 (1940), 1524. (F. J. S.)

Thiamine Chloride and Bismuth Tri-Iodide Complex. The insoluble red addition compound formed by the precipitation of thiamine chloride with Dragendorff's reagent has been analyzed for bismuth and nitrogen and found to correspond to $C_{12}H_{17}OSN_4Cl.HCl.2BiI_3$, the bismuth being 27.6%. It has been called bismothiamin. Its pharmacological properties are being studied.—C. S. LEONARD. *Jour. A. Ph. A.*, 30 (1941), 21. (Z. M. C.)

Thiocyanate, Iodide, Bromide and Chloride—Systematic Detection of. A new procedure for the systematic detection of thiocyanate, iodide, bromide and chloride has been developed which does not involve the use of silver ion as a group reagent. This method is capable of detecting 1 mg. each of thiocyanate, iodide and chloride, and 2 mg. of bromide in 3 cc. solution. In addition to the usual interfering acids ferrocyanide, cyanide and sulfide, it was found that thiosulfate, arsenate and tartrate interfered in the new procedure. Hence, methods were devised for the removal of all interferences.—D. HART and R. MEYROWITZ. *Ind. Eng. Chem., Anal. Ed.*, 12 (1940), 318–320. (E. G. V.)

Vitamin A—Assay of. From a brief discussion of the more important data published during the preceding year (18 references) it is concluded that the following points should be given attention in further work on vitamin A determination: (1) Apparatus of the spectrophotometric type should be standardized with potassium chromate in twentieth normal sodium hydroxide and a technique for standardization should be instituted. (2) The saponification procedure should be given specific consideration (the technique used in the laboratory of the U. S. Food and Drug Administration at Washington is described in detail). (3) Details of technique should be made more evident to coördinators of collaborative activity, a questionnaire being suggested.—J. B. WILKIE. *J. Assoc. Official Agr. Chem.*, 23 (1940), 336–341. (A. P.-C.)

Vitamin A Preparations—Assay of. The differentiation of carotene and vitamin A by means of the antimony trichloride reaction is described. In presence of acetic anhydride the blue color obtained with carotene persists; with vitamin A it is fugitive. —Y. RAOUL and P. MEUNIER. *J. Pharm. chim.*, 29 (1939), 112–118; through *Chimie & Industrie*, 42 (1939), 1024. (A. P.-C.)

Vitamin D and Vitamin A—Estimation of Units of, in Fish Liver Oils and Their Concentrates. Vitamin D was determined by the A. O. A. C. chick method modified by the feeding of the U. S. P. reference oil at 5, 10 and 15 units per 100 Gm. of feed, and the oils to be tested at 10 units (as guaranteed) to 100 Gm. of feed. Six sets were run on 17 oils. The units of vitamin D were calculated from the ash analyses and reasonably concordant results were obtained. Vitamin A was estimated by spectrographic and biological methods on 24 samples of fish liver oils or concentrates, and 18 samples were appreciably below guarantee. The spectrographic method is satisfactory for rapid preliminary testing of the oils.—G. S. FRAPS, A. R. KEMMERER, W. W. MEINKE and S. M. GREENBERG. *J. Assoc. Official Agr. Chem.*, 23 (1940), 417–422. (A. P.-C.)

Vitamin D—Assay of. The feeding of solids not fat in the form of skim milk, in a quantity equal to that contained in the sample of milk under investigation, along with the calculated quantity of reference oil, should furnish a reference standard that is more comparable with vitamin D milk than is the reference oil alone.—WALTER C. RUSSELL. *J. Assoc. Official Agr. Chem.*, 23 (1940), 341–345. (A. P.-C.)

Vitamins—Assay of. A brief discussion of the work being undertaken by the A. O. A. C. on vitamin assays.—E. M. NELSON. *J. Assoc. Official Agr. Chem.*, 23 (1940), 334–336. (A. P.-C.)

Zinc—Determination of, in Presence of Iron, Copper, Manganese and Magnesium in Organic Tissues. Iron, manganese and magnesium are precipitated with sodium carbonate and ammonia in presence of sodium acetate; zinc and copper are precipitated completely in the filtrate by means of ammonium sulfide. After washing the precipitate, the zinc is dissolved therefrom either with ammonium phosphate or with oxyquinoline in acetic acid solution; but best results are obtained by determining zinc as the double phosphate of zinc and ammonium.—Z. GRUZEWSKA and G. ROUSSEL. *Compt. rend. soc. biol.*, 130 (1939), 1209–1211; through *Chimie & Industrie*, 42 (1939), 964. (A. P.-C.)

Zinc—Determination of Traces of. The previously described method (*J. Assoc. Official Agr. Chem.*, 22 (1939), 333–338) was studied collaboratively. The collaborators seemed to acquire the general technique more readily than was expected, but their control was faulty. Photoelectric measurement is preferable to visual estimation of the color.—E. B. HOLLAND and W. S. RITCHIE. *J. Assoc. Official Agr. Chem.*, 23 (1940), 302–303. (A. P.-C.)

Zinc in Snake Venoms—Estimation of, by Micro-Quinaldinate Method. The percentages of zinc in various types of Indian snake venoms have been determined microchemically by means of sodium quinaldinate. It has been found that the zinc content varies from 0.56% in the case of *Naja naja* cobra venom to less than 0.02% for *Bungarus ceruleus* among the colubrides, and from 0.186% in the case of *Echis carinata* to 0.04% for Russell's viper among the viperides. In purified neurotoxin and hemolysin fractions of *Naja naja* cobra venom, the zinc percentage is reduced to negligible amount. These results indicate that there is no relationship between the zinc content of the crude venom and its toxicity as was previously assumed by Delezenne. The sensitivity and the reliability of the quinaldinate method for the estimation of minute quantities of zinc in biological materials are thus clearly demonstrated.—PRIYADARANJAN RAY. *J. Indian Chem. Soc.*, 17 (1940), 681. (F. J. S.)

PHARMACOGNOSY

VEGETABLE DRUGS

Ash in Medicinal Plants. In general the ash of a plant varies from 1.5 to 5 Gm., but may go to 10 or even 30 if the plant absorbs salts readily from the soil. Care must be taken in reduction and analysis of the ash to circumvent volatilization or conversion of certain of the minerals, notably phosphorus. This may be done by defatting first, by heating in a closed silver crucible, pulverizing and returning it to the crucible and moistening with a lime solution. Another method is to reduce the ash in sand previously cleaned in fuming nitric acid, in a silica crucible. Comprehensive tables are given of the total ash in some 200 drugs, with detail analyses of cocoa, coffee, tea, mate, tobacco, sarsaparilla, quinine, belladonna, cardamom and saffron.—JOAQUIM MAY Y GUINDAL. *Noticias farm.*, 6 (1940), 252. (G. S. G.)

Chromatographic Adsorption Analysis—Use of, in Pharmacy. III. Saffron. An effort was made to detect the adulteration of saffron by means of the chromatograph. The following standard procedure was applied to several samples of saffron: 0.5 Gm. of drug was boiled with 20 cc. of 70% alcohol for a few minutes, allowed to cool, filtered and the filter washed with 30 cc. of 70% alcohol. The extract was passed through a column of aluminum oxide activated with tap water (height of column 25 cm., diameter 25 mm.) at the rate of 60 drops of effluate per minute. The chromatogram was developed with 100 cc. of 70% alcohol and observed in both diffuse daylight and ultraviolet light. The filtrate was also tested for fluorescence. Samples of official saffron from Spain and southern France gave the same chromatogram: two zones of about even width and a very highly colored zone. Turkish saffron which is not official gave an entirely different chromatogram. Many of the common adulterants of saffron were chromatographed both pure and mixed with official saffron. Sketches of 18 chromatograms are given. The method may be used for the detection of adulteration in saffron.—MARGUERITE FICHTER. *Pharm. Acta Helv.*, 14 (1939), 158–162. (M. F. W. D.)

Hellebore or Veratrum—Study of Relative Merits of Biologic and Pharmacognostic Identification of. This is a detailed study of the history of the use of hellebore and veratrum, their pharmacognosy and pharmacology, with botanical plates and plates of tissue studies on animals after dosage. Hellebore has been used according to record, since 1500 B. C. There is confused terminology regarding *Helleborus*

niger and *Veratrum album*. Hahnemann called the primitive hellebore *Veratrum album*. To avoid confusion veratrum should receive its proper name and the name hellebore be applied only to plants of the genus *Helleborus* (*Ranunculaceae*). These plants may be distinguished by pharmacognostic, pharmacodynamic and therapeutic tests.—NARCISO SOARES DA CUNHA. *Trib. Farm., Parana*, 8 (1940), 49. (G. S. G.)

Lavender Cultivation. The details of propagation, growing conditions and production are offered.—ANON. *Drug Cosmetic Ind.*, 48 (1941), 414–416. (H. M. B.)

Pharmacognosy—Some Current Problems of. An address covering the domain of pharmacognosy, the methods of studying plant constituents and the attempts at syntheses.—A. MIRIMANOFF. *Schweiz. Apoth.-Ztg.*, 78 (1940), 173–180. (M. F. W. D.)

Pilocarpus Jaborandi Holmes—Some Distinctive Anatomical Characteristics of. Of the seventeen species and varieties of pilocarpus which have been studied or reported by Duval in his classical monograph, only *Pilocarpus jaborandi* Holmes is official in the fifth edition of the Swiss Pharmacopœia. The description in the pharmacopœia is not complete and does not clearly differentiate the official species from some of the others. Some of the new characteristics of *Pilocarpus jaborandi* Holmes are: A partial cutinization of the exterior membrane of the epidermis terminating in a point between each two cells; internal portion of the epidermis thickened; elongated palisade cells, of which some are divided and contain 3 to 4 crystals of calcium oxalate; the membranes are finely undulating; the sub-palisade cells are elongated and extend for five or six palisade cells.—A. LENDNER and A. MIRIMANOFF. *Pharm. Acta Helv.*, 14 (1939), 141–144. (M. F. W. D.)

Pinus Alba—Pharmacognosy of. A brief history of white pine and the uses of its bark and wood is presented. A few minor changes in the description and physical properties of the unground drug are offered. The histology of the bark, structure, a description of the powdered drug and determinations for eight commercial samples of the bark on the content of adhering outer bark (0.00–1.7%), foreign organic matter (0.00–1%) and acid insoluble ash (0.103–0.273%) are presented. Three chemical and seven microchemical tests are described.—H. W. YOUNGKEN and H. S. FELDMAN. *Bull. Natl. Formulary Committee*, 9 (1941), 157–166. (H. M. B.)

Powdered Barks—Fluorescence Microscopic Studies of, with the Help of Reagents. The use of fluorescence to characterize compounds and later drugs is reviewed. The gradual development into the use of ultraviolet light for detecting fluorescence and the use of ultraviolet light in capillary analysis is presented. The authors have sought to produce characteristic differences in the fluorescence of drugs by the treatment of the powders with various reagents. They have investigated all of the barks official in the Swiss Pharmacopœia V, the German Pharmacopœia VI and the Supplement to the German Pharmacopœia VI. Reagents were selected, which according to the work of various authors, either enhanced the fluorescence or which may themselves be the carriers of fluorescence. Some new reagents have been introduced. Thirty-three reagents in aqueous solution and 10 in alcoholic solution were employed in the various tests. The apparatus consisted briefly of a fluorescence microscope made by C. Reichert of Vienna. An arc lamp with iron carbide electrodes produced a light rich in ultraviolet light. The light, focused by a quartz lens and filtered through a 20% copper sulfate solution, fell on the microscope mirror. From here it was reflected through a condenser obliquely onto the object to permit observation in the dark field. The light arising only from the fluorescence is viewed since the small amount of reflected ultraviolet light is removed by a filter. A tabulation of the important results obtained with 24 barks is given. It is possible, with the use of various reagents, to obtain typical fluorescence reactions for the above individual powdered barks, and the differentiation between samples difficult to distinguish with the ordinary microscope is possible. Twenty-two references.—K. LEUPIN and I. STEINER. *Pharm. Acta Helv.*, 14 (1939), 144–157. (M. F. W. D.)

Rubiaceae—Pharmacognostic Study of. Various drugs of the *Rubiaceae* are described (including cinchona with its derivatives yellow, red and mineral quinine), *Coffeoideae*, *Psychotrieae* (Ipecac) and *Spermacoceae*.—CARLOS STELLFELD. *Tribuna farm., Parana*, 8 (1940), 121. (G. S. G.)

Solanum Carolinense Linné. A chemical investigation of *Solanum carolinense* L. has been made. Data are reported for moisture, volatile matter, nonvolatile ether-soluble extract and crude fiber. The results of extraction with selective solvents by the Dragendorff method are given. No appreciable amount of volatile oil was obtained upon steam distillation of 500 Gm. of the drug. The physical and chemical constants of the fixed oil obtained from the petroleum ether extract are reported. Ash data, including spectrographic and elementary determinations, are given. The presence of an alkaloid or alkaloids, obtained by five different methods of extraction, both from the drug and from the alcoholic extract obtained in the Dragendorff procedure, is shown by positive reactions with mercuric bichloride T. S., iodine T. S. and mercuric potassium iodide T. S. The results indicate that the alkaloidal substance is soluble in alcohol, iso-amyl alcohol, acetone, ether, chloroform, dilute acetic acid and dilute hydrochloric acid.—R. D. LITTLE and ROBERT L. MCMURRAY. *Pharm. Arch.*, 11 (1940), 23. (A. C. DeD.)

Viburnum Cassinoides. A new monograph is offered.—ELMER H. WIRTH. *Bull. Natl. Formulary Committee*, 9 (1941), 150–151. (H. M. B.)

Xanthoxylum. A revised monograph is offered for this drug.—ELMER H. WIRTH. *Bull. Natl. Formulary Committee*, 9 (1941), 149–150. (H. M. B.)

PHARMACY

GALENICAL

Cascara Sagrada—Aromatic Fluidextracts of. The formulas proposed in several pharmacopœias are compared and the following is recommended: powdered cascara sagrada (1000), light magnesium oxide (170), vegetable charcoal (170), 95% ethyl alcohol (100), glycerol (300 Gm.), anise seed essence (2 cc.), soluble saccharin (1 Gm.), in water.—T. A. ESTEVEZ. *Rev. facultat cienc. quím. La Plata*, 14 (1939), 141–151; through *J. Soc. Chem. Ind.*, 59 (1940), 492. (E. G. V.)

Emulsions—Stabilization of. The influence of electrolytes on the electrokinetic potential of stabilized oil-in-water emulsions has been studied. No relation has been observed between electrical charge and emulsion stability in the absence of chemical reactions. The role of lyotropic phenomena has been investigated, with special reference to concentrated emulsions, and the results have been discussed and explained. The relation of other fundamental properties of emulsions to stability has been considered, and some general principles have been developed for a rational explanation of the behavior of certain groups of emulsions.—A. KING and G. W. WRZESZINSKI. *J. Chem. Soc.*, (1940), 1513–1521. (W. T. S.)

Extract of Cinchona—Studies on the Preparation of. After the percolate of the drug was obtained, it

was concentrated in two stages at about 50° under reduced pressure according to the Swiss Pharmacopœia. The total alkaloids in the extractive and in the first and second concentrates were determined and tabulated. The best final yield of alkaloids was obtained in those cases where the concentration of formic acid in the menstruum was 1.25%. The results are too irregular to allow any definite conclusions. A study of the loss in alkaloidal content resulting from the filtration of the extractive to remove the precipitate indicated that those percolates prepared with menstrua with high alcohol content, showed no loss within the experimental error. In the other cases the loss was variable. During the concentration according to the pharmacopœial method, the formation of froth seriously hindered operations and required constant care. If the settling and filtration are carried out when the froth first appears, the operation can then be continued according to directions without difficulty. When the analytical data for the extracts were tabulated, it was found that the menstrua giving the best initial yields of alkaloids gave the poorest yields after concentration. The composition of the menstruum is important since the larger the amount of precipitate formed during concentration, the more alkaloids were lost. The recovery of alkaloids from the precipitate by washing with the mixture prescribed by the pharmacopœia indicated an average recovery of 0.88 Gm. of alkaloids which represents about 12.2% of the alkaloids extracted by the menstruum.—C. Béguin. *Pharm. Acta Helv.*, 14 (1939), 109–118. (M. F. W. D.)

Pharmaceutical Emulsions. II. A Study of the English Method. Experimental work is reported and results are discussed. It is shown that this method has no advantage over the Continental method as to appearance and stability of finished product, range of emulsification, or average size of globules. Finished product is the same by either procedure but the English method takes twice as long as the Continental. The rather common belief that smaller proportions of acacia are possible with the English method is shown to be incorrect.—WILLIAM J. HUSA and CHARLES H. BECKER. *Jour. A. Ph. A.*, 30 (1941), 114. (Z. M. C.)

Pharmaceutical Preparations—Conservation of. Pharmaceutical preparations deteriorate or become toxic due to age, heat, light, humidity and microorganisms. The best physical preservative is sterilization by heat—air or steam. Chemical preservatives added are carbolic, benzoic and salicylic acids, thymol or formol. Better preservatives are the esters of *p*-oxybenzoic acid, nipagin (the methyl) and nipasol (the propyl ester). Tests with both of these esters in dilute alcohol were made on a broth culture of bacillus coli and also on agar plates of varying pharmaceuticals such as digitalis, adrenalin, codeine, etc. Nipasol proved negative in every case, nipagin gave negative or weak positive results and other antiseptics proved of much less or no value. The satisfactory percentage strength ranges from 10% to 20%.—JAQUES SONOL. *Rev. Col. Farm. Nac.*, 7 (1940), 168. (G. S. G.)

Phenol and Eucalyptus Ointments. The loss of phenol in preparing about 250 Gm. of phenol ointment by ordinary methods is approximately 5%. If stored in collapsible tin tubes the loss is negligible even after a year or more. In well-closed containers the loss in nine months may reach about 8%, but it can be kept down to much less. The loss in preparing eucalyptus ointment is much less than with phenol ointment. In full well-closed containers the loss of oil on storage for eighteen months and three years was very small. The most satisfactory way of dealing with ointments containing volatile ingredients is to purchase them in collapsible tubes. Such ointments should on no account be stored in the usual shop jar with a loosely fitting cover. If kept in airtight containers, particularly if well filled, there should be no danger of trouble with the authorities if the samples are not stored for more than one or two years. The ointments may be prepared freshly as required. It is possible that the efficiency of collapsible tubes is not altogether due to these being airtight, since stoppered bottles showed a loss, but largely because they are completely filled, thus preventing condensation on the sides of the container.—H. BRINDLE. *Pharm. J.*, 145 (1940), 20. (W. B. B.)

Rhatany Extracts and Tinctures—Studies on. The Swiss Pharmacopœia contains three preparations of rhatany; the extract, tincture and syrup. The tincture is low in alcoholic content and is not well adapted for use in compounding or in the preparation of other pharmacopœial preparations. An effort was made to prepare a dry extract which could be redissolved in alcohol to prepare a tincture of official specifications. Using 250-Gm. samples of the drug, the following factors were studied: the course of the extraction, the proper filling of the percolator, concentration of the various fractions of the percolate and properties of the finished dry extract. The coarseness of the powder was determined by a standard procedure, and the percolate tested for total extractive of the drug, dry residue and tannin content. The latter was determined by the Risler-Beunat tin chloride method because of its ease and rapidity. It was found that 60% alcohol by volume was necessary to produce a tincture miscible with tincture of myrrh for at least 2 weeks without precipitation. In the first series of experiments, chloroform water, 40%, and 50% alcohol by volume were used. The water was a poor menstruum and the 50% alcohol produced the highest average tannin content. In the second series of experiments 60%, 70% and 95% alcohol by volume were used. The total extractive increased with increasing alcohol concentration. The average tannin content of the total extractive increased with 60% alcohol but fell off with the 70% alcohol. The combined extractives of each of the solvents were converted to dry extracts and the tannin content redetermined. The pharmacopœial extract (chloroform water menstruum) showed not only the poorest yield of dry extract but also about the poorest tannin content. The 50% alcohol menstruum gave the best yield of dry extract with the highest tannin content and the extract could be used for the preparation of an official tincture. The extract prepared with 50% alcohol is soluble only in 50% alcohol and immediately clouded tincture of myrrh when mixed with it. This extract is not suitable for the preparation of a tincture or a syrup of rhatany. A stable tincture is prepared only by direct extraction of the drug with 70% alcohol. A stable syrup must be prepared as before with an extract prepared with water according to the Swiss Pharmacopœia V. Twenty-six references.—EWALD SEEBECK. *Pharm. Acta Helv.*, 14 (1939), 187–201. (M. F. W. D.)

Tablet Mixtures before Granulating—Homogeneity of. Four factors enter into fabrication of compressed tablets: mixing before granulating, granulating, mixing after granulating prior to compression, and compression. Any mechanical disturbance due perhaps to vibration of tablet machine could break homogeneity established in granulation. Experimental work reported shows that physical characteristics of component substances affect homogeneity of powder mixing. Agglomeration in powder mixtures is intensified as the particle size is reduced. Materials which pack to small volumes when in fine powder tend to agglomerate when mixed with other materials of larger particle size.

Particle size and weight per cent is of great importance in determining the amount of excipient to be used.—E. B. BEELER and E. N. GATHERCOAL. *Jour. A. Ph. A.*, 30 (1941), 56. (Z. M. C.)

Tannic Acid—Stabilized Aqueous Solution of. Tannic acid solution (5%) for medical use is stabilized against fermentation by adding 0.01% of an ester of *p*-OH.C_6H_4.CO_2H (*e. g.*, the butyl ester) and 0.25% of an alkali bisulfite.—W. H. ENGELS and H. J. BECKER. U. S. pat. 2,088,590; through *J. Soc. Chem. Ind.*, 59 (1940), 641. (E. G. V.)

Vitamin Preparations Stabilized against Deterioration by Oxidation. Tablets or wafers are formed from granules of non-fatty materials such as dicalcium phosphate and calcium gluconate and granules of a fat solid at room temperature having dissolved in it a vitamin material such as a fish liver oil, fish liver oil concentrate or irradiated sterol. Various examples are given.—FERDINAND W. NITARDY, assignor to E. R. SQUIBB & SONS. U. S. pat. 2,206,-113, July 2, 1940. (A. P.-C.)

PHARMACOPŒIAS AND FORMULARIES

Brazilian Pharmacopœia—Suggestions for Revision of. Recommendations are made for alterations in certain formulas including Fluidextracts of Balsam of Tolu and of Opium, and Elixir Pepsin and Simple Elixir.—BERNARDINO CINTRA. *Rev. quím. farm. (Rio de Janeiro)*, 5 (1940), 2. (G. S. G.)

British Pharmacopœia—Third Addendum to the. Further particulars of the new and amended British Pharmacopœia monographs are given.—*Chemist and Druggist*, 134 (1941), 12. (A. C. DeD.)

Burow's Solution in Dermatology—Role of. Liquor Burowi, an N. F. preparation of lead acetate, aluminum sulfate and water, is recommended for its beneficial buffer, astringent, antiphlogistic action on the inflamed integument. A revision of the N. F. VI method of preparing this solution is suggested, *i. e.*, the inclusion of excess aluminum sulfate to ensure precipitation of all the lead.—FRANK C. COMBES. *N. Y. State J. Med.*, 40 (1940), 37–41; through *Chem. Abstr.*, 34 (1940), 1130. (F. J. S.)

Pharmacopœia Bateana. A pharmacopœia of George Bateo, an English doctor, and written in Latin was translated into Portuguese by a priest Dom Caetano de Santo Antonio in 1712. It belongs to the empiric epoch of medicine with formulas founded on superstition. Its most interesting remedies are those requiring precious stones as heart stimulants, those utilizing human or animal excreta for the purpose of dissolving kidney or gallstones and some requiring certain animal tissues steeped in wine as cures for epilepsy and female disorders. These last might be the precursors of modern endocrinology.—DAVID MEINICKE. *Gazeta Pharm.*, 9 (Aug. 1940), 2. (G. S. G.)

Saffron and Its Official Preparations. A series of experiments demonstrates the superiority of cumarin over saffron both as a coloring agent and for its therapeutic usefulness. It is recommended that saffron be deleted from the Brazilian Pharmacopœia following the practice which reduced laudanum to a simple tincture of opium, or which maintains only essences of cinnamon and cloves. Cumarin should be included in the Pharmacopœia as a coloring substitute for saffron since it also possesses a demonstrated therapeutic activity.—B. CINTRA. *Public. Farmac. São Paulo*, 5 (1940), 11; through *Anales farm. bioquím., (Buenos Aires)* 11 (1940), 37. (G. S. G.)

U. S. P. Revision. A number of changes have been made in the lists of articles proposed for admission to or deletion from the United States Pharmacopœia in its twelfth revision. The revised lists of recommended admissions and deletions include the titles given: Recommended Additions: Oil of Caraway (N. F. VI); Oil of Cardamom (N. F. VI); Raspberry Juice; Syrup of Raspberry (N. F. VI); Oil of Bitter Almond; Recommended Deletions: Copaiba; Oil of santal.—ANON. *Perfumer. Essent. Oil Record*, 32 (1941), 68. (A. C. DeD.)

NON-OFFICIAL FORMULAS

Abracol Products—Notes on. Abracol Emulsifiers are manufactured by A. Boake Robert and Co., Ltd., by arrangement with the owners of the English parent covering the use of Tegin, Protegin, etc. A very useful brochure has been issued by the firm explaining the nature and practical applications of the entire range of their emulsifiers, with specimen formulas, adjustable to particular needs. There are two general types, those giving an oil-in-water emulsion and those yielding a water-in-oil one. Of the former, Abracol G. M. S. is utilized in the preparation of cosmetic creams of fine quality, *e. g.*, all-purpose, vanishing, hand, cleansing creams and hand lotion. It is a wax-like, white solid, m. p. 57° C. and 10% added to water with agitation at about 70° C. gives an emulsion stable to heat and setting to a stiff paste on cooling. The oils, fats and waxes usually employed in making cosmetic creams are readily emulsified in the medium, and other ingredients, excepting electrolytes like borax, can be added without affecting the stability. Abracol V. C. H. and Abracol C. A. A. are also embodied in some of the formulas referred to. Abracol P. G. S., m. p. about 40° C., is normally used in association with triethanolamine soaps giving emollient and non-irritating creams. Particularly, brushless shaving creams and pearly or milky liquid emulsions can be advantageously prepared by its agency. Formulas are given for brushless, shaving, liquid cleansing, liquid tissue and all-purpose creams. Abracol L. T. R., m. p. 35–40° C., is chiefly for the preparation of liquid emulsions. It contains an alkaline material and is used, therefore, in association with fatty acids. Oleic acid is usually employed but, if stiffening is required, some stearic acid is added. The exemplifying recipes embrace complexion milk, massage oil and day cream. Abracol G. S. P. is a waxy solid made from Abracol G. M. S. by the addition of an acidic body and is used in creams requiring a slightly acid reaction. It gives greaseless creams, and various organic acids may be added without any breakdown of the emulsion. Specimen basic formula sare given for deodorant, anti-perspirant, lemon and vanishing creams and for hand lotion. Abracol G. S. A., m. p. 56° C., is for neutral creams and lotions. It is cheaper than Abracol G. M. S. The experimental formulas are for hand and yanishing creams and hand lotion. Of the water-in-oil emulsions there are Abracols V. C. H., V. P. X., V. P. Y. and V. P. Z. In appearance these resemble petroleum jelly and melt at or about 40° C. To ensure the maximum stability the use of a homogenizer is essential. Details of the preparation of creams with these particular emulsifiers are set out with the care necessary to ensure satisfactory products. Formulas are added for hair, all-purpose, cold, cleansing and sun-tan creams, the emulsifier chosen being Abracol V. P. X., but this can be interchanged with the others of the series with suitable adjustments. Some pointers on perfumes, packing and preservatives in relation to the creams and lotions from these emulsifiers conclude a most instructive little guide. —ANON. *Perfumer. Essent. Oil Record*, 31 (1940), 21. (A. C. DeD)

Insect Bites and Stings. The treatment of bites and stings and subsequent itching is discussed. Fourteen formulas and suggested remedies are mentioned with fourteen references.—M. A. LESSER. *Drug Cosmetic Ind.*, 48 (1941), 408–411. (H. M. B.)

Toilet Preparations—New Types of. A number of formulas for the various kinds of toilet preparations are given.—*Chemist and Druggist*, 134 (1941), 145. (A. C. DeD.)

War-Time Cosmetic Formulas. V. Toilet Lotions. The demand for toilet lotions during recent years has increased so considerably that many variations have been introduced for specific purposes, under such names as astringent, tonic, after-shaving and hand lotions, etc. Each is discussed. In composition all these lotions are fundamentally similar, consisting of weak alcoholic solutions of aromatic, astringent, antiseptic substances, some of which have a stimulating or refreshing effect on the skin.—ANON. *Chemist and Druggist*, 134 (1941), 224. (A. C. DeD.)

DISPENSING

Balsam of Peru—Ointment of. The difficulty of obtaining a uniform and homogeneous ointment containing balsam of Peru may be overcome as follows. Twenty Gm. of balsam of Peru is dissolved in one-half its weight of chloroform in a mortar. To this is then added 80 Gm. of petrolatum with trituration. The mixture is then allowed to stand in well-ventilated spot for several hours until the chloroform has evaporated. The resulting ointment may then be kept and can be rapidly and conveniently incorporated in any ointment.—EDOUARD BRIDON. *Schweiz. Apoth.-Ztg.*, 78 (1940), 48. (M. F. W. D.)

Charta Sinapisata Swiss Pharm. V—Preparation of. Explicit directions are given for the preparation of mustard plaster. The mustard, if first expressed, does not require so much petroleum benzine for defatting. The powdered and de-fatted mustard (3–3.5 Gm.) is then spread over 100 sq. cm. of unsized paper coated with a rubber solution. Suitable formulas for the rubber base are: (*a*) 1 part of rubber in 40 parts benzene; (*b*) 1 part colophony and 4 parts rubber in 100 parts benzene. Two coats of the solution may be necessary to hold all of the mustard powder. The finished plaster is quite acceptable and not inferior to the commercial product.—H. LEHMANN. *Schweiz. Apoth-Ztg.*, 78 (1940), 701. (M. F. W. D.)

Compound Mixture of Opium and Glycyrrhiza. A formula, as a home remedy, in which no opium is present, is offered.—JUSTIN L. POWERS. *Bull. Natl. Formulary Committee*, 9 (1941), 148–149. (H. M. B.)

Elixir Paregoric. Two formulas for elixir paregoric are compared. One contains a tincture of camphorated opium, the other benzoate of opium, each mixed with magnesium bicarbonate. The benzoic acid formed is considered chemically incompatible with the magnesia. To test this a proportionate formula containing benzoate of magnesia and magnesium bicarbonate was made and proved perfectly compatible chemically.—HEITOR. *Luz. Gaz. Pharm.* 9 (May 1940), 20. (G. S. G.)

Emulsifying Agent—New. A new emulsifying agent that forms the subject of a recent patent is, however, exceptional inasmuch as it is an inorganic chemical, namely, aluminum hydroxide. The use of metallic salts in the preparation of emulsions is not, of course, by any means new and emulsions can be prepared by using finely divided solids such as clay, calcium carbonate, various metallic sulfates, etc., as the emulsifying agents. These agents are usually of very limited application and the emulsions prepared with them are not characterized by their stability. The new agent, on the other hand, has very wide applications and produces stable emulsions. The ideal emulsifying agent has yet to be found, but this new agent, to which the trade name "Unemul" has been applied, fills, both physically and chemically, most of the above requirements. Other advantages are its neutral reaction, compatability and wide application. The agent has a wide range of usefulness, as it is capable of emulsifying fixed and essential oils, fish and mineral oils, waxes of low melting point, synthetic resins, tar-oils, etc. It also has uses as a suspending and wetting agent.—S. J. HOPKINS. *Pharm. J.*, 145 (1940), 28. (W. B. B.)

Excipients for Pomades. There is a long list of substances used as excipients for pomades, pastes, creams and unguents. The most common is pork fat either pure or benzoated. It is cheap and miscible but becomes rancid. Others in use are cocoa butter, beeswax and various oils, paraffin, lanolin, spermaceti and glycerin, and aluminum hydroxide. The ideal excipient for a pomade must be readily miscible with medicinal agents, have a fusion point between 40° and 45°, be thermostable, neutral, readily absorbed, inexpensive, odorless and relatively colorless. Hydrogenation of certain fats and oils extends their use. Of these, hydrogenated cottonseed oil possesses the desired qualifications of miscibility, neutrality, fusion point between 43° and 45° and stability; and is therefore recommended for inclusion in the Brazilian Pharmacopœia for such purpose.—VIRGILIO LUCAS. *Gazeta Pharm.*, 9 (Aug. 1940), 19. (G. S. G.)

Fruit and Berry Juices in Pharmacy. A discussion.—ANON. *Wien. Pharm. Wochschr.*, 73 (1940), 219. (H. M. B.)

Incompatibilities in Medicaments of Animal Origin. The drugs of animal origin still in use include cantharides, cod liver oil, musk, albumin, gelatin, milk and pepsin. Most of these have incompatibilities with certain astringents and with substances containing hydrocyanic acid. Musk has suffered an almost complete eclipse by mixture with saffron, antimony, camphor or valerian, each of which modifies its original activity.—R. FREITAS. *Gazeta Pharm.*, 9 (Aug. 1940), 21. (G. S. G.)

Isotonic Solutions—Preparation of. The Swiss Pharmacopœia V contains a table of freezing point depressions of many substances along with the equations for calculating the amounts of material necessary to produce isotonic solutions. Böhme has criticized the tabulation and suggested more accurate tables. The criticisms of Böhme may be embodied in the construction of a few simple graphs from which the amount of electrolyte (sodium chloride) necessary to prepare solutions isotonic with the blood and the tears can easily be read off. The necessary formula is given in the article. Several illustrations are given.—L. ROSENTHALER. *Schweiz. Apoth.-Ztg.*, 78 (1940), 85–89. (M. F. W. D.)

Prescriptions. Since prescriptions are being written in which only the active ingredient is specified and the diluent left to the pharmacist, it is essential that the finished product be uniform throughout the country. For various lotions, the following is suggested: total solid matter 40% and liquid components 60%. The diluent added to the solid active ingredient is a mixture of equal parts of talc and zinc oxide. The liquid portion is made up to 60% of the total with a mixture of equal parts of 95% alcohol, glycerin and water. Any water-soluble substances may be dissolved in it first before mixing whereas water-insoluble liquids should be added at the very end. Similar standard diluents are suggested for mucilages and ophthalmic ointments.—KURT STEIGER. *Schweiz. Apoth.-Ztg.*, 78 (1940), 221–223. (M. F. W. D.)

PHARMACEUTICAL HISTORY

Apothecaries' Mortar from Linz—An Old. A description and an illustration are offered.—ANON. *Wien. Pharm. Wochschr.*, 73 (1940), 320. (H. M. B.)

Blaud's Pills—History of. The history of pills of ferrous carbonate is sketched from the time of their introduction into medicine in 1831 in France.—M. I. NEUROTH and C. O. LEE. *Jour. A. Ph. A.*, 30 (1941) 60. (Z. M. C.)

Hippocrates Was Born 2400 Years Ago. Historical.—ANON. *Wien. Pharm. Wochschr.*, 73 (1940), 220–221. (H. M. B.)

Imported Drugs—Examination of and Standards for, from 1790 to 1908. The author states that work on drugs at the ports of entry into the United States began as early as it was feasible and funds were available. The report of this work begins with the tariff act of 1790 and covers the 1848 drug and chemical import law, lack of efficient standards for law enforcement, report of Drs. Guthrie and Bailey on workings of the 1848 law, drug adulteration and defective standards and immediate causes for organizing the AMERICAN PHARMACEUTICAL ASSOCIATION, extension of powers of the secretary of agriculture to importations, services of the best qualified and available men sought and secured, beginning of work on drug imports and some findings.—LYMAN F. KEBLER. *Jour. A. Ph. A.*, 30 (1941), 25. (Z. M. C.)

Johanna Balck, a Famous Apothecary's Wife. Biographical.—ANON. *Wien. Pharm. Wochschr.*, 74 (1941), 43–44. (H. M. B.)

Pharmaceutical Archives of Guatemala. Notes of pharmaceutical interest in the years 1707–1818 include petitions to the General Government for the privilege of establishing businesses. The Protomedico or Director and Examiner of Physicians, Surgeons and Pharmacists granted some of these and denied others. Among the latter was that of a physician who wished to open a pharmacy since the practice of medicine failed to provide sufficiently for his family. This was denied on the thesis that a physician should not conduct a pharmacy. The appeal was made in 1762 and again in 1768.—ANON. *Escuela Farm.*, 3 (Sept. and Oct. 1940), 17. (G. S. G.)

Pharmacist in History. References to famous scientific figures who were also pharmacists.—A. BEDOYA. *Escuela Farm.*, 3 (July and Aug. 1940), 27. (G. S. G.)

Sarsaparilla—History of. A species of smilax, the European variety, has proved of little or no therapeutic value, though its saponins may produce injury to the cortical parenchyma. The American species named "Zarzaprilla" by the Spaniards, meaning "thorny vine," enjoyed much popularity in the 16th century as a cure for syphilis, the early explorers having observed the natives using it for skin infections. The European and Asiatic species were known much earlier, and Pliny and Dioscorides accredit it with miraculous powers as an antidote to all poisons. The Brazilian species of *Smilax aspera* is named "japicanga" signifying thorns and a round fruit. *Smilax japicanga* is similar to the Brazilian *S. syphilitica* and *officinalis*, all included in the Brazilian Pharmacopœia. Herreria pseudo-Sarsaparilla is the name applied to a so-called "false" sarsaparilla which is neither botanically, chemically, therapeutically nor commercially the same as the true sarsaparilla.—CARLOS STELLFELD. *Trib. Farm., Parana*, 8 (1940), 193 and 217. (G. S. G.)

Science, the Handmaid of Agriculture. The author presents a most interesting historical sketch of the events and persons concerned with the growth of our present Department of Agriculture, whose service in behalf of the country's welfare has been a large factor in our material growth and prosperity.—T. SWANN HARDING. *Am. J. Pharm.*, 113 (1941), 58. (A. C. DeD.)

Therapeutics—Evolution of, Outlined. The author in a lecture sketched the history of therapeutics from primitive remedies, through the times of the Greeks and the Middle Ages, to the nineteenth century.—W. LANGDON-BROWN. *Chemist and Druggist*, 134 (1941), 222. (A. C. DeD.)

PHARMACEUTICAL LEGISLATION

Hibiscus Flowers or Karkade. In view of the large amount of fruit acids present in the aqueous extracts which at best have only a slight laxative action, the sales of hibiscus as treatment for heart and nerve troubles, arteriosclerosis and other diseases is fraudulent.—ANON. *Schweiz. Apoth.-Ztg.*, 78 (1940), 194–196. (M. F. W. D.)

Infection Regulations of 1680. A historical discussion including diaphoretic potions and poison powders.—ANON. *Wien. Pharm. Wochschr.*, 73 (1940), 412–413. (H. M. B.)

Narcotics and Hypnotics—Regulation of. The provisions of a decree regulating the sale of narcotics and hypnotics and ending a period of monoply. Such products are now controlled by the Director General of Health in Peru and provide for registration of sales and imports and also restrict possibilities of graft in prices.—CONSTANTINO J. CARVALLO. *Reforma Medica*, 26 (1940), 581. (G. S. G.)

PHARMACEUTICAL ECONOMICS

Belgium and Toilet Soap. The manufacture of toilet soaps is prohibited in Belgium.—*Perfumer. Essent. Oil Record*, 32 (1941), 67. (A. C. DeD.)

British Perfumery and Cosmetic Industry—Progress of the, in 1940. A review. *Perfumer. Essent. Oil Record*, 31 (1940), 376. (A. C. DeD.)

Cosmetics into Ecuador. The import of cosmetics into Ecuador will in future be permitted under permits issued by the Ecuadorean Exchange Control Commission in Guayaquil, with the condition that the value of these products be increased by twenty per cent when charged against the importer's monthly quota under the provisions of the Ecuadorean exchange control regulations of October 16, 1940.—ANON. *Perfumer. Essent. Oil Record*, 32 (1941), 67. (A. C. DeD.)

Dermatites in the Courts. Idiosyncrasy and Supersensitivity. Settlement of disputes arising from dermatitis, though still very difficult, may tend to be more equitable. The manufacturer should no longer have to pay substantial damages to any person who claims to have been irritated by his product but has a much fairer chance of being able to show that his product was not in any wise to blame; and it would appear that the plaintiff must bear the onus of proving a defect and the absence of a personal idiosyncrasy. There seem grounds, too, to hope that perseverance in the study of sensitization and in the examination of materials which do irritate may in due time throw more light upon the still baffling problem of these sudden reactions of the human skin.—H. E. COX. *Chemistry and Industry*, 59 (1940), 454–455. (E. G. V.)

Drugs—Pharmacist as a Purveyor of. The early methods of cultivation and collection of drugs are given. The effects of wars and the gradual passage of the collection and curing of drugs to the large drug houses are reviewed. The author describes all of the drugs obtained from the vegetable, animal and mineral kingdoms which have been proposed in the course of the last five decades. Various information is given as the occurrence, method of collection, uses, changes in popularity, etc. Sixty-three drugs are mentioned.—F. SIDLER. *Schweiz. Apoth.-Ztg.*, 78 (1940), 245, 258, 270, 284, 296, 309, 325, 336, 360, 370, 386 and 395. (M. F. W. D.)

Paris Green—Export of. The Board of Trade has made an Order under which the export of copper aceto-arsenite (Paris green) to any destination is now permitted only under licence issued by the Export Licensing Department.—ANON. *Chemist and Druggist*, 132 (1940), 379. (A. C. DeD.)

Specialties for Export. Some topical observations and suggestions by the author.—S. P. JANNAWAY. *Perfumer. Essent. Oil Record*, 31 (1940), 371. (A. C. DeD.)

MISCELLANEOUS

Anti-Light (Sunburn Protective) Ointments and Their Action. A brief general discussion.—A. M. MEMMESHEIMER. *Fette u. Seifen*, 46 (1939), 639–640; through *J. Soc. Chem. Ind.*, 59 (1940), 411. (E. G. V.)

Cosmetic Base—New. A synthetic emulsifying base, 2-methyl-2-amino-1, 3-propanediol ($CH_3C(CH_2OH)_2NH_2$) introduced under the name "amino-glycol," is described in *Drug and Cosmetic Industry* (January, p. 31). Amino-glycol is a yellowish white crystalline product, odorless and freely soluble in water. Up to 250 parts can be dissolved in 100 parts of water, producing a water-white solution of low alkalinity (p_H of tenth-molar solution, 10.78). It does not take up moisture from the air, though it absorbs carbon dioxide. The compound is soluble in alcohol, but not in mineral oil; 105 parts combine with 284 parts of pure stearic acid, 282 parts of pure oleic acid, etc. One part of potassium hydroxide, 85% pure, is replaceable by 1.6 parts of amino-glycol.—ANON. *Chemist and Druggist*, 134 (1941), 186. (A. C. DeD.)

Cupriferous Fungicides. Claim is made for a sodium oxide-aluminum oxide-silicon oxide zeolite containing cupric oxide in non-exchangeable form (cupric oxide:aluminum oxide = 1–10.1), made by adding aqueous copper sulfate to the reaction product of aqueous sodium silicate and alum or sodium aluminate, washing, drying and grinding.—R. RILEY and W. M. BRUCE. U. S. pat. 2,099,623; through *J. Soc. Chem. Ind.*, 59 (1940), 634. (E. G. V.)

Deodorant Powder. A mixture of zinc dioxide 15–20 (17.3), kaolin 1–5 (1.8), zinc oxide 5–15 (9.5), talcum 20–40 (38.1) and precipitated calcium carbonate 25–35 (33.3) is claimed.—L. MELLERSH-JACKSON. Brit. pat. 514,979; through *J. Soc. Chem. Ind.*, 59 (1940), 646. (E. G. V.)

Depilatory. A depilatory in paste or emulsion form consists of a thiol having a substituted group attached to the same carbon to which the thiol group is attached, *e. g.*, 2-amino ethyl mercaptan or ethyl mercaptan-2 sulfonic acid, and made alkaline with strontium hydroxide.—R. L. EVANS and E. G. MCDONOUGH. Brit. pat. 521,240; through *J. Soc. Chem. Ind.*, 59 (1940), 574. (E. G. V.)

Depilatory—Stabilized Soluble Stannite. Aqueous stannous chloride is poured into aqueous sodium hydroxide containing sodium silicate to give a solution having p_H less than 12.6 (12.3).—W. B. STODDARD and J. BERLIN. Brit. pat. 516,812; through *J. Soc. Chem. Ind.*, 59 (1940), 646. (E. G. V.)

Detergents—Manufacture of. A soap-forming fatty acid, *e. g.*, stearic, is caused to react with a finely divided alkali silicate (apparent density not greater than 1) *e. g.*, an intumescent sodium silicate, in substantial absence of water and in such proportions that the product contains not less than 5% of soap.—J. CROSFIELD AND SONS, LTD. Brit. pat. 521,910; through *J. Soc. Chem. Ind.*, 59 (1940), 625. (E. G. V.)

Disinfecting Means—Production of. Disinfecting gases are obtained by passing air over a heated porous carrier impregnated with silver or a compound thereof so that vaporization of silver (at greater than 800°) or of the silver compound (silver chloride, at greater than 400°) is effected.—R. MULLER. Brit. pat. 519,573; through *J. Soc. Chem. Ind.*, 59 (1940), 574. (E. G. V.)

Fixatives for Aromatics. A discussion.—A. FOULON. *Wien. Pharm. Wochschr.*, 73 (1940), 414. (H. M. B.)

Flavoring Material. Flavoring materials of good keeping quality are obtained by emulsifying a natural or artificial essence in presence of a high boiling substance (ester or alcohol) which will reduce a volatility of the flavor and a hydroscopic carbohydrate, *e. g.*, invert and anhydrous corn sugar, and drying the product.—W. E. STOKES and J. M. WENNEIS. U. S. pat. 2,088,622; through *J. Soc. Chem. Ind.*, 59 (1940), 639. (E. G. V.)

Hair Dyes. A method is given which consists of producing a preparation (for dyeing living hair) in the form of a stick, bar, cake or the like compact solid form and containing a soap and an adequate proportion of a water-soluble oxidation dye with an alkali such as ammonia or sodium carbonate and a small amount of water, this amount being insufficient to dissolve a substantial proportion of the dye intermediate, so as to form a thick paste, mixing the paste with partially dried soap chips, milling the mixture, plodding the milled product and cutting it into sticks, bars, cakes or the like compact solid form.—N. V. CLAIROL and HANS H. MEYER. Specification 524,293. *Perfumer. Essent. Oil Record*, 31 (1940), 314. (A. C. DeD.)

Hair Preparations for Export. Some topical comments.—S. P. JANNAWAY. *Perfumer. Essent. Oil Record*, 32 (1941), 74. (A. C. DeD.)

Insecticidal Compositions Suitable for Sprays and Dusting Powders. Derris root or pyrethrum or cubé powder is used with an admixture of about 1% of an organic thiocyano compound such as α-(β-thiocyanoethoxy) - α - (β' - chloroethoxy) - β - methylpropane.—DONALD F. MURPHY, assignor to RÖHM & HAAS CO. U. S. pat. 2,203,919, June 11, 1940. (A. P.-C.)

Insecticidal Compound—Manufacture of. Aqueous solutions of nicotine salts (I) containing free acid to neutralize the alkalinity of the bentonite (II) are treated with II, which removes most of the I by metathesis. The washed and dried product may contain up to 10% of I.—C. R. SMITH. U. S. pat. 2,096,566; through *J. Soc. Chem. Ind.*, 59 (1940), 392. (E. G. V.)

Insecticidal Oil Spray. A spray which may be used on sensitive foliage comprises a paraffinic mineral oil, containing 0.1–2% of insecticidal naphthenic acids of acid value not less than 150 and molecular weight 150–250 (*e. g.*, those derived from kerosene, gasoline or gas oil fractions of petroleum) and 0.5–4.5% of an oil-soluble emulsifier, *e. g.*, glycol mono-oleate.—H. KNIGHT. U. S. pat. 2,103,196; through *J. Soc. Chem. Ind.*, 59 (1940), 634. (E. G. V.)

Insecticide Materials of Vegetable Origin—Survey of. An economic and technical review of alkaloid-containing materials, plants containing rotenone and allied compounds, pyrethrum, quassia and plant oils.—ANON. *Bull. Imperial Inst.*, (1940), 155 pp.; through *J. Soc. Chem. Ind.*, 59 (1940), 633. (E. G. V.)

Mange Remedy. Use is made of an aqueous emulsion, the dispersed phase of which contains tetraethylthiuram monosulfide dissolved in a vegetable oil such as coconut oil in proportions of substantially 1:1, and the emulsifying agent of which is a solubilized casein in an amount sufficient to produce a stable emulsion, the emulsion containing as a wetting agent a salt of a sulfate of a higher aliphatic

alcohol containing more than 7 carbon atoms, and water so proportioned that when the emulsion is applied to a hairy portion of an animal it freely penetrates to the skin without depositing excessive and undesirable amounts of oil on the hair.—WENDELL H. TISDALE and ALBERT L. FLENNER, assignors to E. I. DU PONT DE NEMOURS AND CO. U. S. pat. 2,206,520, July 2, 1940. (A. P.-C.)

Parasiticide. A reaction product of acetonyl acetone with ammonium thiocyanate is used in the form of a paste also containing a thickener such as bentonite, a wetting agent such as "Santomerse D" and a hygroscopic agent such as hydrogen dipotassium phosphate, and water.—WM. P. TER HORST. U. S. pat. 2,206,758, July 2, 1940. (A. P.-C.)

Perfumes—Brief Study of the Composition of. Most perfumes have to be "fixed," that is mixed with another substance which reduces the time of evaporation, and which has a high boiling point. Musk is one of these substances and is mixed with more volatile substances. The chief materials for perfumes are animal drugs (musk, ambergris), plant drugs (rose, violet), essential oils, extracts, odorous synthetics (benzylic ester, benzoic acid) and ethyl alcohol. Alcohol is an excellent agent because it evaporates at a lower temperature than the other components of the perfume, leaving an odorous residue. Examples are given of two formulas for rose perfume. One using rose and geranium fixed with musk and dissolved in alcohol is considered poor, while the second using both musk and civet as the animal fixative with patchouli, sandalwood, citronella and mingling rose and jasmine for odor in a mixture of benzylic acetate, phenyl-ethyl acetate, octylic aldehyde and nonylic and 90% alcohols, is considered excellent. The acetates, octylic aldehyde and nonylic alcohol are used in very small quantities as accents to the perfume. The best plants for this purpose are rosemary, jasmin, mimosa, mignonette and bergamot. The most perfect results are obtained if the perfume is aged for a period of 3 months to 2 years.—HELMUT GASTON LARISCH. *Noticias farm.*, 6 (1940), 268. (G. S. G.)

Rotenone Insecticide. A unimolecular compound of rotenone (I) and dichloracetic acid (II) is obtained by dissolving I, or extracts of roots containing I, in II, heating the solution, adding hot water, cooling and separating the resultant crystalline compound. —H. A. JONES. U. S. pat. 2,103,195; through *J. Soc. Chem. Ind.*, 59 (1940), 633. (E. G. V.)

Soap and Soap Products—Manufacture of. Soaps or soap products, prepared in rapidly-soluble form from mixed fatty acids containing 10–30% of saturated fatty acids of greater than C_{16} (I) (*e. g.*, behenic, arachidic, lignoceric acids), not less than 30% of unsaturated acids and not greater than 30% of palmitic acid or of a mixture of palmitic and stearic acids whereof the latter is not greater than 15% of the total acids, dissolve in hard water with little or no precipitation of insoluble soaps and the solutions remain clear on boiling; in the presence of sufficient I, the inclusion of polyethyleneic acids or of phosphates (II), as specified in the prior patents, is not essential, although addition of II (10–25% of the weight of fatty acids of ortho- or pyro-phosphates, or 25–50% of poly- or metaphosphates) is advantageous.—LEVER BROS. Brit. pat. 521,566; through *J. Soc. Chem. Ind.*, 59 (1940), 625. (E. G. V.)

Soaps—Detergent Effect of. A review. In absence of a satisfactory theory of the detergent effect of soap, there is no exact method for its determination.—F. WATZINGER. *Industria y quim.*, 3 (1940), 546; through *J. Soc. Chem. Ind.*, 59 (1940), 546. (E. G. V.)

Soaps—Preparation of, without Artificial Heating. Advantage is taken of the heat of solution of sodium or potassium hydroxide in water to saponify the oil. The alkali is dissolved in the least amount of water and while hot is added along with some alcohol, which catalyzes the reaction, to the oil in a round-bottomed or Erlenmeyer flask with shaking. The saponification is complete within 5 minutes, after which time the remainder of the water and other constituents are added. The modified directions are given for four Swiss Pharmacopœial preparations containing soaps.—HANS GFELLER. *Schweiz. Apoth.-Ztg.*, 78 (1940), 73–75. (M. F. W. D.)

Soaps—Properties of Commercial Toilet and Medicinal. Analyses were made of 13 representative toilet soaps and 5 medicinal soaps. Properties of the mixed fatty acids were determined and the possible extent of the discoloration of the soaps was estimated by the Mackey test. Average physical properties of 0.25% solutions of the toilet soaps are given.—S. KAWAI. *J. Soc. Chem. Ind. Japan*, 43 (1940), 80b; through *J. Soc. Chem. Ind.*, 59 (1940), 624. (E. G. V.)

Stain Removers. About 25 recipes are given for removing various stains from fabrics, leather and marble.—F. VON ARTUS. *Farben-Chem.*, 11 (1940), 9–10, 17–18; through *J. Soc. Chem. Ind.*, 59 (1940), 354. (E. G. V.)

Sun Tan Products and Luminescence. The article presents a brief study of products which fluoresce and which filter out ultraviolet light and a few practical statements for use of the materials.—MIRIMANOFF. *Schweiz. Apoth.-Ztg.*, 78 (1940), 393. (M. F. W. D.)

Toilet Preparations—Powders for Use as, or as Ingredients of. The cosmetics are obtained by dissolving silk (fiber) in a solution of a heavy-metal hydroxide in aqueous alkali, clarifying the solution (*e. g.*, by centrifuging), precipitating the silk as a powder by an acidic reagent after adding a dye if desired, washing and drying. The use of copper hydroxide in sodium hydroxide and precipitation with acetic acid in ethyl alcohol is described.—F. H. CLAYTON. Brit. pat. 519,544; through *J. Soc. Chem. Ind.*, 59 (1940), 574. (E. G. V.)

PHARMACOLOGY, TOXICOLOGY AND THERAPEUTICS

PHARMACOLOGY

Alcohol—Studies in the Absorption, Distribution and Elimination of. VIII. The Diuresis from Alcohol in Its Influence on the Elimination of Alcohol in the Urine. Experiments were done on humans, and it was found that in most subjects alcohol produced a marked diuresis, but only when the concentration in the blood was rising. The extent of diuresis is directly proportional to the amount of alcohol given. Usually only a small amount of alcohol is eliminated by way of the urine. It was found that ingredients of alcoholic beverages other than alcohol do not contribute to the diuresis.—HOWARD W. HAGGARD, LEON A. GREENBERG and RICHARD P. CARROLL. *J. Pharmacol.*, 71 (1941), 349. (H. B. H.)

Alcoholism—Pharmacological Studies in Experimental. I. The Effect of Sympathomimetic Substances on the Blood-Alcohol Level in Man. Experiments were carried out on man. Amphetamine (benzedrine), paredrine, epinephrine and atropine sulfate were found to reduce blood alcohol values by, first, delaying the emptying time of the stomach and second, by inhibiting the absorption of alcohol from the alimentary tract.—MAX RINKEL and ABRAHAM MYERSON. *J. Pharmacol.*, 71 (1941), 75. (H. B. H.)

p-Aminophenol—Relation between Constitution and Physiological Action in Derivatives of. Cocaine has a combined local anesthetic and sympathomimetic action, while most of the local anesthetics now in use have no appreciable action on the sympathetic nervous system. There are two methods of approach to the synthesis of substances having these two actions: attempts on the basis of chemical constitution and physical-chemical properties to heighten the sympathomimetic action in model types of substances of pronounced local anesthetic or to develop local anesthetic effects in pronouncedly sympathomimetic substances. The starting point for the present work was *p*-ClH.$(C_2H_5)_2NCH_2CH_2$-OC_6H_4NHR.HCl (in which R = H). To obtain reliable evidence of the double effect sought, the products had to be prepared in the highest degree of purity, which often entailed great difficulties. Substitution of alky or aryl residues, R, in the primary amino group by condensation with the corresponding alcohols in the presence of condensing agents was not very successful, as the reaction was too sluggish. With ethyl iodide the reaction was extremely violent; with increase in molecular weight of the alkyl radical the violence of the reaction decreased. An equivalent of propyl bromide reacted smoothly and completely with the starting compound in either water or alcohol. The very difficult separation of the resulting mixtures of secondary, tertiary and even quaternary bases, however, made this method unsuitable for the purpose in view. As the products were always thick, intensely colored oils, the suspicion arose that they might contain impurities (mixtures of different amines), too small in amount to be detected by analysis, which prevented crystallization, and a further means of purifying the starting material was sought. Its condensation product with benzyl aldehyde in a solution buffered with sodium acetate was likewise oily, nor could the intermediate hydrate be obtained. In absolute alcohol the condensation proceeded better than in water but was still far from quantitative. The use of zinc chloride, purified according to Merz and Müller by passing an excess of dry hydrochloride acid gas into the fused chloride in a retort and displacing the excess of acid with dry hydrogen, was a decided improvement and gave practically quantitative yields. Addition of sodium carbonate to distinct alkaline reaction precipitated the zinc as carbonate. The voluminous precipitate, which retained considerable amounts of the water-soluble Schiff base, was repeatedly washed with water, the aqueous solution concentrated, again tested for zinc ions, made acid to litmus with hydrochloric acid, the precipitate taken up in absolute alcohol (which left the sodium chloride behind), and traces of excess aldehyde were removed by evaporation. The purified Schiff base was then reduced in 5 volumes of absolute alcohol with 2.5 atoms of sodium at 20° C. Hydrochloric acid gas was next cautiously passed into the solution until the latter was acid to litmus. Various salts of the starting compound were prepared, but all crystallized very poorly. *p*-Benzylamino(diethylaminoethoxy)benzene hydrochloride and the corresponding ethyl, propyl and butyl compounds were brown, hygroscopic oils which do not disturb the circulation, are not irritating (animal experiments) and show distinct local anesthetic action.—C. ROHMANN and K. FRIEDRICH. *Ber. deut. chem. Ges.*, 72 (1939), 1333-1339; through *Chimie & Industrie*, 43 (1940), 585. (A. P.-C.)

Animal and Reptile Holder. This apparatus was designed to fit the needs of individuals in two main categories: (1) Those who must or prefer to work unassisted and want to be assured of no inconvenience later. (2) Those receiving their initial training in handling laboratory animals and others who though assisted desire greater efficiency with subsequent ease of manipulation and personal safety. The apparatus is of value in the following considerations: (1) Ease of manipulation and efficiency of technique where assistance is not available. (2) Uniform grasping, immobilization and the avoidance of injury to the animal. (3) Personal safety of the operator and other attendants. (4) Conservation of personnel. (5) Instruction purposes.—P. SCHAIN. *Am. J. Pharm.*, 113 (1941), 100.
(A. C. DeD.)

Anthelmintics—Bioassay of. Anthelmintics may be assayed on earthworms and goldfish with reasonably consistent results. Fourteen groups of products including alcohols (6) and volatile oils (8) were studied and the minimum fatal concentrations reported. Santonin was found to be the most potent. The anthelmintic principle of brayera flowers is most soluble in benzene.—JAMES C. MUNCH, JOSEPH D. MCINTYRE and ZOSIA J. DROZD. *Pharm. Arch.*, 12 (1941), 17–20. (H. M. B.)

Arsenic—Pharmacodynamics of. The structural formulas of many compounds of arsenic are presented, including Carbarsone, 28.82% arsenic, used orally in amebiasis; Triparsamide 25.31% arsenic, used intravenously or intramuscularly in syphilis; Stovarsol 27.24% used in amebiasis and malaria; Acetylarsan 21.52% for intramuscular use; Neosalvarsan 32.01% for intravenous use; Myosalvarsan also for intravenous use; Sulfarsenol 25.06% for intravenous and intramuscular use; Mapharside 31.8% used intravenously. Of the mineral arsenicals anhydrous arsenious acid with 75.74% arsenic is administered orally; sodium cacodylate 50% arsenic is administered subcutaneously and also monomethyl sodium arsenate which is more toxic. In chemotherapy with arsenic the agent does not act solely on the parasite, but combines with certain constituents of cells or tissues fixing itself and thus acting on the parasite. Arsenic is fixed in the blood and tissues and its level is regulated by the circulation. Fixation in red cells is both by absorption and adsorption, each phenomenon being reversible. Such adsorption depends also on the valence of the arsenical compound. Trivalent arsenicals are fixed by blood cells *in vivo*, instantaneously and permanently. In the case of Neosalvarsan a smaller amount of arsenic is fixed by the red cells than by the plasma. Pentavalent arsenicals are fixed by the red cells *in vivo*, but this occurs slowly.—AMELIA TURBAY SUBIZAR. *Quim. Farm.*, 6 (June 1940), 12; (July 1940), 16; and (Sept. 1940), 10.
(G. S. G.)

Ascorbic Acid—Role of Manganese in the Biological Synthesis of. The Synthesis of Indophenol Reducing Substances by Guinea Pig Liver in Vitro and in Vivo. The ability of normal guinea pig liver to synthesize indophenol reducing substances *in vitro* and *in vivo* in presence of adequate concentrations of manganese has been demonstrated. A hypothesis that the inability of the guinea pig and the primates to synthesize ascorbic acid within the body is due to insufficiency of manganese, which acts in the capacity of a coenzyme in the tissues, has been advanced. The probability of synthesis of ascorbic acid in human being under certain suitable (generally acid) conditions has been discussed.—M. N. RUDRA. *J. Indian Chem. Soc.*, 17 (1940), 705.
(F. J. S.)

Assay of Digitalis—Are the Results of the U. S. P. Frog Method for the, Applicable to Man? In the authors' opinion the answer is: No. Prior to any official method of assay, specimens of digitalis on the American market were reported to vary in potency as much as about 300%. Evidence has been adduced indicating that the intensive work on the assay of digitalis during the past 35 years has not improved that situation sufficiently, and preparations of outstanding tinctures of digitalis at the pres-

ent time vary by nearly 300% when assayed by the cat method, although they are all labeled U. S. P. XI. The cat and the frog methods do not necessarily yield comparable values. Which values are applicable to humans has never been satisfactorily determined. In the present study, results by the two methods have been applied to tests on humans with auricular fibrillation and regular sinus rhythm by a technique in which comparisons are carried out on one and the same subject. These experiments show that animal assay values are misleading, that assays with the U. S. P. frog method are not applicable to humans, that assays with the cat method give results that are more nearly applicable to man in the case of digitalis leaf. The results also indicate that neither overcomes all the obstacles to uniformity among digitalis preparations and that a final evaluation of the potency of a preparation of digitalis must be based on determinations on man directly.—HARRY GOLD, CATTELL MCKEEN, NATHANIEL T. KWIT and MILTON KRAMER. *J. Pharmacol.*, 72 (1941), 17. (H. B. H.)

Berberine—Action of, on Mammalian Hearts. The author studied the action of berberine on the heart-lung preparation, the isolated cat heart and the isolated rabbit and cat auricle. In small amounts berberine stimulated the heart and increased coronary flow; large amounts depressed the heart. Small doses of berberine intensified the action of acetylcholine as regards its cardioinhibitory action; moderate and large doses antagonize acetylcholine. These later doses also acted antagonistic to the effect of pilocarpine but not to potassium chloride.—CHANG-SHAW JANG. *J. Pharmacol.*, 71 (1941), 178. (H. B. H.)

Bile Salts—Effect of, on the Emptying Time of the Stomach. Bile preparations produce an increase in the flow of bile and because of this effect they act as laxatives. Experiments have revealed that they increase gastric tone and the amplitude and rate of gastric contractions and indirectly increase intestinal peristalsis. The authors studied their effect on the emptying time of the stomach in four healthy adults and found the average decrease in emptying time after ingestion of a bile preparation to be 21.2%. Acceleration of gastric emptying caused by the administration of bile preparations could be considered a desired action when bile salts are indicated for chronic constipation. Experimental distention of the colon may produce a noticeable reflex gastric inhibition. If it is true that constipation likewise is capable of reflexly inhibiting gastric motility by the same mechanism, it would presumably be desirable therapy to administer bile preparations in order to stimulate motility of the stomach and the upper intestinal tract.—E. J. VAN LIERE and D. W. NORTHRUP. *Am. J. Digestive Diseases Nutrition*, 8 (1941), 26; through *Abbott Abstract Service*, (1941), No. 860. (F. J. S.)

Blood Plasma Dialysis on Tissue Growth—Influence of. Influence of dialysis of plasma as a constituent of the culture medium with embryonic tissue extract was studied on the growth of the tissue strains of fibroblast and of iris epithelial cell. The dialysis of the plasma against Tyrode's solution excluded out some growth stimulating substances through collodion membrane, but seemed not to lose its ability to keep the tissue growth for a longer time.—M. TAZIMA. *Tôhoku J. Exp. Med.*, 38 (1940), 1. (A. C. DeD.)

Chlorine Contents of Symmetric Organs of Albino Rats. The chlorine contents are the same in all the symmetric organs and tissues.—A. SALVATORI. *Biochim. terap. sper.*, 26 (1939), 344. (A. C. DeD.)

Cinchonine—Influence of, on Salivary Secretion. The author studied the effect of cinchonine on salivary secretion and after various experiments states that it has an inhibitory action.—L. LIACI. *Biochim. terap. sper.*, 18 (1939), 429. (A. C. DeD.)

Cooling Drugs and Cooling Centres. Experiments were done on rabbits. It was found that the injection of picrotoxin and aconitine into the infundibular region of the brain produced a fall in temperature. In the case of picrotoxin this could be suppressed by phenobarbital and paraldehyde. The fall in temperature produced by calcium and aconitine was intensified by picrotoxin. From his experiments the author concluded that the heat regulating center is a dual structure consisting apparently of a cooling center and a heat center. Picrotoxin and aconitine stimulate the cooling center.—F. E. ROSENTHAL. *J. Pharmacol.*, 71 (1941), 305. (H. B. H.)

Cyverine Hydrochloride, a New Synthetic Papaverine-Like Compound. A Report on Its Vasodilator Action in Chronic Occlusive Peripheral Vascular Diseases. Cyverine hydrochloride was given orally in daily doses of from 3 to 12 capsules of 20 mg. each to one normal individual, and to 11 suffering from either arteriosclerosis obliterans or thromboangiitis obliterans. As judged from blood pressure readings, temperature observations, oscillometer notations and evidences of subjective and objective improvement, cyverine therapy was without beneficial result. Eight patients complained of very mild to persistent heartburn. The drug is not recommended as a vasodilator in chronic obliterative peripheral vascular diseases.—ROY J. POPKIN. *J. Pharmacol.*, 71 (1941), 320. (H. B. H.)

Delvinal Sodium (5-Ethyl-5-(1-Methyl-1-Butenyl) Barbituric Acid)—Effect of Repeated Administration of, to Guinea Pigs. Guinea pigs were found to show a tolerance to delvinal sodium on repeated administration of large doses. The average length of sleep dropped from 127.3 to 48.2 minutes following eight semi-weekly injections of the drug while the average length of hypnosis dropped from 191.9 to 104.1 minutes. The average weight of the guinea pigs increased from 250 to 380 Gm.—EMMET B. CARMICHAEL and WILLIAM D. THOMPSON. *Proc. Soc. Exptl. Biol. Med.*, 46 (1941), 233. (A. E. M.)

Di-(β-Cyclohexylethyl) Methylamine Hydrochloride (Cyverine Hydrochloride)—Note on the Pharmacology of. On isolated segments of the intestinal tract of rabbits and cats weak dilutions of cyverine brought about relaxation. In the anesthetized, intact cat, rabbit and dog, cyverine usually caused an increase in the tone of the gastrointestinal tract. In view of these findings it would appear that there is little justification for the clinical use of this drug as spasmolytic.—ROBERT A. LEHMAN. *J. Pharmacol.*, 71 (1941), 317. (H. B. H.)

Digitalis Preparations—Studies on the Absorption of Some, from the Gastrointestinal Tract in the Cat and Man. Absorption after oral administration was determined in the cat by the method of intravenous titration with ouabain, and in patients by a comparison of the effects of oral and intravenous doses of the preparation under controlled conditions at different times, usually in the same individual. In cats only a small proportion, usually about 25%, of the potent principles in the dose of tincture of digitalis is absorbed from the gastrointestinal tract, and the per cent varies for different specimens of leaf. The tincture of digitalis is as well absorbed from the gastrointestinal tract when it is freshly prepared as when it is several years old. Digitoxin-like preparations are practically completely absorbed after oral administration. Their absorption occurs not only from the small intestine but also from the ligated stomach under suitable conditions. We have indications that the pH and the concen-

tration of alcohol influence absorption from the stomach. Lanatoside C is absorbed much less rapidly and completely than is digitoxin. Experiments in man support the statement of Hatcher and Eggleston that the gastrointestinal absorption of digitalis and its purified preparations parallel that in the cat. Lanatoside C which is poorly absorbed in the cat is also poorly absorbed in humans, as indicated by the fact that equivalent therapeutic doses of this glucoside are about 4 cat units by intravenous injection and about 40 cat units by oral administration. The digitonix-like materials which are almost completely absorbed in the cat, are also well absorbed in man since the intravenous and oral digitalizing doses are the same, about 3 cat units. This dose has the same effect as about 20 cat units of digitalis given orally.—JANET TRAVELL and HARRY GOLD. *J. Pharmacol.*, 72 (1941), 41. (H. B. H.)

Embryo Tissue Extract Dialysis on Tissue Growth—Influence of. Influence of dialysis of embryonic tissue extract as a constituent of the culture medium with chicken blood plasma was studied on the growth of fibroblast strain. It was found that by dialysis of the extract against Tyrode's solution some growth-promoting substance permeated out through the collodion membrane. The growth of tissue in dialysate-plasma medium was distinctly greater than that in Tyrode-plasma medium, but could not be kept active for a strong time. Oxygen consumption of liver tissue of rabbit and embryonic heart of chicken was greater in the dialysate than in the normal Tyrode's solution.—M. TAZIMA. *Tôhoku J. Exp. Med.*, 38 (1940), 8. (A. C. DeD.)

Entada Pursaetha DC. (E. Scandens Benth.)—Note on the Chemistry and Pharmacological Action of. Two saponins of identical action and equal toxicity have been isolated from *Entada Pursaetha* (Giant Rattle, Lady Nut, etc.) by extracting the air-dried seed kernels with refined spirits. These saponins hemolyze r. b. c. but are little toxic to paramæcia and non-toxic to mosquito larvæ. In a dosage of 0.002 Gm. per Kg. they produce a fall in the blood pressure of the cat, probably due to vasodilation of the splanchnic area and depression of the myocardium. Fall in blood pressure was absent in animals given atropine. The saponins caused death by respiratory failure and also inhibited the movements of unstriped muscles of the intestines and uterus.—R. N. CHOPRA, J. C. GUPTA and B. K. GHOSH. *Indian J. Med. Research*, 28 (1940), 469–473. (W. T. S.)

Epinephrine—Effect of Slowly Absorbed, in Experimental Shock. Slowly administered epinephrine will maintain the blood pressure during and following intestinal manipulation and will increase the survival by 300%. Adrenaline and other vasoconstrictor substances may be a valuable adjunct in the therapy of some forms of shock.—HERMAN KABAT and ALFRED M. FREEDMAN. *Proc. Soc. Exptl. Biol. Med.*, 46 (1941), 385. (A. E. M.)

Estrogen—Rate of Secretion of, by the Ovaries. Information as to the rate of production of any hormone is difficult to secure and the answers are loosely approximate. The present author has estimated by deduction from experimental observations the rate of output of estrogenic hormone by the ovaries of the young, adult, non-pregnant Rhesus monkey. The rate of secretion is estimated tentatively as equivalent to about 200 International Units of estrogen daily. The true amount may be greater, but can hardly be smaller. The average weight of a human female may be taken as approximately 15 times that of the monkeys used in the experiments. Multiplying the estimated rate of secretion of estrin by the same factor, the roughly estimated daily output of estrogenic hormone in the human species is equivalent to 3000 International Units of estrone. The estimates are based on the assumption that an ovarian hormone in oil solution is utilized by the body as efficiently as hormone produced in the animal's own ovaries.—G. W. CORNER. *Bull. Johns Hopkins Hosp.*, 47 (1940), 407; through *Abbott Abstract Service*, (1941), No. 880. (F. J. S.)

Heart Sounds—Difference of Intensity of, Expressed Numerically. It was proposed to express the difference of intensity of heart sounds numerically (though only comparatively) by the combined use of the magnascope and an attentuator connected to it.—A. SATO and Y. MORIWAKI. *Tôhoku J. Exp. Med.*, 38 (1940), 53. (A. C. DeD.)

Heart Sounds—Quantitative Estimation of Normal, in Healthy Children. The authors have reported their attempt to express a certain heart sound numerically, although comparatively.—A. SATO, Y. MORIWAKI and T. MINAGAWA. *Tôhoku J. Exp. Med.*, 38 (1940), 55. (A. C. DeD.)

Hormones—Role of, in the Production of Edema. By many experiments the authors studied the effect of hormones on generalized edema associated with menstruation and concluded that the electrolyte balance of the body appears to be affected significantly by the steroid hormones of the gonads and adrenal cortex. Premenstrual gain in weight is associated with a striking retention of sodium chloride and water. Shortly after the onset of menstruation, a diuresis occurs and the subject loses weight. Fluctuation in the excretion of female sex hormones was correlated with the cyclical changes in the excretion of sodium chloride and water. The role which the adrenal cortex plays in the regulation of electrolyte balance is of great importance and treatment with desoxycorticosterone acetate resulted in striking retention of sodium chloride and water. Progesterone with estrogens is more effective than the estrogens alone. It has been shown that the effect of progesterone on electrolyte balance resembles that of adrenal cortical hormone.—G. W. THORN and K. EMERSON, JR. *Ann. Internal Med.*, 14 (1940), 757; through *Abbott Abstract Service*, (1941), No. 858. (F. J. S.)

Hydrastine as an Antagonist to Sodium Pentobarbital. From the experiments described in the article it is obvious that hydrastine is of no value as an analeptic. However, this investigation has uncovered an interesting action of hydrastine in its apparent depression of cortical function as shown by loss of placement reactions. Experiments are being continued to clarify the mechanism of this action. Like strychnine, hydrastine stimulates the spinal cord, but unlike strychnine, which has some analeptic action, hydrastine shows none at all and even prolongs the sleep produced by pentobarbital. It therefore appears that hydrastine may have a mixed action: its stimulation of the spinal cord, which is responsible for the convulsions, and, as these experiments now seem to indicate, an additional depressant action on other parts of the central nervous system.—H. M. KIPPLE and J. M. DILLE. *Pharm. Archiv.*, 11 (1940), 21. (A. C. DeD.)

Hydrogen Ion Concentration and Depression of Freezing Point of Chicken Serum. The hydrogen ion concentration and depression of freezing point of chicken serum were determined. The former was measured potentiometrically with a hydrogen electrode at 38° C. and the latter with the cryoscopic method of Beckmann. On an average, the p_H value was 7.331 ± 0.0115 and the Δ value −0.617° ± 0.0031°.—N. OYAMA and K. OTUKA. *Tôhoku J. Exp. Med.*, 38 (1940), 14. (A. C. DeD.)

Hypotensive Extracts—Oral and Intramuscular Ineffectiveness of. Two hypotensive extracts, namely Padutin and Tissue Extract No. 568, advocated in the treatment of circulatory disorders,

produced no demonstrable changes in the blood pressure and no symptoms after oral and intramuscular administration in very high (beyond therapeutic) doses in animals. Placed directly into ligated intestinal loops, both extracts remained unchanged and unabsorbed for two hours. All animals reacted typically to control intravenous injection of both extracts. An experimental basis for the clinical use of the "hypotensive" extracts, either orally or intramuscularly, is completely lacking. However, accidental intravenous injections, resulting from careless intramuscular or hypodermic uses, could conceivably cause alarming symptoms and even death. These extracts are undesirable, if not dangerous, for intravenous use.—W. VAN WINKLE, Jr. *Proc. Soc. Exptl. Biol. Med.*, 46 (1941), 220. (A. E. M.)

Insulin Action—Influence of Sulfhydryl Compounds upon. Admittedly, powerful reducing agents inactivate insulin by reduction of its disulfide linkage and probably by damage to the entire molecule. The present investigation is concerned with the types of inactivation produced by mild reducing agents as cysteine and reduced glutathione (G. S. H.), a type of inactivation of possible significance in the organism. The *in vivo* experiments were carried out using insulin-resistant and insulin-sensitive rabbits. The methods used to determine G. S. H. and blood glucose are given. Cysteine does inhibit the action of insulin in the intact but not in the eviscerated animal. The effect of cysteine in this respect in the intact animal is due to the fact that cysteine *per se* causes marked increase in blood glucose. No relation has been found to exist between the G. S. H. content of the liver and insulin sensitivity.—A. B. CORKILL and A. H. ENNOR. *Australian J. Exp. Biol. Med. Sci.*, 18 (1940), 379–384. (W. T. S.)

Lansones Resin, Tangan-Tangan Oil and Palo Santo Seeds—Pharmacodynamic Study of. Studies were made on intact animals, on intestine *in situ* and on the excised intestine. The lansones resin was extracted from the peelings of the fruit. It has proved efficacious in the treatment of experimental diarrhea, and promising clinical trials have also been made. Tangan-tangan oil pressed from the kernels and tested on cats proved an adequate substitute for castor oil. Toxicity tests were negative. Industrially it has potential usefulness as a lubricant, a leather dressing and an ingredient of soap. The seeds of Palo Santo contain a convulsant poison. It is neither an alkaloid nor a glucoside, it is water soluble but is destroyed by heat, and so far has no therapeutic value.—ROMULO GUEVARA. *Rev. Filipina Med. Farm.*, 31 (1940), 143. (G. S. G.)

Local Anesthesia of the Forearm and Hand. A method of local anesthesia of the arm is described. It is used in cases of pseudoarthritis, osteosinthesis, sinovitis and in the reduction of fractures. It is applied at the junction of the middle third with the upper third of the forearm and consists in methodical infiltration of the whole sector, avoiding the vasculo-nervous bundles. A 0.5% solution of novadrenalin in doses of 70 to 150 cc. produces anesthesia and complete relaxation within 15 to 20 minutes.—RICARDO FINOCHIETTO and DIEGO E. ZAVALETA. *Rev. Med. Cienc. Afin.*, 2 (1940), 295. (G. S. G.)

2-Methyl-1,4-Naphthoquinone and Phthiocol—Absorption of, by Bile Fistula Rats. Both compounds are absorbed from the intestinal tracts of bile fistula rats and desoxycholic acid is not necessary to insure the absorption. The experience indicates that it is feasible to use these compounds orally to raise the prothrombin level of the blood.—LURA M. MORSE and CARL L. A. SCHMIDT. *Proc. Soc. Exptl. Biol. Med.*, 46 (1941), 415. (A. E. M.)

Metrazol—Preliminary Report on the Elimination of. The results, which are in accordance with those reported on rabbits by Tatum and Kozelka, indicate that metrazol is detoxified in cats and not excreted. The liver plays an important part in this detoxication.—J. M. DILLE and V. P. SEEBERG. *Pharm. Arch.*, 12 (1941), 9. (A. C. DeD.)

Nicotinic Acid—Inhibition by Sulfapyridine of the Curative Action of, in Dogs. When dogs were placed on a diet deficient in nicotinic acid, the addition of nicotinic acid corrected the deficiency, while this was not the case when sulfapyridine was added. When raw liver and sulfapyridine were added to the diet, the deficiency disappeared. It seems possible that sulfapyridine inhibits the action of nicotinic acid but not of preformed coenzymes.—RANDOLPH WEST. *Proc. Soc. Exptl. Biol. Med.*, 46 (1941), 369. (A. E. M.)

Posterior Pituitary Fractions—Oxytocic Assay of. A comparison of the chicken method of Coon and the official (U. S. P. XI) method for the oxytocic assay of posterior pituitary fractions was carried out. Preparations having pressor:oxytocic (P:O) ratios ranging from 1:15 to 29:1 were assayed by these methods and by the guinea-pig uterine method using Locke-Ringer solution with a Mg concentration adjusted to 2.5 mg. %, the approximate Mg titer of human and chicken blood sera. Preparations having P:O ratios ranging from 1:15 to 3.5:1 exhibited equal potencies by all three methods. When the P:O ratio exceeded 3.5:1, the chicken method and the uterine method using Locke-Ringer containing 2.5 mg. % Mg gave equal results, and the official method gave lower values. This discrepancy, increasing with the P:O ratio, reached 300%. Results indicate that the lower values obtained by the official methods are due to the low, unphysiological Mg titer of the official Locke-Ringer solution. The chicken method, with its simplicity and economy of time and funds, may therefore have the additional advantage of predicting more accurately the oxytocic activity of pressor preparations.—BLACKWELL SMITH, JR. *J. Pharmacol.*, 72 (1941), 38. (H. B. H.)

Pro-Oxidants—Effect of, upon Reproduction in Rats. It has not been possible to interfere with the process of reproduction in female rats on an adequate diet by administering various oxidation products of fats, by mouth, subcutaneously or intraperitoneally. These products included rancid animal fats, their volatile oxidation products with very high peroxide content, the unsaponifiable portion of irradiated fats and some aldehydes. Mortality of the young was very great. Unlike mice, rats were not susceptible to the damaging effect of heptaldehyde on reproduction. An adequate stock diet treated with ethereal ferric chloride supported reproduction in second generation, indicating that the coupled oxidation of tocopherol in presence of rancid fat requires adequate contact for an adequate time.—F. E. DEATHERAGE, K. P. MCCONNELL and H. A. MATTILL. *Proc. Soc. Exptl. Biol. Med.*, 46 (1941), 399. (A. E. M.)

Snake Venoms—Hyperglucemic Action of. A substance with hyperglucemic action was found in varying amounts in all of 14 venoms examined. It should not be confused with echidnase nor with echidnovaccine.—G. BERTRAND and R. VLADESCO. *Compt. rend. acad. sci. U. R. S. S.*, 209 (1940), 818–821; through *Chimie & Industrie*, 43 (1940), 586. (A. P.-C.)

Sulfanilic Acid—Esters of. I. Attempted Preparation of Simple Alkyl Esters of Sulfanilic Acid. Failure resulted in attempts to prepare esters of unsubstituted sulfanilic acid by direct esterification by the reaction of the sodium and silver salts of the acid with an alkyl halide, through the medium of N-acetyl- and N-formyl-sulfanyl chlorides and by reduction of ethyl *p*-nitrobenzenesulfonate. The

failure has been attributed to a postulated electronic disturbance within the molecule of the type compound thus rendering it incapable of existence. **II. Preparation, Properties, Toxicity and Anesthetic Value of Some Alkyl N-Acetyl-Sulfanilates.** The simple esters—ethyl through isoamyl— and one substituted ester of N-acetylsulfanilic acid have been prepared and the physical constants reported. The quantitative result of acetylation of the *p*-amino group in anesthetics has been determined for ethyl *p*-aminobenzoate. The simple alkyl N-acetyl-sulfanilate have been tested for anesthetic activity and were found to be toxic to goldfish and possess no apparent local anesthetic activity. Diethylaminoethyl-*p*-acetylaminobenzenesulfonate is shown to possess anesthetic activity. Acetylation of the amino group in *p*-aminobenzoic acid esters decreases the anesthetic activity of the ester appreciably; the substitution of sulfur for carbon in the ester linkage portion of the anesthetic molecule increases the toxicity of the compound but does not destroy its anesthetic activity. It is concluded that the use of sulfanilic acid for the production of esters having probable anesthetic properties should be avoided except in those cases where the necessary substitution in the amino grouping does not diminish this activity to too great an extent.—GEORGE E. CROSSEN, GLENN L. JENKINS and CHARLES H. ROGERS. *Pharm. Arch.*, 12 (1941), 21–32. (H. M. B.)

Sulfapyridine—Levels in Blood Following Dosage by Weight of. Six hundred and fourteen determinations of the levels of free sulfapyridine were made on the blood of 126 children. Sixty-seven of these children received 1 gr. of sulfapyridine per pound of body weight per 24 hours but not over 80 gr. a day. Fifty-nine received 1½ gr. per pound of body weight per 24 hours but not over 80 gr. a day. All received an initial dose of ½ their calculated 24-hour dose. Sodium bicarbonate was given in amounts equal to those of sulfapyridine. The patients were divided into four age groups. The average level of free sulfapyridine in the blood for each group was approximately the same. Individual patients receiving the drug in a dosage based on body weight show only moderate fluctuations in the levels of the drug in their blood from day to day or throughout a single day. Since dosages which are designed to give higher levels are less predictable in regard to the level obtained, the authors of this report recommend the "dosage by weight" with use of the smaller dose.—G. E. CULLEN and A. T. WILSON. *Am. J. Dis. Child.*, 60 (1940), 891; through *Abbott Abstract Service*, (1941), No. 841. (F. J. S.)

Sulfur—Behavior of, in the Blood in Liver Disease. The author studied the behavior of the blood-sulfur fractions during many liver diseases and he found an increase in the inorganic sulfur in the serum and none in the red corpuscles. An increase of the organic non-protein sulfur and a decrease of the protein sulfur were also noted.—P. LARIZZA. *Biochim. terap. sper.*, 26 (1939), 289. (A. C. DeD.)

Sulfur Compounds—Effect of, in the Diet on Sulfanilamide Cyanosis and Anemia. Experiments were done on mice. The effect of the following substances as concerning sulfhemoglobin formation of sulfanilamide were studied. Thiourea, magnesium sulfate, sodium glycollate, cysteine hydrochloride, sodium thiosulfate, washed flowers of sulfur and sulfurated potassium. Sodium thiosulfate, flowers of sulfur and sulfurated potassium were the most effective. Magnesium sulfate and thiourea were ineffective.—ARTHUR P. RICHARDSON. *J. Pharmacol.*, 71 (1941), 203. (H. B. H.)

Testicular Extract—Effect on Castrates. Castration produces attenuation of secondary sex characteristics and tends toward those of the opposite sex. In castrated males the injection of testosterone propionate stimulates development and activity of the secondary sex characteristics. In castrated females the injection of testosterone propionate suppresses secondary sex characteristics and inclines toward those of the opposite sex. The zones most susceptible to action of the hormone are the anogenital and the mouth and jaw.—MIGUEL A. MAZZINI. *Rev. Arg. Derma.*, 24 (1940), 41; through *Rev. Med. Cienc. Afin.*, 2 (1940), 281. (G. S. G.)

TOXICOLOGY

Acetanilid Studies. I. Acute Toxicity. A survey of the literature and laboratory studies have been made. The present report deals only with acute toxicity, development of death within twenty-four hours. Literature and laboratory data are combined in one table for eight types of test animals and humans and the effect of oral administration on humans as shown by literature data is shown in another. Several graphs show effect on blood pressure of cats, dogs and monkeys. There is a progressive increase in susceptibility from mice to rats, guinea pigs, rabbits, dogs, monkeys and man. Cats are about twice as susceptible as man. Dogs and monkeys are preferable for toxicity studies that are to have any bearing on human interpretations. Effects on blood pressure or respiration were without significance until the lethal dose was approached Doses corresponding to 25 to 500 mg. per Kg. for humans, were tolerated. Eight deaths were reported in humans following doses ranging from five to two hundred grains but lack of post-mortem examinations in five and pathological conditions in the others make conclusions doubtful. Considering the tolerated and lethal doses for animals and man, the acute toxicity is relatively low.—JAMES C. MUNCH, HARRY J. PRATT and LILIAN M. PHILLIPS. *Jour. A. Ph. A.*, 30 (1941), 91. (Z. M. C.)

Allergic Conjunctivitis Produced by Certain Drugs and Cosmetics. In an article dealing with the symptoms and treatments of allergic conjunctivitis, the writer states that this condition appears in two types: vernal and non-vernal. The vernal type may be caused by drugs and cosmetics. Among the drugs, cocaine, butyn, picric acid, quinine and camphor balls were named as offenders. A brief history is given of the case involving camphor.—RALPH BOWEN. *Southern Med. J.*, 34 (1941), 184–191. (W. T. S.)

Ammoniated Mercury—Toxicological Studies on. Studies have been conducted on animals and man to determine whether the ordinary use of ammoniated mercury is practically dangerous. The authors made over 20,000 applications to cats, dogs, rabbits, rats and humans: the latter for one month only; the animals for periods up to one year. Pathological studies were made by Hansmann to whom, in order to avoid postmortem changes, animals were shipped alive, the tissues necessary for analysis being returned. Results: (1) Nearly all common foods contain mercury. This varies from 0.1–6.0 gamma per 100 Gm. (or cc.). (2) From estimations of food and total excreta content, in the order of 20 gamma mercury per day is ingested by man. (3) Much larger amounts can be accidentally ingested. (4) The ingestion of traces of mercury and their presence in the excreta have no toxicological significance. (5) One gram of 10% ammoniated mercury ointment applied daily to man for one month, causes a total increase of 0.5 mg. mercury in the excreta for that period. (6) Erythrematous doses of quartz-light do not increase the absorption. (7) Transient skin rashes (average duration 2.2 days) often appear in the human only, especially in hot, sweaty weather. They may be reproduced by the base alone. (8) All animal tissues including cat,

dog, rabbit, rat, cow, pork fish, frog, foetus (rat and cat), new born (cat and human) contain mercury. (9) The distribution is irregular. Kidney, liver and gut usually highest; spleen, skin, lungs next; brain and bone lowest. (10) The equivalent of 5 mg. per day per man given to animals caused no pathological lesions. The figure necessary to cause these was not established. 11. Mercury does not form dangerous storage pools in the tissues. 12. It is excreted by urine, gut and skin. This latter is a new finding. 13. The danger of chronic poisoning from insoluble mercury compounds has been overestimated. It depends not only on the amount of ingestion, but also importantly on the state of the animal.—O. S. GIBBS, H. POND and G. A. HANSMANN. *J. Pharmacol.*, 72 (1941), 16. (H. B. H.)

Epherdrine and Racephedrine—Comparison of Blood Pressure Effects and Toxicity of. Due to disagreement in the literature concerning the relative toxicity and action of ephedrine and racephedrine, a study was conducted to compare the action of the two drugs—(1) on blood pressure in rabbits anesthetized with sodium barbital, (2) on maintenance of blood pressure following procaine spinal anesthesia in rabbits and (3) on toxicity in normal rabbits. In barbitalized rabbits, ephedrine intravenously in doses of 2–10 mg./Kg. produced a greater rise in blood pressure than racephedrine in equal doses, but the toxicity was the same, early toxic symptoms appearing with 20 mg./Kg. and 60 mg./Kg. killing 4 out of 5 animals with either drug. Only one dose was injected per animal. In the spinal anesthesia experiments, 40 mg./Kg racephedrine intravenously was required to maintain the blood pressure above 100 mm. of Hg as compared to only 10 mg./Kg ephedrine. However, 40 mg./Kg. racephedrine completely prevented any initial fall in blood pressure following spinal anesthesia, whereas in the case of ephedrine 30 mg./Kg. was needed to prevent a fall. The LD_{50} as determined intravenously in 83 normal rabbits was 60–70 mg./Kg. for ephedrine and 90 mg./Kg. for racephedrine.—ELIZABETH M. CRANSTON. *J. Pharmacol.*, 72 (1941), 10. (H. B. H.)

Estrogens and Tumor Formation. In an editorial, it was pointed out that workers in the National Health Service of Chile (*Proc. Soc. Exper. Biol. Med.*, 45 (1940), 788) have found that continued administration of small quantities of estrogens to guinea pigs produced fibroid tumors. In several hundred animals, treated with ten different estrogens, subserous tumors were found throughout organs of the abdominal cavity. The tumors had no connection with the lymph nodes. No thoracic tumors were found and none appeared at the site of application but estrogens implanted under the skin produced tumors within three weeks.—*Southern Med. J.*, 34 (1941), 236–237. (W. T. S.)

Ficin—Toxicological and Pharmacological Properties of the Proteolytic Enzyme. Experiments were done using a crude preparation "leche" from *Ficus glabrata*, and its purified enzyme, "ficin." This material has been looked upon with favor for its possible anthelmintic effect. By oral administration, the LD_{50} of ficin for rats and mice was about 10 Gm. per Kg. The intravenous toxicity is appreciably less. Signs of intoxication included vomiting, bloody diarrhea and general prostration. Necropsy observation showed severe irritation in the gastrointestinal tract. Parenteral injection of ficin causes a local tissue damage. This is also observed when ficin is applied to denuded surfaces and also to the conjunctiva.—HANS MOLITOR, CHARLES W. MUSHETT and SAMUEL KUNA. *J. Pharmacol.*, 71 (1941), 20. (H. B. H.)

N^1-*p*-Fluorophenylsulfanilamide—Synthesis and Toxicity of. Since the N^1-*p*-aminophenyl derivative had been reported to be twice as active and of the same order of toxicity as sulfanilamide, N^1-*p*-fluorophenylsulfanilamide was prepared in order to make a comparative study. Procedure for preparation of the compound is given. Also results of the experiments made to determine relative toxicities. The acute toxicity of a single intraperitoneal injection in an olive oil suspension of the N^1-*p*-fluorophenylsulfanilamide has been compared with that of N^1-phenylsulfanilamide and sulfanilamide. The N^1-phenylsulfanilamide is practically non-toxic in a single dose. The toxicity of sulfanilamide and N^1-*p*-fluorophenylsulfanilamide is essentially the same at the end of 30 hours while at the end of 54 hours the fluorinated compound shows a delayed toxicity about three times that of sulfanilamide.—GEORGE P. HAGER, E. B. STARKEY and C. W. CHAPMAN. *Jour. A. Ph. A.*, 30 (1941), 65. (Z. M. C.)

Plant Poisoning. The toxic principles in plants which may affect man and other animals internally by ingestion or externally by causing dermatitis are discussed. Poisonous plants, their toxic principles, important physiological actions, animals poisoned and the active parts of the plants are tabulated. The plants causing dermatitis are also tabulated.—A. B. MASSEY. *Merck Repl.*, 50 (1941), No. 3, 24–28. (S. W. G.)

Red Squill—Factors Affecting the Toxicity of. Experiments were conducted to determine the effect of the sex of rats, heat, moisture, fat, pectin and diet on the toxicity of red squill. Reference is made to reports of other workers on red squill. Experimental details are reported. It was found that red squill is about half as toxic for male rats as for the females and it is recommended that only male rats be used in making standard assays. The higher the dry air temperature (above 100° C.) applied to the squill powder the less toxic it becomes. Amount of moisture in a red squill bait has little relationship to toxicity. Large percentages of protein (casein) or carbohydrate (corn starch) in squill baits do not affect their toxicity. Considerable fat in bait causes a slight decrease in toxicity. Pectin reduces toxicity in proportion as it is increased. Low protein diets containing high fat and high carbohydrate percentages when fed for thirty days seem to have little effect on toxicity; but a high protein, low carbohydrate diet does decrease toxicity definitely.—J. A. LUBITZ, A. S. LEVINE and C. R. FELLERS. *Jour. A. Ph. A.*, 30 (1941), 69. (Z. M. C.)

Red Squill Powder and Extracts for Chickens, Rabbits and Guinea Pigs—Toxicity of. Because of a belief that red squill powder is non-toxic to hogs, dogs, cats and chickens this study was conducted. It is thought to contain an emetic principle and that emesis prevents poisoning. Rodents, ruminants and solipeds seldom or never vomit. The literature is reviewed and experimental work reported. Conclusions reached were that poisoning from red squill is due to species' susceptibility rather than ability or inability to vomit, though vomiting may protect susceptible animals from red squill poisoning by ridding the animal of the poisoning.—J. A. LUBITZ and C. R. FELLERS. *Jour. A. Ph. A.*, 30 (1941), 128. (Z. M. C.)

THERAPEUTICS

Addison's Disease—Increased Survival in. Six cases of Addison's disease responded excellently to an extract of suprarenal cortex (non-commercial) prepared by the technique of Swingle and Pfiffner. —LEONARD G. ROWNTREE. *J. Am. Med. Assoc.*, 114 (June 1940); through *Rev. Med. Cienc. Afin.*, 2 (1940), 702. (G. S. G.)

Ammonium Chloride—Excretion of Bismuth Used in the Treatment of Syphilis Influenced by. Dur-

ing the course of syphilitic treatment, relatively large quantities of retained bismuth are stored in the body when the preparation is employed over a long period of time in patients resisting a reasonable amount of medication. It is possible that untoward effect may result from this storage. Bismuth and lead have certain points of similarity and react in the same way to many reagents. Ammonium chloride is used to eliminate led from the body. Therefore, the administration of ammonium chloride by mouth was employed to move, if possible, the bismuth from its stored areas. The results were encouraging since urinary tests for bismuth, which formerly gave negative reactions, gave positive results after the administration of ammonium chloride. Patients were given thirty to forty grains daily in compound elixir of pepsin. In cases in which this amount failed to eliminate the bismuth, the dose was doubled, bringing about prompt effect in the majority of cases.—E. F. CORSON, H. B. DECKER and T. L. WILLIAMS. *Arch. Dermatol. Syphilol.*, 42 (1940), 868; through *Abbott Abstract Service*, (1941), No. 825. (F. J. S.)

Anahemin—Tropical Macrocytic Anemia in an Indian Treated with. The clinical features, the megalocytic anemia, the numerous Ehrlich megaloblasts in sternal marrow smears, the presence of hydrochloric acid in the gastric juice and the absence of reticulocytosis, spherocytosis and hyperbilirubinemia showed the case to be one of typical uncomplicated tropical macrocytic anemia. At no time did the picture resemble tropical sprue. The response to large doses of anahemin was unexpectedly satisfactory. It was associated with reticulocytosis, rapid regeneration of blood and a restoration of the secretion of hydrochloric acid from one of hypoacidity to a level bordering on hyperacidity. The dosage of anahemin employed was larger than that employed by previous workers and the submaximal reticulocytosis noted in certain of their cases suggests that their results would have been more satisfactory with a larger dose. The author has found that anahemin does not show any greater advantage over cruder liver extracts and since the expense is almost prohibitive in the treatment of peasants the parenteral administration of the latter is advised.—N. H. FAIRLEY. *Lancet*, 238 (1940), 1118. (W. H. H.)

Arsenicals and Heavy Metals—Intolerance to, in Cases Treated with Liver Extract. One hundred and seven patients were studied to investigate the value of liver extract as a therapeutic or prophylactic agent in cases intolerant to arsenicals, heavy metals or radiation. The conclusions were that liver extract is a useful therapeutic measure in some patients suffering from manifestations of intolerance due to these agents; that it may be of some value in preventing or ameliorating pruritis, gastrointestinal disturbances, nephritis, pains in the bones and joints and in some cases of erythema; and that it is a useful supportive measure in patients with a history of previous intolerance to drugs and in those with low resistance presenting difficult therapeutic problems. It was found to be of no value in preventing nitritoid crises. There were more improved cases among those patients intolerant to arsenicals than among patients intolerant to heavy metals. The best results were in patients receiving the largest number of liver extract injections.—ANON. *Jour. Invest. Dermat.*, 3 (1940), 409; through *Abbott Abstract Service*, (1941), No. 871. (F. J. S.)

Ascorbic Acid—Gangrene of Mouth Treated with. This condition is relatively frequent in young children of Madagascar and generally terminates in death. The large number of children saved by this treatment offers an interesting report. The treatment employed has been 10 mg. vitascorbol by mouth and 10 mg. laroscorbine intramuscularly for four days. After this time the usage of a little citric juice is the only agent employed.—BOUILLAT and RAMIANDRASOA. *Soc. Path. Exotique*, (March 13, 1940); through *Presse méd.*, 47–48 (1940), 541. (W. H. H.)

Avertin in the Treatment of Ureteral Lithiasis. A 2% solution of avertin produces sufficient relaxation of the ureteral musculature to effect catheterization. It is harmless, diffuses readily and promotes the prompt expulsion of calculi. It is contraindicated only in extreme cases.—ROBERTO A. RUBI. *Rev. Med. Cienc. Afin.*, 2 (1940), 343. (G. S. G.)

Blood Transfusion—Mode of Action of, in Fluid Balance. Traumatic shock and burns are the most extensively studied conditions in which injury to capillaries allows a transfer of plasma elements into the interstitial space in the region of the injury. The traumatized area becomes grossly edematous while the volume of circulating blood becomes progressively diminished. Therapeutic measures must be directed toward restoring and maintaining an adequate volume of circulating blood to prolong life until there is time for recovery. Intravenous injection of normal saline increases the loss of fluid and protein into the injured area. The blood becomes more concentrated because of the inability to hold this fluid in the blood stream. Only when the amount of plasma colloid is restored to normal, can a normal plasma volume be maintained by the administration of saline solutions. The best results are obtained when only plasma is given by vein and fluid is administered subcutaneously.—A. S. MINOT and K. DODD. *J. Pediatrics*, 17 (1940), 571; through *Abbott Abstract Service*, (1941), No. 823. (F. J. S.)

Colchicine, the Most Important Drug in the Treatment of Gout. Gout is a metabolic disease of unknown etiology, associated with an increased production of uric acid in the body. There is no known cure for it. Bed rest, abundant intake of fluids and a soft diet are recommended for the acute symptoms. Aspirin, codeine or even stronger opiates may be necessary to alleviate pain. Local applications are usually ineffective. The author believes the most important drug to be given is crystalline colchicine. For acute symptoms the $^1/_{120}$-gr. tablet was given every one or two hours until 8, 10, 12 or more had been taken. The importance of continued medication is stressed. Complete alleviation of joint pain usually followed within 24 to 48 hours. Nausea, vomiting and diarrhea may develop if the drug has been taken over too long a period, but no untoward symptoms have been noted and the author, in his experience, has never observed a patient who was hypersensitive to the drug. The mechanism of the action of colchicine is not known. —J. H. TALBOTT. *Rocky Mountain Med. Jour.*, 38 (1941), 186; through *Abbott Abstract Service*, (1941), No. 857. (F. J. S.)

Corticosterone—Treatment of Wound Shock with. Experiments in the rat indicate that pure corticosterone administered in aqueous solution is very effective in combating shock caused by surgical trauma and other means. Desoxycorticosterone is ineffective when tested under similar conditions. From this it appears that the hydroxyl group on carbon atom 11 is important for the shock-combating action of cortical steroids. The relative inefficiency of adrenal cortical extracts is probably due to the fact that the beneficial effects of the corticosterone, and possibly of other active steroids contained in them, are at least in part counterbalanced by harmful contaminating substances. In view of the limited amount of adrenal glands which could

be made available for the extraction of active steroids special emphasis is laid on preliminary experiments indicating the presence of relatively large quantities of adrenal cortical activity in the urine of large domestic animals.—H. SELYE and C. DOSNE. *Lancet*, 239 (1940), 70. (W. H. H.)

Diethylstilbestrol. Clinical Evaluation of the Various Modes of Administration. This compound prepared by Dodds, *et al.*, bears only a slight structural relationship to natural estrogens but shows their physiological action to a marked degree. It is active orally, *per vaginam*, and may be employed as a percutaneous alcohol rub. Its potency, economy and ease of administration will cause it to be widely used, but the authors hope not indiscriminately. Between March 1939 and February 1940 diethylstilbestrol was administered by different routes to 79 patients in whom estrogen therapy was indicated. The methods employed to follow its activity are outlined. When administered parenterally, its effects are not so sustained as that of estradiol benzoate and 11% receiving the drug in this way experienced some nausea. Given orally in plain or enteric coated tablets it was not satisfactory, with over 50% of the patients showing nausea. Diethylstilbestrol was given conveniently by a percutaneous alcohol rub and while toxic effects were reduced to a minimum the activity was not so great. Vaginal suppositories were found to be the most effective route of administration. Daily administrations of 0.1 mg. were frequently capable of transforming the vaginal smear from castrate to a positive estrus with concomitant alleviation of the menopausal symptoms. Some 26% of the patients experienced mild side reactions as nausea and vaginal soreness. Side effects are probably central in action. Reduction in dosage or change in mode of administration generally produced a tolerance in patients. If no tolerance occurred medication was discontinued. In seven patients the drug proved effective in suppressing lactation. The drug is quickly absorbed and eliminated.—ROBERT B. GREENBLATT, RICHARD TORPIN and W. R. BROWN. *Southern Med. J.*, 33 (1940), 1276–1285. (W. T. S.)

German Specialties—Review of 1940, with Special Regard to the New.—KONRAD SCHULZE. *Scientia Pharm.*, 12 (1941), 5–6. (H. M. B.)

Gold Treatment—Selection of Cases of Chronic Arthritis for. Gold is a potentially dangerous remedy and should be used with a knowledge of its toxic reactions. No patient should receive gold who has evidence of any real kidney impairment, and patients giving a history of allergy and hypersensitiveness should be treated cautiously to avoid reactions. Initial doses of gold should be small and later treatment should be the minimum quantity capable of producing a favorable result. Treatment should be controlled by constant and adequate laboratory examinations including blood count, sedimentation rate, urine and renal function tests. The advent of bronchitis or skin eruption should be viewed with alarm, and in such cases it is imperative that the gold treatment be given in very small doses or that it be stopped entirely. In the selection of cases for gold therapy, Forestier and others have stressed the importance of the presence of an increased sedimentation rate of corpuscles and a resorcinol-flocculation test performed according to the method of Vernes.—J. C. THOMPSON and C. K. ELLIOTT. *Nebraska State Med. J.*, 26 (1941), 44; through *Abbott Abstract Service*, (1941), No. 855. (F. J. S.)

Gonorrhea—Chemotherapy of, in Women and Children. In the treatment of gonorrhea in the adult female the administration of sulfapyridine is a great advance on the older methods. In the present series 87.4% of the cases were cured in a very much shorter time than was previously possible. In children suffering from vulvovaginitis the results are less encouraging. With the dosage used the ill effects of the drug are infrequent and of no great severity. In the treatment of complications of the infection in adults no measures other than the administration of sulfapyridine are necessary. No failures have occurred in the treatment of gonococcal ophthalmia with sulfapyridine.—M. MOFFETT. *Brit. Med. J.*, 4148 (1940), 8. (W. H. H.)

Histamine Phosphate in Dizziness Caused by Hypertension. Since dizziness is one of the most severe complaints of patients who suffer with hypertension, current opinions have been reviewed as to the production of this symptom. Since vascular angiospasms are thought to produce this disorder at various sites, it is pertinent that the administration of antispasmodics might somewhat alleviate this complaint. In order to test the efficiency of histamine phosphate, as a vasodilator for these angiospasms, one group of three patients was treated with this drug for three months. Another (control) group of three patients was treated with more or less standard therapy. The cardinal symptom of which all six patients complained was that of dizziness which restricted even simple activities in their daily routine. From these limited observations, it appears that histamine phosphate may have a place in medical armamentaria for the treatment of dizziness due to hypertension. It is with this thought in mind that the author presents these findings which he trusts will be investigated further by other observers.—W. MARSHALL. *Clin. Med. Surg.*, 47 (1940), 285. (W. H. H.)

Iron Deficiency Anemia—Cause and Cure of. In recent years an intensive and profitable study has demonstrated that the iron deficiency anemias are due primarily to the lack of a normal amount of available iron in the body. This lack may be due to a definite loss, to a reduced intake, an added demand, to faulty absorption or to an inhibiting effect of any infection on the relationship between iron and normal hemoglobin synthesis. These anemias are exceedingly common, although their prevalence has failed to arouse the interest merited and it is usually possible to control or, still better, to prevent their occurrence. They are important not because they produce fatalities *per se*, but because they contribute greatly to a diminished efficiency, a loss of a sense of well-being, decreased resistance to infection and in general play a significant role in contributing to the disability and the misery of mankind. Regardless of the cause, administration of ferrous sulfate, 0.3 Gm., three times daily restores the blood to normal in almost all cases.—C. C. STURGIS. *Am. J. Pub. Health*, 31 (1941), 10; through *Abbott Abstract Service*, (1941), No. 854. (F. J. S.)

Iron—Ferrous and Ferric, in Liver Extract. An aqueous liver extract effectively prevented the oxidation of added ferrous iron. Due to the reducing action of commercial liver extracts, from 50% to 95% of ferric iron added to it was later present in the ferrous state. The efficacy of liver and iron combinations in the treatment of iron deficiency anemias may be partly due to this action of liver extract in supplying or maintaining iron in the more easily absorbable ferrous state.—R. S. FISHER and W. A. PEABODY. *Proc. Soc. Exptl. Biol. Med.*, 46 (1941), 207. (A. E. M.)

Liver Disturbances—Rationale of Therapy in. Drugs affecting the liver have been divided into two groups: those which cause an increased secretion of the bile by the liver, choleretics and drugs which empty the gallbladder. A recent change in viewpoint is that gallstone formation is not so much an increase in cholesterol in the bile as it is a decrease in the bile salt content, the bile salts keep the cholesterol

in solution where it can do no harm. Failure of the gallbladder to empty properly is very rarely the result of weakness to be treated with stimulants of gallbladder contraction, but is usually caused by reflex spasm which prevents the outflow of bile and is properly treated by continuous sedative therapy. The choleretics or bile acids are indicated when there is reason to believe that the secretion of bile is such that it requires stimulation; bile salts may be used when it is thought desirable to make the bile a better solvent of cholesterol; sedatives, especially tincture of belladonna, are needed to relieve obstruction.—C. NEWMAN. *Practitioner*, 145 (1940), 361; through *Abbott Abstract Service*, (1941), No. 882. (F. J. S.)

Liver Preparations for the Treatment of Anemia. A palatable antianemic preparation is prepared containing a dessicated autolyzed-liver concentrate flavored with monosodium glutamate, etc.—FERDINAND W. NITARDY, assignor to E. R. SQUIBB & SONS. U. S. pat. 2,192,326, March 5, 1940. (A. P.-C.)

Liver—Treatment of Pernicious Anemia with. The macrocytic anemias are due to a disturbance in the mechanism of red blood cell production and are characterized by increased numbers of red blood cells larger than normal and an average cell volume which exceeds that found in health. Some substance in the diet interacts with an enzyme-like component of the gastric juice to produce a factor which controls the rate of development of the red blood cells in the bone marrow. This factor is deposited principally in the liver. The author of the present paper stresses the importance of making a proper diagnosis in anemias, carefully differentiating between iron deficiency anemias and anemias in which the liver factor is lacking. Concentrated liver extracts are stated to be best for uncomplicated cases of pernicious anemia and there is not often an indication for giving iron and liver together, but if achlorhydria with a hypochromic anemia is present, liver extract may be needed.—R. L. HADEN. *Illinois Med. J.*, 79 (1941), 44; through *Abbott Abstract Service*, (1941), No. 851. (F. J. S.)

Lobar and Bronchopneumonia. The results of different methods of treatment in 478 unselected consecutive cases of lobar pneumonia treated in the wards of Cork Street Hospital in 1933–1939 are reviewed and compared. With intravenous collosol iodine used alone the case mortality was 13.3%; with antipneumococcal serum, with or without collosol iodine, 14.5%; and with sulfonamide (mostly sulfapyridine) and antipneumococcal serum 2.7%. The results of different methods of treatment in 171 unselected consecutive cases of bronchopneumonia admitted to the same wards are also reviewed. With antipneumococcal serum alone the case mortality was 43.7%; with antipneumococcal serum and sulfonamide (mostly sulfanilamide) 38% in 1937 and 34% in 1938; and with antipneumococcal serum and sulfapyridine 9.5%. The great majority of the patients treated were children under five, and the case mortality in this group was reduced from 50% in 1936 and 1937 to 30% in 1938 and to 10% in 1939, the first complete "sulfapyridine" year. Summaries of the present methods of treatment of lobar pneumonia and of bronchopneumonia in Cork Street Hospital are given.—C. J. MCSWEENEY. *Lancet*, 239 (1940), 3. (W. H. H.)

Magnesium Trisilicate—Urinary Excretion of Silica Following the Use of. It has been stated that magnesium trisilicate cannot be absorbed from the digestive tract to produce alkalosis. In studies carried out on five healthy subjects, urinary silica was increased when magnesium trisilicate was given by mouth. These studies suggest that silica is excreted by the kidneys in direct proportion to the amount absorbed and that there is probably no definite renal threshold for silica. As animals excrete large amounts of silica with no apparent tissue damage, it is reasonable to suspect that the moderately increased silica excretion during a course of magnesium trisilicate therapy is not harmful. When a trisilicate salt reacts with hydrochloric acid, formation of a gel approximating the formula for trisilicic acid would be expected. However, other factors such as temperature play an active part and there is a possibility of a soluble silicon being formed in the stomach from magnesium trisilicate.—R. C. PAGE, R. R. HEFFNER and A. FREY. *Am. J. Digestive Diseases Nutrition*, 8 (1941), 13; through *Abbott Abstract Service*, (1941), No. 877. (F. J. S.)

Malarial Mosquitoes. Among mosquitoes sent from British Honduras for identification were found both male and female *Anopheles darlingi*, which had never before been found north of Columbia, Venezuela and the Guianas. This is the most vicious vector of malaria in South America. It has since been found also in Guatemala. The common vector in Central America is *Anopheles albimanus* which produces a less pernicious form of malaria. Investigation is progressing to see if *Anopheles darlingi* is common and if the malaria it produces in Central American is as dangerous as the South American form.—W. H. H. KOMP. *Bol. Ofic. Sanit Panamericana*, 19 (1940), 687. (G. S. G.)

Manganese—Colloidal, in Acne and Psoriasis. It is difficult to judge the role played by manganese in its effect on lesions caused by acne vulgaris and psoriasis. The presence of any one or a combination of the factors mentioned, may easily be conceived as turning the tide of forces in favor of the healing process. Nevertheless, while we are not definitely able to account for the action of manganese, it is demonstrable clinically that the lesions are affected by the metal where other treatment fails.—W. G. WATT. *Clin. Med. Surg.*, 47 (1940), 282. (W. H. H.)

Morphine-Scopolamine—Use of, in First Aid Anesthesia. The author has been using the combination of morphine and scopolamine in the first-aid room for fractures, dislocations, wounds requiring special care and burns. The usual initial injection consists of morphine sulfate $^1/_4$ gr. and scopolamine hydrobromide $^1/_{80}$ gr. The dose may be repeated once or twice at 30- or 40-minute intervals if necessary and may be followed by nitrous oxide and oxygen or ether or both. When the drugs are used in combination there is produced a synergistic action, the result of which induces a deep sleep and relieves pain. Van Hoosen has pointed out that many of the undesirable side effects of each drug are in direct antagonism to each other so that the desirable anesthetic effect is obtained. The ease of its administration, its safety, its versatility in meeting the needs in all kinds of injuries, its rapid action which allows the surgeon to carry out cleansing at once, all speak in favor of the use of this combination of drugs in giving first-aid treatment.—J. F. DEPREE. *Indian Med., Gaz.*, 9 (1940), 554; through *Abbott Abstract Service*, (1941), No. 828. (F. J. S.)

Neoarsphenamine—Treatment of Syphilis with Massive Doses of, by Intravenous Drip. A large series of patients with syphilis have been treated over a period of seven years with massive doses of neoarsphenamine by the intravenous drip method. The technique consists in the administration of the arsenical in 5% glucose solution at the rate of 30 drops a minute. The drip is continued for 10 to 12 hours a day on five successive days. By this means up to 4.5 Gm. of neoarsphenamine are administered

in the five days. The importance of such a technique lies in the fact that highly infectious persons are out of circulation until treatment is completed and when they are discharged from the hospital, the danger of transmitting infection to others has been reduced. The best results were obtained by persons in whom the treatment was begun eight weeks after the appearance of the primary sore. The majority of soldiers and sailors come under medical observation at a time when the five-day treatment is adequate to insure prompt elimination of infection.—G. BAEHR. *Am. J. Pub. Health*, 31 (1941), 176; through *Abbott Abstract Service*, (1941), No. 872. (F. J. S.)

Oral Vaccine in Prophylaxis of Common Cold—Use of. Among 445 persons taking vaccine, 399 had 1089 (70%) less colds than usual during a year, whereas 469 controls showed a decrease of only 29 (26.3%) colds, an essential decrease of 43.7% due to oral cold vaccine. For the fourth consecutive year experiments on 100 volunteer students and faculty members, with another group of 100 students, not taking the vaccines, acting as controls, confirm the previous findings that the use of oral cold vaccines is effective in preventing colds. About 25% of the individuals studied who had taken the oral vaccine during the winter season of 1938–1939 reported that they had not contracted colds at all in spite of the wide prevalence of colds. About 70% of the individuals taking the vaccine reported a reduction of the number of colds from the average of four per individual in previous winter seasons to one or two, which were consistently reported as much milder or of shorter duration due to self-immunization with the oral vaccine. The remaining 5% reported that they did not seem to be benefited at all but many of this group admitted that they had not taken the vaccine faithfully throughout the season.—L. F. PICCOLI. *Pharm. Arch.*, 11 (1940), 43. (A. C. DeD.)

Oranges—Medicinal Qualities of. Oranges are a valuable addition to the diet because of the mild acid (citric) and the mineral salts in the juice such as potassium, sodium, magnesium, phosphorus and iron as well as for the vitamin C content.—ANON. *Gaz. Pharm.*, 9 (June 1940), 18. (G. S. G.)

Peptic Ulcer—Treatment of, in War Time. War time needs and restrictions have necessitated changes in the routine care of gastric ulcer patients. Their stay in the hospital must be drastically curtailed to keep beds free from casualties. It is desirable to reduce the period of incapacity in order to allow valuable workmen to return to their labors, and those who need surgery must be selected as early as possible to avoid expensive medical treatment. The routine drugs given are limited, for the sake of simplicity, to olive oil and magnesium trisilicate (60 grains every 2 or 4 hours). As long as the only alkali used is magnesium trisilicate, alkalosis can be avoided. A point of increasing importance concerns the fitness for military service of patients who have had a peptic ulceration. Those who have recovered from peptic ulceration are unlikely to make physically satisfactory soldiers because of the possibility of relapse under stress and strain. There appears to be a gradual increase in the incidence of peptic ulcer noticeable among civilian as well as service cases.—N. C. TURNER and J. JENS. *Practitioner*, 146 (1941), 100; through *Abbott Abstract Service*, (1941), No. 844. (F. J. S.)

Plasma Transfusions for Hemorrhage. Investigations, to be reported elsewhere, have shown that after hemorrhage the individual red blood corpuscles swell very appreciably in size and that large numbers of them become side-tracked out of the circulation in muscle capillaries. These observations suggested a new form of auto-transfusion for hemorrhage, aimed at restoring these corpuscles to the circulation. Evidence is produced that this can be effected by plasma transfusions which should therefore rival whole blood transfusions in the treatment of acute hemorrhage. It is suggested that plasma transfusions should become a routine measure in the treatment of severe hemorrhage.—H. J. BRENNAN. *Brit. Med. J.*, 4147 (1940), 1047. (W. H. H.)

Potassium Chloride—Effect of, on Electrolyte Balance in Asthma. Twelve children and young adults with asthma which proved intractable under routine allergic management were studied under various procedures which affect the electrolyte exchange. From repeated observations on the twelve patients the authors concluded that if the sodium chloride intake is normal or high, fever therapy gives only transient benefit while striking improvement was seen on a special diet low in salt. Complete remission obtained by this special diet could be terminated promptly by adding as little as 1 or 2 Gm. of sodium chloride to the diet. The addition of potassium chloride (6 to 10 Gm. daily) to the special diet low in salt caused cessation of the milder attacks of asthma. The more severe cases continued while potassium chloride was being given but ceased at once when the administration of the salt was discontinued. It was found that potassium chloride administered to patients during remissions did not cause the recurrence of the asthma.—A. V. STOESSER and M. M. COOK. *Am. J. Dis. Child.*, 60 (1940), 1252; through *Abbott Abstract Service*, (1941), No. 875. (F. J. S.)

Potassium Salts—Study of, in Allergic Conditions. Rusk and Kenamore first mentioned the possible relationship between potassium ions and the allergic state. Subsequent work (some 20 references) has confirmed this and attempted to explain the specific action of the potassium ion in giving this relief. Allergy is related to excessive irritability of certain tissues and appears to be conditioned by excess passage of potassium from tissues to the serum. The relationship of serum to cellular potassium appears to be a function of the permeability of the cell membrane. This permeability is controlled by the adrenals and hence a dysfunction of these glands results in a shift of the equilibrium of cellular and serum potassium and may be the basic cause of the allergic state. Now the serum and potassium levels in the allergic state have been studied to determine: (1) the efficacy of potassium salts in relieving this condition; (2) whether the difference of serum potassium levels in the allergic and non-allergic state is significant; and (3) the effect of oral potassium on the serum level. Twenty-five normal and 38 allergic persons were used. Persons with asthma, hay fever and vasomotor rhinitis were generally benefited or completely relieved by the oral administration by potassium chloride or gluconate, while persons with eczema were little benefited. Both salts are equally effective, with potassium gluconate producing less gastric irritation. The administration of potassium resulted in no cumulative effect and when relief occurred it was in proportion to the size of the daily dose. Each normal individual apparently has a characteristic serum potassium level. No characteristic basal serum potassium level was noted in the allergic group. A relationship appears to exist between the average serum potassium variation after potassium therapy and the degree of relief obtained. The failure of the serum potassium to rise after therapy suggests the occurrence of a more effective increase of the tissue potassium concentration.—FRANCIS P. PARKER. *Southern Med. J.*, 33 (1940), 1301–1309. (W. T. S.)

Prontosil Soluble—Local Treatment with. Successful local treatment with prontosil soluble in empyema, ulcers, abscesses and other conditions is

described. The drug has antibacterial, deodorant and stimulating action in such cases, and toxic effects do not occur.—J. A. SMITH. *Brit. Med. J.*, 4146 (1940), 1017. (W. H. H.)

Recipe Collection of Philippa Welser. III. The Sicknesses. A detailed description.—OTTO ZEKERT. *Scientia Pharm.*, 12 (1941), 1–4, 6–8. (H. M. B.)

Riboflavin—Clinical Use of. A review of the symptoms of ariboflavinosis with special reference to ocular manifestations and a description of the clinical results following administration of riboflavin to 120 patients. An abstracted discussion by two authorities is appended.—V. P. SYDENSTRICKER, A. R. KELLY and J. W. WEAVER. *Southern Med. J.*, 34 (1941), 165–170. (W. T. S.)

Serum and Plasma in Treatment of Hemorrhage in Experimental Animals. In the treatment of post-hemorrhagic shock, such as the authors produced in experimental animals, approximately 40% of the blood removed must be restored to seeure recovery. Comparable volumes of serum or plasma produce equally satisfactory results. These findings indicate that under these conditions the volume of red cells restored to the animal is more important than their oxygen-carrying capacity; and that the serum and plasma which can be stored for long periods are effective blood substitutes for the treatment of hemorrhage. The authors' results indicate the importance of administering blood or blood substitutes at a rapid rate (50 to 100 cc./min.) and, of course, as soon as possible after the hemorrhage.—J. W. MAGLADERY, D. Y. SOLANDT and C. H. BEST. *Brit. Med. J.*, 4155 (1940), 248.
(W. H. H.)

Serum Phosphatase in Cases of Bone Tumor. The serum phosphatase in twenty-eight cases of bone tumor is recorded. The results support the hypothesis that the level of the enzyme in the blood serum reflects the degree of osteoblastic activity in the bones, assuming that the possibility of gross hepatic damage has been excluded. The estimation appears to be of some value in following the treatment of osteogenic sarcoma and in detecting the onset of metastases in this condition. The test can sometimes detect the presence in bone of latent metastases from other organs—*e. g.*, prostatic carcinoma—and the test is suggested as a useful routine in this condition.—S. CADE, N. F. MACLAGAN and R. F. TOWNSEND. *Lancet*, 238 (1940), 1074.
(W. H. H.)

Sex Hormones—Treatment of Otosclerosis by. Otosclerosis may be prevented from becoming progressive deafness by early treatment. It is caused by deposits of calcium in embryonic bone, particularly the stapes. This is aggravated at puberty, but may be counteracted by use of estrin. Sex hormones dilate the peripheral veins and accelerate circulation causing absorption of the embryonic bone of otosclerosis. Improvement has been noted in 31 out of 56 cases, responding chiefly to heterogeneous hormone therapy. More work is in progress.—E. B. *Reforma Medica*, 26 (1940), 439. (G. S. G.)

Steatorrhea Due to Deficiency of Fat-Soluble Vitamins. It is well recognized that steatorrhea may be associated with hypocalcemia and tetany. One explanation holds that vitamin D, being fat-soluble, is dissolved in the unabsorbed fat, and that the patient suffers from vitamin D insufficiency. Absorption of calcium can be brought to normal in patients with steatorrhea by the administration of large amounts of vitamin D and with no other change in the regime. The authors report a case of fatty diarrhea in which there was an insufficiency of at least three of the fat-soluble vitamins and they emphasize the importance of treating such patients with all the fat-soluble vitamins rather than with vitamin D alone. Pan-fat-soluble-vitamin deficiency should be looked for in all cases with chronic steatorrhea, regardless of the presenting symptoms. A low fat diet is indicated, and, where it is possible, the patient should obtain fat-soluble vitamins in fat-free vehicles.—F. ALBRIGHT and J. D. STEWART. *New Engl. J. Med.*, 233 (1940), 230; through *Abbott Abstract Service*, (1941), No. 833. (F. J. S.)

Strophanthin—Therapeutic Indications of Intravenous Injection of. The indications of treatment of cardiac disorders with intravenous strophanthin do not depend upon the degree of insufficiency but the manner of the working heart. In the particular case reviewed it was found that digitalis failed to relieve the distressed condition but that the usage of strophanthin in this manner alleviated the distress. The dosage of strophanthin employed was 20 to 30 mg. per day. After the third or fourth day it is advisable to discontinue the medication for twenty-four hours. However, it is advised that strophanthin should never be employed when the patient is under digitalis influence.—L. M. TER HORST. *Nederland. Tijdschr. Geneeskunde*, 84 (1940), 697; through *Presse méd.*, 49–50 (1940), 71.
(W. H. H.)

Sulfamide—Treatment of Cerebrospinal Meningitis. Sulfamide therapy in cerebrospinal meningitis has transformed the prognosis in the affection as may be noted in fourteen cases of less than sixty years of age, no death has occurred. The usage of 1162 F orally in doses of 6 Gm. was made in the greater number of these cases. The intrarachitic injection of a special preparation of 1162 F was an indispensable complement in severe cases.—R. DAMADE. *Soc. Med. et Chir. de Bordeaux*, (April 1940); through *Presse méd.*, No. 49–50 (1940), 562.
(W. H. H.)

Sulfanilamide and Sulfone Not Beneficial in Treating Climatic Bubo. A comparison of four cases of climatic bubo (lymphogranuloma inguinale) treated with sulfanilamide or sulfone with eleven other cases treated by the usual palliative methods revealed that these drugs are not particularly effective against climatic bubo. The same drugs were used more successfully in treating chancroid and ulcers resembling granuloma venereum.—FRANK HAWKING. *J. Trop. Med. Hyg.*, 43 (1940), 221.
(W. T. S.)

Sulfanilamide—Implantation of, in Clean Surgical Wounds. There have been many reports in the literature of the use of sulfanilamide locally in contaminated wounds. In the present study sulfanilamide was implanted in the wounds of a series of eighteen inguinal herniorrhaphies in an effort to determine the efficacy of this drug as a prophylaxis against infection. Six to eight grams of the drug were used in these cases, although perhaps smaller amounts would be adequate. Two control groups of approximately equal numbers were operated upon under similar conditions without the use of sulfanilamide. There were no infections in the group receiving sulfanilamide whereas the remaining control groups showed ten and a half per cent and twelve per cent, respectively. The blood concentrations would indicate that a general therapeutic level of the drug is maintained longer due to a slower continual absorption than when the drug is administered by mouth.—M. A. CASBERG. *J. Missouri Med. Assoc.*, 37 (1940), 473; through *Abbott Abstract Service*, (1941), No. 873. (F. J. S.)

Sulfanilamide in Trachoma. The author cites nine previous reports of the successful use of sulfanilamide in trachoma. He describes the results which he obtained in 40 cases of trachoma by giving 0.04 Gm. of the drug a day per Kg. body weight. Ten days of treatment were considered; one course and ten days free of medication were allowed between courses. The 40 cases were analyzed in

tables with respect to age and sex of the patient, stage of trachoma, trachomatous condition prior to the treatment and culture of conjunctival scrapings. Thirty-two cases were cured and eight cases were greatly improved. The results of the treatments are discussed and some of the cases described in detail.—T. H. LUO and E. CHANG. *Chinese Med. J.*, 58 (1940), 512–526. (W. T. S.)

Sulfapyridine—Abdominal Actinomycosis Treated with. This case is not reported as a cure of actinomycosis by sulfapyridine. Before such a claim could be made it would be necessary to establish, by laboratory experiments with pure cultures, that the drug has in fact a lethal or inhibitory effect on the *Streptothrix actinomyces*. It is probable, as in the case with many anaerobic infections, notably those of gas gangrene, that in this patient the association of anaerobichemolytic streptococcus with the causative organism had produced a more serious condition than a pure infection alone would have done, and that the sulfapyridine, by eliminating the streptococcus, allowed her to effect her own cure of the actinomycotic infection. Whatever may be the therapeutic explanation, this girl, treated by standard methods, was losing ground and, if the estimate of the clinical course and the forecast of statistics can be accepted, would eventually have died; owing to sulfapyridine she is cured, or at any rate is well enough to be serving with the Forces.—W. H. OGILVIE. *Brit. Med. J.*, 4155 (1940), 254. (W. H. H.)

Sulfapyridine and Sulfathiazole—Comparative Therapeutic Efficiency of, in Mice Infected with Pneumococcus Types II and III. Sulfathiazole administered *per os* to rabbits is less toxic than sulfapyridine; administered the same way to mice sulfapyridine appears to be the less toxic drug. Absorption and elimination, and the resulting toxicity depend on the type of animal used. In types II and III pneumococcus infection, the therapeutic effect of sulfapyridine is superior to that of sulfathiazole, based on oral dose only and with no blood level determinations.—GEORGE W. RAIZISS, M. SEVERAC and J. C. MOETSCH. *Proc. Soc. Exptl. Biol. Med.*, 46 (1941), 361. (A. E. M.)

Sulfapyridine in Chronic Meningococcal Septicemia. Seventeen cases of chronic meningococcal septicemia without meningitis are recorded. They were seen (together with about ten other cases whose case notes are not available) within a period of nine weeks during the prevalence of cerebrospinal fever in the British Expeditionary Force. Chronic meningococcal septicemia in sporadic form is not rare and the suggestion is made that this form of meningococcal infection becomes common whenever meningococcal meningitis is prevalent in a community. The disease presents a characteristic clinical picture which enables bedside diagnosis to be made with ease. Sulfapyridine by mouth rapidly cures the disease.—A. W. STOTT and W. S. C. COPEMAN. *Lancet*, 238 (1940), 1116. (W. H. H.)

Sulfapyridine—Influence of, on Leukemia. Three of six cases of lymphatic leukemia showed a rapid fall in lymphocytes when sulfapyridine was given. A fourth case showed a similar but not conclusive response. This reaction to the drug is apparent within twelve to eighteen hours after its administration, and appears even when the blood level of the drug is low. However, the effect is transitory. In none of the cases was the fall in total white cell count attributable to granulocytopenia. In three cases of chronic myelogenous leukemia, no comparable response to sulfapyridine occurred. These observations are interesting because recent reports on the effects of sulfapyridine on the hematopoietic system emphasize granulocytopenia. The reactions reported here appear to be different and suggest a specific effect on the leukemic lymphocytic cell. Experimental studies are being directed on the related compounds to discover if any of these are more effective than is sulfapyridine in this type of reaction.—K. E. LIVINGSTON and R. D. MOORE. *New Engl. J. Med.*, 223 (1940), 975; through *Abbott Abstract Service*, (1941), No. 840. (F. J. S.)

Sulfapyridine—Late Relapse Following Treatment of Gonorrhea with. The differentiation between late relapse and reinfection may on occasion present real difficulty. It is evident, however, from a careful analysis of a personal series of cases of urethritis treated with sulfapyridine that late relapse may occur in a proportion of such cases. The incidence found in the present series was 3.7%, and it seems that the unusually high rate of late relapse reported by Cokkinis and McElligott has not been the experience of other venereologists. While the clinical picture may vary widely in this condition the cause of the recurrence of signs and symptoms is often to be found in a closed focus of infection situated in the various glandular structures which normally communicate with the urethra. The prophylaxis of late relapse is described: the successful treatment of the condition is usually dependent on the discovery and eradication of such closed foci by local measures. The wider appreciation of these conclusions is required for a deeper understanding of the epidemiological problem presented by the late relapse of gonorrhea.—S. M. LAIRD. *Brit. Med. J.*, 4145 (1940), 967. (W. H. H.)

Sulfapyridine—Treatment of Cerebrospinal Fever with. One hundred and sixty cases of cerebrospinal fever were treated in four groups: serum (50 cases), sulfapyridine (50 cases), sulfapyridine plus serum (30 cases), sulfapyridine plus antitoxin (30 cases). Satisfactory results were obtained, fatality rates for the groups being 38, 32, 22.6 and 20%, respectively. The recovery rate was accelerated in the groups where sulfapyridine was employed. Blood cultures were performed in 126 cases only; positive cultures were obtained in 100 cases, twenty-one of which ended fatally. Concentration of sulfapyridine in the cerebrospinal fluid was estimated, but the concentration appeared to have little if any relation to the dosage. No toxic reactions were experienced in any of the cases treated with sulfapyridine.—J. H. JORDAN, J. H. BLAKELOCK and W. R. JOHNSTON. *Brit. Med. J.*, 4146 (1940), 1005. (W. H. H.)

Sulfathiazole—Use of, in the Treatment of Gonorrhea. Fifty-five male patients were studied who had gonorrheal urethritis. They were all treated with sulfathiazole, in 3-gr. doses daily, on the average. The test for cure was two or more negative smears and negative culture of the prostatic fluid. Sulfathiazole was found to be particularly valuable in the treatment of gonorrheal urethritis, not only because of therapeutic efficiency, but also because of the low incidence of toxic reactions encountered in its use. Fifty of the fifty-five patients studied were followed to the completion of the study and of the fifty who were followed, 96% were cured on the average of eight days' treatment with an average of 28 Gm. of the drug. Toxic reactions occurred in only 11.5% of the cases. The blood levels of free sulfathiazole were not found to be of any prognostic value in regard to determining the rapidity of cure.—F. KNIGHT, C. A. W. UHLE and L. W. LATOWSKY. *J. Urol.*, 44 (1940), 748; through *Abbott Abstract Service*, (1941), No. 843. (F. J. S.)

Sulfhemoglobinemia—Mode of Formation of, from Sulfur-Containing Foods. It is important to prevent the formation of sulfhemoglobin during sulfonamide therapy. This substance in the blood is formed by the action of oxidation products of the sulfonamides on hemoglobin in the presence of sulfides. If sulfides are absent methemoglobin results.

The sulfides are derived from the action of bacteria on sulfur-containing food residue in the intestine. The chances of sulfhemoglobin formation should be decreased if the bacterial action or the sulfur in the intestine can be diminished. Bacterial action can be lessened by using a low-residue diet or by keeping the intestinal contents dry by avoiding saline purges. Bacteria of the gut can form sulfides from practically all types of sulfur compounds, especially from protein sulfur. The animal proteins contain just as much sulfur as do egg proteins. The author of this report concludes from many observations that there is practically no evidence that the dietetic precautions taken have reduced the occurrence of cyanosis.—A. T. FULLER. *Practitioner*, 146 (1941), 184; through *Abbott Abstract Service*, (1941), No. 881. (F. J. S.)

Sulfonamide and Smallpox. Treatment, with controls, of 151 cases of smallpox in a Bombay hospital with average doses of sulfonamide showed that while this drug reduced mortality by 30% in the confluent type it is without influence on cases of the hemorrhagic type.—T. B. PATEL and B. P. B. NAIDU. *Indian Med. Gaz.*, 75 (1940), 730–732. (W. T. S.)

Sulfonamides for Gonorrhea. Sulfanilamide and sulfapyridine are both potent drugs in assisting or securing cure of gonorrhea, and give approximately the same percentage cured. Sulfapyridine is much easier to use, with a lower incidence of drug resistance and complications of gonorrhea. Toxic effects were almost invariable and often severe when sulfanilamide is used, but less severe in the sulfapyridine series, and not dangerous with either drug. There is a high rate of defaulters with both drugs. Every effort should be made to minimize this tendency. The tests of cure employed appear to be very reliable and cases returning to the clinic after default or cure are almost all cases of reëxposure or do not suffer from venereal disease. The late recurrence of gonorrhea after satisfying tests of cure was noted definitely in only one male patient of this series. Drug resistance appears to be a personal idiosyncrasy, the nature of which has not been studied in this paper. Drug resistance is readily acquired if subcurative doses of any sulfonamide are given. Such acquired drug resistance is not permanent. The treatment described has been conducted as a large scale clinical investigation on the value of sulfonamides in gonorrhea. Experience and the results presented have suggested some modifications of the scheme originally used. Sulfonamides are powerful antigonorrheal agents, though not an easy panacea. They must be skilfully used and accurately controlled and should only be employed where results of treatment can be accurately ascertained; 810 male cases and 129 female cases of gonorrhea have been studied. The results have been assessed six months or longer after completion of treatment. Strict tests of cure have been employed. All patients who have not completed all the tests of cure are "defaulters." Search for "return cases" has been conducted up-to-date. The incidence of complications of gonorrhea arising during treatment is noted. Drug resistance, its incidence and its relation to cure, is discussed.—R. C. L. BATCHELOR, R. LEES and G. M. THOMPSON. *Brit. Med. J.*, 4145 (1940), 961. (W. H. H.)

Therapeutics—Recent Developments in. Control of Blood Pressure. Blood pressure control of hypertension, mercurial diuretics and low blood pressure are discussed.—F. PRESCOTT. *Chemist and Druggist*, 133 (1940), 340. (A. C. DeD.)

Thiazolic Derivative of Aminobenzene Sulfamide—Treatment of Cerebrospinal Meningitis with. The authors report two cases of cerebrospinal meningitis treated with a thiazolic derivative of aminobenzene sulfamide. They have obtained a very rapid clinical and biological cure. The thiazolic derivative (2090 R. P.) has been well supported in large doses. The ease of producing sufficient concentration of this compound in the cephalo-rachitic fluid has led to the belief that it may be desirable in cases of other microbes.—J. J. GOURNAY and P. MOLITOR. *Soc. Med. des Hospitaux*, (May 10, 1940); through *Presse méd.*, 47–48 (1940), 539. (W. H. H.)

Toad Venom. The toad has been associated with magic, chiefly evil, from earliest times. It was considered poisonous or contaminating as late as the 17th century. And until the beginning of the 19th the study of toads was considered a dangerous pastime. Scientific investigation began in 1893. In 1922 toad venom was demonstrated to have beneficial action on the nervous system, respiration and circulation. Toad venom is in pectoral and dorsal glands and also in sweat glands. It is not poisonous to man, but will stun or kill smaller animals. It is primarily active on the nervous system, its tonic qualities make it a useful remedy in simple depression, anemia, asthenia and glandular insufficiency. Toad therapy is prescribed in intramuscular injections of a solution of the venom in physiological serum. It has been found of value for anemic children and adolescents. However it is not a complete panacea and should be used only in carefully controlled medical cases.—MAURICIO BERT. *Escuela Farm.*, 3 (May–June 1940), 15. (G. S. G.)

Undulant Fever—Prevalence and Treatment of. Brucellosis, a comparatively rare and little known disease of a few years ago, is gradually assuming an important and well-recognized place in public health. The author has seen ten cases within a period of eighteen months. The importance of this disease is becoming more manifest to the doctor in farming communities, where, if the gradual increase is an indication, the incidence will soon assume alarming proportions. It has been estimated that 20% of the cattle in the United States are affected. In smaller communities, pasteurization of milk is not carried out and therein lies one avenue of infection. Many of the subclinical cases have been diagnosed as neurasthenia. The most encouraging results in the treatment of this fever have been reported by those using sulfanilamide or its derivatives. Sulfanilamide was used in eight of ten cases reported. In one of the patients, sulfapyridine was used in the same manner as in the treatment of pneumonia.—I. FISHER. *Minnesota Medicine*, 24 (1941), 106; through *Abbott Abstract Service*, (1941), No. 850. (F. J. S.)

Vitamin A Deficiency—Relation of, to Pityriasis Rubra. Under certain conditions a deficiency of vitamin A provokes a characteristic response in the skin which shows a similarity in many respects to the microscopic picture of pityriasis rubra pilaris. In three such cases reported by the authors it was found that the threshold levels of dark adaptation were from 0.5 to 1.25 log units higher than normal. The dark adaptation levels were corrected promptly by the administration of large amounts of vitamin A. At the same time, with this treatment there was improvement in the condition of the skin, but the response was slow. The authors do not assume from this small series that the pathogenesis of the pityriasis rubra pilaris is to be explained solely on the basis of vitamin A deficiency, but they believe that the study should be extended along these lines to include other phases of the condition. They found that a lack of the vitamin may exist in the face of an adequate supply in the diet due to some faulty mechanism which prevents proper utilization of the supply.—L. A. BRUNSTING and C. SHEARD. *Arch. Dermatol. Syphilol.*, 43 (1941), 42; through *Abbott Abstract Service*, (1941), No. 862. (F. J. S.)

Vitamin B Complex—Use of, in the Treatment of Lichen Planus. The etiology of lichen planus is not known. The majority of dermatologists have usually resorted to the theory of a nervous causation to account for the occurrence of the eruption in many individuals. The treatment in general has been largely of such character that the nervous state of the patient as a whole, including that of the skin, is soothed by general and local remedies. Since the outbreak of the war the author thinks lichen planus has been more frequent because there exists in these people a certain psycho-neurotic background which becomes manifest under the stress and strain of unusual nervous tension and reveals itself in this specific cutaneous lesion. In a series of fifteen cases, the response to vitamin B complex in the acute cases has been good, seeming at times to be almost a specific effect. There appeared to be no value in the constituents of vitamin B complex individually, but the complex as a whole could be recommended. —J. F. BURGESS. *Can. Med. Assoc. J.*, 44 (1941), 120; through *Abbott Abstract Service*, (1941), No. 845. (F. J. S.)

Vitamin B_1—Deficiency Manifestations of, in Small Bowel. X-ray films of the small bowel must be made at 15- or 30-minute intervals until the opaque meal has passed from the stomach to the cecum which normally requires about four hours. The authors of the present paper claim that vitamin deficiency is shown on X-ray examination by the presence of dilated loops of the small bowel, which involve the same portion of the bowel but may vary slightly at different times. No obstruction is found distal to this portion of the bowel. Patients complain of cramp-like pain in the mid-abdominal region, not definitely related either to intake or quality of food. The patient usually rubs his open palm over the region of the umbilicus when asked to locate the distress. Both the mid-abdominal cramplike distress and the dilated loops of small intestine showing in the X-ray examination have promptly disappeared on vitamin therapy. The authors found that the dosage must be large: 20,000 to 50,000 units of vitamin B_1 with other portions of the B complex in proportion.—A. F. TYLER. *Nebraska State Med. J.*, 25 (1940), 441; through *Abbott Abstract Service*, (1941), No. 824. (F. J. S.)

Vitamin D—Use of, in the Treatment of Psoriasis. The frequent beneficial results of sunlight and of ultraviolet radiation suggest the possibility that psoriasis may be related to deficiency of vitamin D. It is logical to assume that in this disease there may be some disturbance of the ability to absorb or to utilize vitamin D. Monash, however, concluded that psoriasis is not wholly due to a deficiency of the vitamin. The author summarizes the results of forty-five cases which he treated with massive doses of vitamin D as follows: Six patients were temporarily cleared of psoriasis; eight were definitely improved; twenty-one were slightly improved, and the remaining ten patients were unimproved. From the results in this series and other observations, he has concluded that the vitamin is by no means specific for psoriasis. Furthermore, it may give rise to severe reactions and is expensive. He thinks the day may come when one will be able to select certain types of the disease which may respond favorably to vitamin D therapy.—C. S. WRIGHT. *Arch. Dermatol. Syphilol.*, 43 (1941), 145; through *Abbott Abstract Service*, (1941), No. 867. (F. J. S.)

Vitamin K—Synthetic. A group of eighteen patients with hypoprothrombinemia were treated parenterally with a water-soluble derivative of 2-methyl-1,4-naphthoquinone (synthetic vitamin K). In nine of these, the lowered blood-prothrombin concentration was rapidly restored to a normal level by the administration of 1–6 cc. of a solution of the material, equivalent to 1–6 mg. of 2-methyl-1,4-naphthoquinone. In three patients with hemorrhage resulting from the lowered blood prothrombin levels the bleeding was satisfactorily controlled within a few hours of intravenous or intramuscular administration of the material. On the other hand, twelve patients with hypoprothrombinemia associated with parenchymatous hepatic disease did not respond to intensive parenteral administration of either water-soluble synthetic vitamin K or natural vitamin K obtained from alfalfa, supplemented in some instances by large doses of 2-methyl-1,4-naphthoquinone and whole liver by mouth. It is suggested that this failure of response may have prognostic importance when considered along with the level at which the blood prothrombin concentration is maintained in these patients.—R. KARK and A. W. SOUTER. *Lancet*, 238 (1940), 1149. (W. H. H.)

Vitamin P—Purpura Hemorrhagica after Arsenic Therapy Treated with. A case of acute purpura hemorrhagica developing after seven injections of neoarsphenamine is reported. Notable symptoms included profuse hematuria, retinal hemorrhage and necrotic angina. The blood picture was one of thrombocytopenia, leucopenia and normocytic anemia. There is no deficiency of ascorbic acid. Recovery took place rapidly after treatment with vitamin P and a blood transfusion.—D. R. GORRIE. *Lancet*, 238 (1940), 1005. (W. H. H.)

War Burns—Experience in the Treatment of. The principles of the treatment of burns, with special reference to the Dunkirk cases, are discussed. The importance of a prepared scheme of treatment, especially in war, is stressed. The silver nitrate-tannic acid method is strongly recommended. The use of plaster for the later treatment of deep burns is advocated.—S. M. COHEN. *Brit. Med. J.*, 4155 (1940), 251. (W. H. H.)

MODERN REMEDIES

SYNTHESIS

Aminophylline "Hypoloid" (Burroughs Wellcome and Co.) is a sterile solution of aminophylline supplied in strengths of 0.5 Gm. in 2 cc. (for intramuscular injection) and 0.25 Gm. in 10 cc. (for intravenous injection). Each strength is available in boxes of six ampuls.—*Indian Med. Gaz.*, 75 (1940), 644. (W. T. S.)

Anaesthesin Jelly (Winthrop Chemical Co., Inc., 170 Varick St., New York, N. Y.) contains 10% of anaesthesin (ethyl aminobenzoate), in a water-soluble glycerin-tragacanth base of high lubricating quality. Anaesthesin is a non-irritating local anesthetic with prolonged action and virtual freedom from toxic effects. It is used as an anesthetic lubricant to facilitate and render painless the urethral passage of various instruments (catheters, sounds, urethroscopes and cystoscopes). Anaesthesin Jelly is supplied in boxes of three collapsible tubes and one applicator.—*Amer. Professional Pharm.*, 7 (1941), 117. (F. J. S.)

Anethaine (Glaxo Ltd., Greenford, Middlesex) is butethanol (*p*-butylaminobenzoyldiamethylaminoethanol). It is used as a local anesthetic for ophthalmology. Also used in oto-shino-laryngology, urology, proctology. Prescription examples: Anethaine, gr. ii; zinc. sulf., gr. ii; aq. dest., *ad* 1 ounce. Sig.: Eye Drops. Anethaine, gr. iv; atropin. sulf., gr. ii; aq. dest. *ad* 1 ounce. Sig.: Eye Drops. Anethaine, gr. iv; acid. boric. cryst., gr. viii; aq. dest. *ad* 1 ounce. Sig.: Eye Drops. Anethaine, gr. ii; phenol. liq. minims viii; glycerin, *ad* 1 ounce. Sig.: Ear Drops. Anethaine, gr. ii; Ext. bellad. vir., gr. vi; ol. theobrom., *q. s.* Mix and divide into six suppositories. Anethaine, gr. xii; paraff. molle alb.,

ad 1 ounce. Sig.: Ung. pro recto. It is supplied as solution 2% (colored blue), not for injection, in 25-cc. bottles; and as powder in 1-gram and 5-gram bottles.—*Australasian J. Pharm.*, 22 (1941), 327. (A. C. DeD.)

Angioxyl (Bengue and Co. Ltd., Alperton, Middlesex) is a pancreatic extract (free from insulin). It is used in cases of angina pectoris, arterial hypertension, arteriosclerosis, arteritis, obstruction of the retinal artery, atomic varicose ulcers, endocrine disturbances. It is given by intramuscular injection and orally. It is supplied in ampuls 6 x 2 cc. in a box; syrup, 100 cc. in bottle.—*Australasian J. Pharm.*, 22 (1941), 327. (A. C. DeD.)

Auraloid (John A. Millar Company, Inc., Eleven Hill Street, Newark, N. J.) is an aqueous ortho-colloidal (0.025%) solution of gold in finely dispersed millimicron dimensions and each teaspoonful (4 cc.) presents one milligram of gold. It is stable, non-toxic and tasteless; and it is used as palliative treatment of inoperable carcinoma, in neurasthenia, alcoholism, arthritis, whooping cough, tuberculosis of the throat and chest, and wherever gold therapy is applicable. The dosage is: Adults, 15 to 60 drops three times daily in water; children, 1/4 to 1/2 adult dose, according to age. Auraloid is supplied in 4-oz. bottles.—*Amer. Professional Pharm.*, 7 (1941), 181. (F. J. S.)

Calcium Pantothenate (E. R. Squibb & Sons, 745 Fifth Ave., New York, N. Y.) is the calcium salt of pantothenic acid, a filtrate factor of the vitamin B complex, in pure synthetic form and its chemical formula is $C_9H_{17}O_5N$ for the acid, or $CH_2OH.C(CH_3)_2.CHOH.CO.NH.CH_2.CH_2.COOH$. It is basically for investigational use. As one of the members of the vitamin B complex group of "filtrate factors," pantothenic acid has an as yet undetermined role in human nutrition. It is essential, however, and associated with riboflavin. The dosage is to be determined by the physician. Calcium Pantothenate is supplied for experimental use as capsules of 10 mg. Calcium Pantothenate in bottles of 50; the parenteral solution containing 50 mg. per 1 cc. is supplied in 5-cc. vials.—*Amer. Professional Pharm.*, 7 (1941), 180. (F. J. S.)

Carbachol (Burroughs Wellcome & Co.) is carbamylcholine and was originally introduced under the trade-mark Doryl. It is choline ester, superior to acetylcholine in that it is stable and effective orally as well as parenterally. It is supplied in tablets, in ampuls, in an ophthalmic solution and as a nasal spray.—*Indian Med. Gaz.*, 75 (1940), 644. (W. T. S.)

Cod Liver Oil Concentrate Tablets (Schieffelin & Co., 16 Cooper Square, New York, N. Y.) are derived from cod liver oil and contain the full therapeutic potency of the latter; unnecessary fats have been eliminated; each tablet contains 3120 U. S. P. units of vitamin A and 312 U. S. P. units of vitamin D or the equivalent of one teaspoonful of cod liver oil which conforms to U. S. P. minimum standards. The tablets are pleasant to take and can be swallowed, crushed or chewed. The tablets are indicated in those cases in which vitamins A and D therapy is required (night blindness, malnutrition, susceptibility to infection, rickets, etc.). Cod Liver Oil Concentrate Tablets are packaged in bottles of 25 and 100 tablets.—*Amer. Professional Pharm.*, 7 (1941), 117. (F. J. S.)

Corvotone is a 25% solution of nikethamide, pyridine-carboxylic acid diethylamide, for use as a cardiac and respiratory stimulant. It is non-toxic and can be administered orally or by subcutaneous injection. The dose in either case is from 1 to 2 cc., but doses of 5 to 15 cc. by intravenous injection may be given in cases of collapse and shock. Corvotone is supplied for oral administration in bottles of 15 and 100 cc. The ampuls of 2 cc. are issued in boxes of 3 and 6. The 5-cc. ampuls are only supplied in boxes of 3.—*Quart. J. Pharm. Pharmacol.*, 13 (1940), 367. (S. W. G.)

Crystoids Anthelmintic (Sharp & Dohme, Philadelphia, Pa.) consists of an orange-colored pill (smaller than the adult size and intended solely for the treatment of children) of crystalline hexylresorcinol (0.1 Gm.) enclosed in a specially processed hard gelatin coat. It is a non-toxic anthelmintic effective against *Ascaris lumbricoides* (round worm), *Necator americanus* (hookworm), *Hymenolepis nana* (dwarf tapeworm), *Dibothryocephalus* (large tapeworm), *Enterobius vermicularies* (pinworm, seatworm, threadworm or whipworm). The pills are administered on an empty stomach upon arising and the number of pills varies with the age of child in accordance with a definitely outlined dosage schedule. This is followed by a saline purge 24 hours after treatment to remove the dead worms. Crystoids Anthelmintic are supplied in single vial packages containing six pills each and in six vial packages, six pills per vial.—*Amer. Professional Pharm.*, 7 (1941), 115. (F. J. S.)

Derobin is dioxyanthranol and is two to five times as active as chrysarobin. It is recommended for the treatment of psoriasis, and fungoid and other skin diseases. It is issued in tubes containing 1 Gm. and 10 Gm.—*Quart. J. Pharm. Pharmacol.*, 13 (1940), 295. (S. W. G.)

Eprolin S (Eli Lilly and Company, Indianapolis, Ind.) is synthetic vitamin E (alphatocopherol). It is indicated in experimental treatment of habitual and threatened abortion and abruptio placentæ, the treatment of muscular dystrophy and atrophy, amyotrophic lateral sclerosis and degenerative diseases of nervous and muscular systems. The dosage is the oral administration of 1 to 6 gelseals daily under physician's direction. Eprolin S is supplied in bottles of 40 and 500 gelseals (each 5 mg.).—*Amer. Professional Pharm.*, 7 (1941), 51. (F. J. S.)

Eptoin is sodium 5,5-diphenylhydantoin, an odorless white powder with a bitter taste. It is supplied in sealed capsules each containing 1.5 grains for the treatment of epilepsy. It is claimed to be free from the narcotic effects associated with barbiturates and bromides. The dose is one capsule during or just after meals, three times a day, increasing if necessary, but not exceeding six capsules in twenty-four hours. Eptoin is supplied in bottles of 100 capsules.—*Quart. J. Pharm. Pharmacol.*, 13 (1940), 295. (S. W. G.)

Hexoestrol (4,4-dihydroxy-γ,δ-diphenyl-*n*-hexane), is a synthetic substance related to stilboestrol, from which it differs only in the elimination of the unsaturated stilbene linkage. Its estrogenic activity is comparable with stilboestrol and its esters, but it is claimed to be considerably less toxic. The compound is available for oral administration in 1 and 5 mg. tablets, and for intramuscular injection as a sterile solution in oil containing 1 mg. in 1 cc. and 5 mg. in 1 cc. Hexoestrol tablets are supplied in boxes of 25 and 100. Each strength of the injection is issued in boxes of 6 ampules.—*Quart. J. Pharm. Pharmacol.*, 13 (1940), 367. (S. W. G.)

Ioloid (John A. Millar Company, Inc., Eleven Hill Street, Newark, N. J.) is a stable ortho-colloidal aqueous sol. of iodine in organic combination (colloidal sodium iodo-gallate) presenting 0.1% of iodine or 4 mg. per teaspoonful (4 cc.). It is indicated wherever internal iodine medication is employed; in simple goiter, as peripheral circulatory stimulant, in hypertension and tertiary syphilis. The dosage is two teaspoonfuls in water three times daily after meals. Ioloid is supplied in 8-oz. bottles.—*Amer. Professional Pharm.*, 7 (1941), 117. (F. J. S.)

Kapseals Theelol (Parke, Davis & Co., Detroit, Mich.) contain theelol which is chemically trihydroxy estratriene and is closely related to theelin; and the two products exert very similar physiological effects. Theelol, however, is more soluble in water than is theelin and is therefore more suitable for oral administration. The kapseals are generally prescribed by the physician to supplement theelin injections. They are supplied as 0.06-mg., 0.12-mg. and 0.24-mg. kapseals in bottles of 20, 100 and 250. The 0.24-mg. kapseals are also supplied in bottles of 50.—*Modern Pharmacy*, 25 (March 1941), 12. (F. J. S.)

Lygranum (E. R. Squibb & Sons, 745 Fifth Ave., New York, N. Y.) is an exceptionally pure and potent antigen of lymphogranuloma venereum prepared from the yolk sac of the developing chick embryo and it is tested in human beings before release for sale. Lygranum control is also available for use in evaluating non-specific reactions. Lygranum is used for the diagnosis of lymphogranuloma venereum and it is supplied as follows: Lygranum and lygranum control are both supplied in 1-cc. vials, containing sufficient material for ten tests.—*Amer. Professional Pharm.*, 7 (1941), 51. (F. J. S.)

Metaphen Suppositories (Abbott Laboratories, North Chicago, Ill.) contain metaphen (4-nitro-anhydro-hydroxy-mercury-orthocresol) 1:2000 in a modified cocoa butter base. They provide prolonged antiseptic action and they are indicated in rectal infections, proctitis and cryptitis. Metaphen Suppositories are supplied in boxes of 12.—*Amer. Professional Pharm.*, 7 (1941), 117. (F. J. S.)

Methedrine is the dextro-rotatory modification of the N-methyl derivative of isomyn (amphetamine), and is chemically allied to adrenaline and ephedrine. Methedrine has a vasoconstrictor effect on the nasal mucosa and produces a prolonged rise in blood pressure. It also has a stimulating action on the central nervous system, especially on the cerebral cortex. Methedrine is suggested for the treatment of narcolepsy and of post-encephalitic Parkinsonism. The dose is 2 mg. to 4 mg. repeated four-hourly until the desired effect is obtained. It should only be given under strict supervision owing to its pressor effect. Collapse and syncope may follow over-dosage. Methedrine is supplied in 2-mg. tablets in bottles of 25 and 100.—*Quart. J. Pharm. Pharmacol.*, 13 (1940), 368. (S. W. G.)

Methyl Testosterone, Metandren, Neo-Hombreol-M, Oreton-M (Ciba Pharmaceutical Products, Inc., Summit, N. J. (Metandren); Roche-Organon, Inc., Nutley, N. J. (Neo-Hombreol-M); Schering Corporation, Bloomfield, N. J. (Oreton-M)) is a synthetic, crystalline, chemically pure, readily absorbed and remarkably effective compound, $C_{20}H_{30}O_2$, 17-methyltestosterone and each tablet contains 10 mg. It shows an effective therapy for impotence of androgenic deficiency, for male climacteric, and other evidences of declining gonadal function such as hypogonadism or where deficiency of testicular hormone exists; it is the most effective androgen when administered by mouth and is valuable when injection of testosterone propionate is inadvisable. To obtain a clinical response equivalent to parenteral administration of testosterone propionate, 3 to 5 times by weight of methyltestosterone must be given. For hypogonadism, eunuchism—5 to 10 tablets daily, diminishing to response. Male climacteric—2 to 5 tablets or more daily. Females—not over 5 tablets daily in dysmenorrhea, uterine bleeding, mastopathia, unwanted lactation, menopausal disturbances. The tablets are supplied as follows: Metandren, boxes of 15 tablets (10 mg. each) and bottles of 30 tablets; Neo-Hombreol-M, boxes of 15 and 30 scored 10-mg. tablets; Oreton-M, packages of 15, 30 and 100 tablets (10 mg. each).—*Amer. Professional Pharm*, 7 (1941), 114. (F. J. S.)

Myocrisin (Pharmaceutical Specialties (May and Baker) Limited, Dagenham) is sodium aurothiomalate, a compound with a gold content of 50% which has been found valuable in the treatment of rheumatoid arthritis and other conditions, effecting complete cure in 50% of the cases treated in the early stages. In the later stages where the condition is of long standing Myocrisin has been found to arrest the progress of disease, increasing movement and reducing pain.—*Indian and Eastern Chemist*, 22 (1941), 39. (A. C. DeD.)

Nalutron (Winthrop Chemical Co., Inc., 170 Varick St., New York, N. Y.) is progesterone (synthetic corpus luteum hormone) and each milligram represents 1 International Unit. Nalutron produces the same biological effects as the natural corpus luteum hormone; it stimulates progestational proliferation of the endometrium, inhibits uterine contractility and suppresses menstruation. It is used for habitual and threatened abortion, dysmenorrhea, menorrhagia, metrorrhagia and premenstrual tension. The dosage is as follows: habitual and threatened abortion: intramuscular injection of from 1 to 2 mg. two or three times weekly. Dysmenorrhea: from 2 to 5 mg. daily for several days prior to menstruation. Menorrhagia and metrorrhagia: from 2 to 5 mg. daily. Premenstrual tension: 1 mg. daily during last half of menstrual cycle. Nalutron is supplied as ampuls: ampuls of 1 mg. (1 cc.), in boxes of 5 and 50; ampuls of 2 mg. (1 cc.), in boxes of 5 and 50; and ampuls of 5 mg. (1 cc.), in boxes of 5 and 50.—*Amer. Professional Pharm.*, 7 (1941), 49. (F. J. S.)

Narconumal is the sodium salt of 1-methyl-5,5-allylisopropyl barbituric acid. It is issued in ampuls containing 1 Gm. of dry substance, which is dissolved in 10 cc. of sterile distilled water just before use. It is recommended as an intravenous anesthetic which can be used for short or long anesthesia. The 10% solution is injected intravenously five minutes before the operation at the rate of 1 cc. per minute. Light anesthesia results after the injection of 4 to 5 cc. Up to 20 cc. may be given for prolonged anesthesia. Consciousness is usually regained in about twenty to twenty-five minutes after a small dose. Narconumal is supplied in boxes of three ampuls each containing 1 Gm. of narconumal, and three ampuls each containing 10 cc. of distilled water. It is also supplied in boxes of twenty-five ampuls.—*Quart. J. Pharm. Pharmacol.*, 13 (1940), 296. (S. W. G.)

Novutox (Pharmaceutical Manufacturing Co. Ltd., Cheltenham) is a self-sterilizing solution of ethocaine hydrochloride. It is used as a local anesthetic. It is marketed in bottles of 2 oz., 20 oz., 1/2%, 1%, 2%, 3% solutions. Ampuls: 50 cc., 1/2% and 1% solutions. Cartridges (standard size): boxes of 20 and 100, 2% and 3% solutions.—*Australasian J. Pharm.*, 22 (1941), 181. (A. C. DeD.)

Opacin (Pharmaceutical Specialties (May and Baker) Limited, Dagenham) is iodophthalein and is intended for radiological purposes. It is marketed in the form of ampuls, each containing 1.75 Gm. of the drug in 20 cc. of sterile, distilled water.—*Pharm. Zentralhalle*, 81 (1940), 69. (N. L.)

Paredrine Hydrobromide Aqueous (Smith, Kline & French Laboratories, 105 N. Fifth St., Philadelphia, Pa.) is *p*-hydroxy-α-methylphenethylamine hydrobromide, 1%, made isotonic with sodium chloride and preserved with sodium ethyl mercurithiosalicylate, 1:100,000 and is used for shrinking the nasal mucosa in head colds, hay fever and sinusitis. It may be used with atomizer, spray,

tampon or dropper and may be diluted 1:4 in normal saline for sinus washing. Paredrine Hydrobromide Aqueous is supplied in 1-oz. bottles.—*Amer. Professional Pharm.*, 7 (1941), 117. (F. J. S.)

Pitressin (Parke, Davis & Co., Detroit, Mich.) is the pressor (blood pressure-raising) principle (*beta*-hypophamine) of the posterior pituitary gland in sterile aqueous solution containing 20 pressor units per cc. It represents less than 1 unit of the oxytocic principle (*alpha*-hypophamine) per cc. It is used in postoperative intestinal stasis, in diabetes insipidus, in shock and collapse and as an agent for increasing or maintaining the blood pressure; also efficacious in the elimination of confusing gas shadows in roentgenography. Pitressin is supplied as 1-cc. (20 pressor units) and 0.5-cc. (10 pressor units) ampuls, in boxes of 6 and 100 ampuls.—*Modern Pharmacy*, 25 (March 1941), 13. (F. J. S.)

Plasmatropin (John A. Millar Company, Inc., Eleven Hill Street, Newark, N. J.) consists of Bottle #1 which contains an aqueous ortho-colloidal 0.025% solution of gold, each cc. presenting 0.25 milligram of gold, and Bottle #2 which contains an ortho-colloidal aqueous solution of 0.1% iodine in organic combination (colloidal sodium iodo-gallate), each cc. presenting one milligram of iodine. It is an alterative, stable, non-toxic, non-irritating, readily absorbed and assimilated and of prolonged action; it is used primarily in the treatment of physical and nervous conditions of chronic alcoholics, also in debility, neurasthenia and associated conditions. Dosage: Bottle #1, one teaspoonful in water before meals, three times daily; Bottle #2, two teaspoonfuls in water after meals three times daily; and the treatment is continued for three weeks. The complete three weeks' treatment consists of: three bottles 4 oz. each marked #1 and three bottles 8 oz. each marked #2.—*Amer. Professional Pharm.*, 7 (1941), 51. (F. J. S.)

Progynon d-p (Schering, A.-G., Berlin) is estradioldipropionate in an oily solution. It is recommended in progynon therapy and in various conditions due to the climacteric and menopause.—*Pharm. Zentralhalle*, 81 (1940), 69. (N. L.)

Pyelectan (H. J. Foster and Co., Ltd., India) is sodium 3:5 - di-iodo - 4 - pyridoxyl - *N* - methyl-2:6-dicarboxylic acid; its iodine is firmly held and the compound is excreted unchanged by the kidney. Available in 20-cc. ampuls each containing 15 Gm. of the compound to be used for injection as a contrast medium in pyelography.—*Indian Med. Gaz.*, 75 (1940), 644. (W. T. S.)

Pylumbrin (**Diodone**) (Boots Pure Drug Co., Ltd., Nottingham) is a stable, sterile, 35% aqueous solution of the diethanolamine salt of 3,5-di-iodo-4-pyridone-N-acetic acid. It is used in excretion radiography of the renal pelvis, ureters, bladder, etc. It is generally administered by intravenous injection; may be given subcutaneously. The dose for infants is 2–3 cc.; children 1–3 years, 8 cc.; children, 3–12 years, 10 cc.; children 12–15 years, 15 cc.; adults, 20 cc. It is marketed in ampuls of 3 cc., single ampuls and boxes of 3 and 6; and in ampuls of 20 cc., single ampuls and boxes of 6 ampuls.—*Australasian J. Pharm.*, 22 (1941), 181. (A. C. DeD.)

Quino-Thrombin (Lederle Laboratories, Inc., 30 Rockefeller Plaza, New York, N. Y.) is the synthetic 2-methyl-1,4-naphthoquinone, having high degree of activity of natural vitamin K and it is indicated where vitamin K has been shown to be of benefit particularly where bile is excluded from the intestinal tract, or enters the tract in insufficient amount or concentration. The dosage should not exceed 2 mg. daily and should not extend over a period longer than four weeks. Infant: $2^1/_2$ mg. dissolved in "alcoholized" oil by mouth, for two to four doses. Quino-Thrombin is supplied as 2-mg. tablets in bottles of 40, 100 and 1000.—*Amer. Professional Pharm.*, 7 (1941), 49. (F. J. S.)

Riboflavin (Lederle Laboratories, Inc., 30 Rockefeller Plaza, New York, N. Y.; Frederick Stearns Co., Detroit, Mich.; E. R. Squibb & Sons, 745 Fifth Ave., New York, N. Y.) is a heat stable factor of vitamin B complex, also known as vitamin B_2 or G and is a synthetic compound identical to the riboflavin in vitamin B complex (6,7-dimethyl-9-(*dl*-ribityl)-iso-alloxazin), $C_{17}H_{20}N_4O_6$; and each 1-mg. tablet is equivalent to 400 Sherman-Bourquin units. It is indicated in riboflavin deficiencies resulting in inflammation of the lips; skin changes; eczema; inflammation of the tongue; ocular manifestations; in the prevention and treatment of riboflavin (vitamin B_2) deficiencies such as cheilosis, seborrheic dermatitis, ocular disturbances such as bulbar conjunctivitis, lacrimation, burning of the eyes, failing vision, etc. The dosage is as follows: maintenance: 1 to 3 mg. daily; deficiency: 10 mg. or more daily. Children: 1 tablet daily; adults: 2 tablets daily. Riboflavin is supplied as: Stearns: 1-mg. capsules in bottles of 25; Lederle: 1-mg. tablets in bottles of 40, 100 and 500; Squibb: 1-mg. capsules in bottles of 50, 100 and 250.—*Amer. Professional Pharm.*, 7 (1941), 180. (F. J. S.)

Sulfathiazole Sodium Sesquihydrate (E. R. Squibb & Sons, 745 Fifth Ave., New York, N. Y.) is the heat-unstable sesquihydrate sodium salt of sulfathiazole. It is indicated in infections caused by the pneumococcus and staphylococcus organisms; its use is limited to patients for whom prompt intravenous chemotherapeutic effect is necessary as a life-saving measure, where oral administration of sulfathiazole is impossible or inadequate, and it should not be administered intraspinally, intramuscularly or subcutaneously. The suggested initial dosage is 3.8 Gm. for adults, on the basis of 0.06 Gm. of salt per Kg. body weight and it produces a blood concentration of 5 mg. % within a few minutes. No more than two doses should be given and the maintenance dosage is 1 Gm. every four hours of sulfathiazole orally. Sulfathiazole Sodium Sesquihydrate is supplied in bottles of 5 Gm.—*Amer. Professional Pharm.*, 7 (1941), 48. (F. J. S.)

Testanon (Organon Laboratories, London) is an organotherapeutic preparation of testes containing all the elements of the fresh gland. It is used in cases of neurasthenia and impaired vitality, more especially to reinforce psychotherapy. The dose is 1–2 tablets three times a day, half-hour before meals. It is marketed in tablets containing 50 mg. of testicular substance desiccated at a low temperature *in vacuo* equivalent to about five times the amount of fresh testes.—*Australasian J. Pharm.*, 22 (1941), 327. (A. C. DeD.)

Theelin (Parke, Davis & Co., Detroit, Mich.) is a pure crystalline estrogen, ketohydroxy estratriene, derived from pregnancy urine; and it is employed by physicians in the treatment of conditions associated with disturbance in the physiology of the female sexual mechanism. It is indicated particularly in the treatment of menopausal disturbances, menopausal sequelae and gonorrheal vaginitis. Theelin is supplied as follows: **Theelin in Oil:** ampuls, 0.1 mg. (1000 International Units); 0.2 mg. (2000 International Units); 0.5 mg. (5000 International Units); 1 mg. (10,000 International Units), each in boxes of six and fifty 1-cc. ampuls. **Theelin Suppositories (Vaginal)** contain 0.2 mg. theelin (2000 International Units) and are packed in boxes of six and fifty suppositories.—*Modern Pharmacy*, 25 (March 1941), 12. (F. J. S.)

Thiazamide is 2-(*p*-aminobenzenesulfonamido) thiazole, a heterocyclic sulfanilamide derivative

resembling, in chemical, physical and therapeutic properties, sulfapyridine. It is a white crystalline powder, m. p. 202°, soluble in water to about 40 mg. per 100 cc. Thiazamide is suggested as an alternative to sulfapyridine in the treatment of pneumococcal, gonococcal, meningococcal and other infections, especially in cases intolerant to sulfapyridine. In acute cases one or two initial doses of 4 Gm., followed by doses of 2 Gm. given four-hourly, is suggested. In cerebrospinal fever the dose should be based on body weight, namely: infants 1 Gm. per 5 pounds; children, 1 Gm. per 10 pounds; adults, 1 Gm. per 20 pounds in twenty-four hours. In acute staphylococcal septicemia a high initial dose is essential. Throughout the administration of thiazamide a fluid intake of not less than three liters in twenty-four hours should be maintained, to guard against the deposition of crystals in the urinary tract. Thiazamide is supplied in containers of 25 and 100 0.50-Gm. tablets, and boxes of 6 ampuls, each containing the equivalent of 1 Gm. of thiazamide in the form of the sodium salt.—*Quart. J. Pharm. Pharmacol.*, 13 (1940), 368.
(S. W. G.)

Tofaxin (Winthrop Chemical Company, Inc., 170 Varick St., New York, N. Y.) consists of a stable, biologically assayed distillate of vegetable oils, containing alpha, beta and gamma tocopherols. It is indicated in habitual and threatened abortion, neuromuscular diseases, especially amyotrophic lateral sclerosis and muscular dystrophy. For habitual abortion, one or two capsules are given daily throughout pregnancy. Threatened abortion, up to five capsules daily. Neuromuscular diseases from three to five capsules daily. Tofaxin is supplied in bottles of 50 capsules (each capsule representing 50 mg. of mixed natural tocopherols, equivalent to 30 mg. of alpha tocopherol (vitamin E)).—*Amer. Professional Pharm.*, 7 (1941), 51.
(F. J. S.)

Tumenol (Ammonium) (Bayer Products Ltd., London) is a tarry product from bituminous slate. It is used in cases of chilblains, eczema, dermatitis impetigo, pemphigus, furunculosis, fissures and ulcers. A 2-20%, made up in suitable base for local application. It is supplied as a liquid in a 1-oz. bottle.—*Australasian J. Pharm.*, 22 (1941), 181.
(A. C. DeD.)

Varium (Tabloid) (Burroughs Wellcome and Co., London and Sydney) contains in each product gr. 5 (0.324 Gm.) and 0.3 Gm. of fresh ovarian substance. The dose is one or more of either strength, taken with a little water, after food, twice or three times a day. It is marketed in bottle of 100.—*Australasian J. Pharm.*, 22 (1941), 181.
(A. C. DeD.)

SPECIALTIES

Avimal (Burroughs Welcome and Co. (U. S. A.) Inc., 9 E. 41st St., New York, N. Y.) contains in each fluidounce vitamin A 25,000 U. S. P. units; vitamin D, 2500 U. S. P. units; vitamin B_1 (thiamine hydrochloride), 1500 U. S. P. units; vitamin B_2 (G) (riboflavin), 2700 micrograms; nicotinic acid, 27 milligrams; U. S. P. malt extract and flavoring, *q. s.* to one fluidounce. It is indicated as a dietary supplement during childhood, pregnancy, lactation, hyperthyroidism, convalescence and in all conditions involving fever or elevated metabolism. The dosage is one teaspoonful, three times a day and this provides not less than: 9375 U. S. P. units of vitamin A; 937 U. S. P. units of vitamin D; 562 U. S. P. units of vitamin B_1; 1012 micrograms of riboflavin (about 400 Sherman-Bourquin units of vitamin B_2); and 10.1 milligrams of nicotinic acid. Avimal is supplied in 8-oz. and pint bottles.—*Amer. Professional Pharm.*, 7 (1941), 49. (F. J. S.)

Bezon (Nutrition Research Laboratories, 332 South Michigan Ave., Chicago, Ill.) consists of thiamine hydrochloride, 750 micrograms; riboflavin, 1000 micrograms; pyridoxine, 35 micrograms; and pantothenic acid, 225 micrograms. It is used in cases of vitamin B deficiencies, loss of appetite, convalescence, pregnancy, anemia and other conditions associated with vitamin B complex deficiency. Bezon is supplied in bottles of 30 capsules.—*Amer. Professional Pharm.*, 7 (1941), 48.
(F. J. S.)

Complevite is a dietary supplement in tablet form for use in various dietary deficiencies, and as a general tonic. Each green tablet contains: calcium, 60 mg.; phosphorus, 92 mg.; vitamin A, 1350 I. U.; vitamin D, 100 I. U. Each white tablet contains: calcium, 60 mg.; phosphorus, 92 mg.; iron (available), 4 mg.; vitamin B, 67 I. U.; vitamin C, 133 I. U.; and traces of iodine, copper and manganese. The dose recommended is one tablet of each kind three times a day with meals. Complevite tablets are supplied in bottles of 120, and for dispensing purposes in bottles of 1000 tablets.—*Quart. J. Pharm. Pharmacol.*, 13 (1940), 367. (S. W. G.)

Crookes' Lemon Powder (Synthetic) (The Crookes' Laboratories, London) provides the equivalent of pure lemon juice in vitamin C, and acid content. Prepared in solution (1 teaspoonful in 2 tablespoonfuls of water) and it contains approximately 10 units of vitamin C (ascorbic acid) and 80 mgs. of citric acid per cc. It is used in the treatment of vitamin C deficiency. It is supplied in bottles; contents of each are equivalent to nearly 30 tablespoonfuls of lemon juice.—*Australasian J. Pharm.*, 22 (1941), 327. (A. C. DeD.)

Crystoflavine (Burn Solution) (Crookes' Laboratories, London) is a triple dye lotion consisting of brilliant green, gentian and acriflavine. It is used in the treatment of burns. It is dabbed on and allowed to dry. A second treatment is given after an hour.—*Australasian J. Pharm.*, 22 (1941), 181.
(A. C. DeD.)

Digitalis Pulv. (S. B. Penick & Company, 132 Nassau Street, New York, N. Y.) is physiologically assayed fine quality powdered digitalis in colored glass 4-oz. jars protected from light and sealed in accordance with U. S. P. XI and F. and D. A. standards. Each package is dated, assayed and laboratory controlled as standardized. Digitalis Pulv. is supplied in 4, 4-oz. jars.—*Amer. Professional Pharm.*, 7 (1941), 181. (F. J. S.)

Euvalerol-A (Elixir) (Allen and Hanburys Ltd., London and Sydney) is an odorless preparation of valerian in aromatic elixir. It is used as a sedative. The dose is one to two teaspoonfuls three times a day or more. It is marketed in 4, 8, 40 and 80-ounce bottles.—*Australasian J. Pharm.*, 22 (1941), 181. (A. C. DeD.)

Foille is a stabilized water-in-oil emulsion of sulfur, iodine, benzocaine and phenol in a vegetable oil, used for the treatment of burns and open wounds. Advantages claimed are its quick analgesic action, absence of sepsis, healthy granulation, absence of scar formation and flexibility of the protective film formed allowing unhindered mobility of the patient. Foille is supplied in 16- and 32-ounce and 1/2-gallon bottles.—*Quart. J. Pharm. Pharmacol.*, 13 (1940), 367. (S. W. G.)

Hepicebrin Gelseals are small oval capsules containing, in each, vitamin A 10,000 units, vitamin B_1 200 units (aneurin hydrochloride, 0.6 mg.); vitamin B_2 40 Sherman units (riboflavin, 100γ); vitamin C 500 units (ascorbic acid, 25 mg.); vitamin D 1000 units. They are recommended for the treatment or prophylaxis of multiple vitamin deficiencies. The dose is one or two capsules daily for

routine prophylaxis. Two to five or more, will be required for the treatment of vitamin deficiency. They are supplied in bottles of 25 and 100.—*Quart. J. Pharm. Pharmacol.*, 13 (1940), 295. (S. W. G.)

Isoflav Solution Tablets of proflavin sulfate are so prepared that one tablet dissolved in 4 fluid ounces of distilled water makes a 1:1000 isotonic buffered solution at approximately pH 6.3. Isoflav is a suitable antiseptic for the prevention and control of wound infection in all delicate tissues, and especially for infected recent wounds of the brain. The solution, which is best prepared just before use, is made by dissolving one crushed tablet in 4 fluidounces of sterile distilled water under aseptic conditions. The solution may be kept for a limited period if stored in well-stoppered bottles in the dark. Isoflav solution tablets are supplied in bottles of 50.—*Quart. J. Pharm. Pharmacol.*, 13 (1940), 367. (S. W. G.)

Lirimin Capsules contain, in each, concentrated liver extract, 0.24 Gm.; exsiccated ferrous sulfate, 0.3 Gm.; vitamin B_1, 0.167 Gm. (55 I. U.); vitamin B_2 25γ (riboflavin), together with other factors of the vitamin B complex derived from the liver. It is recommended for the treatment of hypo- and hyperchromatic anemia. The average daily dose should be one or more capsules three times a day. Lirimin capsules are supplied in boxes of 25, 50 and 100 capsules.—*Quart. J. Pharm. Pharmacol.*, 13 (1940), 368. (S. W. G.)

Medicose-D (Brook, Parker and Co. Ltd., Bradford) is medicinal glucose, vitamin D and calcium glycerophosphate. It is used in cases of debility, overstrain, malnutrition. It is supplied in packages.—*Australasian J. Pharm.*, 22 (1941), 181. (A. C. DeD.)

Mibiol Hair Lotion (Apoth. W. Schwerdtfeger, Fabrik biolog.-pharmaz. Präparate, Leipzig) consists chiefly of the plant extracts of lavender, juniper and pine together with olive oil and wool fat.—*Pharm. Zentralhalle*, 81 (1940), 69. (N. L.)

Multiple Vitamin Capsules (Frederick Stearns and Company, Detroit, Mich.) contain in each capsule vitamin A, 10,000 U. S. P. units; vitamin D, 1000 U. S. P. units; thiamine hydrochloride (B_1), 500 U. S. P. units (1.5 mg.); riboflavin (B_2), 1000 gamma (1 mg.); pyridoxine hydrochloride (B_6), 1000 gamma (1 mg.); ascorbic acid (C), 500 U. S. P. units (25 mg.); nicotinic acid amide, 25 mg. The capsules are indicated in vitamin deficiency states requiring multiple vitamin therapy. Multiple Vitamin Capsules are supplied in bottles of 25 and 100 capsules (2 minims each).—*Amer. Professional Pharm.*, 7 (1941), 180. (F. J. S.)

Neurinase (Laboratories A. Genevrier, Neuilly-Paris) is a preparation containing a stabilized form of fresh valerian with a small quantity of diethylbarbiturate. It is marketed in the form of drops and tablets and is recommended as a nervine and sedative.—*Pharm. Zentralhalle*, 81 (1940), 69. (N. L.)

Polyfagin (Behringwerk, I. G. Farbenindustrie A.-G., Leverkusen a. Rh.) is a bacteriophage intended in the treatment of typhoid, paratyphoid and related diseases. It is marketed as drops, in containers of 12.5 cc. and in the form of ampuls, each containing 2 cc.—*Pharm. Zentralhalle*, 81 (1940), 69. (N. L.)

Ronone (Rotenone Lotion 2%) (Abbott Laboratories, North Chicago, Ill.) is a 2% mixture of rotenone (a colorless crystalline compound, $C_{23}H_{22}O$, derived from derris root and other plants) in mucilage of quince seed, chondrus and chloroform and it is applied locally. It is used for topical application in treatment of scabies and may be useful in treating other parasitic invasions of the skin by mites, lice and fleas; it does not stain clothing or bedding and is not noticeable on the skin after drying. Ronone is supplied in 4-oz. and pint bottles.—*Amer. Professional Pharm.*, 7 (1941), 181. (F. J. S.)

Sevicaine (Glaxo Laboratories, Greenford, Middlesex) is procaine hydrochloride (and procaine hydrochloride, with adrenaline). It is used for infiltration and regional anesthesia. Up to 1 gram (15 grains) procaine hydrochloride may be injected subcutaneously, *i. e.*, up to 50 cc. of 2% solution. In 1% solution of procaine hydrochloride in boxes of 3 x 10-cc. ampuls; in 2% solution of proc. hyd., in 15 cc. rubber-capped bottles; and in 2% solution of proc. hyd. with adrenaline (1 in 60,000) in 15-cc. rubber-capped bottles.—*Australasian J. Pharm.*, 22 (1941), 327. (A. C. DeD.)

Siccolam (The British Drug Houses Ltd., London) is a thick cream containing titanium dioxide, zinc oxide, and small quantities of purified silicates in a fat-free base. It is used in cases of moist dermatitis, seborrhoeic, urticarial, erythematous, inter-triginous, dysidrotic and mycotic inflammations, prurigo, neurodermatitis and lichen planus. It is applied very thinly and allowed to dry. Fresh application twice daily on the dry remains of the previous one. Medicaments may also be incorporated in the Siccolam. It is marketed in collapsible tubes of 2 and 4 oz.—*Australasian J. Pharm.*, 22 (1941), 181. (A. C. DeD.)

Supavite is a combination of vitamins and other factors necessary for good health, supplied in two distinct capsules. Each amber capsule contains vitamin A 6000 units, vitamin D 600 units; vitamin E content of one minim of wheat germ oil. Each black capsule contains vitamin B_1 200 units; vitamin B_2 (G) 25γ riboflavin; vitamin C 300 units; iron (ferrous) 0.017 Gm.; calcium 0.043 Gm.; phosphorus 0.033 Gm. The dose is one capsule of each kind taken at mealtime once a day. Supavite capsules are supplied in boxes containing 15 doses.—*Quart. J. Pharm. Pharmacol.*, 13 (1940), 296. (S. W. G.)

Theoba "Tabloid" (Burroughs Wellcome and Co.) is a combination of theobromine 5 gr. and phenobarbitone 1/2 gr. useful as a diuretic and sedative in cases involving hypertension.—*Indian Med. Gaz.*, 74 (1940), 644. (W. T. S.)

Tussal (McNeil Laboratories, Inc., 2900 N. 17th Street, Philadelphia, Pa.) is a specially emulsified and aromatized combination of chloroform (2 minims per fluidounce), quebracho, sanguinaria, menthol, honey and olive oil. It is used as an expectorant, emollient and sedative in non-productive coughs. The dosage is one to three teaspoonfuls every three hours, or as directed by the physician. Tussal is supplied in pint and gallon bottles.—*Amer. Professional Pharm.*, 7 (1941), 115. (F. J. S.)

Unicap Vitamins (The Upjohn Company, Kalamazoo, Mich.) contains in each capsule vitamin A, 10,000 U. S. P. units; vitamin D, 1000 U. S. P. units; vitamin C, 500 International Units (25 mg. ascorbic acid); vitamin B_1, 500 International Units; vitamin B_2, 200 gammas; vitamin B_6, 200 gammas; nicotinamide, 20 mg.; and it is a mixture of fish liver oil concentrate and crystalline water-soluble vitamins in small, yellow, oval capsules of approximately 2 minims capacity. It is indicated for use in augumenting the daily vitamin intake. The dosage for adults and children is one capsule daily. Unicap Vitamins are supplied in packages of 24 and in bottles of 100.—*Amer. Professional Pharm.*, 7 (1941), 181. (F. J. S.)

Uralysol (Continental Laboratories Ltd., London) contains thyminic acid, 0.10 Gm.; hexamethylenetetramine - anhydromethylene - citrate, 0.50 Gm.; hexamethylenetetramine, 2.50 Gm.; piperazine tartrate, 0.25 Gm.; lithium carbonate, 1.00

Gm.; sodium benzoate, 1.00 Gm.; effervescent base, *ad* 100. It is used in cases of arthritis, rheumatism, gout, calculi, tophi, etc. The dose is one teaspoonful in a tumbler of water, morning and evening. It is marketed in bottles of 100 Gm.—*Australasian J. Pharm.*, 22 (1941), 327. (A. C. DeD.)

Vi-Ferrin (Lederle Laboratories, Inc., 30 Rockefeller Plaza, New York, N. Y.) contains in each capsule 0.2 Gm. (3 grains) of dried ferrous sulfate; 0.25 mg. (83 I. U.) of thiamine hydrochloride; 0.5 Gm. of dried liver extract (obtained from 9 Gm. of fresh liver). This crude liver extract provides 0.13 mg. (50 Sherman-Bourquin units) of riboflavin and undetermined amounts of other factors in the vitamin B complex. It is recommended for the prevention and treatment of nutritional and iron-deficient anemias, hypochromic or secondary anemias accompanied by actual or probable B_1 or B_2 deficiencies. The average daily dose is six capsules, preferably after meals, as directed by the physician. Vi-Ferrin is supplied in bottles of 40, 100 and 500 capsules.—*Amer. Professional Pharm.*, 7 (1941), 114. (F. J. S.)

Vitamin A Capsules (Frederick Stearns and Company, Detroit, Mich.) contain 25,000 U. S. P. units of vitamin A per capsule. They are indicated in the following conditions when they are due to vitamin A deficiency: xerophthalmia, night blindness, follicular hyperkeratosis of the skin, lowered resistance to infections and retardation of growth. Also recommended in pregnancy and lactation. Vitamin A Capsules are to be used under the direction of the physician only; and they are supplied as 3-minim capsules in bottles of 25.—*Amer. Professional Pharm.*, 7 (1941), 48. (F. J. S.)

Vitamin A Concentrated (Abbott Laboratories, North Chicago, Ill.; E. R. Squibb & Sons, 745 Fifth Ave., New York, N. Y.; The Upjohn Company, Kalamazoo, Mich.) consists of small, soft gelatin capsules containing fish liver oils and each capsule is standardized to a potency of 25,000 U. S. P. vitamin A units and 300 U. S. P. units of vitamin D. It is indicated in those conditions requiring the specific administration of vitamin A in massive doses such as night blindness and hyperkeratosis of the skin; also as a diet supplement in diabetes mellitus. One capsule daily furnishes more than the prophylactic dose for either child or adult but two to four capsules three times daily may be indicated in severe deficiencies. Vitamin A Concentrated is supplied in bottles of 25 and 100 "Vitamin A Capsules, Abbott;" bottles of 25, 100 and 250 "Vitamin A Micro-caps, Squibb"; bottles of 100 "Super A Vitamin Concentrate Capsules, Upjohn."—*Amer. Professional Pharm.*, 7 (1941), 115. (F. J. S.)

Vitetrin Capsules contain, in each, vitamin A 6600 units and vitamin D 1320 units derived from fish liver oils; vitamin B 33 units; vitamin G 20γ (rivoflavin, B_1) and small amounts of other principles of the vitamin B complex, derived from liver extract and yeast fortified with aneurine hydrochloride. Vitetrin Capsules are indicated as a dietary supplement to assure an adequate supply of these four vitamins. The dose is 1 to 3 capsules daily. The capsules are supplied in bottles of 25, 100 and 250.—*Quart. J. Pharm. Pharmacol.*, 13 (1940), 296. (S. W. G.)

BACTERIOLOGY

Agglutination Reaction—Determination of the Specificity in the. Non-specific agglutinins may mask the effect of specific agglutinins in diagnostic tests of low-titer sera. The two effects may be distinguished by employing a non-specific suspension in the test. If the titer with the specific antigen is higher than that with the non-specific antigen, it may be taken as a measure of the specific agglutinins. If the non-specific titer is higher, the non-specific agglutinins are destroyed by heating the serum to 62–63° C. for 30 minutes (a few sera coagulate at this temperature). For the diagnosis of brucellosis, it was found that heating sera of cattle, sheep or horses destroyed the non-specific agglutinins (*Bact. pullorum* suspension used), leaving *Br. abortus* agglutinins reduced, but definitely demonstrable. By the same method, antityphoid and anti-para B titers were distinguished from non-specific anti-*Br. abortus* titers in sera from human patients with enteric infection.—E. VELLISTO. *Z. Immunitäts.*, 97 (1940), 380; through *Bull. Hyg.*, 16 (1941), 89. T. C. G.

Agglutinogen of H. Pertussis—Comparison of Physical Methods for the Liberation of. An evaluation was made of the effectiveness of the following six methods of liberation of phase I agglutinogen from *H. pertussis:* sonic extraction, the low temperature ball-mill (−70°C.), the ball-mill at room temperature, freezing and thawing, saline extraction and extraction with water. All extracts were Seitz filtered and assayed quantitatively by their ability to absorb agglutinins from a phase I immune serum. The low temperature ball-mill extracted about 20 per cent as much agglutinogen as the sonic method, which was most effective. The other methods were poor, especially the extraction by the ball-mill at room temperature, in which fractional heating may have had an influence.—E. W. FLOSDORF and A. C. KIMBALL. *J. Immunol.*, 39 (1940), 287; through *Bull. Hyg.*, 16 (1941), 95. (T. C. G.)

Antibacterial Activity of Some Fluorinated Aromatic Mercurials—Further Studies of the. More than 40 years ago Thimm reported that *p,p'*-difluorodiphenyl even in as low a dilution as 1:20 did not kill *Strep. pyrogenes, Staph. aureus, V. cholerae, C. diphtheriae* or *B. anthracis* in the test-tube but was useful for burns, wounds and ulcers. Two years later Valentiner stated that this compound had a bacteriostatic effect and diffused easily through animal membranes. The authors in the present article report their investigations on the antibacterial activity of two mercuric chloride derivatives of the compound, using the official Food and Drug Administration strains of *Staph. aureus* and *E. typhi*, and comparing their action with that of 4-fluorophenyl mercuric chloride, the most effective of compounds previously studied. All three were tested at the same time, using the same cultures to ensure uniformity of conditions. Neither of the diphenyl compounds was as strongly antibacterial as that used for comparison; as with other mercurial antiseptics, the activity was reduced by the presence of serum. Although the diphenyl compounds contain twice as much fluorine as the monophenyl they are less active bactericidally. Former work with the monophenyl compounds indicated that there was no consistent relationship between antibacterial activity and the position of the substituent groups, but with the difluoro-diphenyl compounds studied, that in which the mercuric chloride was ortho to the fluorine proved consistently more active than that in which it was meta to the fluorine.—B. HEYMAN and T. C. GRUBB. *J. Bact.*, 40 (1940), 363; through *Bull. Hyg.*, 16 (1941), 90. (T. C. G.)

Antibody Formation in the Tuberculous Lesion. The experiments reported were designed to determine whether or not local formation of antibodies occurs in the tuberculous lesion. Rabbits were injected intradermally with heat-killed bovine tubercle bacilli suspended in paraffin oil. At varying intervals the animals were sacrificed and extracts were made of the skin lesions. Complement fixation tests on these extracts and the blood serum of the

animals indicated that the antibody titer was higher in the local lesion than in the serum for a period of three weeks following injection. No evidence was found to indicate that these localized antibodies were simply an accumulation of antibodies derived from the blood serum.—J. O. WESTWATER. *J. Exp. Med.*, 71 (1940), 455. (T. C. G.)

Antiseptic and Germicidal Composition. Casein is treated with 5–100% of a phenol, $RXY(OH)_n$, where R = aryl or halogenoaryl, X = alkyl, Y = hydrogen or alkyl and n = 1 or 2, in aqueous solution at 75° to give antiseptics suitable for internal or external therapeutic use. The use of *p*-tert.-amylphenol, ethyhexyl- and chloro-sec.-octyl-resorcinol is claimed.—W. E. AUSTIN. U. S. pat. 2,087,588; through *J. Soc. Chem. Ind.*, 59 (1940), 495. (E. G. V.)

Antiseptics—Manufacture of. Water-soluble antiseptic compounds are obtained by coupling a diazotized amino-arylsulfonic acid, *e. g.*, *m*- or *p*-amino benzyl sulfonic acid, naphthionic acid, $[C_6H_3(NH_2).SO_3H\text{-}4\text{:}3]_2$, with a hydroxyl-aryl compound containing nuclear mercury, *e. g.*, *o*-chloromercuri-phenol, -*p*-cresol and -β-naphthol, preferably at pH 3–6, and treating the product, while still in contact with the coupling medium or after isolation as the sparingly soluble alkali salt, with an acid solution, *e. g.*, hydrochloric acid, at pH less than 1.5. The resultant dye is dried preferably at low temperature (not greater than 45°), and mixed with sufficient alkali to give a solution of pH 3–9; *e. g.*, 3-chloromercuri - 4 - hydroxyazobenzene - 4′ - sulfonic acid (I) is mixed with sodium bicarbonate (0.6 pints).—MELLERSH-JACKSON. Brit. pat. 519,838; through *J. Soc. Chem. Ind.*, 59 (1940), 566. (E. G. V.)

Anti-Typhus Vaccine Prepared from Rickettsia Prowazeki Cultivated in the Yolk Sac of the Developing Chick Embryo. An account is given of preparing vaccine of *R. prowazeki* (Chinese strain) from culture in developing chick embryo. Its titration is also described. The vaccine gave perfect immunity to 4 out of 5 guinea pigs with the fifth dying from a secondary infection. The new vaccine has also been used in Peking to immunize 40 persons, mostly foreigners.—J. TCHANG and G. B. MATHEWS. *Chinese Med. J.*, 58 (1940), 440–445. (W. T. S.)

Bacterial Meningitis—Treatment of. It has been shown that a combination of antibody and chemotherapy offers the best prognosis in both *H. influenzae* and pneumococcus meningitis. In meningococcus meningitis the marked susceptibility of the organism in sporadic cases to both sulfanilamide and sulfapyridine warrants a trial period with drug alone. However, in fulminating types of the disease and severe forms in infants intravenous serum is indicated after a 4-hour period of drug administration.—H. E. ALEXANDER. *Bull. N. Y. Acad. Med.*, 17 (1941), 100. (A. C. DeD.)

Bacteriophage—Distribution of Individual Doses in Capillary Tubes. The virulence rather than the amount of bacteriophage is the important factor to be considered in fixing the dose of this substance. Individual doses of bacteriophage may be conveniently measured, sealed and packaged for transport in this way. Place mouth downward 50 capillary tubes (about $5\frac{1}{2}$ inches long and 2 mm. in diameter) in an 8 in. by 1 in. test-tube. Filter the bacteriophage directly into the tube under vacuum by use of a Pasteur-Chamberland L_3 candle. Each tube contains approximately 0.5 cc., a convenient quantity to be given in a teaspoonful of water.—C. L. PASRICHA and M. N. LAHIRI. *Indian J. Med. Research*, 28 (1940), 321–322. (W. T. S.)

Benzene and Furan Mercurials—Antiseptic Efficiency of Certain. Preliminary studies revealed that 5-nitro-2-furylmercuric chloride has a sufficiently wide margin of safety to warrant its thorough study as a possibly useful clinical antiseptic, since it inhibited growth of representative pathogenic microorganisms in concentrations between 5.7×10^{-5} and 2.9×10^{-6} molecules per liter, and required a concentration of 8.3×10^{-5} molecules per liter to inhibit growth of embryonic chick heart. The other compounds tested, in decreasing margin of safety were phenylmercuric nitrate, phenylmercuric chloride, furylmercuric chloride, furylmercuric nitrate, 5-bromofurylmercuric chloride, 5-methylfurylmercuric chloride, 4 - acetoxymercuridibenzofuran, chloromercuri - β - naphthol, 2,4 - dichloromercuriphenol.—C. HANDLEY, N. M. PHATAK and C. D. LEAKE. *Univ. Calif. Pub. Pharm.*, 1 (1939), 175–186; through *Chimie & Industrie*, 43 (1940), 587. (A. P.-C.)

Blood Groups. A discussion of the four common blood groups which includes not only serology but also immunology and the problems of hereditary transmission of blood diseases.—VICTOR DELFINO. *Escuela Farm.*, 3 (July and Aug. 1940), 31. (G. S. G.)

***p*-Caproylaminobenzenesulfonhydroxamine and Sulfanilamide—Comparison of Antistreptococcal Activities of.** A colorimetric determination of the first compound (hydroxamide) is described making use of diazotization and coupling with N-(1-naphthyl)ethylene diamine in presence of ammonium sulfamate following essentially Marshall's procedure (*J. Biol. Chem.*, 128 (1939), 537). Both drugs are approximately equal, weight for weight, in antistreptococcal activity when fed at intervals of four hours, but sulfanilamide is slightly inferior when fed once daily. If both are fed in equal weight dosage hydroxamide gives the lower and more constant blood levels.—JOHN V. SCUDI and OTTO GRAESSLE. *Proc. Soc. Exptl. Biol. Med.*, 46 (1941), 364. (A. E. M.)

Culture Medium—Developing Egg as a. The technique of preparing and inoculating the fertile egg is briefly described and the fields of study in which the method has been found of value are noted under the heads of virus, rickettsial, bacterial, spirochaetal, fungal and protozoal infections. The author discusses the future possibilities of the chick embryo technique. He foresees an extension of this method for the production of vaccines for use in prophylaxis—a method now used for preparing antismallpox and yellow fever vaccines, and vaccines for protection of animals against equine encephalomyelitis. Its usefulness for development of strains suitable for prophylactic vaccination has been reported with the viruses of influenza, yellow fever, fowlpox, herpes and rabies, and further work on these lines is envisaged. The chick embryo has high susceptibility and little or no capacity to acquire specific immunity before hatching, so it is a possible field for the study of natural resistance; and, since antiserum can be introduced into the embryo, of passive immunization. It also affords a promising opportunity for chemotherapeutic experimentation.—E. W. GOODPASTURE. *J. Lab. Clin. Med.*, 26 (1940), 242; through *Bull. Hyg.*, 16 (1941), 138. (T. C. G.)

Cuprous Oxides—Relation of Particle Size and Color to Fungicidal and Protective Value of, A rapid method for ascertaining the particle size of cuprous oxide is described. The red-yellow color range of the oxide is associated with a range of particle sizes from 2.57% to 0.94%. The fungicidal (inhibition of spore germination) and protective (prevention of infection) efficiency of cuprous oxide varies inversely as the particle size. Presence of cupric oxide lowers both values by increasing mean particle size and by dilution.—J. W. HEUBERGER and J. G. HORSFALL. *Phytopathology*, 29 (1939), 303–321; through *J. Soc. Chem. Ind.*, 59 (1940), 391. (E. G. V.)